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This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of Mexico were reviewed by the Committee on 21 February 2011. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 08 March 2011.

The Secretariat's draft report was prepared for the Committee by Nicola Brandt, Cyrille Schwellnus, with statistical assistance from Roselyne Jamin, under the supervision of Patrick Lenain.

The previous Survey of Mexico was issued in July 2009.

BASIC STATISTICS OF MEXICO 2009

THE LAND

Area (sq. km)	1 964 375	Inhabitants in major metropolitan areas (millions), 2010	
Agriculture area (sq. km) (1990)	394 000	Mexico City	20.1
		Guadalajara	4.4
		Monterrey	4.1

THE PEOPLE

Population (thousands), 2010	112 323	Employment[1] (thousands)	43 678
Inhabitants per sq. km	57.2	Agriculture	13.3
Annual population growth (1990-2010)	1.5	Industry	23.9
		Services	62.1

PRODUCTION

Structure of production		GDP (USD billion)	882.9
(per cent of total, 2003 prices)		GDP per capita (USD, current prices	
Agriculture	3.7	and current PPPs)	14 364
Industry	29.8	Gross fixed capital formation	
of which: Manufacturing	16.6	(per cent of GDP, 2003 prices)	21.8
Services	64.5		

THE GOVERNMENT

			Senate	Chamber of Deputies
Public sector indicators[2]		Composition of Parliament (July)		
(per cent of GDP)		PRI	50	237
Public sector expenditure	26.0	PAN	33	143
Public sector revenue	23.7	PRD	25	71
Oil-related revenue	7.4	Other	20	49
Gross public debt (December)	37.1	Total	128	500

FOREIGN TRADE

Exports of merchandise (per cent of GDP), 2010	29.2	Imports of merchandise (per cent of GDP), 2010	29.5
Main exports (per cent of total)		Main imports (per cent of total)	
Manufactures	82.4	Intermediate goods	76.2
Petroleum products	14.0	Capital goods	10.0
Agriculture	2.9	Consumer goods	13.7

THE CURRENCY

Monetary unit: Peso	Currency units per USD, average of daily figures:	
	Year 2010	12.63
	February 2011	12.07

1. People economically active according to results of the Quarterly National Employment Survey.
2. Central government and public enterprises.

Executive summary

Following a deep recession associated with a strong global downturn, Mexico is experiencing a robust recovery, with GDP growth of 5½ per cent in 2010 and 4½ per cent in 2011. Export growth is expected to slow after the exceptional rebound of 2010, but stronger domestic demand should keep the recovery on track. Several labour market indicators have improved, although unemployment is decreasing only slowly. Mexico has already started to withdraw the fiscal stimulus of 2009 and increased taxes to calm market worries about fiscal trends. If the recovery unfolds as expected, the government should fully implement its plans to lower the budget deficit further through spending restraint. Since inflation has come down, monetary policy can support the recovery by keeping rates low in the near term.

Mexico was able to implement countercyclical policies in the recession thanks to significant reforms of the macroeconomic policy framework. However, it should continue to strengthen its policy framework to better withstand shocks. Amending the fiscal rule to accumulate more financial assets during periods of high oil prices and economic growth would give the government additional room to support the economy when confronting large shocks. Taking measures to lower price stickiness related to administrative tariffs and uncompetitive markets would give monetary policy more room for manoeuvre and, most importantly, would contribute to a better allocation of resources. Enhancing competition and lowering market entry barriers would also promote the development of more stable consumer-related services, attenuating the effects of shocks.

Mexico needs to maintain growth-enhancing investments and social policies to catch up with average OECD living standards and reduce poverty. Therefore, the significant effort that has taken place in recent years to strengthen tax revenues should continue, particularly with a view of attaining a more efficient tax system with higher independence from oil revenues. There is also a great potential to increase revenues at the subnational level. This would make sure that Mexico can confront future spending pressures. The Mexican government has made significant efforts to close tax loopholes in recent years, mainly through the adoption of an alternative minimum tax on business income (Impuesto Empresarial a Tasa Unica, IETU). Yet, further efforts to remove inefficient tax expenditures would broaden the tax base, increase revenues and make the tax system simpler, thus reducing opportunities for tax avoidance and evasion. Mexico is in the process of increasing fossil-fuel prices, but this should be accelerated to eliminate subsidies and the associated negative effects on the environment. A targeted cash benefit would be more efficient to protect the poor.

Mexico's informal sector, which is large by OECD standards, is a drag on productivity growth. Firms in the informal sector lack access to credit, training and legal protection – so they do not innovate and remain small. Better education, enhanced regulation, and improved incentives to formalise are key reforms to combat informality, as will be stronger enforcement of labour and tax laws. The government should continue its efforts to reduce costs of starting and running a business and of employing workers formally. It should strengthen the value of the mandatory social security package for low-wage workers, while limiting its costs through efforts to raise efficiency.

Weak competition in many sectors and deficiencies in education have been a further brake on productivity. The OECD has co-operated with Mexico in all of these areas to develop a reform agenda. The competition law reform, which has now been passed in Congress, is an important step towards reducing market power of incumbents across all industries, as it will greatly strengthen cartel law enforcement. The quality of teaching could be further improved through stronger performance standards, better teacher training as well as more professional recruitment and school management.

Assessment and recommendations

Thanks to past improvements in the macroeconomic policy framework and financial supervision, Mexico weathered the global recession of 2008-09 without fiscal or financial crises – a major improvement compared to previous episodes. The economic recovery has so far unfolded at a robust pace. Nevertheless, the recession was deep. There is thus a need for Mexico to continue preparing itself to confront future shocks through macroeconomic and structural policy measures. Oil revenues, which account for around one third of budgetary receipts, are highly volatile, especially due to price movements, and the prospects for production are uncertain, even though less so than in previous years. Reforms to have stronger fiscal buffers, increase non-oil tax revenues and enhance the efficiency of government spending are therefore important. Mexico's weak potential growth performance and slow convergence towards average OECD living standards highlight the need for structural reforms to raise productivity, especially in a context where Mexico faces pressures due to the integration of other economies with labour-intensive factor endowments into the world economy. Structural reforms should address macroeconomic volatility, limited competition in a number of sectors and remaining weaknesses within the education system.

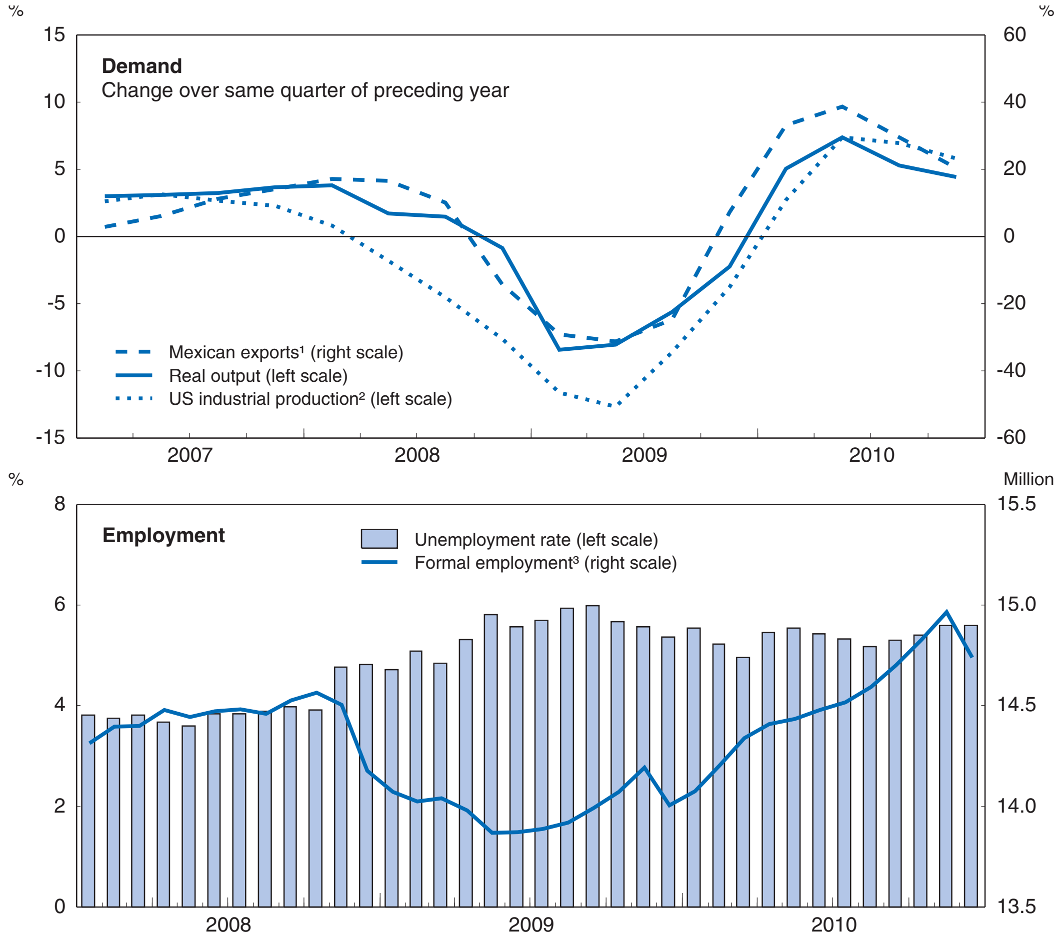
A robust recovery is underway

After a sharp recession in 2009, Mexico has embarked on a strong recovery. Real GDP increased by 5½ per cent in 2010, after a fall of 6% in 2009. The upswing was initially led by booming Mexican exports, in particular to the United States, where Mexico gained market share. Private consumption and investment recovered with some lag, but are now growing more strongly as both business and consumer confidence have started to recover.

The unemployment rate, which had jumped to 6% in 2009, has been falling only slowly and remains well above pre-crisis levels. The underemployment rate, on the other hand, has been coming down steadily. Employment growth has increased, including in the formal sector (Figure 1), but the crisis has come with some decline in job quality, as employment growth was concentrated on the lower-paid jobs, especially in the early stages of the recovery, and the employment share of the informal sector has increased, which is typical for recessions. However, it is now back to pre-crisis levels. The increase in labour force participation has slowed the decline in the unemployment rate, which is expected to return to pre-crisis levels only by 2012. As the impact of the sharp recession on overall employment was rather mild and transitory, labour productivity declined substantially.

After increasing strongly in 2010, reflecting the exit from the recession, output growth is projected to slow down somewhat to a more sustainable pace. Domestic demand should strengthen further in the course, but this may not fully compensate for lower export

Figure 1. **The recovery is robust**



1. Export data are expressed in USD.
2. Excluding construction.
3. Workers affiliated with Instituto Mexicano del Seguro Social.

Source: OECD, *Analytical Database*; Bank of Mexico; INEGI.

StatLink http://dx.doi.org/10.1787/888932383147

growth. GDP growth is expected to reach 4½ per cent in 2011 and 3.8% 2012. Mainly due to swiftly growing imports, the current account deficit is projected to widen moderately, in spite of recovering remittances from Mexican workers abroad.

Core inflation declined almost continuously in 2010, while headline inflation has been slightly more volatile, mainly owing to food prices. It is now within the variability interval of +/–1 percentage points around the central bank's target of 3%. The value of the Mexican peso in terms of the US dollar, which weakened sharply in the wake of the financial crisis, reflecting large capital outflows, strengthened once again throughout 2010, although without returning fully to its pre-crisis level. The recent exchange-rate appreciation has helped to contain inflationary pressures.

Table 1. **Demand, output and prices**

	2007	2008	2009	2010	2011	2012
	Current prices MXN billion	Percentage changes, volume (2003 prices)				
GDP	11 313.23	1.5	–6.1	5.5	4.4	3.8
Private consumption	7 317.8	1.8	–7.1	5.3	4.7	4.1
Government consumption	1 182.1	1.1	3.5	2.8	0.6	1.5
Gross fixed capital formation	2 391.7	5.9	–11.2	2.3	8.6	8.3
Final domestic demand	10 891.6	2.6	–7.0	4.2	5.1	4.7
Stockbuilding[1]	598.7	–0.3	–1.1	1.0	–0.4	0.0
Total domestic demand	11 490.3	2.3	–8.0	5.2	4.7	4.7
Exports of goods and services	3 159.7	0.7	–14.0	24.5	4.9	8.6
Imports of goods and services	3 336.7	3.2	–19.0	22.3	5.6	11.1
Net exports[1]	–177.0	–0.9	2.2	0.2	–0.3	–1.0
Memorandum items						
GDP deflator	_	6.2	4.1	4.4	4.0	4.1
Consumer price index	_	5.1	5.3	4.2	4.3	3.7
Private consumption deflator	_	5.5	7.2	3.0	3.0	3.7
Unemployment rate[2]	_	4.0	5.5	5.3	4.6	3.9
Public sector borrowing requirement[3, 4]	_	–1.1	–5.2	–4.3	–2.9	–2.6
Public debt	_	33.3	36.7	36.8	36.6	36.3
Current account balance[4]	_	–1.5	–0.7	–0.5	–1.3	–2.1

1. Contributions to changes in real GDP (percentage of real GDP in previous year), actual amount in the first column.
2. Based on National Employment Survey.
3. Central government and public enterprises.
4. As a percentage of GDP.

Source: OECD, OECD interim projections.

Further fiscal consolidation can be facilitated by supportive monetary policy

Fiscal consolidation is already underway. After conducting a fiscal stimulus in 2009, the government is in the process of tightening its fiscal policy stance, raising taxes and containing expenditure growth. This reduced the public sector net borrowing requirement, a measure of the combined deficit of the federal government and its public enterprises, from around 5% of GDP in 2009 to 4½ per cent of GDP in 2010. The government intends to limit spending growth and reduce its public sector borrowing requirement to around 3% per cent of GDP in 2011 and 2½ per cent in 2012. This would translate into a closing of the deficit in 2012 based on the government's definition, which excludes PEMEX investment but includes a number of financial operations. If the recovery unfolds as projected, the government should implement its consolidation plans in full to avoid eroding market confidence in Mexico's fiscal policy**.**

In the longer term, further tax and oil sector reform will be needed to make the budget less dependent on oil revenues and their volatility, while securing fiscal sustainability. Even though oil production has stabilised since mid-2009, maintaining current production levels beyond 10 years would require continued substantial investments in high-cost exploration and new discoveries. Mexico launched a reform in 2008 to improve the governance of the state-owned oil company, PEMEX, which has stepped up its exploration of new oil fields. The government has taken initial steps to provide more flexibility to PEMEX's contracting mechanisms in order to enable it to work more like its peers. But the outlook remains uncertain and therefore a strategy to strengthen non-oil tax revenues is needed.

Current low interest rates are helpful to support the recovery in domestic demand in the context of a withdrawal of the fiscal stimulus. Medium-term inflation expectations now seem reasonably well anchored, although in the upper half of the central bank's variability interval around the inflation target of 3%. Given still substantial unused production capacity, inflation is projected to remain within the variability interval around the inflation target in 2012. However, vigilance is needed as some inflationary risks have re-emerged as the economic recovery gains strength even faster than expected and international commodity prices are rising. Provided that higher commodity prices and the strong recovery do not continue to translate into higher inflation expectations, the central bank can wait to raise its policy rates until at least mid-2011, when the recovery of domestic demand is expected to become more firmly established.

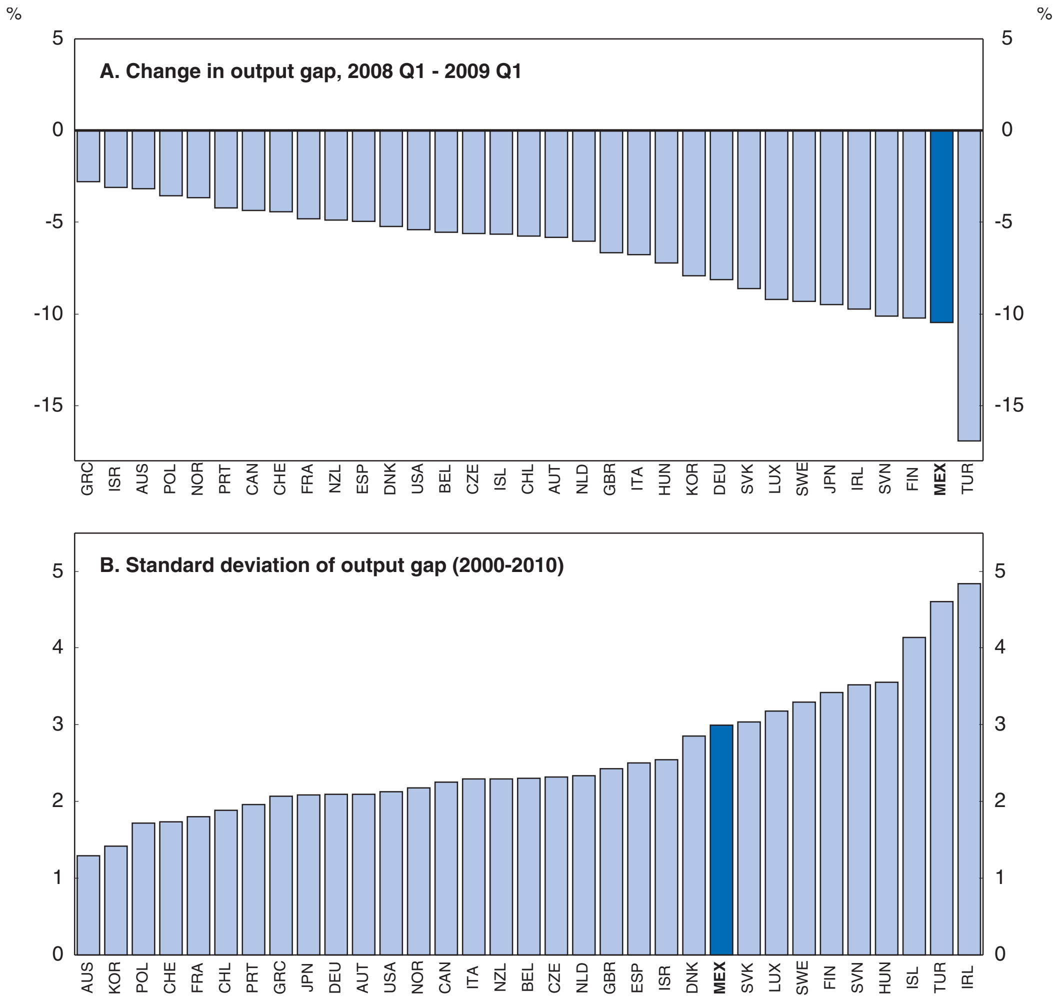
Macroeconomic and structural policy enhancements could further stabilise the economy

Thanks to an improved macroeconomic policy framework combined with prudent regulation and supervision of the financial system, Mexico escaped the fiscal or financial crises experienced in some other countries. After the "Tequila" crisis of the mid-1990s, Mexico started to strengthen its macroeconomic framework. Banking supervision was strengthened and the dependence on foreign financing was reduced. An inflation-targeting framework was introduced in 2001, bringing inflation from double-digit rates in the 1990s down to an average of around 4½ per cent over the period 2003-09, with a floating exchange rate acting as a shock absorber. The balanced budget rule was introduced in 2006 to keep net government debt at a low level by OECD standards (around 31% of GDP in December 2010).

Nonetheless, output volatility has been higher in Mexico than in most other OECD countries, including during the recent recession (Figure 2). The output gap widened by 10 percentage points from the first quarter of 2008 to the first quarter of 2009 and real GDP fell by 6% in 2009 against an OECD average of 3½ per cent. In Mexico domestic factors may have contributed to output volatility, which can have large costs for individuals and for long-term economic growth. Temporary disruptions in output tend to be accompanied by falls in consumption, in particular in countries like Mexico, where a large share of the population is credit constrained and the social safety net is weak. This generates costs for individuals who tend to prefer a smooth path of consumption and are averse to spells of unemployment or poverty (Reis, 2009). Moreover, the literature suggests that high output volatility can have adverse effects on long-term economic growth through hysteresis effects or higher uncertainty (Ramey and Ramey, 1995; Fatás, 2002; Aghion *et al.*, 2010).

Output volatility could be reduced by further improving the fiscal policy framework. Even though there was an adequate fiscal stimulus in 2009, Mexico could strengthen its fiscal buffers by setting aside a larger amount of fiscal resources during economic upturns and periods of high oil prices in order to respond to large negative shocks. Accumulating a financial buffer would also help to prepare for the ageing of Mexico's population, which will increase health expenditures of the social security institutes (IMSS and ISSSTE) and the tax-financed healthcare scheme for workers who are not covered by social security,

Figure 2. **The output gap widened sharply during the recession**



Source: OECD, *Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932383166

Seguro Popular. The government could consider adopting a structural balance rule netting out cyclical tax and oil revenues, as Chile does. In addition, the government should present the government accounts according to national accounts standards to enhance comparability, while the efforts to improve the quality and timeliness of local government fiscal accounts should proceed as planned.

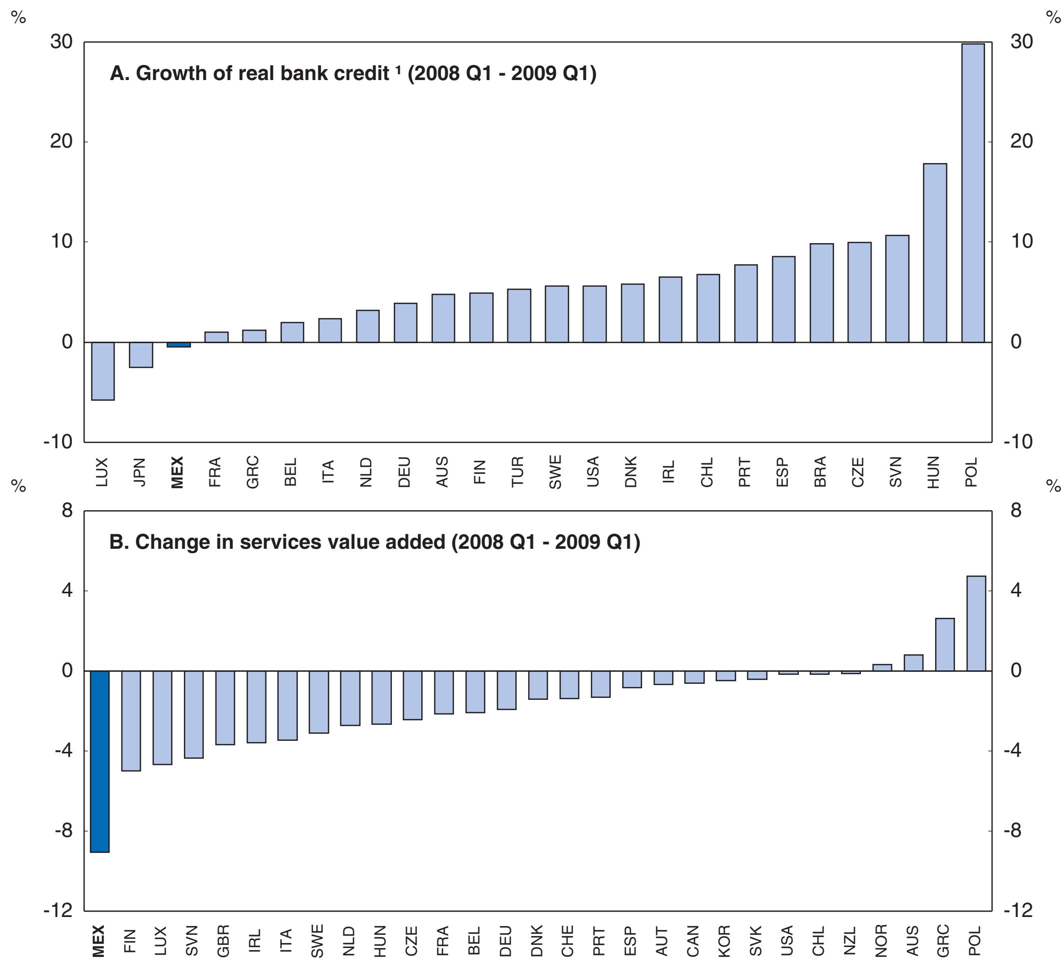
The budget surpluses accruing during economic upswings or periods of high oil prices should be accumulated in a stabilisation fund. With simple and transparent rules on savings and withdrawals, this would enhance the transparency of oil revenue management. While a system of revenue stabilisation funds already exists in Mexico, the rules on savings and withdrawals are complex and the ceilings imposed on these funds are low, which resulted in the accumulation of less than 2% of GDP at the end of 2008 despite high oil prices. As a first step towards the establishment of a full-fledged economic stabilisation fund, the temporary lifting of the limits on accumulated assets in the oil stabilisation funds in 2010 and 2011 should be made permanent.

Monetary policy would have more room for manoeuvre if reforms were introduced to reduce inflation persistence. Higher foreign exchange assets would also have increased the flexibility for macroeconomic policies. In contrast to other countries, the recession of 2008-09 only had a minor downward effect on inflation in Mexico, where inflation remained above the central bank's target and expectations receded only slowly. By itself, a greater fall of inflation following the economic downturn would have facilitated the recovery by boosting the real income of consumers and improving the external competitiveness of Mexican firms. To some extent, the high inflation of 2008-09 can be explained by the large exchange-rate depreciation, which was partly passed through to prices. However, rigidities in product and labour markets may also have played a role. Moreover, during the financial crisis of 2009 the market sentiment towards Mexico appears to have been affected by the low level of foreign exchange assets relative to other emerging markets, thus reducing flexibility for the macroeconomic policy response. The authorities are increasing the central bank's foreign exchange assets through a rules-based mechanism and expanded the one-year precautionary USD 47 billion Flexible Credit Line (FCL) agreement with the IMF to a two-year USD 73 billion agreement approved in January 2011. Both self-insurance through reserve accumulation and multilateral insurance through international agreements bolster investor confidence in times of crises and should be continued as planned.

Further reforms of financial supervision would also contribute to macroeconomic stability. (Figure 3). Pro-cyclical loan loss provisioning requirements fuelled a boom in consumer credit prior to the recession, with real consumer credit growing 35% annually between 2002 and 2007, and underwriting standards deteriorating steadily. Banks sharply reduced consumer credit even before the recession, thus contributing to weaker household demand. The authorities have already taken measures to make loan-loss provisioning requirements for consumer lending less pro-cyclical and are planning to extend the new approach to other lending segments. The authorities should also take appropriate measures to reduce the pro-cyclicality of the financial system by moving towards macro-prudential regulation and supervision. The establishment of a Financial System Stability Council is a welcome step towards closer co-operation between financial authorities, which may facilitate the early identification and prevention of systemic risks. The government should complement the establishment of the Council by introducing counter-cyclical capital ratios as planned.

The development banks provided a counter-cyclical impulse to credit during the crisis, but the government now needs to consider retreating from this exceptional state-directed lending. Stepped up direct lending through public development banks may distort competition in non-crisis situations. The explicit state guarantee gives public development banks a funding advantage over private banks and is a contingent liability to the public finances. In particular, direct lending to market segments with access to private credit in non-crisis situations, such as the automotive, tourism and transport sectors, should be terminated. Instead, in non-crisis situations, public development banks should focus on co-financing arrangements with the private sector, for instance through credit guarantees. This would limit the risks to the public finances and enhance financial development through the dissemination of development bank expertise to the private sector, for instance in the area of long-term infrastructure finance (Armendáriz de Aghion, 1999; Levy Yeyati *et al.,* 2004). An effort to reduce direct lending by development banks is already taking place as lending by private banks recovers. This should be continued.

Figure 3. **Bank credit and services value added contracted sharply**



1. Deflated by CPI. Claims of depository corporations (excluding central bank) on all domestic sectors (including financial corporations, state and local government, public non-financial corporations and private sector).

Source: OECD, *National Accounts Database*; and IFS, *Monetary Statistics Database*.

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Modernising the services sector to reduce its dependence on manufacturing will be key to reduce macroeconomic volatility. Activity is normally more stable in the services sector than in manufacturing, but not in Mexico, in part reflecting strong links to manufacturing. The share of services directly linked to manufacturing, such as transport and wholesale trade, is high by international standards, reflecting high entry barriers into more stable consumer-oriented activities, such as telecommunications, passenger transport and retail banking. Several actions to reduce entry barriers in these sectors have already taken place, but the proposals discussed below would further support the expansion of a modern consumer-oriented services sector.

Greater geographical and product diversification of exports would reduce Mexico's exposure to sudden changes in US economic conditions. According to the WTO, Mexico is already one of the countries with the largest number of bilateral free trade agreements, and at the end of 2008 Mexico announced an ambitious unilateral import tariff reduction over the period 2009-13. By enhancing competition from abroad and reducing the cost of intermediate goods, the unilateral tariff reduction will help to improve the competitiveness of Mexican exports. The increasing number of bilateral free trade agreements and, more recently, unilateral tariff reductions have contributed to a process of trade diversification during this decade, but this process can be enhanced by further easing the access of Mexican exporters to additional foreign markets, including by negotiating free trade agreements at the regional level. At the global level, regional free trade agreements are a second-best option to multilateral trade liberalisation, as trade is diverted to some extent from non-member to member countries. But for Mexican firms, regional free trade agreements would put more export destinations on an equal footing with Mexico's partner countries in NAFTA, which would tend to reduce any remaining diversion of Mexican exports to North American partners. In terms of diversifying risk, the ongoing negotiations with Brazil and Korea are particularly relevant, as they present two fast-growing economies whose business cycles are becoming increasingly synchronised with China and more independent of the United States. To minimise trade diversion the government could also consider the option of negotiating regional instead of bilateral trade agreements.

Box 1. **Main recommendations for supporting the recovery and further stabilising the economy**

- Implement the fiscal consolidation plan in full, unless growth underperforms significantly.
- Provided that inflation expectations remain well anchored, wait to raise policy interest rates at least until mid-year 2011.
- Consider a structural fiscal balance rule, adjusting revenues for the business and the oil price cycles.
- Present fiscal data and budget projections according to national accounts standards on a regular basis.
- Make the temporary lifting of the limits on accumulated assets in the oil stabilisation funds permanent.
- Continue the build-up of foreign exchange assets through a rules-based mechanism as planned.
- In financial markets, move towards macro-prudential regulation and supervision.
- Introduce counter-cyclical capital ratios as planned.
- Continue retreating from exceptional state-directed lending through development banks.
- Promote additional export diversification, including through multilateral and regional trade agreements.

Important spending needs as well as volatility and an uncertain outlook for oil revenues require higher tax revenues

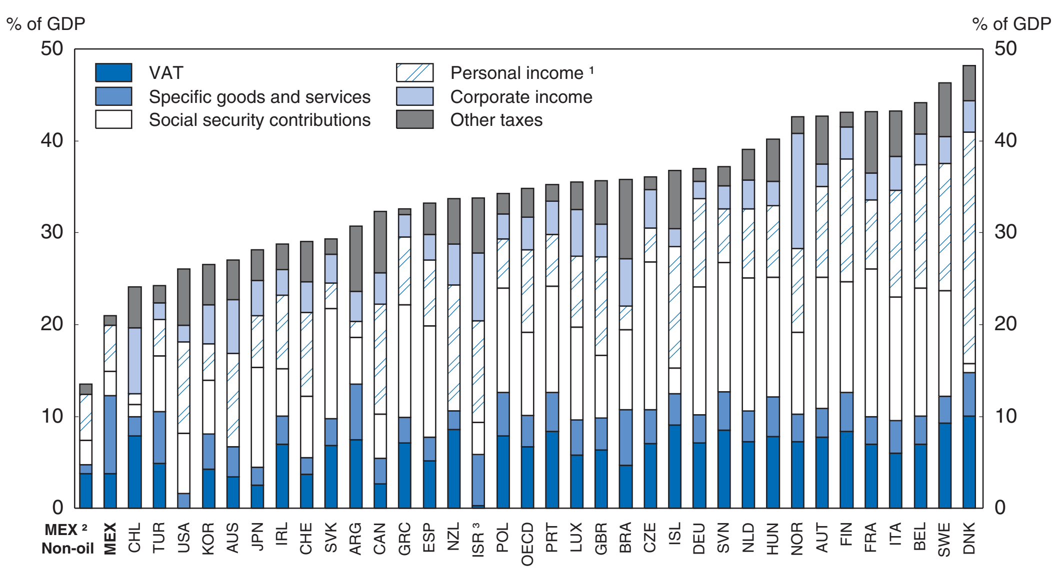
Mexico has substantial financing needs. With low growth and high inequality Mexico needs to invest in infrastructure and education to strengthen its growth potential and in social policies to alleviate poverty and inequality. Mexico has a well-targeted conditional cash transfer programme, *Oportunidades*, which helps the poor invest in their human capital. This has been very successful. However, over time it will be desirable to strengthen the social assistance system to complement *Oportunidades*, which would protect Mexican households and the economy better against shocks. Moreover, Mexico is rapidly extending health insurance coverage to workers not covered by social security through a largely tax-financed scheme, *Seguro Popular*.

There are also longer-term fiscal sustainability challenges related to population ageing and the associated increase in costs for the states' defined benefit pension systems and for healthcare programmes of the federal social security institutes (IMSS and ISSSTE). IMSS is currently drawing down its financial reserves to cover operational deficits of its health accounts, even though some of its schemes are running surpluses which could potentially make up for some of this. Addressing these challenges will require in-depth reforms, such as converting the remaining defined benefit pension systems to defined contribution systems, adopting a stronger focus on prevention in healthcare and taking measures to make the social security agencies more efficient. Yet, stronger revenues are needed, as well.

Mexico should further pursue its significant efforts to increase tax revenues. At only 20%, Mexico's tax-to-GDP ratio is low by international standards (Figure 4). In addition, more than one third of these revenues depend on oil, covering a large part of budget expenditure, as evidenced by the non-oil budget balance (Figure 5). Oil introduces volatility and is subject to an uncertain outlook. To secure medium-term sustainability of public finances, the budget needs

Figure 4. **Tax revenue from different sources across selected countries**

2008[1]



1. 2007 for Australia, Belgium, Chile, Greece, Iceland, Israel, Ireland, Japan, Netherlands, Poland and OECD average. Personal income tax collections include revenue from taxes on corporate income/profits in Mexico.
2. Excluding oil revenues.
3. The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Source: OECD, *Revenue Statistics Database*; Ministry of Finance for Chile and Brazil; Ministry of Economy and Production for Argentina; Central Bureau of Statistics for Israel.

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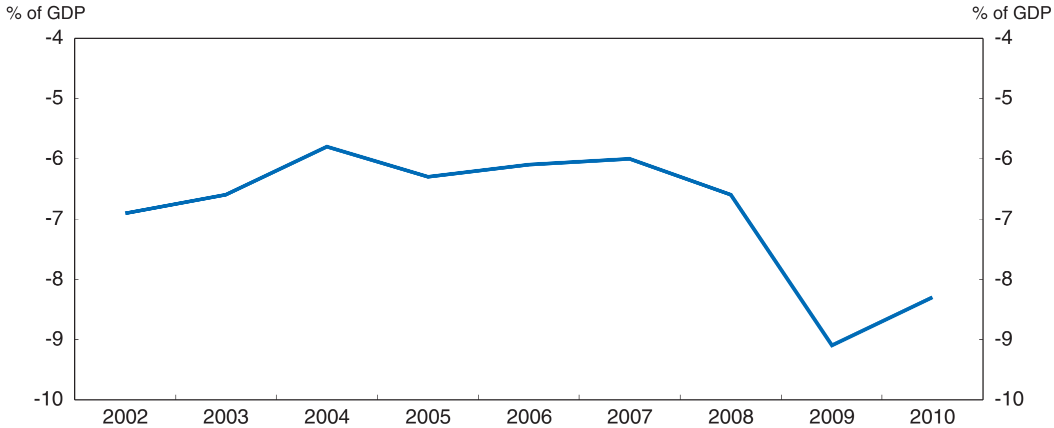
Figure 5. **Non-oil budget balance**[1]

Public Sector Borrowing Requirement



1. Central government and public enterprises. Non-oil revenue minus non-oil expenditure.

Source: Ministry of Finance.

StatLink http://dx.doi.org/10.1787/888932383223

to become more independent from oil revenues. There is potential to improve expenditure efficiency, in particular to improve poverty alleviation, which Mexico should not leave untapped. At the same time, spending needs will remain. Mexico thus needs to find ways to further strengthen its tax revenues, building on recent tax reforms, and improve the efficiency of its tax system, which would limit the distortions that can result from high tax rates.

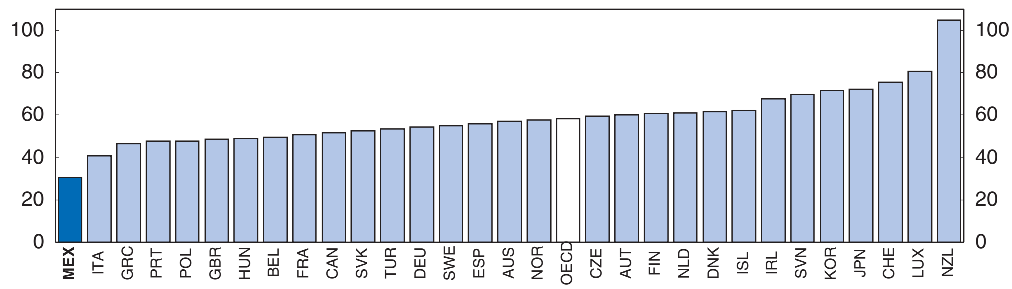
The main reason for such low revenues is the narrow tax base. According to government estimates, tax expenditures account for around 4% of GDP, around 20% of actual government revenues. In addition to revenue losses, tax expenditures complicate the tax system, leaving ample room for tax planning and even evasion, *e.g.* through false declaration of income under categories that receive favourable treatment. Eliminating inefficient tax expenditures would broaden the tax base and make the system simpler to administer and more transparent. Also, there needs to be continued improvement in tax enforcement and tackling informality, including education and training to help low-productivity workers and enterprises succeed in the formal economy. Continued efforts to reduce the costs of formality, while enhancing its benefits through higher quality government services, are also needed.

Tax expenditures and special regimes should be re-assessed…

The costs of tax expenditures in the VAT system are particularly high. There are zero rates for food and medicines, exemptions, such as for education and medical services, and reduced rates at the border. Altogether this lowers tax revenues by a bit less than 2% of GDP. The large size of tax expenditures is also evidenced by the VAT revenue ratio, which measures actual VAT revenues as a percentage of potential revenues that could be obtained when applying the standard VAT rate to all final consumption. At around 30% this ratio, which is a combined measure of tax expenditures and evasion, is lower in Mexico than in any other OECD country (Figure 6). VAT tax expenditures are inefficient as a poverty alleviation mechanism, as higher-income households capture the largest part of the benefits in absolute terms. It would be desirable to gradually withdraw zero rates and

Figure 6. **Effectiveness of value added taxes as measured by the VAT revenue ratio**[1]

2005[2]



1. The VAT revenue ratio (VRR) is defined as the ratio between the actual value added tax (VAT) revenue collected and the revenue that would theoretically be raised if VAT was applied at the standard rate to all final consumption. This ratio gives an indication of the efficiency of the VAT regime in a country compared to a standard norm. The calculation for Canada is for federal VAT only and the OECD aggregate is an unweighted average of data for the countries shown.
2. 2009 estimates for Mexico and 2007 for Slovenia.

Source: OECD, *Consumption Tax Trends*; OECD *Revenue Statistics Database* and Ministry of Finance of Slovenia.

StatLink http://dx.doi.org/10.1787/888932383242

exemptions within the VAT system and address social concerns with targeted cash transfers, as lower-income households spend a larger proportion of their income on food. This would result in higher net revenues, as the costs of providing benefits to higher income households would be avoided.

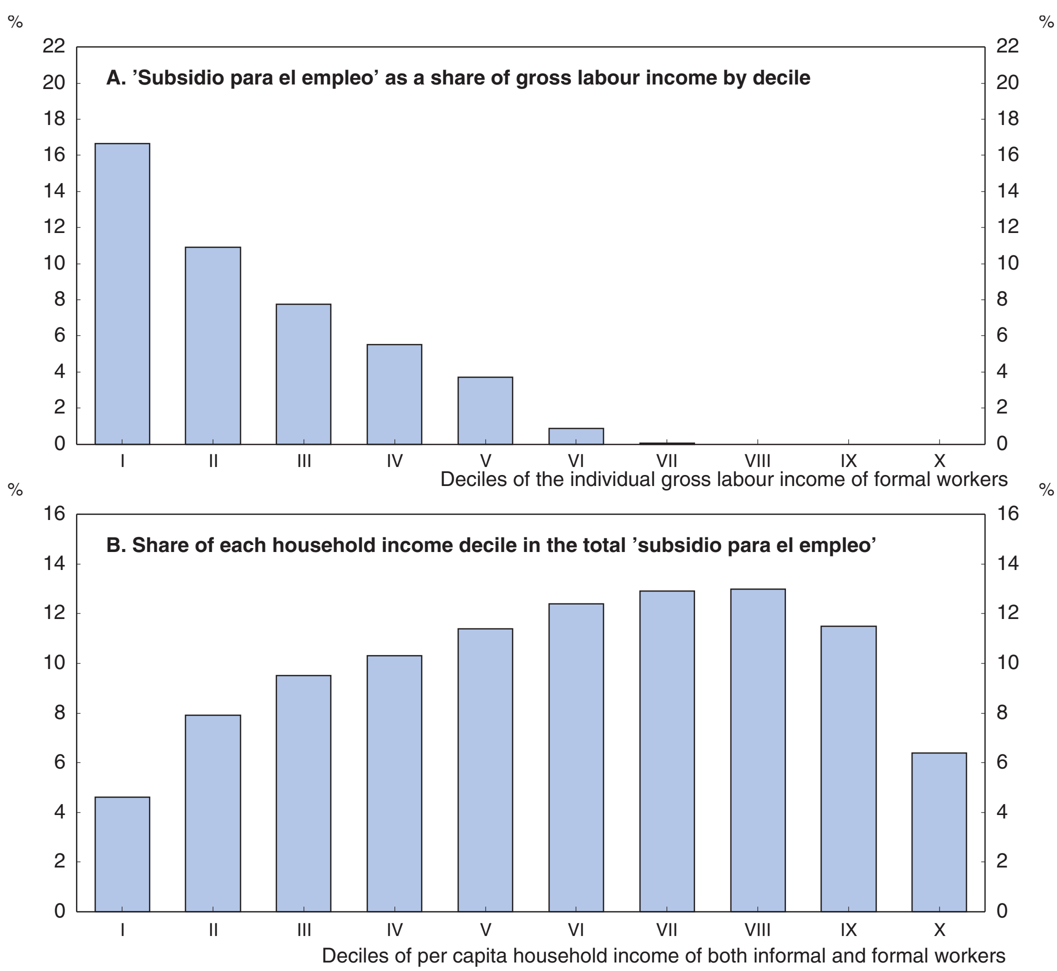
However, attempts to broaden the tax base by starting to tax zero-rated and VAT-exempted goods have proven politically difficult. Past government proposals to tax all consumption goods while increasing benefits of *Oportunidades* were rejected by parliament. Nonetheless, given the advantages of such a reform package, further efforts are warranted. A cash transfer system to compensate lower-income households, through *Oportunidades* or complementary schemes, would be a more efficient poverty alleviation instrument than VAT exemptions or other consumption subsidies, such as for energy. These schemes could protect households against income shocks.

Mexico should re-assess the costs and benefits of its numerous special business tax regimes. There are special regimes for export assembly firms (*maquiladoras*), transport and agricultural firms, small firms and intermediate firms, benefitting from reduced rates, simplified accounting regimes, accelerated depreciation and other forms of tax relief. In addition to the direct loss in revenue, special regimes complicate the tax code and make it easier for firms to engage in tax planning or in tax evasion, by underreporting or misreporting their revenues. Special regimes may also distort the allocation of resources away from sectors or geographical areas that do not benefit from the same kind of tax treatment. The costs and benefits of all special business tax regimes should be carefully evaluated and only regimes of proven efficiency should be retained. In particular, there is reason to re-assess the special regime for small enterprises, *régimen para pequeños contribuyentes* (REPECO), now administered by states, and re-think its design. While tax relief within REPECO is very generous, these firms evade 95% of their tax liability according to a recent study (Fuentes *et al.,* 2010), indicating that the states need to step up their enforcement efforts. REPECO would also benefit from a forceful graduation mechanism, for example a re-qualification after a couple of years or a sunset clause.

The in-work tax credit (*subsidio para el empleo*) warrants a thorough evaluation. It subsidises around 60% of the formal wage distribution with a tax credit that is declining in individual labour income (Figure 7, Panel A). Its original goal was to help low-wage workers, but although the benefit is progressive relative to formal labour income, the share of the benefit that goes to the poor is relatively small (Figure 7, Panel B). This is because the in-work tax credit is not targeted at the poorest workers, but subsidises a relatively wide range of formal labour income. By design the tax credit is not available for informal workers whose income is concentrated at the very lowest wages. Moreover, the tax credit is based on individual income, but workers with relatively low wages may live in high-income households. A thorough evaluation of the tax credit would be warranted to assess whether it has a positive impact on formal employment and in how far it helps increase low-income workers' take-home pay. The evaluation could be the basis for reforms. For example, Mexico could consider targeting it more strongly at the lowest income workers who are most likely to move frequently into and out of the formal sector. This might help promoting formal employment. Another alternative would be to target the benefit at family rather than individual income. This would raise its potential to limit in-

Figure 7. **"Subsidio para el empleo" across income deciles**

2008



Source: OECD calculations based on ENIGH data and Scott (2010).

StatLink http://dx.doi.org/10.1787/888932383261

work poverty, but would require a complicated and costly re-organisation of its administration. It would entail weaker work incentives for second earners in families whose income is within the withdrawal range of the subsidy, although this effect could be alleviated through appropriate design, for example by reducing the withdrawal rate or making the tax credit dependent on the wage of the primary earner only. The government has recently frozen the *subsidio para el empleo* in nominal terms. In addition, Mexico enacted in 2011 a new programme, *Programa de Primer Empleo*, to stimulate formal employment; the programme offers an additional income tax deduction limited to three years for firms that create new jobs for workers who previously did not belong to the formal sector. This programme should be evaluated after some time to check whether it has the expected effects.

Many wage elements and fringe benefits are fully or partially tax exempt for workers and can be deducted from companies' tax bases at the same time, for example wages for supplementary hours and bonuses. These elements can reach up to 30% of an average worker's wage (Alvarez Estrada, 2010). This creates incentives for tax planning. At the same time it contributes to horizontal and vertical inequities because smaller companies are often not able to offer sophisticated salary packages with a substantial contribution of tax-exempt fringe benefits to the same extent as larger companies and higher-income individuals benefit more from tax relief than poorer peers. Mexico should therefore move towards taxing all wage elements at the same rate. In cases where subsidies are deemed to be warranted, perhaps for childcare facilities, the government could consider direct subsidies instead, as this would be more transparent.

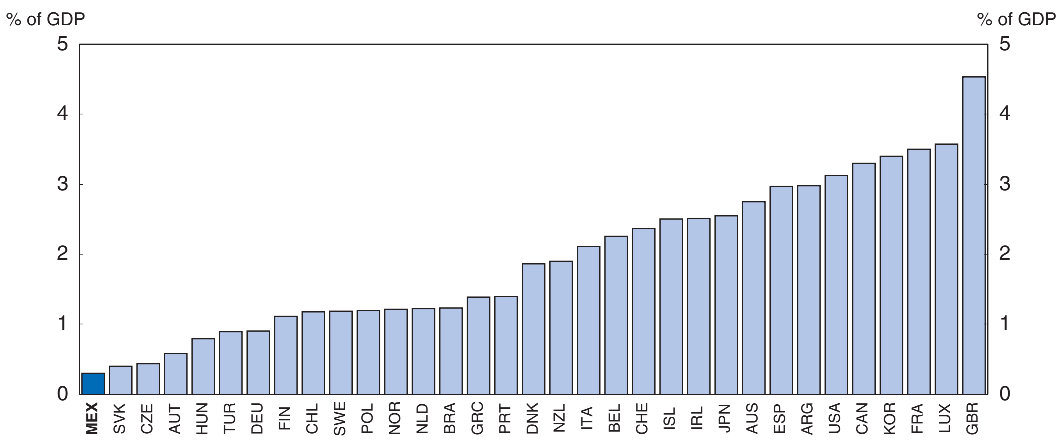
To some extent the issue of tax exemptions and reductions on fringe benefits is addressed through the alternative minimum tax on business income (*Impuesto Empresarial a Tasa Unica*, IETU). A flat 17.5% tax on cash-flow, it was introduced in 2008 to limit revenue losses resulting from tax planning within the business tax system. It has to be paid to the extent that its payment exceeds the business tax liability within the regular income tax scheme. Given that the IETU was introduced shortly before the crisis it is too early to assess its full potential. In any case, it has helped to limit revenue losses from tax loopholes, which is welcome. The IETU should thus be maintained for the moment. At the same time, Mexico should take advantage of the evaluation of the IETU mandated by Congress due in mid-2011 to further develop its tools to broaden the tax base and simplify the system. In the long run, it would be ideal to have a simpler business tax system. However, the IETU would only become redundant, if Mexico could significantly broaden the base of its regular business tax system. Otherwise, the IETU should continue to play its important role in closing tax loopholes. Retaining only the IETU is another option that Mexico could consider, but this should not lead to revenue shortfalls, which might require a higher rate. There are also complicated transition costs to consider when moving towards immediate deduction of investment expenses, as in IETU, and its recognition in double tax treaties would be a prerequisite, which is not guaranteed.

Property taxes should be strengthened…

There is great potential to increase tax revenues at the subnational level. Subnational governments can raise a whole range of different taxes although most of them – excepting a payroll tax – have a limited base. Tax revenues are low, however, mainly because subnational governments have limited incentives and capacity to use their taxing powers, although the government has made important efforts to improve on this. Real estate taxes, which are collected by municipalities, yield exceptionally low revenues, even in comparison to Latin American peers (Figure 8). But real estate taxes are relatively effective, because they are difficult to escape. One problem is that land registries are outdated, leading to an undervaluation of property. Another is lax local administration and enforcement of taxes. Both issues are related to limited capacity, but also to weak incentives to collect higher property taxes. Mayors in Mexico can run for only a single three-year term and this is insufficient to reap the benefits of implementing unpopular tax increases. States could launch programmes to help municipalities update land registries, as some already do, because larger entities should find it easier to attract and train more qualified personnel and establish the required infrastructure. It would also be easier for mayors to engage in an unpopular tax increase when this is part of a state-wide programme.

Figure 8. **Taxes on property**

2007



Source: OECD, *Tax Revenue Database* and *Latin American Revenue Statistics*.

StatLink http://dx.doi.org/10.1787/888932383280

… and Mexico should continue to further promote its important improvements in tax enforcement

Mexico has made important progress in combating tax evasion by enhancing the capacity of the federal tax administration. The government should develop these efforts further and extend them to state tax administrations. According to studies commissioned by the federal tax administration, VAT evasion has declined from 23% of potential revenues to 18% between 2000 and 2008. Registration campaigns, the use of risk models to identify tax payers with a high probability of evasion, and efforts to reduce compliance costs and combat corruption within the administration have contributed to this success. Mexico should refine and extend the use of risk models, step up training of tax administration staff, in particular regarding auditing techniques, and continue to develop attractive pay and career paths. States, where progress in enhancing the capacity of tax administrations is very uneven, will have to engage in similar efforts.

Remove energy subsidies

Mexico spends significant sums on energy subsidies for electricity, gasoline, diesel and liquefied petroleum gas, which altogether accounted for more than 1½ per cent of GDP on average each year over 2005-09. A price-smoothing mechanism for gasoline and diesel can yield additional revenues in times of declining oil prices, but results in large implicit subsidies in times of rising oil prices. Since 2005 gasoline prices in Mexico have been below those observed in major trading partners' countries owing to the large increase in oil prices. Mexico should establish a mechanism that guarantees that gasoline prices do not deviate from their international reference and replace the price-smoothing mechanism with an excise tax. Energy subsidies are inefficient as a poverty-alleviation mechanism, as a large part is captured by higher-income groups. Moreover, energy subsidies create incentives to consume more energy and invest less in energy efficiency, reducing energy security and raising greenhouse gas (GHG) emissions. This is inconsistent with Mexico's ambitious target to cut national greenhouse-gas emissions by 50% by 2050, compared to 2000. There is no place for broad-based energy subsidies in this strategy.

Better targeting of energy subsidies, while bringing prices more in line with costs, is one of Mexico's declared goals in its energy strategy. The government has started to implement a new cash-transfer scheme connected to *Oportunidades* to help poor households cover their energy needs with fewer distortions than under the current system. Mexico has also started an interesting pilot programme to replace electricity subsidies for pumping irrigation water with direct cash transfers in some states, thus removing the price distortion. However, the Mexican government needs to do more to bring energy prices more in line with costs. Despite welcome efforts to gradually increase gasoline, diesel and LP gas prices, the subsidies remain in place. They are likely to increase further, when international prices rise. Little has been done to remove electricity subsidies.

Withdrawing energy subsidies and VAT exemptions, which are captured in large part by higher-income groups, while increasing better targeted cash transfers, either through an expansion of *Oportunidades* or the introduction of a social assistance benefit, would help to further improve the progressivity of the Mexican tax-and-transfer system. Despite improvements over recent years taxes and transfers in Mexico hardly lower the Gini coefficient in sharp contrast to the impact of the tax-and-transfer systems in most OECD countries.

Working towards better productive efficiency and thus lower prices and higher quality in the electricity sector would attenuate the effect of lower electricity subsidies on consumers. The government recently closed down Luz y Fuerza del Centro (LyFC), a highly inefficient state-owned electricity company, which is a step in the right direction. Efforts to improve the efficiency of the remaining state-run company, while allowing for more competition in the sector in the long run, combined with high-quality regulation, would be the right strategy to lower prices for consumers.

… and later move towards carbon pricing

Once energy subsidies are removed, introducing an emissions trading system (ETS) or broad-based GHG taxes would be a good approach to start pricing emissions more in line with their social costs. This would be easier as part of a broader international initiative. To some extent participating in emissions trading systems would be more attractive to Mexico than raising carbon taxes, as it opens opportunities to obtain funds from abroad to finance investments in energy efficiency. Should an emissions trading system be established in the United States, it would be in Mexico's interest to join in. With cheaper abatement possibilities than its technologically more advanced northern neighbour, Mexico could gain revenues from selling emission rights to the United States. There are some ideas to revive an internal emissions-trading system at PEMEX at some point and extend it first to the electricity sector and then gradually to other key industries. However, this may have to be accompanied with technology standards and regulation to be effective, in particular because these sectors are dominated by state-owned monopolies that may have soft budget constraints. The response to higher emission costs with reduced output or investments in new energy-efficient technologies is thus likely to be weaker than on a more competitive market. Raising excise taxes on gasoline and energy sources in line with their carbon content may be another good first approximation to carbon pricing in Mexico and might be somewhat easier to implement than an ETS, as a system for collecting taxes is already in place.

Box 2. **Main recommendations for increasing the effectiveness and efficiency of spending and taxes**

- Increase cash transfers to the poor, for example through *Oportunidades* or by introducing a social assistance scheme.
- Gradually withdraw energy subsidies, as well as zero rates and exemptions within the VAT system.
- Evaluate all special business tax regimes and retain only those of proven effectiveness.
- Strengthen tax enforcement for the small business regime and consider a requalification after some years or a sunset clause.
- Evaluate the in-work tax credit and consider targeting it more at the lowest incomes.
- Move towards taxing all wage elements at the same rate.
- Evaluate the new alternative minimum business flat tax. In the long term, consider moving towards a simpler business tax, but keep IETU in place, unless the tax base of the regular business tax system can be broadened significantly. Consider IETU as the only business tax only if this does not lead to revenue shortfalls.
- Subnational governments should increase their own tax revenues. One way to achieve this would be to encourage states to launch programmes for municipalities to update land registers.
- Enhance tax enforcement through extended use of risk models, training and attractive pay and career paths.

A broad-based strategy is needed to combat informality

A large informal sector, as in Mexico, is likely to be both a symptom and a cause of low productivity. The share of workers and firms in Mexico that do not comply with tax and labour laws is large. Informal firms are very small and unproductive compared to formal firms, but especially so in comparison with larger ones (La Porta and Shleifer, 2008). Unproductive workers and firms are likely to resort to informality because they have difficulties producing profitably or finding employment in the formal economy given the costs of taxes and regulation. In turn, informality can hinder productivity and growth of firms and individuals operating in this sector, as they stay small to hide their activities and they often lack access to financing, customers, formal training and the protection of property rights. To strengthen productivity growth, Mexico needs to tackle informality by reducing costs of working in the formal sector and regulatory hurdles that hinder formalisation, while enhancing training, education and technical help for relatively unproductive informal firms to become more productive and grow. Ultimately tax revenues would increase as well, as the capacity of low-productivity firms and workers to generate income is strengthened although, given their low incomes, integrating them into the tax net without increasing their productivity would not contribute much in the short run. Making the benefits of formal employment more attractive, in particular the mandatory social security package, while limiting its costs through efforts to improve efficiency, would strengthen incentives for workers to formalise.

Reforming social security to support formality

Incentives to operate in the formal sector would be higher if the quality of social security services and their value for workers were improved. Overall, labour taxes in Mexico are moderate. While regressive social charges – reflecting a fixed base contribution to the healthcare system – make for a high burden on the lowest wages, this effect is compensated by the *subsidio para el empleo*. The new *Programa de Primer Empleo* will provide cost reduction for firms that hire workers, who are registered with the federal social security agencies for the first time. Nevertheless, there are several features of the Mexican system that may lead to a negative impact on formal employment. Most importantly, low-wage and rural workers in particular have reason to value certain social security benefits at less than their cost, reducing incentives to contribute to the system:

- Few low-wage workers manage to retain formal jobs for long enough to earn the right to a minimum pension, reducing their perceived value of pension contributions.
- Until recently insurance-based healthcare services were only available to formal workers, financed via social security charges. Yet, a new, largely tax-financed system healthcare system (*Seguro Popular*) now allows workers who are not registered with social security to access healthcare services without paying fees if they belong to the four lowest income deciles. This is welcome from a public health perspective, but working towards a more integrated health care system would increase efficiency and avoid any disincentives to formalise that could stem from differences in financing schemes. Although the quality of social security healthcare services remains in general higher, it is not clear that it is worth paying high social charges for every worker with low wages. Their social charges are high in relation to their income, substantially reducing their consumption possibilities. Moreover, in rural regions the capacity of the social security health system is much weaker, reducing its value for rural workers, who tend to have relatively low wages.
- Access to housing loans from the social security's housing agency is based on a point system that includes elements like savings, income, age and job tenure that are related to workers' ability to repay, thereby favouring higher-income workers. This reduces the value of housing benefits for lower-income workers, although the government has recently made successful efforts to improve their access to these loans.
- Childcare and recreational facilities are concentrated in urban areas, reducing the value of these services for rural workers, who often have low incomes.

Efforts to restructure the social security package to increase its attractiveness for low-income and rural workers, in particular, should raise incentives for them to become formal (OECD, 2008).

As a first step, Mexico should consider removing subsidised mortgages, childcare and recreational activities from the mandatory social security package and merge them with equivalent tax-financed programmes for the general population, while rethinking their targeting. This is likely to improve the value of the mandatory social security package for low-wage and rural workers, because they will no longer have to pay for services to which they have no access. The government has already introduced the possibility to waive part of the contributions to these services for rural day labourers and construction workers who have limited access to them, but re-structuring the package for all workers would come with additional benefits. In particular, more integrated service provision is likely to enhance programme efficiency, because it would allow the government to base these programmes on an encompassing strategy, avoid redundancies and improve targeting. Moreover, this could help lower social charges or move more funds into the pension accounts which are better accessible and thus more valuable for a larger share of workers. The government is planning to shift some funding from the social security housing fund to workers' pension accounts and this would be welcome. It could be used as an opportunity to consider whether financing housing subsidies through social charges is really the best option.

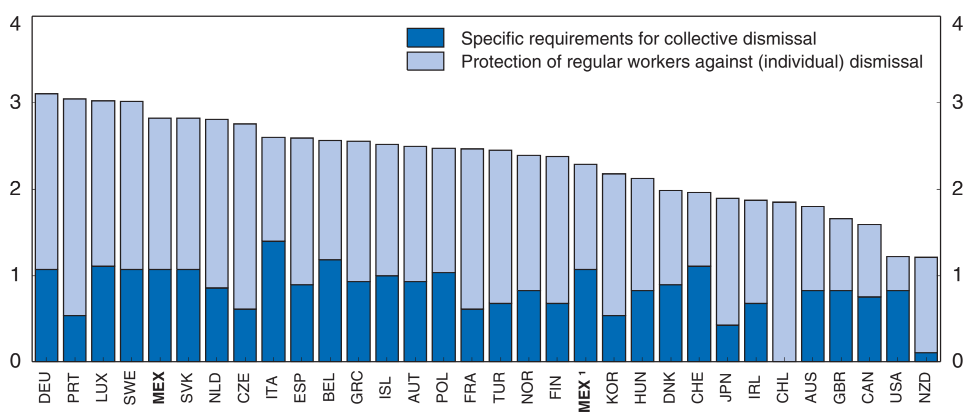
Consolidating at least a basic healthcare package, which is now different for public and private and for formal and informal workers, and moving towards integrated financing would promote efficiency and avoid distorting incentives between formal and informal employment. Integrated services provision has the potential to improve quality, as capacity would be shared and standards would be aligned across the different healthcare systems. The government has already started this work, while co-ordinating the purchase of patented medicines, which has helped to reap significant savings. These steps could be gradually developed to move towards full integration of a basic healthcare insurance across the different healthcare systems. The financing scheme for basic healthcare insurance should be unified to avoid disincentives to formalise, which can arise because the healthcare package for informal workers is cheaper than for formal workers. One option would be to move towards an integrated healthcare system that contains the services of the current social security system, but is tax-financed. Moving towards full tax financing could reduce social charges from close to 40% to 16½ per cent for minimum wage workers. While this would require increasing other taxes, the average financing burden would probably fall, as the tax base is larger than the social security base. As long as the government cannot raise the extra tax revenues that are necessary for this, however, it should limit tax-financing to a very basic healthcare package that covers only a set of diseases with catastrophic expenses. Alternatively, the basic healthcare package could be financed via fees that could be waived for the lowest-income households. However, this financing scheme would then have to be the same for formal workers otherwise healthcare services would remain more expensive for them. Services that go beyond this basic package could be financed via fees or via social charges for formal workers. The government's current strategy, to expand the coverage of the healthcare package for informal workers, while increasing the size of the package, without tax reform or an expansion of the coverage of fees, can lead to financing problems. In addition, it does not resolve the issue that for individual workers *Seguro Popular* is less expensive than the social security package.

Reducing the regulatory burden

A further possibility for Mexico to lower the cost of formal employment would be to reduce the stringency of regulations for regular employment. Regulations for regular employment relationships are relatively stringent compared to most OECD countries (Figure 9). Labour court procedures are complex, lengthy and costly. At the same time there are currently very few restrictions on temporary employment, making it easier for firms to use subcontracting and outsourcing to temporary work agencies as a means to rely on cheaper, often informal workers, which happens frequently. The recent labour reform proposal to limit the currently indefinite accumulation of due wages during labour trials to six months is welcome, as it would reduce the costs of dismissal and the uncertainty surrounding it. The proposal to introduce short-term trial and training contracts, ranging from one to six months, is also helpful. This may raise employers' incentives to consider more unskilled and inexperienced workers for formal employment, especially young workers. The reform would significantly reduce the stringency of employment protection legislation in Mexico, and would enhance legal certainty in terms of hiring and firing (Figure 9).

Figure 9. **Employment protection legislation (EPL) for regular workers, 2008**

Scale from 0 (least restrictions) to 6 (most restrictions)



1. Estimates for the EPL after the proposed reform is implemented.

Source: OECD, *OECD Indicators on Employment Protection Database.*

StatLink http://dx.doi.org/10.1787/888932383299

Further steps that Mexico should consider include reducing the scope for unfair dismissal litigation by easing procedures to dismiss workers on the grounds of repeated poor performance and redundancy. However, notice periods and severance pay in the event of lawful dismissals, which are very light now at least for workers with long tenure, might have to be strengthened to make such a reform more acceptable. Another possibility would be to strengthen schemes that would better protect workers against income losses resulting from unemployment. This could include the unemployment component in individual pension accounts or alternative schemes, such as a social assistance benefit. The reform proposal would also oblige firms using outsourcing or subcontracting arrangements to verify that the subcontractor complies with labour and social security laws. This complements a similar provision, which was introduced in the social security law in 2009, with increases in fines. This is a sensible measure to prevent firms from using outsourcing to bypass labour laws, but the capacity of labour inspectorates may need to be strengthened to enforce it (OECD, 2008).

Box 3. **Main recommendations for reducing informality**

- To reduce the overall cost of social security, enhance efficiency and foster formality remove subsidised mortgages, childcare and recreational activities from the mandatory social security package and merge them with equivalent tax-financed programmes.
- Further integrate the different healthcare systems. Move towards integrated financing of a basic universal healthcare insurance, either through taxes or fees.
- Adopt and implement the proposed labour market reform in full.
- Consider easing procedures to dismiss workers based on poor performance or redundancy.

Mexico has made significant progress in easing procedures to start a business, but should consider further easing the regulatory environment. Mexico is working to reduce time, costs, and requirements to complete the formalities to start up a business, including through the launch in 2002 of the *Sistema de Apertura Rápida de Empresas* (SARE), which has streamlined procedures at the municipal level, halving the time for low-risk businesses to register to 72 hours. One way to take the reform further would be to integrate the initiative with *tuempresa.gob.mx*, an electronic one-stop shop, developed with the support of the OECD, to ease compliance with federal business start-up regulations and procedures. OECD research suggests that *tuempresa.gob.mx* helps to bring down the costs for entrepreneurs to comply with start-up formalities from 16% of per capita GDP to 5½ per cent. However, it is not yet the most widely used mechanism to start up a business. More effective publicity and interconnection with state and municipal portals for business start-ups should help dissemination of this electronic one-stop shop. The federal Ministry of Economy and subnational governments should co-operate to interconnect state and municipal portals for business start-ups with *tuempresa.gob.mx*, and engage a wide set of stakeholders to support the platform. Over time, the government plans to integrate a wider set of procedures into *tuempresa.gob.mx*, including those for businesses that are already operating. This is welcome.

Mexico is engaged in a regulatory review process called *Base Cero*, which is supported by the OECD, to identify and simplify regulations that are overly burdensome. A first set of five procedures for exporters and start-ups have already been simplified. The government has recently added simplified tax declaration formalities and plans further measures in the realm of taxes, foreign trade and technical regulations, which will also help Mexico to facilitate technology absorption. Overall savings are projected to reach around 20 billion pesos. In addition, the OECD has helped Mexico to strengthen the focus of its regulatory impact assessment (RIA) for new regulations, allowing regulators to concentrate their resources on the analysis of those that are particularly costly. This opens the opportunity to develop a lighter RIA version for low impact regulations, thus freeing resources and enhancing Mexico's capacity to improve regulations where they imply significant costs and risks. Given the benefits of the *Base Cero* initiative, the government should consider extending its scope to a larger set of high impact economic processes. Mexico should also work to facilitate the implementation of the new RIA framework by enhanced training for its personnel.

There is a need to simplify and improve regulation at the state and municipal level, as well, including to reduce overlap between different levels of government. The OECD worked with the federal Ministry of Economy and the Mexican Institute for Competitiveness (IMCO) to identify particularly burdensome regulations at the subnational level and proposed a reform agenda for nine Mexican states. It also developed a toolkit to simplify subnational regulations, *i.e.* for business start-ups, construction permits, property registration, and procurement. The federal government should encourage states and municipalities to apply the toolkit, to monitor results and to co-ordinate regulation across different government levels.

Box 4. **Main recommendations for simplifying business regulation**

- Co-operate with subnational governments to interconnect the federal one-stop shop with state and municipal internet portals for business start-ups.
- Extend the scope the regulatory review (*Base Cero*) initiative to other regulations with a large impact on business productivity. Implement the suggested changes in the regulatory impact assessment.
- Encourage states and municipalities to apply the toolkit to simplify subnational regulations. Co-ordinate regulation across government levels.

Mexico needs to enhance competition…

Product-market competition is weak in many sectors in Mexico and this often hurts efficiency, productivity and consumer welfare. There are state-owned monopolies in the distribution of electricity and production of oil, but concentration is high in many others. Analysis conducted jointly by the Mexican competition authority (*Comisión Federal de Competencia*, CFC) and the OECD suggests that the average Mexican household spends close to a third of its budget on products that are produced in monopolistic or highly oligopolistic markets and this share is even higher for the lowest-income households. In a number of sectors, regulations help market incumbents prevent new firm entry or effective competition from existing competitors. Mexico has launched a project overseen by the Ministry of Economy to identify hindrances to competition and propose reforms based on joint CFC/OECD analysis. More competition would lead incumbent firms to lower prices, become more efficient and innovate, enhancing aggregate productivity growth and promoting consumer welfare.

The President has introduced a competition law reform, which has now been passed in Congress. This reform applies OECD best practice to increase the chance for the competition authority to detect firms abusing market power, while increasing the cost of abuse. The reform now allows unannounced office visits, which increases the likelihood of finding useful evidence, and it expands the scope for criminal prosecution against individuals engaged in cartel activities. Instead of a fixed amount (currently around USD 7 million), maximum fines could be as high as 10% of company revenue, which will significantly promote deterrence for large companies. This will strengthen Mexico's competition framework and economic performance.

Regulation should be reviewed in several sectors to improve the functioning of competition. Many of these sectors produce important inputs for the rest of the economy and increasing efficiency could have potentially very beneficial effects on aggregate productivity:

- In *air transport*, fair access to landing and take-off slots at Mexico City airport, which is operating at full capacity, will be key to ensure open competition. Allocation is currently non-transparent, largely based on grandfathering, and is controlled by a committee in which only incumbents are represented. Grandfathering will have to be limited to allow for efficient auctioning of a large share of slots. Mexico should also consider abolishing the requirement of route-specific concessions, allowing airlines to operate on any route as long as they fulfil safety and notification requirements.
- In *intercity bus* transport, restrictions to obtain a permit should be eased and non-discriminatory access to essential facilities better ensured. Currently, the regulator has to base the decision to grant permits to new firms on demand and investment studies. This requirement should be lifted and restrictions to new firm entry should be limited to safety concerns. In cases where bus terminals are an essential utility, *e.g.* when construction of a new terminal is not economically feasible or permission is refused by a local government, the regulator should ensure competitive access.
- Market concentration in *retail banking* is high, which is partly related to high costs for customers of switching banks in the past. Following CFC/OECD recommendations Mexico has passed a new law that requires banks to provide transparent information on switching costs. Banks are now permitted to switch payment orders for new customers. Access for new banks to essential facilities, such as card network infrastructure, retail payment systems and credit bureaus, has been relaxed, facilitating entry into the market. The central bank is now required to adopt clear efficiency criteria in its determinations of appropriate interchange fees for debit and credit cards. These legal changes are now being implemented and the government should make sure that this proceeds as quickly as possible.
- Prices for medications are exceptionally high in Mexico, in part reflecting weak competition in the *pharmaceutical sector*. This is a problem for public health and for public finances. More transparent procedures for public procurement will be key for strengthened competition in the pharmaceutical sector. The social security institute (IMSS), the competition authority (CFC) and the OECD have agreed to co-operate to promote this. Starting in 2011, IMSS will conduct all its purchases, including of pharmaceutical drugs, through reverse auctions, which will greatly limit the scope for corruption and make collusion between pharmaceutical firms much more difficult. Competition in the pharmaceutical sector could also be strengthened by easing overly stringent restrictions for generic pharmaceuticals. The government is engaged in a number of efforts in this field, including a process to renew all medicine registration procedures that will conclude this year, leaving only generics complying with bioequivalence requirements; promotional and informational campaigns to deepen the adequate prescription and use of generics; and a current revision of the conceptual framework for intellectual property to assess areas of improvement. Mexico should implement as quickly as possible the removal of the requirement that foreign firms operate a plant or a laboratory in Mexico to be allowed to sell generics. Mexico should also require doctors to prescribe medications only by their generic compound name, allowing patients to choose the cheapest option in the pharmacy. Pharmacists should be required to supply generics.

- *Telecommunications* prices are well above the OECD average in some areas – with prices for moderate use mobile phone services exceeding the OECD average by 30% and prices for moderate-use fixed-line telephony and business fixed-line telephony exceeding OECD averages by 67% and 82% respectively. A major step forward to promote stronger competition has taken place through several concessions of the state-owned electricity company's fibre optic network to competitors of the incumbent in the telecommunications sector together with the auctioning of new radio spectrum frequencies. This will allow for infrastructure competition in the telecommunications sector. However, the efforts to increase competition should continue, and the enforcement of regulation should be strengthened. In half of the country's 400 local areas only the incumbent, Telmex, has the infrastructure to put through fixed-telephony calls to customers and charges exceptionally high fees for this service. The regulator, COFETEL, ruled in 2008 that this charge had to be brought in line with termination costs, reducing it to roughly 15% of today's value. However, this decision has been subject to an injunction since and thus has not been applied. Interconnection tariffs are also high in mobile telephony, but the regulator has no authority to regulate these tariffs ex-ante for all cases. It can only propose changes for specific cases when a legal dispute arises between operators. Following a complaint by several competitors the CFC recently imposed a 1 billion USD fine on the incumbent in the mobile telephony market for monopolistic practices related to interconnection charges. The government should consider merging local calling areas to have fewer that are non-competitive. The telecommunications regulator COFETEL should be authorised to regulate interconnection ex-ante, declare bottlenecks and essential facilities for all telecommunication sectors and establish non-discriminatory access conditions to these facilities. Legislation should include the possibility of unbundled access to essential infrastructure when it promotes competition, provided that this does not undermine investment incentives. Tariffs associated with interconnection and access to essential infrastructure should be based on long-run incremental costs.

Box 5. **Main recommendations for strengthening competition**

- Limit grandfathering of airport slots at congested airports to ensure efficient allocation, for example through auctioning. Review the requirement of route-specific concessions and allow airlines to operate as long as they fulfill safety notification requirements.
- Ease restrictions to obtain a license in intercity bus transport and ensure non-discriminatory access to essential facilities.
- Implement fully the legal changes to ease access to banking services and facilitate banks' access to essential facilities.
- Quickly implement the removal of the requirement that firms operate a plant or a laboratory in Mexico to be allowed to sell generics. Require doctors to prescribe medications only by their generic compound name and pharmacies to supply generics.
- Merge local calling areas. Authorise COFETEL to regulate interconnection ex-ante, declare bottlenecks and essential facilities for all telecommunication sectors and establish non-discriminatory access conditions to these facilities. Allow unbundled access to essential infrastructure when it promotes competition provided that this does not undermine investment incentives. Base interconnection tariffs on long-run incremental costs.

… and the quality of its school system

In order to strengthen productivity and enable more citizens to work and produce in the formal economy Mexico needs to enhance its education system. The OECD has worked with Mexico to address the key weaknesses of its basic education school system. While Mexico has invested a lot in education over recent years and significantly increased enrolment, in particular in primary schools, enrolment in secondary school falls far short of OECD standards, as do learning outcomes as measured by PISA results. One key weakness is the qualification of teachers and their principals. As a basis for its education strategy Mexico should develop a nation-wide set of standards defining competences that teachers need to improve their students' learning outcomes. Initial teacher education needs to improve and a first step would be to establish rigorous accreditation standards for all teacher training institutions. Mexico should further improve its new teacher licensing examination (*Concurso Nacional de Asignación de Plazas Docentes*) ensuring that only well-qualified teachers can enter the profession. All teacher posts should be open to competition and the appointment of principals should be professionalised. Probationary periods with high quality mentoring for novice teachers to support them in attaining their potential and to assess their skills would also be helpful.

Based on the standards to be developed, Mexico should develop and gradually introduce an evaluation system for teachers. When the system is well-established and accepted it will reward excellence and guide teachers towards professional training. However, there are two prerequisites for success. Professional development is currently dispersed across a wide range of providers and often does not address teachers' needs. Over time professional development should be aligned with the standards for teacher performance with quality controls for providers and it should become more relevant for schools' needs. Second, Mexico will have to work to develop a well-qualified cadre of mentor teachers and principals to manage evaluation.

School funding and school autonomy need to be strengthened. Although aggregate spending on education is comparable to OECD countries, schools have virtually no autonomy and no funds at their own disposal. More than 90% of resources are devoted to staff compensation. Other funding is allocated only to a limited number of schools through more than 200 different federal and state programmes. Many of the smallest and poorest schools receive no funding under the current programmes because they do not have the administrative capacity to complete the application process or handle the reporting requirements. Revising state funding formulas and replacing the multitude of special school funding programmes by a single improvement grant would enhance funding equity and reduce the attainment gap between advantaged and disadvantaged schools. Funding for maintaining school facilities can be devolved to school level and once a capable cadre of principals has been build up, they should be given more of a say in key decisions concerning their schools, including teacher employment and pay.

Box 6. **Main recommendations for raising the quality of education**

- Define nation-wide standards for teacher performance as well as accreditation standards for teacher-training institutions to improve initial teacher education. Improve the new teacher licensing examination and open all teacher posts to competition. Professionalise the appointment of directors.
- Gradually introduce a teacher evaluation system.
- Reallocate resources to provide schools with reliable financing.
- Professionalise the training and selection of principals to assume greater responsibility for teacher employment and pay.

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ANNEX A1

Progress in structural reform

This table reviews recent action taken on recommendations from previous *Surveys*. Recommendations that are new in this *Survey* are listed in the relevant chapter.

Recommendations	Action taken since the previous Survey (July 2009)
A. Macroeconomic policy	
Refrain from further stimulus in view of the potentially larger-than-expected deficit in 2009 and likely worsening of the fiscal outlook in 2010.	The government started fiscal consolidation in 2010.
Allow automatic fiscal stabilisers to play freely in 2009-10; draw down savings accumulated in the oil stabilisation fund.	The government temporarily deviated from its balanced budget rule in 2009-10 to let the automatic stabilisers operate freely; the resulting deficit was partly financed by drawing down assets in the oil stabilisation fund.
Shift spending in the fiscal stimulus package to targeted measures, *e.g.* income support for the poor or employment subsidies.	Income support through the conditional cash transfer programme *Oportunidades* was expanded in 2009.
Protect social programs in the budget.	Health insurance coverage through the non-contributory *Seguro Popular* programme continued to be expanded.
Start reporting fiscal accounts to the OECD in ADB format.	Fiscal accounts for the years 2003-08 in national account format were submitted to the OECD.
Continue loosening of monetary policy in case of deteriorating outlook of economic activity, provided expectations remain anchored.	Monetary policy has remained expansionary throughout 2009 and 2010.
Support credit with liquidity measures and general guarantees to development banks.	Direct lending and credit guarantees of development banks were stepped up substantially in 2009.
Monitor bank portfolios and rollover risks for enterprises with foreign credit.	Central bank intervened in foreign exchange market to provide foreign exchange liquidity.
B. Oil economy	
Replace the nominal balanced budget rule by a limit on the non-oil structural deficit.	No action taken.
Regularly review the limit for the non-oil structural deficit to stabilise the net financial position of the public sector.	No action taken.
Report energy subsidies and the opportunity cost of price smoothing as expenditures instead as a negative taxes.	No action taken.
Establish a mechanism that links gasoline prices to their international reference.	Gasoline prices were increased regularly to reflect rising oil price on world markets.
Replace the IEPS with an excise tax.	No action taken.
Continue tax reform to make the budget less dependent on oil revenues by enlarging the tax base.	The VAT rate was increased from 15% to 16% in early 2010, and the corporate and the top marginal personal income rate were temporarily increased to 30%. The rate of the tax on cash deposits was increased to 3%. The excise tax on cigarettes was increased.
Continue PEMEX-reform to improve incentives for private sector participation in exploration, transport and refining.	In December 2010, the Constitutional Court declared the Petroleos Mexicanos Law and the Ruling Law of Petroleos Mexicanos as constitutional.

Recommendations	Action taken since the previous Survey (July 2009)
C. Enhancing spending efficiency in health and education	
A. Health	
Achieve universal health insurance coverage through *Seguro Popular.*	Health insurance coverage has been expanded significantly, with around 90% of the population projected to be covered by public insurance schemes by 2011.
Start discussions about making health insurance mandatory to avoid adverse selection of less healthy individuals; reduce fragmentation in the system by moving to a clear split between providers and insurers; allow all insurers to contract with any provider.	Agreements on service provision between the different insurer-providers are gradually being implemented, including for highly specialised and obstetric emergency services.
Establish a unified claims management system to reduce administrative costs.	Agreements among public institutions defining rates and compensation mechanisms are being developed. *Seguro Popular* is upgrading its claims management system for high-cost interventions.
Set up a centralised roster of enrollees to reduce overlap between insurers and to improve the targeting of *Seguro Popular.*	A common methodology for setting up a centralised roster has been developed. The rosters of the individual insurer-providers are expected to be crosschecked by 2011.
B. Education	
Implement the national teacher entry examination to improve professional qualification of newly-hired teachers; introduce voluntary re-certification for existing teachers; turn the Carrera Magisterial into a fully-fledged incentive scheme with a strong focus on teaching performance.	The number of posts that are subject to the *Concurso Nacional de Asignación de Plazas Docentes* (national teacher entry examination) has been expanded; an incentive scheme focusing on teaching performance (*Programa de Estímulos a la Calidad Docente*) is being implemented.
Strengthen autonomy of schools in budget and personnel decisions; accompany this with measures to increase accountability, including a national exit exam after lower secondary education; consolidate the existing patchwork of evaluation schemes.	Results on the student performance test (*ENLACE*) by school are now available online. The Ministry of Education develops a value-added based evaluation scheme and a unified calendar for all evaluations to be carried out during 2011.
Channel new funds mainly to infrastructure, educational material and teacher training.	Around 26 000 schools were renovated. Around 55 000 teachers, principals and other education personnel were equipped with computers.
Improve lower-secondary completion rates and enrolment in upper-secondary education by expanding *Jóvenes con Oportunidades.*	*Oportunidades* has given 1.8 million monthly loans to students from low-income families over 2009-10 to increase completion rates.
D. Accelerate growth and economic recovery	
Increase competition in the main network industries (electricity, gas, water, telecommunications and transport) through regulatory action.	The fibre-optic network of the state-owned electricity monopoly has been opened to a competitor of the incumbent in the telecommunications sector. Furthermore, Mexico has auctioned 70 MHz of radio spectrum benefitting competitors of the incumbent in the telecommunication sector.
Reduce both barriers to domestic and foreign investment; enhance trade links with Asia to diversify trade.	Free trade agreement negotiations with South Korea have been started. The unilateral reduction of tariffs launched in 2008 has been continued.
Increase competition by reducing entry barriers in telecommunications.	The fibre-optic network of the state-owned electricity monopoly has been opened to a competitor of the incumbent in the telecommunications sector. Furthermore, Mexico has auctioned 70 MHz of radio spectrum benefitting competitors of the incumbent in the telecommunication sector.
Focus on sectors with rapid pay-offs such as education and transport networks (road, rail and ports).	Mexico has worked with the OECD to advance education policy reform.
Continue to increase infrastructure spending provided capacity constraints allow it.	Infrastructure spending has increased further.

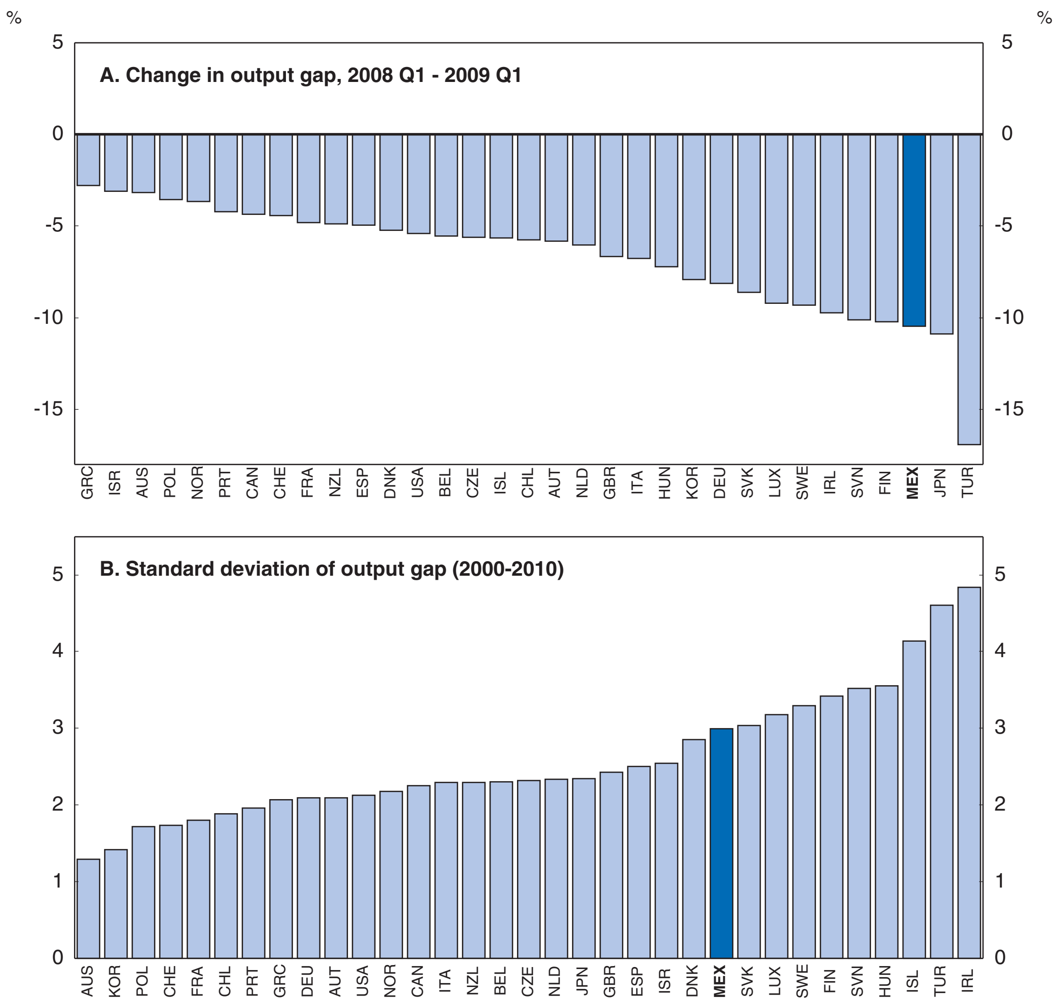
Chapter 1

Macroeconomic and structural policies to further stabilise the economy

Improvements in the macroeconomic policy framework over the past two decades and prudent regulation of the financial system have contributed to reduce output volatility in Mexico relative to other OECD countries. The sharp recession in 2008-2009 illustrated that output volatility has nonetheless remained high. The fiscal rule has helped to balance the federal budget and keep the level of government debt low, while enhancing fiscal credibility, but it should be strengthened to allow building a larger buffer of financial assets to respond to shocks. Although output contracted sharply in early 2009, actual and expected inflation remained above target, in part because rigidities in product and labour markets limit price flexibility. This constrained the monetary policy response. The banking system withstood the recession of 2008-2009 well, but the contraction in bank credit was sharper than in other OECD countries, in part related to a boom-and-bust cycle in consumer credit that preceded the recession. While in other OECD countries the services sector stabilises output, in Mexico it contributes to output volatility. The volatility partly reflects the dominance of services with strong links to manufacturing, while modern and more stable consumer-related services remain underdeveloped. Output volatility could be further reduced by amending the fiscal rule to accumulate larger buffers of financial assets during economic upswings or periods of high oil prices, and by taking measures to enhance the flexibility of prices. Mexico should also adopt internationally-accepted statistical conventions for its budget accounts to make them more easily comparable with those in other countries. There would be merit in moving towards macro-prudential regulation and supervision to reduce the pro-cyclicality of the financial system. Finally, entry barriers to services should be lowered to boost the development of a modern consumer-related services sector.

Thanks to an improved macroeconomic policy framework and prudent regulation of the financial system, Mexico did not endure the type of fiscal and financial crises experienced in some other OECD countries during the global crisis of 2008-09. The improvements in the macroeconomic policy framework have contributed to a reduction in the volatility of Mexican output relative to other OECD countries. Nevertheless, output volatility in Mexico remains high (Figure 1.1). This can have large costs for individuals and for long-term economic growth. Temporary disruptions in output tend to be accompanied by temporary falls in consumption, in particular in countries like Mexico where a large share of the

Figure 1.1. **The output gap widened sharply during the recession**



Source: OECD, *OECD Economic Outlook Database.*

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population is credit constrained and the social safety net is weak. This generates costs for individuals who tend to prefer a smooth path of consumption and are averse to spells of unemployment or poverty (Reis, 2009). Moreover, the literature suggests that high output volatility can have adverse effects on long-term economic growth through hysteresis effects or through higher uncertainty (Ramey and Ramey, 1995; Fatás, 2002; Aghion *et al.*, 2010). This chapter discusses the sources of Mexico's output volatility and recommends reforms that would enhance fiscal buffers; increase the central bank's room for manoeuvre; reduce the pro-cyclicality of the financial system; and contribute to the development of a more stable, consumer-oriented services sector.

The recession of 2008-09 in international perspective

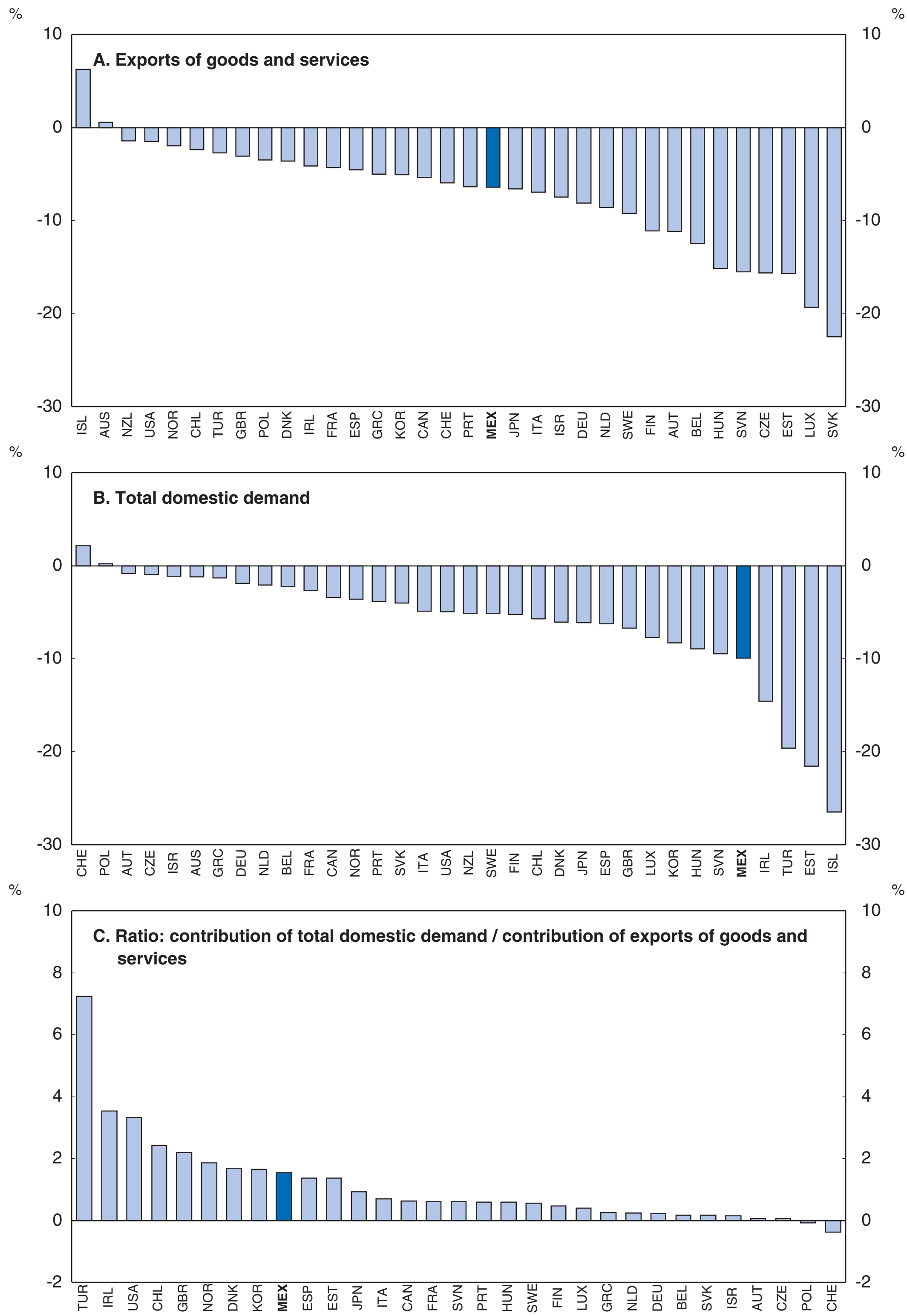
To some extent, the sharpness of the recession of 2008-09 reflects the concurrence of several large adverse shocks. The recession of 2008-09 hit Mexico first through the trade channel, with exports falling sharply when world trade collapsed in the second half of 2008. The volume of exports was around 20% lower in the first quarter of 2009 than one year before. The sharp fall in exports was mainly the result of Mexico's specialisation in manufacturing (around 80% of total exports) and close trade links with the US (80% of exports go to the US), which both experienced particularly sharp downturns during the global economic and financial crisis of 2008-09. The generalised flight to safety, which penalised emerging market assets during the global crisis of 2008-09, resulted in a widening of sovereign bond spreads and a substantial tightening in financial conditions. Finally, Mexico was also hit by the fall in remittances from migrant workers in the US and the outbreak of the A(H1N1) influenza in April 2009.

Despite the sharp fall in exports, external factors alone cannot explain the sharpness of the recession in Mexico. The contribution of exports to GDP growth between the first quarter of 2008 and the same period of 2009 was around the OECD average (Figure 1.2). Income effects cannot account for the sharpness of the recession either, as the terms of trade declined less than in other countries. Although Mexico is a large exporter of oil (around 15% of total exports), the terms of trade declined by only around 5½ per cent between the first quarter of 2008 and the same period of 2009. This compares with a decline of around 12½ per cent in Canada, for instance. The reason for the relative mildness of the decline is that the share of manufacturing imports in total exports is relatively high and Mexico is simultaneously an exporter of unrefined petroleum and an importer of refined petroleum. Moreover, the effects of lower oil prices on the real economy tend to be transmitted through fiscal policy in Mexico, but the 2009 budget was shielded against sharp declines in the oil price through a clever oil price hedge.

The contribution of domestic demand to the fall in GDP was large in international perspective (see Figure 1.2, Panel B), indicating that the export shock spilled over to the rest of the economy. Nonetheless, when the contribution of domestic demand is normalised by the export shock, the spillover was not larger than in other export-oriented economies (see Figure 1.2, Panel C). Private consumption contracted by more than in other countries that experienced similar shocks to exports. In Mexico, private consumption fell by 9% between the first quarter of 2008 and the same period of 2009, whereas it hardly decreased in Canada, for instance, which experienced a similar shock to exports, though it did better than other emerging markets controlling for the size of the shock.

Figure 1.2. **Contributions to GDP growth during the crisis**

2008 Q1-2009 Q1



Source: OECD, *National Accounts Database.*

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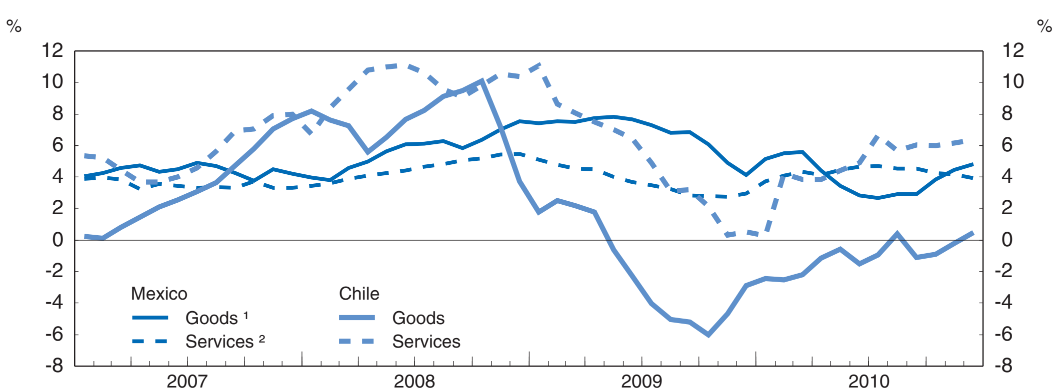
The fall in migrants' remittances and the outbreak of the A(H1N1) influenza contributed to the fall in private consumption, but the magnitude of these effects was moderate. In USD terms migrants' remittances fell by around 5% year-on-year in the first quarter of 2009 after having recorded strongly positive growth rates in the previous years. Due to the strong depreciation of the currency, however, remittances continued to record positive annual growth rates in peso terms throughout the first half of 2009. Moreover, remittances are small relative to the size of the Mexican economy (around 2.5% of GDP). The A (H1N1) influenza broke out in April 2009, contributing to weak private consumption in the second quarter of 2009.

Although the macroeconomic policy response was broadly appropriate, there remains scope for further enhancing the flexibility with which macroeconomic policies can respond to large shocks. The social safety net is limited and the automatic fiscal stabilisers are weak, possibly resulting in large increases in precautionary savings. A larger counter-cyclical fiscal response could have been implemented in 2009 if larger fiscal buffers would have been available. The central bank reduced the policy rate during the recession of 2008-09, but above-target inflation expectations may have precluded an even stronger policy response.

The sharp depreciation of the peso contributed to persistently high inflation, but rigidities in labour and product markets may also have played a role. The peso depreciated by around 20% in USD terms over the second half of 2008. Importers of manufactured goods pass a depreciation of the currency through to consumer prices to some extent, but in the presence of large excess capacity the degree of pass-through should be limited. Empirical analysis conducted for the *OECD Economic Survey of Mexico 2009* (OECD, 2009) showed that the degree of exchange rate pass-through declined over the period 1990-2008 and became statistically insignificant after the adoption of inflation targeting in 2001. Moreover, due to the global nature of the recession of 2008-09, prices on world markets in foreign currency fell, which should have compensated for part of the depreciation of the Mexican peso. In fact, inflation of tradable goods in Chile fell rapidly during the recession of 2008-09, despite a similar currency depreciation (18% between September and December 2008, Figure 1.3). Exchange rate pass pass-through in the services sector is likely

Figure 1.3. **Inflation fell by less than in Chile**

Year-on-year percentage change



1. Including processed foods, beverages, tobacco and other goods.
2. New definition. Including housing, education and other services.

Source: Banco de México and Banco Central de Chile.

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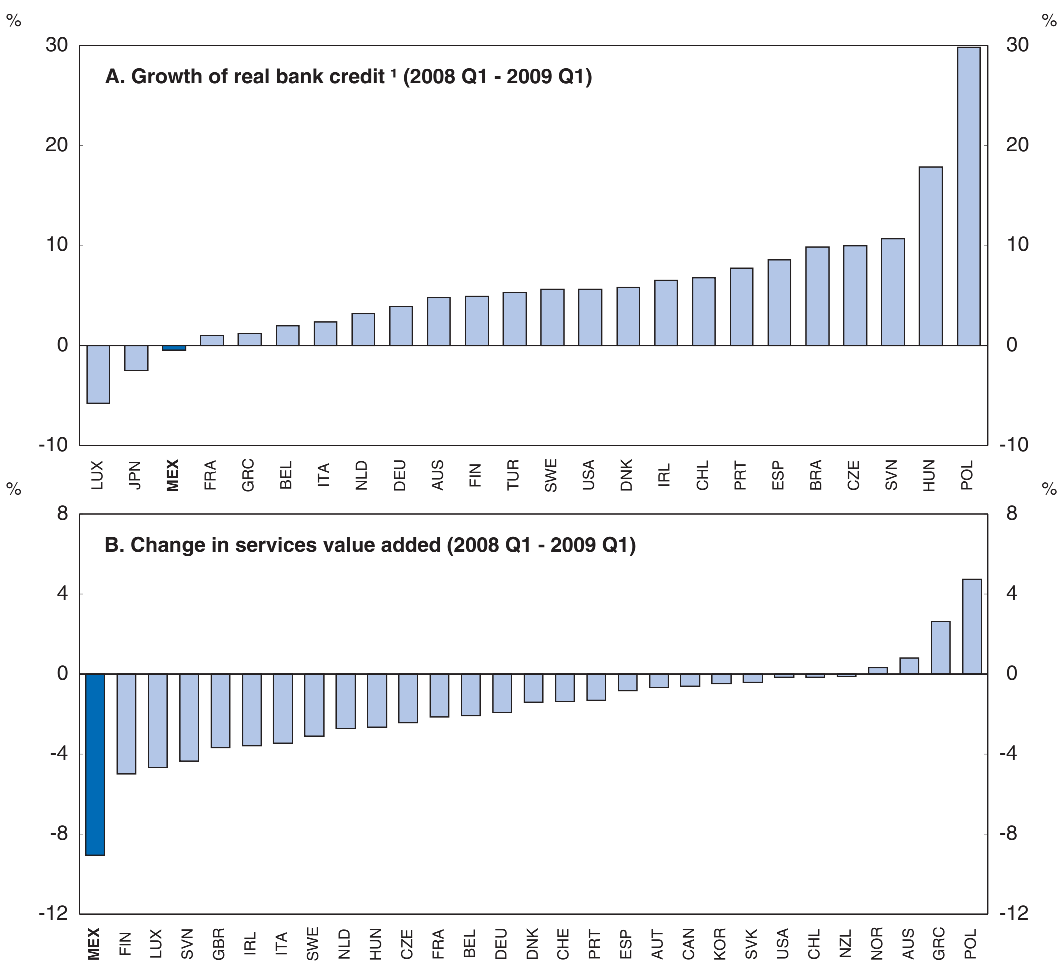
to be limited, as services remain largely non-tradable. However, inflation in the services sector came down much more slowly in Mexico than in Chile (Figure 1.3). To some extent this may reflect that the depreciation of the exchange rate was perceived to be permanent in Mexico but a higher degree of price rigidities may also have played a role.

The contraction in domestic bank lending contributed to the propagation of the export shock to the rest of the economy and the fall in private consumption, but the contraction in bank credit started before the recession. Bank lending was already on a declining path when the international crisis hit Mexico in the second half of 2008, in particular lending to consumers. Total bank lending had grown at high rates (around 20% in real terms) up to the first quarter of 2008. The adjustment in consumer credit was particularly sharp: its annual growth rate decreased from around 30% in 2007 to –9% in the second quarter of 2008. The fact that the contraction in consumer credit pre-dated the sharp collapse in private consumption suggests that it was not primarily lower consumer demand that drove the fall in consumer credit but instead tighter credit conditions, as standards for the origination of

Figure 1.4. **Bank credit and services value added contracted sharply**



1. Deflated by CPI. Claims of depository corporations (excluding central bank) on all domestic sectors (including financial corporations, state and local government, public non-financial corporations and private sector).

Source: OECD, *National Accounts Database*; and IFS, *Monetary Statistics Database*.

StatLink http://dx.doi.org/10.1787/888932383375

consumer credit were tightened in 2007. This may, in turn, have affected consumers' ability to smooth their consumption over the cycle. Overall, bank credit contracted by 0.5% in real terms between the first quarter of 2008 and the same period of 2009 (Figure 1.4).

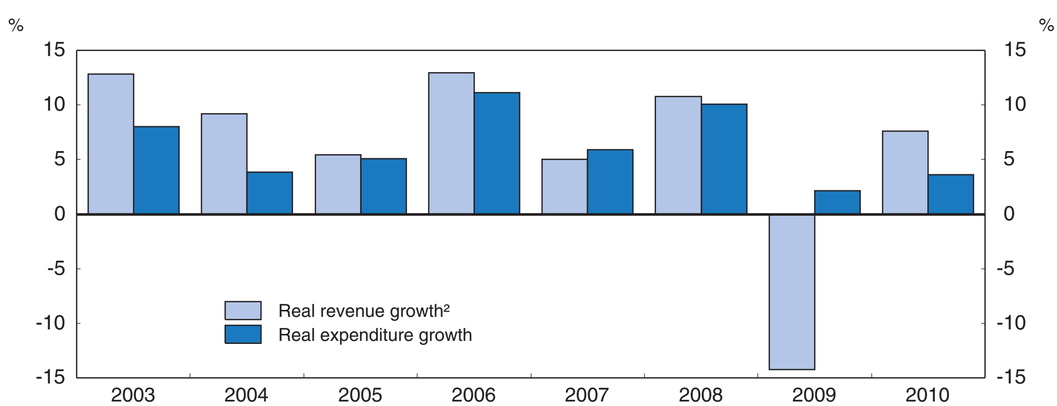
Strong links between the Mexican manufacturing and services sectors also contributed to the rapid spill-over of the export shock to the overall economy. Services value added contracted by around 9% between the first quarter of 2008 and the same period of 2009 (see Figure 1.4). The reason is that the services sector is dominated by the transport and wholesale trade sectors, which are heavily dependent on manufacturing production. Partly because of entry barriers, more stable consumer-related services account for a much smaller share of value added than in most other OECD countries.

Macroeconomic policies could contribute more to output stabilisation

The balanced budget rule needs to be amended to accumulate larger fiscal buffers

The balanced budget rule guiding fiscal policy in Mexico that has been in place since 2007 resulted in low fiscal savings despite high oil prices in 2007 and 2008. According to the Fiscal Responsibility Law the government aims for a balanced budget for the budgetary public sector, which includes public enterprises but excludes state and local governments. The balanced budget rule has been helpful in establishing fiscal discipline and achieving long-term fiscal sustainability. The budget was balanced in the years prior to the recession and net government debt, at around 30% of GDP, is lower than the OECD average of around 60% of GDP. But *a priori* balanced budget rules are pro-cyclical as they imply high public spending when economic activity and revenues are buoyant, and spending restraint when economic activity and revenues are weak. In Mexico, the Fiscal Responsibility Law allows the government to save revenues in excess of those in the budget in a system of stabilisation funds and an exceptional circumstances clause allows it to run a budget deficit if an adverse event hits the economy. Therefore, even though there was a tight link between revenues and expenditures in the years prior to the recession (Figure 1.5), this was partly due to a fiscal reform in 2008 and policy was countercyclical in 2009 and 2010. Despite an unprecedented oil price boom, fiscal savings accumulated in the oil stabilisation funds therefore amounted to less than 2% of GDP at the end of 2008.

Figure 1.5. **Real government revenue and expenditure growth**[1]



1. Deflated using CPI.
2. Net of non-recurrent revenue and financing operations.

Source: Ministry of Finance.

StatLink http://dx.doi.org/10.1787/888932383394

Structural balance calculations suggest that the fiscal stance deteriorated in 2008, in spite of record high oil revenues (Figure 1.6).

The exceptional circumstances clause in the Fiscal Responsibility Law and the hedging of oil revenues on financial markets allowed the government to conduct a counter-cyclical fiscal stimulus in 2009, and it also started to withdraw the stimulus gradually in 2010 as the economy recovered. In the past few years the government has limited revenue volatility by hedging oil revenues against declines by buying put options on financial markets. The put options provide the government with an oil price similar to that in the budget, even when oil prices fall well below the budgeted price as during 2009. Indeed, in 2009 the exceptional circumstances clause and the oil price hedge provided a welcome buffer to government expenditure: although oil and non-oil revenues fell sharply (around 21% and 11%, respectively), real government expenditure continued growing, albeit at a slower rate (around 2%) than before the downturn (see Figure 1.5).

Further output stabilisation could be achieved by amending the fiscal framework to accumulate a larger buffer of financial assets during economic upturns. This would make the fiscal position more symmetric over the business cycle. Headline budget surpluses in economic upturns would result in the accumulation of financial assets, which would be used to finance headline budget deficits during economic downturns. Villafuerte *et al.* (2010) find that across Latin America those countries that implemented more prudent fiscal policies during the boom years 2003-08 were able to conduct more expansionary policies during the downturn in 2009. Similarly, Sutherland *et al.* (2010) find that across OECD countries those with a more favourable budget position on the eve of the recession of 2008-09 were able to conduct stronger counter-cyclical policies during the downturn.

The government should consider accumulating a buffer of financial assets not only during economic upturns but over the business cycle as a whole to insure against large risks. Alternatively, a faster decline in debt could be attained. This would require measures to raise tax revenues or enhance the efficiency of spending (Chapter 2). Although a relatively large proportion of revenues is accounted for by corporate tax and VAT revenues, which are generally found to respond strongly to the business cycle (Girouard and André, 2005), low overall non-oil tax revenues as a proportion of GDP limit the size of the automatic fiscal stabilisers. A rule of thumb is that the automatic fiscal stabilisers approximately equal the share of tax revenues in GDP times the output gap (Baunsgaard and Symansky, 2009). In Mexico, the share of non-oil tax revenues to GDP is around 12%. Thus, a fiscal rule allowing the automatic fiscal stabilisers to operate freely would only have weak stabilising effects in Mexico. A prudent fiscal framework would therefore need to go well beyond the simple operation of automatic stabilisers. It would warrant the accumulation of a buffer of financial assets over the business cycle, which could then be used in the event of future large contingencies, such as a particularly sharp recession or a natural disaster.

Accumulating a buffer of financial assets over the business cycle would also be advisable to prepare for longer-term fiscal challenges. Even though oil production has stabilised recently and the risk balance on oil production has improved, oil revenues continue to be sensitive to volatile international oil prices. In any case, the ratio of oil revenues to GDP is set to decline eventually. Moreover, maintaining oil production at the current level will require high investment, as existing oil fields mature and tapping new reserves, for instance through deep-sea drilling, becomes more costly. Aiming for the accumulation of a buffer of financial assets over the business cycle would contribute to making the budget more independent of oil revenues and ease the transition to the non-oil economy.

While the federal pension systems for private workers (IMSS), public workers (ISSSTE) and the state-owned electricity company (CFE) have been transformed into capital funded defined contribution schemes, reform of the PEMEX pension system is still lacking and many states run severely underfunded defined-benefit systems for their staff. Moreover, several states have recently introduced non-contributory pension pillars, which are financed through taxes, and more are set to follow suit. The federal government should work with the states to co-ordinate conversion of the existing defined-benefit systems to the schemes prevailing at the federal level. If the government decides to introduce a basic, tax-financed pension for workers who have contributed to their pension accounts but attained only a low balance, its design should be unified across states and ensure that strong incentives remain to contribute to the prevailing federal defined-contributions schemes. While these measures will minimise the fiscal risks from population ageing, the government should nevertheless consider accumulating financial assets over the business cycle by raising taxes or enhancing the efficiency of spending to ease the demographic transition. The share of the population above the age of 60 is projected to double from 8½ per cent in 2010 to around 17% in 2030 and reach 30% in 2030 (CONAPO, 2006).

The planned expansion of the non-contributory health insurance, *Seguro Popular*, will also require setting aside financial assets over the business cycle by raising tax revenues or enhancing the efficiency of spending. The government is on track to cover 100 million out of its 112 million inhabitants with health insurance by 2011, a major improvement compared to a coverage of 50% before 2004. The enhanced coverage has been achieved through the expansion of *Seguro Popular*, a tax-financed health insurance programme targeting workers without social security, which covered around 44 million Mexicans in 2010. However, only around 2% of the 44 million people affiliated with *Seguro Popular* pay a fee. Moreover, efforts to harmonise the provision of healthcare through *Seguro Popular* and the different social security programmes has led to an expansion of the original *Seguro Popular* package. To minimise the fiscal risks, a better approach would be to define a very basic health insurance package that should be available to the entire population. The basic package could be financed through taxes or fees, which could be waived for the lowest-income households. Services that go beyond this basic package could be financed via social charges for workers with formal employment or additional fees. While this should be easier to finance than an attempt to provide all individuals without social security coverage with a tax-financed package that approaches the social security healthcare package, it would nevertheless be prudent to set aside financial assets over the business cycle to ensure the long-term sustainability of the programme.

To enhance the accumulation of assets and further stabilise output the government should consider adopting a structural fiscal rule. One option would be to net cyclical tax and non-tax (oil) revenues out of total government revenues, as Chile does. The part of government revenues due to, first, deviations of actual from potential output and, second, the actual oil price from its "structural" price would be considered as cyclical. Alternatively, the government could exclude oil revenues from the structural budget balance calculation altogether, as Norway does. The estimation of the "structural" oil price is fraught with major estimation uncertainties, as the stochastic process describing it makes the identification of a medium-term trend difficult. But even when excluding oil revenue from the structural balance calculation altogether, the government would need to estimate long-term oil production volumes and prices to set the non-oil structural balance target in such a way that it is consistent with long-term fiscal sustainability.[1] Given the uncertainties regarding long-term oil production volumes in Mexico, the most appropriate policy option appears to be the adoption of a structural fiscal rule including oil revenues.

With a constant structural balance target, government expenditure would be smoothed over the business and oil price cycles, as structural revenues would grow in line with potential output and medium-term oil prices, irrespective of sudden swings in economic conditions. This would reduce economic volatility and would be preferable over the current "exceptional circumstances clause" because the structural balance rule would be symmetrical over the cycle: Headline budget surpluses would be saved during good times and spent during bad times.

Setting a structural surplus target would result in fiscal savings over an average business cycle. In Chile, for instance, the government set the annual structural surplus target at 1% of GDP between 2001 and 2007, which resulted in the accumulation of a large buffer of financial assets (around 20% of GDP at the end of 2008).

Mexico already has in place a system of stabilisation funds, which could accommodate headline budget surpluses from such a structural fiscal rule. Simple and transparent rules on savings and withdrawals for these funds would enhance the transparency of oil revenue management. Although the Fiscal Responsibility Law establishes a transparent rule for calculating the oil price in the budget, rules on the saving of excess revenues with respect to this price have been unduly complex and the ceiling on accumulated assets low (OECD, 2009). As a result, by the end of 2008 these funds had accumulated less than 2% of GDP, despite an unprecedented boom in oil prices. The ceiling on accumulated assets in the oil stabilisation funds has been lifted temporarily for 2010 and 2011. At a minimum, this ceiling should be lifted permanently to ensure high oil prices yield a buffer of financial assets for future contingencies.

Presenting the budget accounts according to national account standards would enhance comparability with other countries and facilitate the implementation of a structural fiscal rule. Financing operations are included in Mexico's current definition of the budget deficit. Judging the cyclical position would be facilitated by Mexico adopting a more standard national accounting framework (Box 1.1). If the government presented the

Box 1.1. **Structural budget balance calculation**

Although further refinements will be needed to estimate the elasticities of fiscal revenues to the business and oil price cycles more precisely and to identify transitory income and financing operations in official Mexican fiscal data, the following calculations illustrate how the structural budget balance could be estimated for Mexico. Algebraically, the structural budget balance can be represented as:

$$CAB = T(Y^{*}/Y)^{\eta_T} + R(P^{*}/P)^{\eta_R} - G \quad , (1)$$

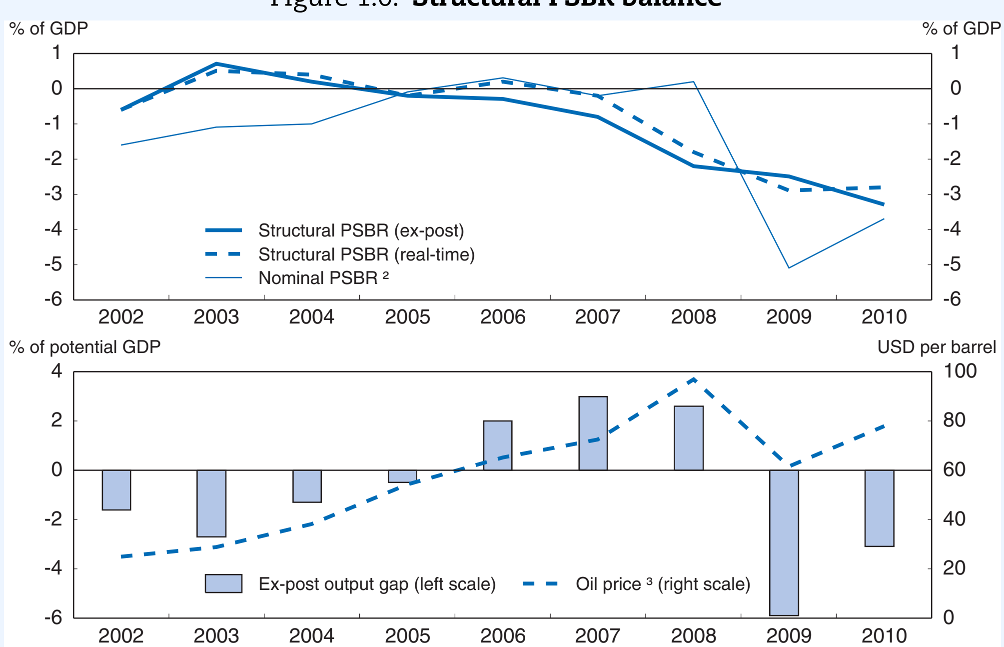
where T is non-oil revenue, Y^* is potential GDP, Y actual GDP, η_t is the elasticity of non-oil tax revenue to the output gap, R is oil revenue, P^* is the "structural" oil price, P the actual oil price, and η_R the elasticity of oil revenues to the gap between the actual and structural oil price. Expenditure (G) is assumed to be acyclical, given the weakness of automatic fiscal stabilisers on the expenditure side in Mexico.

Box 1.1. **Structural budget balance calculation** *(cont.)*

Daude *et al.* (2010) follow standard OECD methodology (Girouard and André, 2005) to estimate the elasticities of tax revenues to the output gap. They find that the semi-elasticity of the budget balance to the output gap (in per cent of GDP) is around 0.12, which is used for the present calculations. It corresponds to the ratio of non-oil revenue to GDP, as suggested by a common rule of thumb (Baunsgaard and Symansky, 2009). The output gap is from the *OECD Economic Outlook Database*. In order to distinguish between the government's intentional and *ex post* fiscal stance, the calculations are carried out using, first, the real-time output gap projected for the following year in the autumn editions of the *Economic Outlook* and, second, the estimated *ex post* output gap in *OECD Economic Outlook* 88 (Autumn 2010). This also controls partly for the increase in the measurement error in the output gap due to the 2008-09 international recession. The gap between the actual and the "structural" oil price is obtained through a Hodrick-Prescott filter.

An important caveat to these structural balance calculations is that official Mexican fiscal data make it difficult to identify purely transitory income, such as large revenues from an oil price hedge in 2009. Moreover, some types of financing operations are reported as revenue. This complicates the calculation of structural revenues. In the above calculations, *i)* non-oil revenue is therefore adjusted for non-recurrent revenue as reported in official Mexican fiscal data and *ii)* oil revenue for net transfers to the oil stabilisation fund. The budget balances reported in Figure 1.6 are thus similar to the definition of the public sector borrowing requirement (PSBR) balance in official Mexican fiscal data. Although these adjustments partly correct for non-transitory revenues and financing operations, it would be preferable to move to national accounts conventions for reporting budget data, as discussed above. This would greatly facilitate the calculation of the structural budget balance.

Figure 1.6. **Structural PSBR balance**[1]



1. Public sector borrowing requirement for central government and public enterprises.
2. Here defined as the budget balance net of non-recurrent revenue and transfers (net) to oil stabilisation fund. This differs slightly from the definition of the PSBR in official Mexican fiscal data.
3. Brent spot price.

Source: Ministry of Finance; *OECD Economic Outlook Database*.

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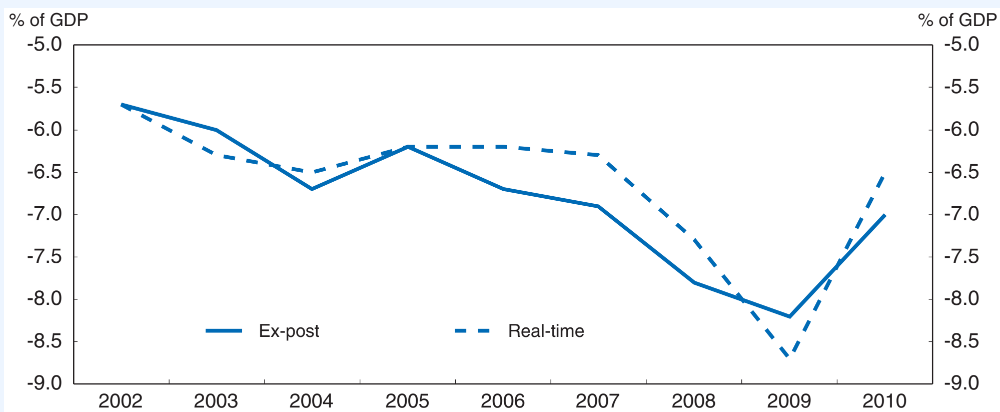
Box 1.1. **Structural budget balance calculation** *(cont.)*

Figure 1.6 shows that the structural PSBR balance declined somewhat in the years prior to the recession of 2008 09, despite a recovery from the recession of 2001-2003. This mainly reflected falling structural oil revenues due to declining oil production volumes and increased expenditure, including on social programmes. If the government had kept the structural PSBR balance at its 2003 level (around 0.5% of GDP), it would have accumulated substantial fiscal savings over this period. Figure 1.7 shows that the structural non-oil PSBR balance (defined as structural non-oil revenue minus total expenditure net of oil-related expenditure) amounted to around 8% of GDP in 2009 (Figure 1.7), which is similar to the figure reported in IMF (2011, Table 2).

Figure 1.7. **Non-oil structural PSBR balance**[1]



1. Central government and public enterprises. Here defined as structural non-oil revenue – total expenditure + oil-related expenditure.

Source: Ministry of Finance; *OECD Economic Outlook Database*.

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budget accounts according to national accounts conventions, pure financing operations – including transfers to and from the oil stabilisation funds – would be treated as such. The authorities have already started to move in this direction, as a new law for government accounting seeking to establish international conventions was adopted at the end of 2008. The government expects that a full set of general government account data will be available by 2013. The National Statistical Institute (INEGI) provided a preliminary set of government account data in line with national accounts conventions up until 2008. These accounts should be provided on a regular basis. To facilitate communication during the transition period the Ministry of Finance should provide explanations where the differences to its own presentation come from.

Even after bringing government accounts to national accounts standards, calculating structural budget balances remains a major challenge. The adjustment of tax revenues for the economic cycle requires the estimation of potential output. The decomposition of observed output into a trend and a cycle component is particularly challenging for emerging countries, as economic shocks have often proved to be very persistent (Aguiar and Gopinath, 2007). Similarly, estimating trend oil prices which are needed for the estimation of cyclical oil revenues or setting a sustainable non-oil structural balance target is a daunting task. Finally, the elasticity of tax revenues to the output gap and oil revenues to the oil price would need to be calculated to implement the structural adjustments. Box 1.1 provides a simple illustration of such a structural budget balance calculation. Given the large estimation uncertainties, the government may consider delegating the estimation of these parameters to independent expert committees. Chile's experience with this type of setup has been favourable (Ffrench-Davis, 2010; Corbo *et al.,* 2010). Expert committees or simple and replicable ways of calculating the structural parameters would contribute to more transparency, which is of the essence to build up credibility for the new fiscal rule.

Structural fiscal rules merely allow the automatic fiscal stabilisers to operate freely. To achieve sufficient flexibility in case of large adverse shocks the fiscal framework may need to include an escape clause. According to an IMF survey conducted in 2009, only around half of the countries with any type of fiscal rule were able to accommodate a counter-cyclical fiscal impulse during the recession of 2008-09 in their existing fiscal framework (Ter-Minassian, 2010). This highlights the importance of including an escape clause in the fiscal framework, similar to the current exceptional circumstances clause, which could be triggered by predetermined and transparent conditions or the decision of an independent committee, for instance in the case of a particularly sharp recession or a natural disaster. To maintain the credibility of the fiscal rule the escape clause should specify the path back to the rule, once the emergency has been overcome (IMF, 2009).

To avoid a possible loss in hard-won credibility, the timing of the introduction of the structural fiscal rule will be critical. During an economic downturn the introduction of a structural fiscal rule could be interpreted as a loosening of fiscal discipline, as the cyclical adjustment can make the structural budget balance look better than the headline budget balance (see Box 1.1). To start with, the government could regularly publish estimates of the structural budget balance while continuing to adhere to the balanced headline budget rule for some time. The switch to a structural budget balance rule could then be made during an economic upswing when it does not risk undermining fiscal credibility.

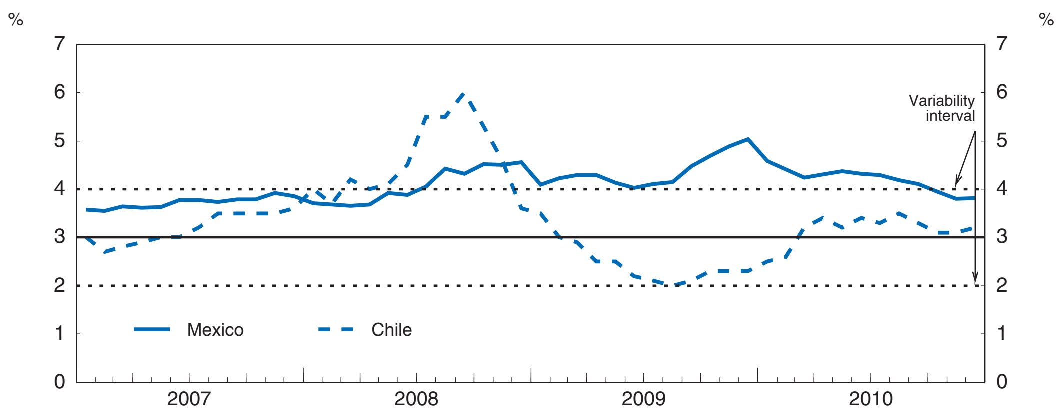
Reforms to strengthen mechanisms in support of the low-income population (Chapter 2) may enhance automatic fiscal stabilisation, which, in the medium term, will nonetheless remain weaker than in most other OECD countries. Automatic fiscal stabilisation occurs through relatively rigid government expenditure with an elasticity of tax revenues to output around one; social insurance (*e.g.* unemployment insurance); and the progressivity of income taxes (Blanchard *et al.,* 2010). Enhancing mechanisms to support the low-income population or workers who lose their jobs, as proposed in Chapter 2, would strengthen automatic stabilisation through the second channel.[2] Such strengthening of the social safety net may be particularly effective in stabilising the economy by reducing precautionary savings of credit constrained households in downturns (Cerda and Vergara, 2007). But in the medium term the ratio of tax revenues to GDP and the size of social insurance will remain considerably smaller than in the OECD average, thereby limiting the strength of the automatic fiscal stabilisers.

Measures should be taken to facilitate the conduct of monetary policy

The monetary policy framework is close to international best practice, but inflation expectations have been persistently anchored at the upper end of the central bank's variability interval around its inflation target of 3% (+/–1 percentage point). The central bank became independent in 1994 and the authorities formally adopted inflation targeting in 2001 under a flexible exchange rate regime, which was adopted in 1995. This has helped to bring consumer price inflation down from double-digit rates in the 1990s to 4½ per cent between 2003 and 2009. During the recession of 2008-09, the central bank reacted to the downturn by reducing the policy rate from 8.25% to 4.5% between January and July 2009. However, in contrast to other OECD countries, rapidly increasing excess capacity in the second half of 2008 and the first half of 2009 only had a minor effect on price inflation and inflation expectations (Figure 1.8). By itself a more rapid slowdown in price inflation would have attenuated the contraction in domestic demand by boosting the real incomes of consumers and strengthening the competitiveness of Mexican firms abroad. Moreover, it would have given the central bank more room for manoeuvre.

Figure 1.8. **Inflation expectations remained above the central bank target range**[1]

Year-on-year percentage change



1. One year ahead.

Source: Banco de México and Banco Central de Chile.

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In Mexico, prices of services display a particularly high degree of stickiness and downward rigidity. Using micro-data on the prices of individual goods and services in specific outlets over the period 2002-09, Ysusi (2009) shows that prices of goods change relatively frequently. Around 35% of prices in the CPI categories "processed food" and "other merchandise" change every month and prices of fresh fruit and vegetables (85%) and meat (64%) change even more frequently. By contrast, prices of services change much less frequently, with only between 10-15% of services prices changing every month. Although across countries prices are generally more rigid in services than in manufacturing, the degree of price stickiness in services appears to be particularly large in Mexico, including larger than in Brazil (Gouvea, 2007). Moreover, price decreases are very uncommon. Only 2% of housing prices, 1% of education prices and 4% of other services prices (mainly retail, hotels and restaurants, transport and telecommunication) fall every month against around 14% of processed food and other merchandise prices.

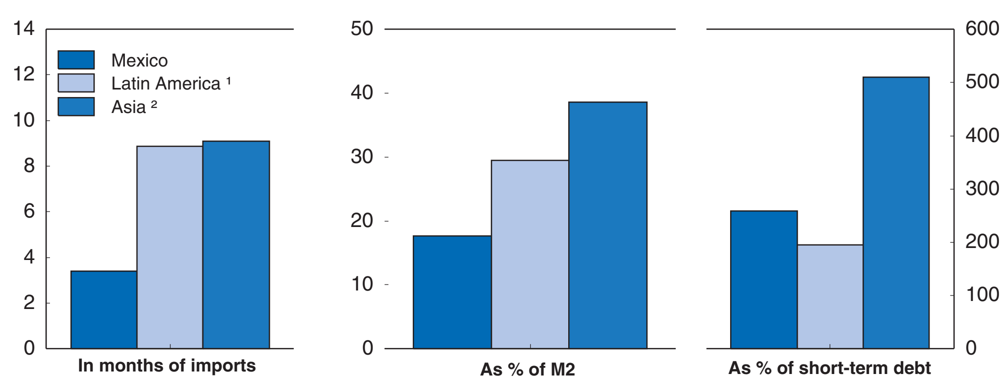
The effectiveness of monetary policy could be enhanced by eliminating product market rigidities. Cournède *et al.* (2005) show that restrictive regulations in product and labour markets slow the response of inflation to changes in the output gap in a sample of OECD countries. According to the OECD Product Market Regulation (PMR) index, product market regulation in Mexico is among the most restrictive in the OECD. Entry regulations in network industries, in particular in the services sector, could be eased to enhance competition. Chapter 3 discusses specific proposals. There would also be merit in reviewing the mechanisms for setting administered/regulated tariffs, in particular gasoline. In Mexico, the share of administered (electricity, natural gas, gasoline) and regulated (including telecommunication and public transport) prices in the CPI is around 15%.

Action should be taken to anchor inflation expectations more firmly at the central bank's target of 3%. Rigidities in product markets were one element that constrained the central bank's room for manoeuvre by reducing the response of inflation to falling demand. But Mexico also entered the crisis with price inflation and expectations above the central bank's target. While inflation was above target in many OECD and emerging economies in mid 2008 as a result of the global shock to commodity prices, in Mexico average inflation over the period 2003-2008, at around 4.3%, was above the central bank's inflation target (3% +/–1 percentage point variability interval).[3] The estimation of a backward-looking monetary policy response function over the period 2001-08 suggests that the central bank responds strongly to changes in inflation, with the central bank increasing the nominal interest rate by around 3 percentage points in the long-term in response to a one-percentage point deviation of inflation from its target (Annex 1.A1). This is similar to the estimates in Moura and Carvalho (2010). The estimates in Annex 1.A1 further suggest that, controlling for the inflation gap, the central bank does not respond to the output gap. According to column (2) of Table 1.A1.1, this result is driven by the absence of a systematic interest rate response when the output gap is in the upper two thirds of its distribution over the sample period, whereas the central bank appears to reduce the interest rate in response to declines in the output gap when it is in the lowest third of its distribution.[4] However, these results need to be interpreted with caution, including because they are derived from the estimation of simple reduced forms, the sample period is relatively short, and estimates of the output gap are uncertain.

The level of foreign exchange assets in Mexico before the recession of 2008-09 was adequate according to conventional rules of thumb, but lower than in other emerging countries. Foreign exchange assets in the form of central bank reserves covered 3.4 months of imports against 9 in a range of other Latin American emerging countries (Figure 1.9).

Figure 1.9. **International reserves on the eve of the global economic crisis**

End of 2007



1. Simple average of Brazil, Chile, Colombia.
2. Simple average of China, Indonesia, Korea, Malaysia, Thailand and Singapore.

Source: BIS-IMF-OECD-World Bank, *JEDH Database*.

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However, this may be less of an issue than in other countries, given the automatic adjustment of intermediate goods imports that is observed when non-oil exports decline. According to the so-called "Greenspan-Guidotti" rule, which requires foreign exchange assets to cover short-term external debt, Mexico's foreign exchange cover was somewhat excessive, and higher than in other emerging Latin American countries: Foreign reserves covered around 260% of short-term foreign debt against 200% in a range of Latin American emerging countries at the end of 2007. Obstfeld *et al.* (2010) argue that the "Greenspan-Guidotti" rule is too narrowly focused on "sudden stop" episodes during which capital inflows suddenly cease. Instead, a central bank concerned with limiting currency depreciation would take the possibility of episodes of sudden capital flight into account. They argue that the total amount of domestic liabilities of the banking sector, irrespective of its currency denomination, should therefore be the relevant driver of foreign asset accumulation. Adopting the Obstfeld *et al.* (2010) view of foreign reserve accumulation by calculating the ratio of foreign reserves to broad money (M2), shows that the level of foreign reserves in Mexico (18%) was below that in other Latin American emerging countries (30%). The estimation of a standard foreign exchange demand equation suggests that in 2007 Mexico's level of foreign exchange reserves was below the conditional mean in other countries (around 60%) once several country characteristics, such as the exchange rate regime or financial openness, are taken into account (Annex 1.A2). It should be noted that the results from this exercise do not allow inferring an optimal level of reserves, and the conditional mean may to some extent be driven by countries that accumulate reserves for reasons unrelated to precautionary motives.

A relatively low level of foreign exchange assets may also have constrained the macroeconomic policy response to the sharp contraction in output. During the recession of 2008-09, investors in emerging markets increasingly shifted their portfolios to assets in advanced countries that were considered as safer, thereby contributing to the depreciations of emerging market currencies. While "flight to quality" was a concern in a wide range of emerging markets, in Mexico these concerns were compounded by investors' view that the available level of foreign exchange assets was modest. Along with the uncertain outlook for oil production and the weak outlook for external demand over the coming years, this may have contributed to the increase in risk premia in Mexico,which was larger than in many other emerging markets. This limited the room for manoeuvre of macroeconomic policies. Using data on a range of advanced and emerging countries, Obstfeld *et al.* (2009) show that countries with larger foreign exchange assets generally had more stable exchange rates during the recession of 2008-09.

The central bank has accumulated additional foreign exchange reserves, including through the conversion into pesos of foreign exchange receipts of PEMEX, and an additional rules-based mechanism introduced in February 2010. By November the level of foreign exchange reserves had increased by around USD 20 billion. Moreover, the lifting of the ceilings on accumulated assets in the oil stabilisation funds and the introduction of a structural fiscal rule would also result in the faster accumulation of foreign exchange assets, which could be used for future contingencies. Models of optimal reserves (Jeanne and Rancière, 2006) suggest that the opportunity costs of holding reserves can be substantial. Alternative multilateral insurance mechanisms should therefore be explored. In particular, the authorities should consider risk pooling through agreements with other central banks (Becker *et al.,* 2007) and insurance through the IMF if facilities for members with strong fundamentals become available on a permanent basis. Mexico has been a pioneer in this area, and in January 2011 Mexico expanded its one-year precautionary USD 47 billion Flexible Credit Line (FCL) agreement with the IMF to a two-year USD 73 billion agreement. Both self-insurance through reserve accumulation and multilateral insurance through international agreements will bolster investor confidence in times of crises.

Structural policy reforms would enhance the economy's capacity to withstand shocks

Measures should be taken to reduce the pro-cyclicality of the financial system

The Mexican financial system weathered the recession of 2008-09 relatively well, but the slowdown in credit was more pronounced than in other OECD and Latin American emerging countries. To some extent, the resilience of the Mexican financial system (see Box 1.2 for an overview) reflects improvements in prudential regulation and supervision after the "Tequila" crisis of 1994: minimum capital requirements are in line with international standards, deposit insurance has been transformed from a blanket guarantee to a scheme with limited coverage, and the institutional framework for financial supervision has been modernised (Financial Stability Board, 2010). Strong profitability of Mexican banks before the recession of 2008-09 resulted in the build-up of large reserve and capital buffers, which also buttressed Mexican banks' ability to absorb losses. As a consequence, official support to the financial system was limited and consisted mainly of liquidity provision. Systemic stability notwithstanding, the slowdown in credit growth in Mexico was sharper than in other emerging and developed countries (see Figure 1.4).

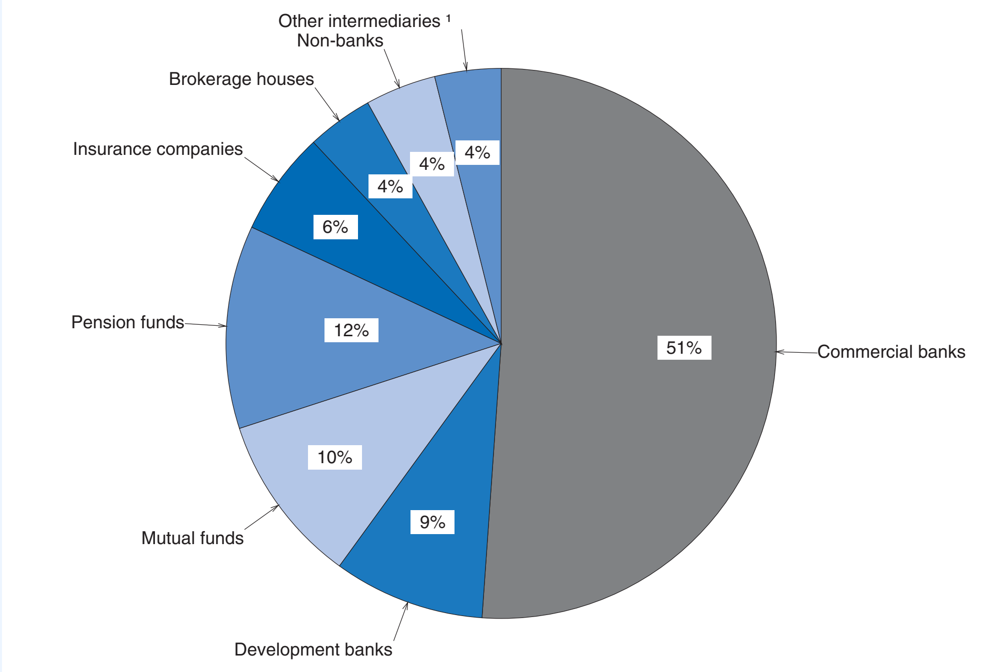
Box 1.2. **The Mexican financial system**

The Mexican financial system is diverse, but is dominated by large foreign groups. It includes commercial banks, pension funds, publicly-owned development banks, investment banks, and non-bank financial intermediaries, among other institutions (Figure 1.10). Foreign groups are present in most lines of financial business and dominate the commercial banking segment, accounting for around 70% of all banking assets. The commercial banking segment is also highly concentrated, with the three largest institutions accounting for around 55% of total assets. Non-bank financial intermediaries do not take deposits and consist of *Sofoles*, which specialise in a single line of business such as mortgages, and *Sofomes*, which can engage in multiple lines of business. Micro-credit and savings and loans institutions (*Sociedades Financieras Populares* and *co-operativas de Ahorro y Préstamo*) are small in terms of overall system assets but relevant in terms of improving financial market access for underserviced segments of the population. The development banks facilitate access to credit to underserviced firms and households and provide funding and guarantees to private financial institutions. Commercial, investment and development banks are supervised by the National Banking and Securities Commission (CNBV); insurance companies by the National Insurance and Sureties Commission (CNSF); and the pension funds by the Pension Fund Commission (CONSAR). The Ministry of Finance is responsible for the overall development and stability of the financial system. The central bank has among its duties to look after the stability of the financial system. The *Sofoles* and those *Sofomes* with equity links to commercial banks are currently supervised by the CNBV, but the remaining institutions remain outside the regulatory perimeter.

Box 1.2. **The Mexican financial system** *(cont.)*

Figure 1.10. **The structure of the Mexican financial sector**

As per cent of total assets, December 2009



1. Include financial leasing companies, factoring, savings and loans, credit unions and bonding companies.

Source: Banco de México.

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Continued improvements in financial regulation and supervision will be particularly important to maintain financial stability while further developing financial markets. The deepening and modernisation of Mexican financial markets can bring benefits in terms of growth (Rajan and Zingales, 1998). In particular, small and medium-sized firms, including in the services sector, would benefit from better access to credit, as discussed below.

The relatively strong contraction of credit in Mexico compared to other OECD or emerging countries during the recession of 2008-09 was partly related to a bust in consumer credit. Although the credit slowdown may to some extent have reflected a decrease in credit demand due to the sharpness of the recession in Mexico, tighter credit standards clearly contributed. Consumer credit started to contract in 2007, well before the fall in private consumption. Moreover, other countries that suffered sharp contractions in private consumption experienced only mild slowdowns in credit growth. In Mexico, credit was expanding at an average annual rate of close to 20% (in real terms) between 2005 and 2007, mainly on the back of a rapid expansion in consumer credit. The expansion was accompanied by a deterioration in credit underwriting standards, which led to a sharp increase in non-performing loans and loan-loss provisions once the business cycle turned.[5] These losses were manageable for the banks thanks to the large reserve and capital buffers built up before 2007 but they likely constrained aggregate bank lending.[6] Across countries, there is strong empirical evidence that the size of the credit contraction during the global economic and financial crisis of 2008-09 was positively related to the size of the expansion prior to the crisis (Aisen and Franken, 2010).

The development of a macroprudential framework would facilitate the detection of systemic vulnerabilities during economic upturns and the timely adoption of corrective measures. The government is establishing a Financial System Stability Council, which is a welcome step towards closer co-ordination between financial authorities.[7] The Council's mandate is to identify systemic risks and recommend policies to the supervisors. Over time, it would be useful to establish clear rules on information exchange and clarify the rights and obligations of the sectoral supervisors *vis-à-vis* Council recommendations. In the short term, there is scope to improve the co-operation between the bank regulator (CNBV) and the central bank regarding bank stress testing: despite improved communication on results, stress tests are still designed separately in the CNBV and the central bank.

There is room to further develop counter-cyclical regulatory tools and to improve the bank bankruptcy procedure. The CNBV has already switched from an incurred-loss to an expected-loss approach in loan loss provisioning for consumer credit. It plans to adopt the expected loss approach for mortgage loans and loans to enterprises and municipalities over the coming years. By assuming a probability of default that is independent of the business cycle, the new approach should reduce the pro-cyclicality of loan loss provisions and improve underwriting standards in the economic upturn. The CNBV also plans to introduce a counter-cyclical capital requirement in addition to the current minimum capital requirements. This is a welcome step towards further reducing the pro-cyclicality of credit. The Ministry of Finance, CNBV, the deposit insurance company (IPAB) and Banco de México are also working on a law proposal to improve the bank bankruptcy procedure, including by providing greater legal certainty for depositors and streamline the procedures for the liquidation of assets. This would contain the systemic risks and the fiscal costs from bank failures.

The government may need to consider bringing large non-bank financial intermediaries into the regulatory perimeter and improve information on all non-bank intermediaries. The *Sofoles* and *Sofomes* fund themselves mainly through loans from banks (80%) and the issuance of commercial paper in the Mexican stock exchange. During the recession of 2008-09 the financial soundness of these institutions deteriorated markedly. Funding temporarily dried out while non-performing loans increased, in part due to a focus on firms and households without access to the formal banking system, which resulted in higher credit risk. Although *Sofoles* and *Sofomes* account for only around 3% of total financial system assets, exposure to these institutions through loans or equity links likely acted as a brake on lending by commercial banks. Until now only the *Sofoles* and those *Sofomes* with equity links to commercial banks are regulated and supervised by the CNBV. The government is considering establishing a voluntary regime where other *Sofoles* and *Sofomes* can register. In addition, there may be a need for tighter regulatory standards in part of the sector. A new law has strengthened the regulation of savings and loans co-operatives, including through the creation of a new private deposit insurance fund for members' savings and the supervision through the consumer protection agency for users of financial services (CONDUSEF).

The government should consider adopting tighter rules for related-party lending to reduce the risk of financial contagion through foreign-owned banks. Cetorelli and Goldberg (2010) provide evidence that adverse funding shocks to parent banks in developed countries affect affiliates in emerging countries. Contagion from the parent bank to the affiliate occurs through an increase in borrowing from affiliates abroad to alleviate funding shortages. This internal capital transfer may reduce loan supply by the foreign affiliate if it does not have access to offsetting funding sources. In Mexico, the bank regulator observed increased flows of liquidity between parent banks and foreign subsidiaries during the recession of 2008-09, but they were not of a magnitude that posed a systemic threat. Although the lending behaviour of foreign banks did not differ significantly from that of domestic banks, the government should consider tightening rules on related-party lending to preclude outflows of liquidity which reduce loan supply by the Mexican affiliate when the foreign bank comes under pressure. Currently, the ceiling on related-party lending is 50% of the Mexican affiliate's capital. The lowering of the ceiling should be carefully calibrated, as the benefits in terms of enhanced resilience of the financial system need to be weighed against reduced investment incentives for foreign banks.

The government should also consider strengthening the budgetary and technical autonomy of the bank supervisor. The relatively large role of public development banks in the Mexican banking system may warrant limiting the weight of the Ministry of Finance in setting the CNBV's budget (Financial Stability Board, 2010). Currently, the Finance Ministry sets the CNBV's budget, which may be a constraint on its independent decision taking although there is no evidence for pressure exerted by the Ministry of Finance on the CNBV, and the lack of problems in the financial system during the recent international financial crisis suggests that regulation and supervision were adequate.

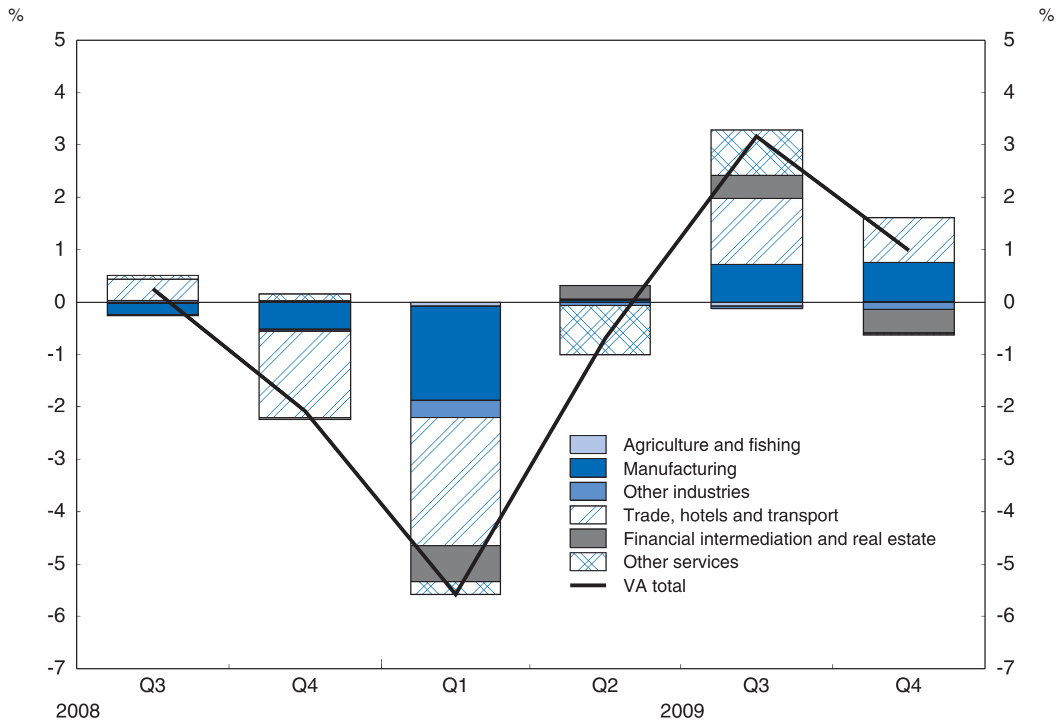
Public development bank lending provided a counter-cyclical impulse to credit during the crisis, but the government now needs to consider retreating from exceptional lending. As in other Latin American countries (IMF, 2010), public development banks sharply stepped up lending when the private financial system was partly frozen up, with lending increasing by around 40% in real terms between September 2008 and December 2009 (Ministry of Finance, 2010). Public development banks are subject to the same rules as private commercial banks and are supervised by the bank supervisor. But stepped up public development bank lending may nevertheless distort competition in non-crisis situations, with possibly large efficiency costs as the explicit state guarantee gives public development banks a funding advantage over private banks and is a contingent liability to the public finances (Prasad, 2010). The development banks should therefore gradually withdraw exceptional lending operations. In particular, direct lending to market segments with access to private credit in non-crisis situations, such as the automotive, tourism and transport sectors, should be terminated. However, these operations only represented 5% of the total balance of development banks in 2009. Instead, in non-crisis situations, public development banks should focus on co-financing arrangements with the private sector, for instance through credit guarantees, as they have done in the past. This would limit the risks to the public finances and enhance financial development through the dissemination of development bank expertise to the private sector, for instance in the area of long-term infrastructure finance (Armendáriz de Aghion, 1999; Levy Yeyati *et al.,* 2004).

Measures should be taken to spur the development of a modern consumer-related services sector

Reducing the services sector's sensitivity to external shocks will be key to reducing macroeconomic volatility, as the sector accounts for more than 60% of GDP. Indeed, during the recession of 2008-09, the fall in manufacturing value added accounted for only a third of the fall in total GDP (Figure 1.11). The 6% fall in services value added in the first quarter of 2009 accounted for the remaining two thirds. In Canada, where the size of the

Figure 1.11. **Real value added growth by activity**

From previous quarter, simple rates



Source: OECD, *National Accounts Database.*

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manufacturing sector and the dependence on US exports are similar, the services sector held up much better, which contributed to a milder recession.

Empirical analysis shows that only part of the strong business cycle synchronisation between Mexico and the US stems from manufacturing export links. It is well known that the Mexican business cycle is highly synchronised with economic developments in the US, which is generally attributed to such links (Chiquiar and Ramos-Francia, 2004, 2008; Sosa, 2008). Indeed fluctuations in US industrial production result in an amplified response of Mexican manufacturing value added (Box 1.3). A one percentage point increase in US industrial production leads to an increase in Mexican manufacturing GDP of one

Box 1.3. **VAR analysis of the transmission of external shocks in Mexico and Canada**

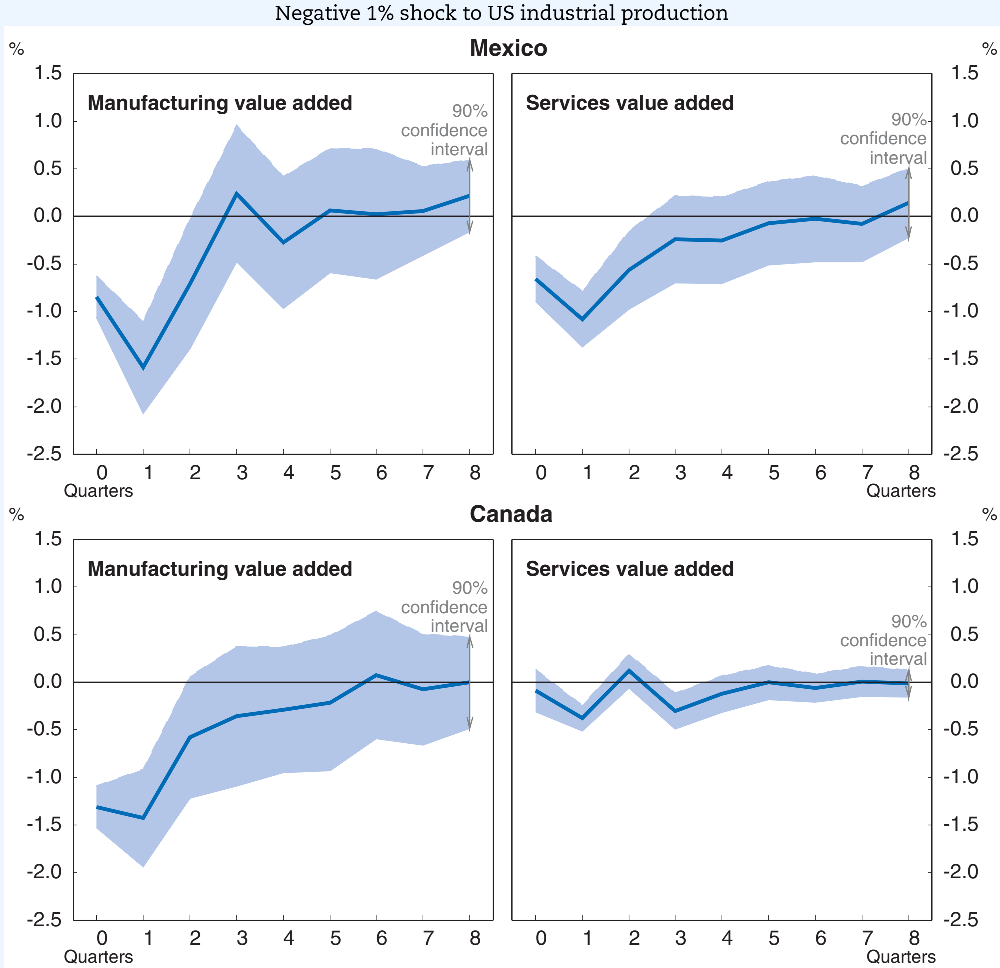
- **Motivation:** Both countries have similar links to the US through trade, FDI and the financial system.
- **Specification:**
  - The sample covers the period 1996Q1 to 2009Q4. The number of included lags is determined using the Akaike criterion, which suggests an optimal lag length of four quarters. A unit root in the time series for Mexican manufacturing and services value added cannot be rejected using a simple Augmented Dickey-Fuller test. All variables are therefore first-differenced to avoid spurious regression results.*

Box 1.3. **VAR analysis of the transmission of external shocks in Mexico and Canada** *(cont.)*

- The impulse response functions shown in Figure 1.12 correspond to the estimation of a block-exogenous VAR including US industrial production, Mexican manufacturing value added and Mexican services value added. The imposed block-exogeneity constraint is that developments in the Mexican manufacturing and services sectors do not impact on US industrial production, which is achieved by setting the coefficients on the lags of Mexican manufacturing and services value added in the US industrial production equation to zero. Identification of the impulse-response functions additionally requires imposing constraints on the contemporaneous correlation between shocks. This is achieved through the following simple Cholesky decomposition: US industrial production may contemporaneously impact on Mexican manufacturing and services value added and Mexican manufacturing value added may impact on services value added but not *vice versa* . Granger causality tests confirm the plausibility of these assumptions.

Figure 1.12. **Impulse-responses to US industrial production shocks in Mexico and Canada**[1]

Negative 1% shock to US industrial production



1. Impulse-responses estimated from a block-exogenous VAR including US industrial production, manufacturing value added and services value added over the period 1996 Q1 to 2009 Q4.

Source: INEGI; Statistics Canada; OECD, *Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932383527

Box 1.3. **VAR analysis of the transmission of external shocks in Mexico and Canada** *(cont.)*

- **Robustness:** The impulse-response functions shown above are robust to several changes in model specification:
  - Inclusion of other determinants of manufacturing and services value added: real effective exchange rate, oil prices, real interest rate in the US.
  - The use of a different US shock variable: US GDP, US import demand, US private consumption.
  - The use of a different sample: exclude the 2008-09 recession from the sample by restricting it to the period 1996Q1-2008Q4.
  - The use of a different set of structural constraints on the variance-covariance matrix between shocks instead of a simple Cholesky decomposition: constrain the direct transmission of US shocks on Mexican services value added to zero. This yields a 40% lower response of Mexican services value added to a US shock, which is broadly in line with the estimated direct response in the unconstrained model.
- **Conclusion:** While the response of the manufacturing sector to US shocks is similar in Mexico and Canada, the Canadian services sector seems to be better insulated.

* A unit root for US industrial production over the sample period is rejected at the 1% significance level which precludes cointegration and the estimation of a Vector Error Correction Model (VECM).

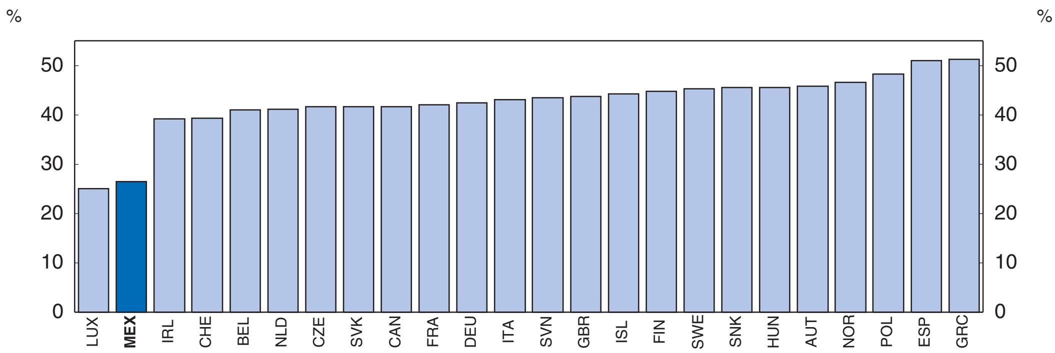
percentage point in the same quarter and a more than one percentage point increase in the following quarter.[8] But the empirical analysis also shows that the sensitivity of the Mexican services sector to developments in the US contributes to business cycle synchronisation. Over the period 1996-2009, Mexican services value added responded to a one percentage point increase in US industrial production by a 0.7 percentage point increase in the same quarter and a 1.1 percentage point increase in the quarter immediately following the shock (Figure 1.12). Starting in the second quarter following the shock, the effect gradually fades. By contrast, in Canada services value added does not immediately respond to shocks in US industrial production and the response in the quarter immediately following the shock is much weaker than in Mexico: the response to a 1 percentage point increase in US industrial production is around 0.35 percentage points.

In Mexico, strong links between manufacturing and services add volatility to the economy. The sensitivity of Mexican services value added to fluctuations in US economic conditions appears to be driven in part by stronger links between the manufacturing and services sectors. This can be seen from the response of the Mexican services sector to a shock in the manufacturing sector: a one percentage point increase in Mexican manufacturing value added is translated into an immediate 0.4 percentage point increase in Mexican services value added against a statistically not significant response of services to manufacturing in Canada. This is because Mexico's services sector is geared towards activities that are highly dependent on manufacturing, such as transport and wholesale trade. By contrast, in Canada and most other OECD countries the share of consumer-related services is much larger (Figure 1.13).

Easing services sector regulations that constrain competition would spur the development of a modern consumer-oriented services sector. According to the OECD ECTR indicator, which measures regulation in specific services sectors, Mexico is among the

Figure 1.13. **Share of consumer-related services in total services value added**[1]

2008[2]



1. Consumer-related services are defined as total services less wholesale trade, transport, storage and communications, finance, insurance, real estate and business services.
2. 2007 for Ireland, Belgium, Canada, Germany, United Kingdom, Sweden, Hungary, Norway and Poland.

Source: OECD, *STAN Database*.

StatLink http://dx.doi.org/10.1787/888932383546

countries with the most restrictive regulations in the OECD.[9] Chapter 3 shows that there are high entry barriers across a wide range of services sectors, including telecommunications, passenger transport and retail banking. Even though important improvements have been made, more action may need to be taken in order to promote stronger competition and growth in these sectors. Easing these regulations along the lines of Chapter 3 would spur productivity growth and make the composition of services in Mexico more similar to that in other OECD countries.

Credit constraints have also contributed to the relative underdevelopment of the domestic consumer-related services sector in Mexico. Tornell *et al.* (2004), for instance, find that credit constraints affect the Mexican services sector particularly severely. After the "Tequila" crisis of 1994 tight financial conditions held back investment and growth in the services sector, while the manufacturing sector benefited from foreign financing, including through FDI. Even though credit started to expand strongly from 2003 onwards, this expansion decelerated, initially due to problems related to consumer loans and then during the recession.

There is room for strengthening creditor rights. The bankruptcy law was reformed in 2000 and Mexico now ranks relatively high compared to other emerging markets on the ease of closing a business.[10] Nevertheless, several features of the Mexican economy continue to make it difficult for creditors to repossess collateral. In order to repossess physical collateral there need to be property registries, and a judicial system that provides for adequate law enforcement. In Mexico the property registries are inadequate: individuals consulting the files have access to original files, which allows them to modify entries; many property sales go unregistered; there are multiple owners for the same property; and the property and property tax register are unconnected, limiting municipalities' incentives to update it (Haber, 2009). In order to alleviate this problem, the Ministry of Economy created in 2010 a registry of credit guarantees, the *Registro Único de Garantías Mobiliarias* (RUG). Moreover, when bankers move to foreclose, the repossession of collateral can be delayed for long periods of time through the issuance of *amparos* (constitutional appeal procedures). A current project to set up specialised commercial courts may alleviate this problem.

Collateral and the enforcement of creditor rights are particularly important for enterprise credit. Enterprise lending relies significantly more on the legal system and law enforcement than consumer and micro lending, which often absorb credit risk in interest margins. Some type of collateral involved in enterprise lending (*e.g.* receivables, machinery and equipment, inventories) is more difficult to identify (*e.g.* receivables), has less efficient secondary markets (*e.g.* firm-specific machinery and equipment) and loses value more rapidly (*e.g.* raw material inventories) than real estate or durable consumer goods, such as cars. Moreover, credit bureaus have more difficulties to track the credit histories of firms than individuals, in particular in an economy in which the informal sector is large. Credit developments in the years prior to the recession of 2008-09 are consistent with this view, as access to credit remained difficult for enterprises while other forms of credit boomed. Commercial credit grew 1.4% on average in real terms between 2002 and 2007, while consumer credit expanded at an average real rate of 35%. In a survey of firms across 54 countries, Beck *et al.* (2005) find that the fraction of firms reporting severe financing constraints is highest in Mexico. Since Mexican firms in the tradable sector of the economy often have access to finance from abroad – through banks, customers or suppliers (IMF and World Bank, 2006) – weak creditor rights may hit the services sector particularly hard. To support the development of a domestic consumer-related services sector which is less dependent on manufacturing, the government should diligently implement the envisaged measures to strengthen creditor rights by modernising the property registry. It should also support measures that ensure the repossession of collateral is not unduly delayed through the issuance of *amparos*.

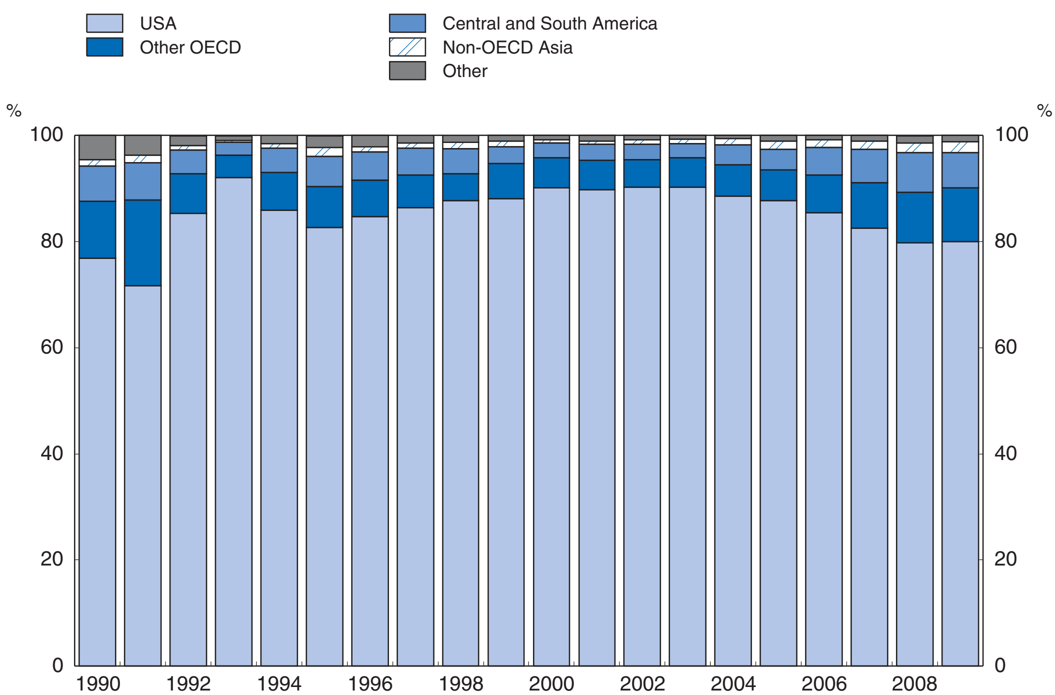
Strengthening competition in the banking sector could contribute to easing credit for small and medium-sized firms in the services sector, but adequate consideration should be given to financial stability issues. Over the past years, several reforms have strengthened transparency and consumer protection in the Mexican banking sector (Chiquiar and Ramos-Francia, 2009). Chapter 3 discusses how costs to consumers of switching banks could be further reduced to enhance competition. The government has also acted to strengthen competition on the supply side. Among other measures, minimum capital requirements for new entrants were reduced and non-bank financial institutions were authorised, including niche banks and *corresponsales bancarios*. The authorities have also liberalised the access to the inter-bank payment system, which liquidates transactions between financial institutions. Nevertheless, discriminatory access to the retail payments systems persists. These systems liquidate transactions between individuals and firms, mainly checks, payment cards and electronic transfers. Large banks with extensive networks can make the access for smaller competitors or new entrants to their payment systems costly by charging high fees. The authorities should therefore continue to enhance the access to the retail payment systems for all banks, which would strengthen competition and likely bring down fees and the cost of credit for firms and consumers alike. At the same time, the authorities should exert sufficient care to preserve financial system stability. Although there is no clear-cut answer to the question of whether there is generally a trade-off between competition and financial stability (Beck, 2008), the difficulties of the non-bank financial institutions during the recession of 2008-09 illustrate that there can be a tension between the objectives of financial deepening and financial stability.

Trade policy could ease exporters' access to a broader range of foreign markets

Exports have increased sharply over the past two decades and are mainly geared towards the United States and manufacturing, in particular export assembly. However, there has been an important process of export diversification during the last decade, which has resulted in a lower share of non-oil exports going to the United States than before NAFTA came into force in 1994. Nevertheless, around 80% of Mexican exports go to the United States (Figure 1.14) and around 50% of Mexican manufacturing exports are produced by so-called *maquiladoras*, or export assembly plants (Hanson, 2010). These plants import their inputs mainly from abroad (primarily the United States), assemble the inputs into final outputs and re-export them to the United States.

Figure 1.14. **The share of non-oil exports going to the US remains high**

As % of total non-oil exports



Source: OECD, *International Trade by Commodity Statistics Database*.

StatLink http://dx.doi.org/10.1787/888932383565

Mexico's export specialisation pattern is largely determined by geography and comparative advantage. Given the size and proximity of the US market, it is unsurprising that the bulk of Mexican exports go to the US (Feenstra, 2003). Countries at early stages of economic development also tend to specialise on relatively low-value added exports (Newfarmer *et al.,* 2009). Most industrialised Asian countries started their industrial development through export assembly but later graduated into the manufacturing of original equipment and the development of own brands. Mexico has not yet made this transition.

The dominance of the United States in Mexican exports and the specialisation on export assembly contribute to output volatility. The transmission of economic fluctuations in the United States to Mexico is strong: The empirical evidence suggests that shocks to US output are magnified in Mexico (see Box 1.3). During the recession of 2008-09 US GDP declined by 4% from peak to trough, while Mexican GDP fell by 8.5%. Bergin *et al.* (2009) find that even within narrowly defined manufacturing sectors, volatility of value added in Mexico is twice as high as in the United States. One reason may be that firms outsource particularly volatile production stages, such as assembly, to Mexico, while keeping the less volatile ones, such as headquarters and managerial activities, in the US.

Policies that reinforce Mexico's trade specialisation should be reviewed. Haddad *et al.* (2010) find that more diversified exports in terms of products and geography shield countries against external shocks. For the Mexican case this implies that strengthening export links with a wider range of countries and making the transition from export assembly to higher-productivity activities is likely to reduce the vulnerability to adverse shocks from the United States. This could be achieved by promoting the access of Mexican exporters to a wider range of foreign markets on similar conditions as to the United States; and removing barriers to exports in a wide range of sectors, including mining, energy and services.

At the end of 2008 Mexico announced an ambitious unilateral import tariff reduction over the period 2009-13. The unilateral tariff reduction is expected to reduce the average industrial tariff from 10.4% in 2008 to 4.3% in 2013. By enhancing competition and reducing the cost of intermediate goods, the unilateral tariff reduction will help improve the competitiveness of Mexican exports. But achieving greater geographical diversification will also require improving the access of Mexican exporters to a broader range of foreign markets.

Currently, Mexican exporters enjoy tariff-free access to the US and Canada through the North American Free Trade Agreement (NAFTA). Mexico has also signed free trade agreements with the European Union and a range of Latin American countries. In fact, these agreements may have contributed to the fall in the share of exports that go to the United States from around 90% at the beginning of the 2000s to around 80% in 2009 (see Figure 1.14). At the global level, bilateral free trade agreements are a second-best option to multilateral trade liberalisation as, to some extent, trade is diverted from non-member to member countries (Carrère, 2006). But for Mexican firms, bilateral free trade agreements would put more export destinations on an equal footing with Mexico's partner countries in NAFTA, which would reduce the diversion of Mexican exports to the United States and Canada. The decrease in the share of Mexican exports going to the United States suggest that this effect has already declined significantly. In terms of diversifying risk, the ongoing negotiations with Brazil and Korea are particularly relevant, as they represent two fast-growing economies whose business cycles are becoming increasingly synchronised with China and more independent of the United States. To minimise trade diversion the government could also consider the option of negotiating with regional trading blocs instead of single countries. For instance, the government could consider entering into negotiations with the South American common market (MERCOSUR).

Improving competitiveness in mining, energy and services would go a long way towards diversifying exports. Mexico's export potential in energy and mining is large, but inadequate regulation and labour disputes have prevented it from fully exploiting it. In energy, there is scope to improve the productivity of the state-owned monopolies PEMEX (oil) and CFE (electricity), mainly by fully implementing contracts that allow PEMEX to pay contractors according to performance and moving towards the ownership separation between electricity generation and transmission, with an independent state-owned system operator operating the transmission grid (OECD, 2007). In mining, the world's second-largest copper deposit was blocked by a labour dispute for several years until mid-2010. Services exports as a share of total exports are low in Mexico. This partly reflects the inherent non-tradability of some services, but the fact that the share of services exports (around 6% of total exports in 2008) is well below the OECD average indicates (23%) that there is scope for improvement. Some mineral-rich countries have made the successful transition from pure mineral exporters to exporters of mineral-related services, such as exploration and engineering. In the United Kingdom, for instance, the highest service export intensity is found among oil and mining companies (Breinlich and Criscuolo, 2010). The large mineral exporters Australia, Brazil, Canada and Norway are among the ten largest exporters of engineering services. However, services are still not effectively covered by WTO provisions. While continuing to actively negotiate services trade liberalisation at the multilateral level, the authorities should ensure that free trade agreements include substantial commitments in services.

Concluding remarks

The absence of a major fiscal or banking crisis despite the large shock of the global economic and financial crisis of 2008 09 is testimony to the improvement in macroeconomic and financial market policies over the past two decades. Nonetheless, further reforms, both in macroeconomic and structural policies, would contribute to further reduce output volatility. Modifying the fiscal rule to allow for the accumulation of a larger buffer of financial assets during economic upswings or periods of high oil prices, while taking measures to reduce price rigidities, would be useful in this respect. In financial market policies, the government's plan to move towards macroprudential regulation and supervision will help reducing the pro-cyclicality of the financial system. Enhancing competition and reducing entry barriers in services, which now account for the largest part of Mexican value added, will spur the development of a modern and less volatile consumer-related services sector. A process of geographical trade diversification is already underway, but further reducing barriers to a wider range of export markets may contribute to the diversification of exports and reduce the dependence on a single export partner.

Box 1.4. **Main recommendations for further stabilising the economy**

- Consider the adoption of a structural fiscal rule to accumulate buffers of financial assets during economic upswings and periods of high oil prices and prepare for long-term fiscal challenges. Make the elimination of the caps on accumulated financial assets in the oil stabilisation funds permanent.
- Present the government accounts according to national account standards to improve international comparability.
- Continue the build-up of foreign exchange reserves through a rules-based mechanism as planned.

Box 1.4. **Main recommendations for further stabilising the economy** *(cont.)*

- Facilitate the conduct of monetary policy by reducing price rigidities in labour and product markets and take action to anchor inflation expectations more firmly at the 3% inflation target.
- Move to macro-prudential regulation and supervision to reduce the pro-cyclicality of the financial system.
- Adopt counter-cyclical minimum capital requirements as planned.
- Continue the exit from exceptional lending by public development banks to avoid distorting competition in banking.
- Support the development of a modern consumer-oriented services sector by reducing entry barriers in services.
- Support the diversification of exports by: easing the access of Mexican firms to a broader range of foreign markets, including by developing regional trade agreements, and removing barriers to exporting in energy, mining and services.

Notes

1. To minimise the relevance of estimated oil production volumes and prices in the non-oil structural balance rule, the government could complement the rule by a net assets target. The non-oil structural balance target would periodically be adjusted to make it consistent with the net assets target.
2. This would require adjusting expenditure for the economic cycle under a structural fiscal rule, as otherwise all fluctuations in expenditure would be regarded as structural, requiring offsetting changes in structural revenues.
3. In part, this may be due to cost-push shocks over this period, including an increase in electricity tariffs in 2002 and the tax reform of 2007 that came into force in 2008.
4. The difference between the coefficient on the interaction term (output gap * low output gap) and the one on (output gap * medium output gap) is not statistically significant. The difference between the coefficient on the interaction term (output gap * low output gap) and the one on (output gap * high output gap) is statistically significant at the 10% level.
5. The ratio of non-performing loans and loan-loss provisions to total consumer reached 25% in November 2009.
6. At the peak of the consumer credit boom at the end of 2007 consumer credit accounted for a substantial share of bank assets (around 10%) and total bank credit (around 25%).
7. The Council will be headed by the Minister of Finance and include representatives from the central bank, CNBV, CNSF, CONSAR and the deposit insurance agency.
8. One reason may be that Mexico mainly specialises on volatile production stages, such as assembly, whereas less cyclical managerial, headquarters and R&D activities continue to be carried out in the US (Bergin *et al.,* 2007, 2009).
9. The OECD ETCR indicator covers the telecoms, electricity, gas, post, rail, air passenger transport and road freight sectors.
10. In the 2011 edition of the World Bank Doing Business indicators (World Bank, 2010) Mexico ranks 23rd out of 183 countries on the ease of closing a business.

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ANNEX 1.A1

Monetary policy response function

This annex estimates simple backward-looking monetary policy response functions. To focus on the period after the central bank formally adopted inflation targeting but prior to the recession of 2008-09 the sample includes monthly data from January 2001 to September 2008. The following specifications are estimated by ordinary least squares:

$$r_t = \beta^0 + \rho r_{t-1} + \beta^{\pi}(\pi_t - \pi_t^*) + \beta^y y_t + \varepsilon_t, \quad (1)$$

$$r_t = \beta^0 + \rho r_{t-1} + \beta^{\pi}(\pi_t - \pi_t^*) + \beta^{ylow}(y_t < y^{low})y_t + \beta^{ymed}(y^{low} \leq y_t \leq y^{hi})y_t + \beta^{yhi}(y^{hi} < y_t)y_t + \varepsilon_t \quad (2)$$

r_t is the nominal policy interest rate, π_t is consumer price inflation over the past 12 months, y_t is the output gap, π_t^* the inflation target, ε_t is the regression residual and the ρ and β terms are the coefficients to be estimated.* Consumer price inflation is seasonally adjusted using the US Census Bureau X12 programme. The output gap is calculated as the deviation of the logarithm of the seasonally adjusted monthly indicator for global economic activity (IGAE) from its long-term trend (obtained through a Hodrick-Prescott filter). The data on the policy interest rate and consumer price inflation are obtained from Banco de México and the indicator for global economic activity is obtained from the national statistical institute (INEGI).

Specification (1) is a standard monetary policy response function, where the central bank responds to both shocks to inflation and output. The lag of the policy rate is included to account for interest rate smoothing. Table 1.A1.1 reports the long-run responses of interest rates to changes in the inflation and output gaps. Column (1) of Table 1.A1.1 shows that the central bank increases the nominal policy rate by around three percentage points in response to a one percentage point deviation of inflation from its target, thus satisfying the Taylor (1993) principle. The coefficient on the output gap is not statistically significant. These results are similar to those obtained by Moura and Carvalho (2010) for similar specifications.

Specification (2) estimates the central bank's response to changes in the output gap at different levels of the output gap. Specifically, it estimates the interest rate response at "low" (below the 33 percentile), "medium" (between the 33 and 66 percentiles) and "high" (above the 66 percentile) output gaps. Column (2) of Table 1.A1.1 shows that the central bank reduces the interest rate in response to more negative output gaps when the output gap is low: the coefficient on the interaction between the output gap and an indicator variable for "low" output gaps is positive and statistically significant. However, the central

* The coefficients reported in Table 1.A1.1 are the long-run response coefficients $\beta(1 - \rho)$.

bank does not appear to respond to changes in the output gap, when it is in the "medium" or "high" range, as the coefficients on the remaining interaction terms are not statistically significant.

Overall, the results from the estimation of these monetary policy response functions indicate that the central bank responds vigorously to deviations of inflation from its target. While the interest rate response to changes in the output gap appears to be weak overall, there appears to be some loosening of the monetary stance when the output gap turns sharply negative. Although the results are robust to a number of variations in sample period and specification, including disaggregating the output gap into quintiles instead of terciles, there is a need for further research to test whether they hold in a more general setup. In particular, the above monetary policy response functions do not allow to draw conclusions on central bank preferences, which would require setting up a fully-fledged general equilibrium model.

Table 1.A1.1. **Monetary policy response functions**[1]

Dependent variable	Policy interest rate	
	(1)	(2)
Inflation gap	2.983 (1.270)**	2.602 (1.053)**
Output gap	0.424 (0.356)	
Output gap * (Low output gap)		1.539 (0.744)**
Output gap * (Medium output gap)		0.230 (1.311)
Output gap * (High output gap)		–0.268 (0.482)
N	93	93
R^2	0.95	0.95

** statistically significant at 5%, * at 10%. Standard errors in parentheses.
1. Specifications include the first lag of the policy interest rate and a constant. Long-run response coefficients.

ANNEX 1.A2

Foreign exchange demand equation

This annex estimates a simple foreign exchange demand equation in the vein of Obstfeld *et al.* (2010) for a sample of advanced and emerging equations over the period 1995-2010. Algebraically, the estimated equation can be represented as:

$$\ln(Res/GDP) = \beta_0 + \beta_1 {}^*TradeOpen + \beta_2 {}^*AD + \beta_3 {}^*SoftPeg + \beta_4 {}^*Peg + \beta_5 {}^*FinOpen + \beta_6 {}^*\ln(M2/GDP) + \varepsilon, \quad (1)$$

where *Res/GDP* is the reserves-to-GDP ratio (IMF IFS), *TradeOpen* is the trade-to-GDP ratio (World Bank WDI), *AD* is a dummy for advanced countries (Obstfeld *et al.*, 2010), *SoftPeg* and *Peg* are dummies for the exchange rate regime (Obstfeld *et al.*, 2010), *FinOpen* a measure of financial openness (Edwards, 2007) and *M2/GDP* is the M2-to-GDP ratio (IMF IFS). The βs are the coefficients to be estimated and μ is the regression residual. Country and time subscripts are dropped for notational simplicity.The results from estimating variations of equation (1) by pooled OLS are reported in Table 1.A2.1.

Table 1.A2.1. **Foreign exchange demand equations**

Dependent variable	ln(Res/GDP)		
	(1)	(2)	(3)
ln(TradeOpen)	0.682*** (0.045)	0.634*** (0.047)	0.424*** (0.050)
AD	–0.786*** (0.058)	–0.957*** (0.075)	–1.199*** (0.074)
SoftPeg	0.140** (0.060)	0.140** (0.058)	0.239*** (0.055)
Peg	0.297*** (0.080)	0.300*** (0.079)	0.265*** (0.074)
FinOpen		0.488*** (0.155)	0.897*** (0.151)
ln(M2/GDP)			0.407*** (0.043)
Constant	–4.800*** (0.186)	–4.924*** (0.184)	–5.960*** (0.200)
N	534	532	519
R^2	0.57	0.59	0.66

** statistically significant at 5%; *** at 1%. Standard errors in parentheses.

Column (1) excludes *FinOpen* and *M2/GDP* from the estimating equation. All the coefficients have the expected sign and the equation explains around 57% of the variation in reserves-to-GDP ratios. Including *FinOpen* and *M2/GDP* in columns (2) and (3) improves the fit of the equation and shows that financially more open and more developed countries accumulate larger buffers of foreign exchange reserves. The ratio of actual-to-predicted reserves for Mexico is consistently around 55% for the year 2007 and around 70% for 2010 across the specifications in columns (1)-(3). However, this should not be interpreted as a gap with respect to an optimal level of precautionary reserves, as some countries in the sample may have accumulated reserves for reasons beyond a precautionary motive.

Chapter 2

Fiscal reform for a stronger fairer and cleaner Mexican economy

With slow growth and high inequality Mexico needs investments in infrastructure, education and social policies. Mexico has increased spending in all of these areas. This was easily financed thanks to fiscal reforms in 2007 and 2009 as well as high oil prices in recent years. Oil revenues, which account for around one third of budgetary receipts, are highly volatile, especially due to price movements, and the prospects for production are uncertain, even though less so than in previous years. Mexico has the lowest tax revenues as a share of GDP in the OECD and much of Latin America, even when oil-related revenues are included. The government should improve the efficiency of its public spending. Mexico spends significant sums on energy subsidies, which are in large part captured by higher-income groups. Moreover, these subsidies are not in line with Mexico's ambitious goals to reduce greenhouse gas (GHG) emissions. These subsidies should be gradually withdrawn in line with the government's goals. Extending cash benefits to the poor instead would be much more efficient to fight poverty and help citizens and the economy as a whole to buffer income shocks. Agricultural spending should be re-structured to finance more investment in public goods and less support for producers, which has proven ineffective in increasing agricultural productivity. Broadening the tax base by withdrawing some of the most distortive tax expenditures would make an important contribution to strengthen revenues. This would also help make the tax system simpler, thus reducing compliance costs as well as opportunities for tax avoidance and evasion. Efforts to enhance tax enforcement should continue.

Main challenges

With slow growth and high inequality Mexico needs to maintain its increased levels of investment in infrastructure, education and public health to enhance its productive capacity and in social policies to reduce poverty and inequality. Public investment spending in infrastructure and education has increased over recent years and is comparable in aggregate terms with that in other OECD countries, but spending per pupil remains low compared to other OECD countries, even when adjusted for GDP per capita. Mexico has developed an innovative conditional cash transfer programme, *Oportunidades*, to help the poor invest in their education and health. This has been very successful. However, coverage is still limited in urban areas Mexico thus needs to work further to strengthen its social security system, including to better protect citizens against income shocks, as for example in the case of job losses. In addition, Mexico makes important efforts to expand the coverage of basic health insurance to the entire population through its largely tax-financed programme, *Seguro Popular,* for citizens without access to social security. Some states and the federal government have started to introduce non-contributory pension pillars for some groups of pensioners.

There are also longer-term fiscal sustainability challenges related to population ageing and the associated increase in costs for the states' defined benefit pension systems and for healthcare programmes of the federal social security institutes (*Instituto Mexicano del Seguro Social*, IMSS, and *Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado,* ISSSTE). IMSS is currently drawing down its financial reserves to cover operational deficits of its health accounts, even though some of its schemes are running surpluses which could potentially make up for some of this. Addressing these challenges will require in-depth reforms, such as converting the remaining defined benefit pension systems to defined contribution systems, adopting a stronger focus on prevention in healthcare and taking measures to make the social security agencies more efficient. Yet, stronger revenues – through taxes or higher contributions – are needed, as well.

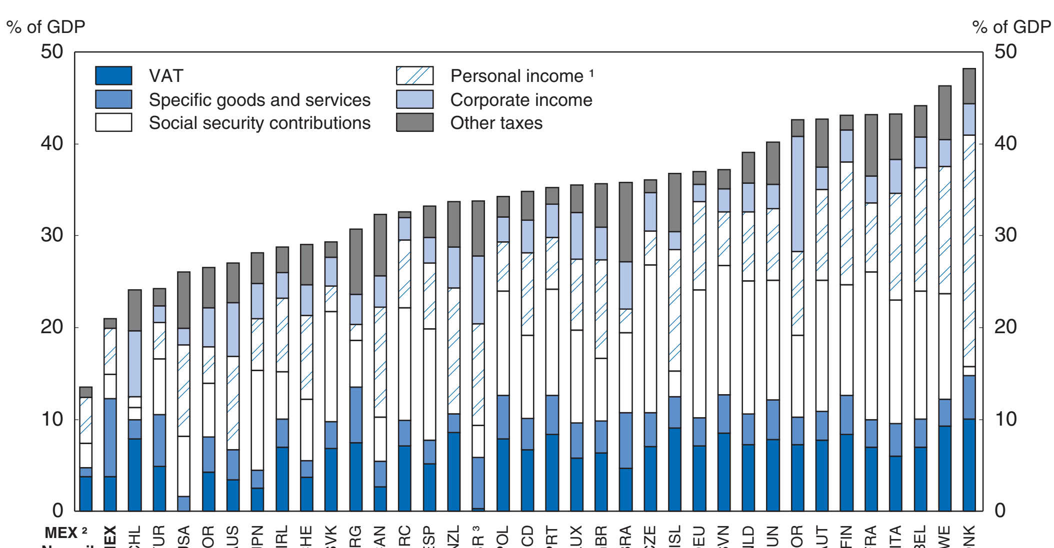
Opportunities to enhance spending efficiency should not be missed. Mexico spends substantial amounts on energy subsidies, but these are inefficient when it comes to alleviating poverty, as a large part is captured by higher-income groups. At the same time, energy subsidies are harmful for the environment, encouraging overconsumption and increasing greenhouse gas (GHG) emissions. This runs counter to Mexico's ambitious goals to combat climate change. Energy subsidies should thus be withdrawn. The government has gradually reduced subsidies for gasoline and diesel over 2010 and this is very welcome. Protecting the poor through targeted cash transfers, for example by extending *Oportunidades* or building a social assistance benefit over time, would be much more efficient than energy subsidies to protect the poor. The second alternative would be very challenging to administer and is more something to consider in the longer term. While such a system would not come without costs, measures to enhance spending efficiency, such as energy subsidy withdrawal, and to strengthen tax revenues, such as a broadening of the VAT tax base, could contribute to financing this. The tax-benefit system would also become more progressive if these instruments were replaced with a targeted cash transfer. Other areas where Mexico can enhance the efficiency of public spending include agriculture, where expenditures are geared to the largest producers with little positive impact on overall productivity. Mexico is already making efforts to improve the efficiency of spending on public administration, by reducing duplication of structures and programmes and rationalising procedures.

To ensure sustainable financing for growth-enhancing investments and social policies, Mexico needs to strengthen its tax revenues, which are lower than in any other OECD country and in much of Latin America (Figure 2.1). More than a third of these revenues depend on oil production. Oil introduces volatility and is subject to an uncertain outlook, although production seems to have stabilised recently and Mexico has enhanced the flexibility of Pemex's contracting arrangements. Mexico has already made important efforts to enhance tax revenues in recent years and as a result of reforms since 2007 structural revenues may have increased by 2 percentage points of GDP according to government estimates. However, further improvements are needed to reduce income volatility and to sustainably finance Mexico's ambitious plans to enhance economic growth, reduce poverty and ensure more complete coverage of the population with healthcare and pensions.

Tax revenues are low, mainly because the tax system is complex with many special regimes and costly tax expenditures narrowing the tax base. This also increases opportunities for tax avoidance and evasion, which remains high, despite significant

Figure 2.1. **Tax revenue from different sources across selected countries**

2008



1. Personal income tax collections include revenue from taxes on corporate income/profits in Mexico.
2. Excluding oil revenues.
3. The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Source: OECD, *Revenue Statistics Database*; Ministry of Finance for Brazil; Ministry of Economy and Production for Argentina.

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recent improvements. Policies to broaden the tax base by eliminating inefficient tax expenditures and special regimes to make the system simpler will therefore be important. Stepped up efforts to fight informality and tax evasion are also needed. In the long run a broad-based economic growth strategy is needed to strengthen productivity, especially at the lower end of the distribution. This would enhance the capacity of low-productivity workers and firms to work in the formal sector and generate sufficiently high income to contribute to tax revenues. Policies to strengthen productivity are presented in Chapter 3, while policies to fight informality are discussed in Chapter 4.

This chapter is structured as follows. The second part discusses ways to improve spending efficiency, including by replacing energy subsidies with more targeted cash transfers and devoting agricultural spending more to productive public goods. The outlook for implementing an emission trading system or introducing broad-based carbon taxes after energy subsidy withdrawal is also discussed. The second part reviews tax expenditures and special regimes to assess whether some of them should be limited or reduced to broaden the tax base and make the system simpler. It also discusses strategies to enhance tax collection at lower levels of government. Policies to fight tax evasion are discussed thereafter.

Improving spending efficiency

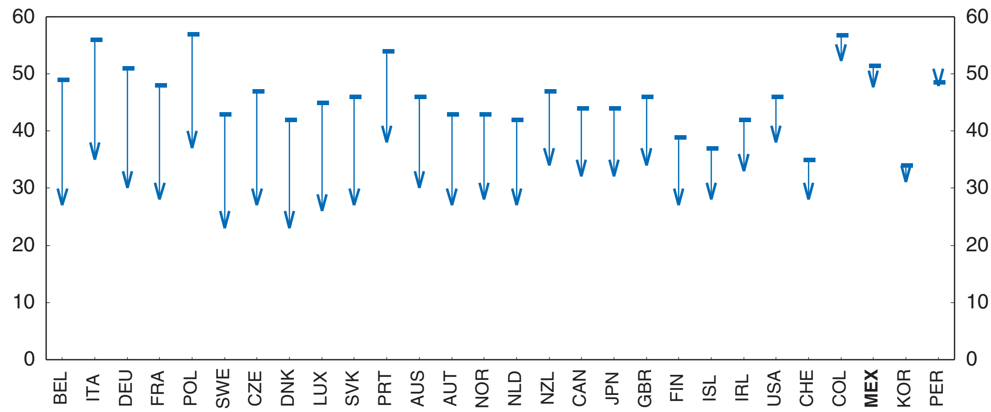
Mexico should aim to make the tax-benefit system more progressive

Although income inequality has declined over recent years, the impact of Mexico's tax-benefit system on inequality is still much weaker than in other OECD countries. Even though it has declined in recent years, inequality remains high by international standards. While taxes lower income inequality quite substantially in almost all OECD countries, the Gini coefficient in Mexico before and after taxes is almost the same. This is mainly the result of a low share of progressive income taxes in overall tax revenues (see Figure 2.1). Informality is one factor contributing to this phenomenon, as it is somewhat easier to collect indirect taxes with high levels of informality, because informal firms will in some cases need to buy inputs from tax compliant firms. The low incomes of a large part of the population also make it difficult to raise income tax revenues. In Mexico the two richest income deciles pay almost 80% of income taxes and as a result of an in-work tax credit the first three income deciles pay negative income taxes on average. Some authors argue that it is almost impossible to redistribute income through the tax system for countries with high inequality and that achieving distributional goals through spending instead would be more efficient (Engel *et al.*, 1999). In most OECD member economies the impact of cash transfers on the Gini coefficient is stronger than the effect of taxes, with an overall effect larger than 10 percentage points (Figure 2.2). The decline in inequality in Mexico over recent years owes much to higher and better targeted social spending (Esquivel *et al.,* 2010). Yet, the effect of transfers on Mexico's income distribution is much lower than elsewhere in the OECD (Figure 2.2). This is similar in other Latin American countries, in part reflecting their weak tax-raising capacity, which does not allow for large transfers (Goñi *et al,* 2008).

Mexico has improved the targeting of social spending, but further progress is desirable. Some cash transfers in Mexico are well targeted and very progressive, including *Oportunidades*, the tax-financed health programme *Seguro Popular* for citizens without access to social security, and the federal non-contributory pension for rural seniors *Adultos Mayores* (Figure 2.3). This latter programme should not be confounded with the Mexico

Figure 2.2. **Gini coefficient before and after taxes and transfers**

Mid-2000s[1]



1. 2008 for Mexico, 2003 for Colombia and 2004 for Peru.

Source: OECD, *Income Distribution Database* and *Latin American Economic Outlook 2009*.

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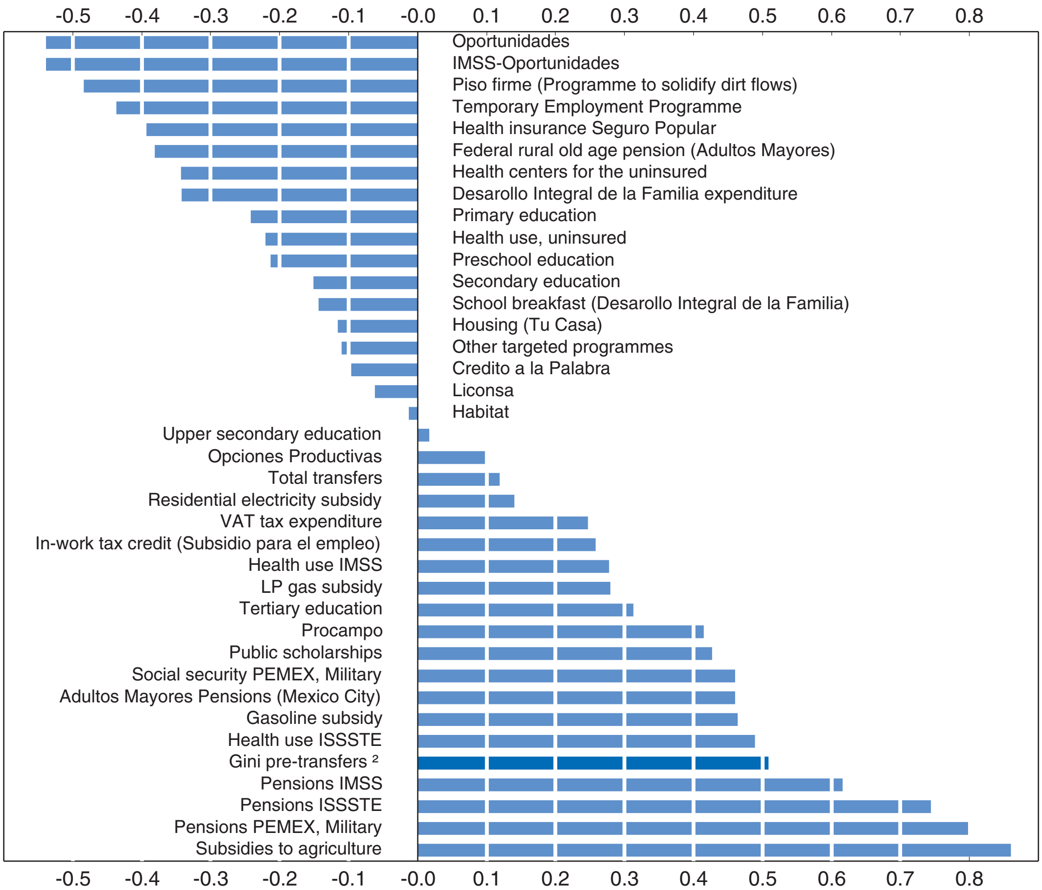
City's non-contributory pension programme by the same name. It is not means-tested and thus a lot less progressive than the federal programme for rural seniors (Figure 2.3) However, the effect of the more progressive programmes is outweighed by others that are meant to help the poor, but in fact devote more spending to higher income households. This is true for social security programmes, because these cover only formal workers who have higher incomes in general than Mexico's large share of informal workers. The spending share devoted to higher-income individuals is particularly high for public workers affiliated with the *Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado* (ISSSTE) and for employees of PEMEX, the state-owned oil company, who tend to have relatively high wages. Mexico's efforts to extend healthcare coverage to all workers through *Seguro Popular* and to build non-contributory pension pillars are helping to make spending on pensions and healthcare more progressive. Yet, energy subsidies, including for liquefied petroleum gas, petrol and electricity which are meant to help lower-income households, are captured in large part by higher-income individuals and are thus inefficient as a tool to alleviate poverty. A similar argument holds for some tax expenditures, in particular those within the VAT system (Figure 2.3). Like energy subsidies VAT exemptions are in effect non-targeted consumption subsidies and thus depend on household expenditure on the subsidised products, which tends to increase with income. In 2008, these consumption subsidies accounted for close to 5% of GDP, compared to 0.7% of GDP for *Oportunidades*, *Seguro Popular* and the rural old-age pension (Scott, 2010). A number of agricultural programmes worsen inequality, including support to producers and subsidies for marketing, as the spending share that goes to higher income groups is even higher than their share in pre-transfer income. Other programmes, including Procampo, are progressive with respect to income, although in absolute terms it still devotes more spending to higher than to lower-income groups. Restructuring social spending to devote a larger share of it to programmes targeted at the poor would help make the tax-benefit system more progressive and reduce poverty and inequality.

A particularly easy way to do this would be to withdraw some of the less efficient spending items and spend more on the well-targeted programmes instead. For example, increasing the *Oportunidades* cash transfer would be a way to compensate lower-income

Figure 2.3. **Concentration coefficients of selected spending programmes**[1]



1. A negative concentration coefficient implies that a larger spending share goes to lower rather than higher income deciles and *vice versa* .
2. Programmes with a higher concentration coefficient than the Gini worsen the income distribution.

Source: Scott (2010).

StatLink http://dx.doi.org/10.1787/888932383622

households for the withdrawal of consumption subsidies, such as energy subsidies or tax expenditures in the VAT system. Expanding coverage of *Oportunidades* is also an important goal. In 2008, close to 40% of the poorest 20% of the population were not covered by *Oportunidades*, while 70% of those who were covered did not belong to the poorest 20% thus defined (Scott, 2010). Coverage of low-income households is very incomplete in particular in urban areas, although the government is making important efforts to improve on this.

In the longer run, an alternative would be to complement *Oportunidades* with a social assistance benefit based on direct annual means tests of the kind that is common in OECD countries, though this would be very challenging from an administrative point of view. *Oportunidades* had been designed as a programme with relatively small cash transfers conditional on school attendance and health checks, to help the poor develop their human capital in the long run. This has been very successful. It may not be the best solution to add additional tasks to this, such as providing insurance against sudden income losses, which would be somewhat easier to do with a social assistance type benefit. Complementing *Oportunidades* with such a benefit may thus be an attractive alternative to devote more money to well-targeted cash transfers that would help fight poverty, provide insurance against income shocks and make the tax-benefit system more progressive. It could initially be limited to urban areas, where coverage with *Oportunidades* is very incomplete and where it would be easier to implement, as literacy and access to banking services are higher than in rural areas. Moreover, it would not be too complicated to put in place an administrative infrastructure to help people apply for the benefit, as this could be linked to centers that help people with tax filing, which are being implemented all across the country. Expansion of *Oportunidades* in urban areas already depends on people applying to the benefit, as the poor are much more dispersed than in rural areas. In this respect the added complexity of introducing a social assistance benefit to which people would need to apply based on income declarations, as suggested in Box 2.1, would be less than in rural areas. However,

Box 2.1. **Social assistance in Mexico**

Introducing social assistance based on annual income declarations and strict controls would protect households against poverty and income shocks, because they would be eligible for the benefit as soon as their income falls below a certain threshold. This would require arrangements to make the benefit immediately available for households who suffer and declare a sharp drop in income, for example as a result of job losses. *Oportunidades* comprises cash transfers, but it does not effectively protect all households against poverty and income shocks, such as those resulting from unemployment. Not only is coverage still incomplete, but targeting relies on indirect indicators, such as families' belongings and the size and quality of their home, which are reviewed during interviews. Updates are not frequent enough to ensure that moves into and out of poverty are accounted for in time for the transfer to protect households against sudden income losses (Mason *et al.,* 2008).

Introducing a social assistance benefit based on income declarations is no easy task in a country with high informality compared to OECD standards and weak literacy in large parts of the population. This is why this is a project to be developed in the longer term. It should be introduced step by step, starting in urban areas where formality and literacy are higher. There is an important role for proxy means-testing in a context of high informality and weak literacy to ensure that cash benefits actually reach the poor. This is why *Oportunidades* should not be abandoned if a social assistance type benefit were to be introduced. In particular in rural areas it is an important instrument to ensure that cash transfers actually reach the poor.

However, developing a social assistance system based on annual income declarations to complement *Oportunidades* would be an opportunity to build a more effective insurance against income risks, covering also those individuals that fall into poverty as a result of an income shock. While workers are allowed to draw on their pension accounts in Mexico during unemployment spells, this is limited, as they can withdraw less than 90 days of their last wage only once every five years. The system could be expanded. At the same time, the pension system needs to be strengthened, as well, to ensure adequate retirement income. Many of the lowest-income workers frequently move in and out of formal employment and never manage to save sufficiently to obtain a minimum pension. For workers with middle incomes, as well, savings are in many cases too low to ensure adequate pension income. Given that expanding the system sufficiently to ensure both adequate retirement income and insurance against unemployment will require substantial extra financing, Mexico can also consider alternatives, such as the social assistance benefit discussed in this box.

Box 2.1. **Social assistance in Mexico** *(cont.)*

A social assistance benefit could help reduce poverty in Mexico and contribute to cushioning macroeconomic shocks, by helping individuals to smooth consumption. Social assistance could also help avoid inefficient adjustment behaviour to income shocks with potentially long-run negative side effects on investment and productivity, such as taking children out of school. Research for Mexico shows that poor children are likely to leave school in response to shocks, such as parents' unemployment, and that this can have long-lasting effects on school attendance. *Oportunidades* has been shown to mitigate this effect partly or – according to some estimates – almost completely (de Janvry *et al.,* 2006). However, *Oportunidades* transfers are only available to people who are poor enough to be in the target group before experiencing an income shock. It does not cover those who fall into poverty because of it, or at least not sufficiently fast, and a social assistance benefit, where the means-test is based on income declarations, could improve on this.

Administering the scheme through the tax system could help improve coverage compared to *Oportunidades* and bring more workers into the formal economy, but it would involve higher compliance and enforcement costs The system could be administered via the tax system as a non-wastable tax credit. This would be an opportunity to raise people's incentives to declare income taxes and lobby their employers to formalise their status. While workers now declare income individually either themselves or through their employers, the reform would require moving towards joint family income tax declarations to have an adequate means test for the benefit. This would be a major reform, would take some time to implement and would be administratively challenging. However, it is likely to promote enforcement, including because it would help expand the taxpayer database. Compliance costs for workers, whose income is now declared through their employers, would increase. But requiring them to declare their income for themselves and their families would allow for enhanced cross-checking with employers' tax and social security declarations based on a broader database. This should help improve enforcement, although the tax agency would need to increase its personnel substantially and further improve their training to administer a social assistance benefit, combat abuse and help people with weak literacy apply for the benefit. However, this could help improve the coverage of the population with cash benefits to fight poverty, reduce informality and expand the taxpayer base. These benefits may well be worth the required investment in enforcement capacity. To make sure that the system becomes a strong incentive for workers to formalise it would make sense to make benefits available only after they have declared positive earnings for some time. In any case, strong enforcement would be needed to counteract underdeclaration of income and workers combining benefit receipt with undeclared work.

Using an income tax credit as a social assistance benefit would require making it available for households independent of their labour market status. Research for the United States shows that a negative tax which is independent of employment status would increase the income of low-wage workers more than an in-work tax credit, as the latter increases labour supply of low-wage workers, thus driving down wages (Rothstein, 2009). The drawback of a negative income tax that is independent of employment is that it discourages work, but this could be alleviated by topping up the tax credit for households with working members to enhance employment incentives. Mexico currently has an in-work tax credit, the *subsidio para el empleo,* and a version of it could be used as such a top up. Like the Earned Income Tax Credit in the United States, the tax credit could increase with earned income up to a ceiling and then be withdrawn gradually. However, given that

Box 2.1. **Social assistance in Mexico** *(cont.)*

it also serves as a social assistance benefit, the tax credit in Mexico would be positive for households with zero income from formal employment similar to France's new *Revenue de Solidarité Active* (RSA). Top-ups for low-wage workers would raise incentives to try and obtain formal employment status. However there is a trade-off between positive employment effects and positive effects on the income of low-wage earners. If workers increase their labour supply in response to an in-work tax credit in the presence of less than perfectly elastic labour demand, wages will always fall to some extent. Over time it would be important to build a strong job search assistance programme with activation measures for the unemployed who receive the social assistance benefit to counteract weaker job search incentives.

tax compliance costs would increase for the large majority of workers whose taxes are now withheld and remitted by employers with no need for the employee to file taxes (Box 2.1).

If successful, the benefit could later be made available to rural workers as a top-up to *Oportunidades* to the extent that the social assistance benefit is higher, but implementation in rural areas would be much more difficult given the low levels of literacy and access to banking services. It would require building an administrative infrastructure of support for people to apply to the benefit and for paying it out in cash, if needed. This would be very ambitious, it would be costly and would thus require a much longer time horizon for implementation. Yet, such a benefit could help expand the taxpayer base, if it was administered through the tax system (Box 2.1) and provide incentives for workers to formalise, although this will require investment in administration and enforcement capacity. Direct annual means tests based on income declarations would also have advantages, because it would help build a cash benefit that could better protect households against income shocks than *Oportunidades*, which was not designed to serve this goal, although special arrangements would be needed to make the benefit immediately available for workers suffering sudden drops in income, *e.g.* after job losses. However, strong controls would be needed to avoid that people underdeclare income and work in the informal sector while receiving benefits.

Expanding targeted cash benefits, such as *Oportunidades* or a social assistance-type benefit will be costly, but measures to strengthen tax revenues and improve spending efficiency proposed in this chapter would help finance it. The programme could be phased in gradually, first in urban areas, and should be thoroughly evaluated in the beginning to correct design if necessary. Withdrawing energy subsidies, VAT exemptions and zero rates discussed further below should free sufficient resources to finance this increase in benefits. An estimate of total savings would be to the order of 2½-3% of GDP. This should be sufficient for Mexico to finance a social assistance system, as OECD countries on average spend 2% of GDP on means-tested income support and this estimate includes family cash transfers, means-tested spending on the unemployed, the elderly and the disabled. Although it has increased substantially in recent years, spending on social programmes in Mexico is still low in comparison with OECD countries and so is spending on income-tested cash benefits (Table 2.1). Higher benefits – whether administered through *Oportunidades* or alternative schemes – will require building strong job search assistance with activation measures for the unemployment who receive these benefits to counteract weaker work incentives associated with such benefits.

Table 2.1. **Spending on income-tested programmes and on public social expenditure 2007**

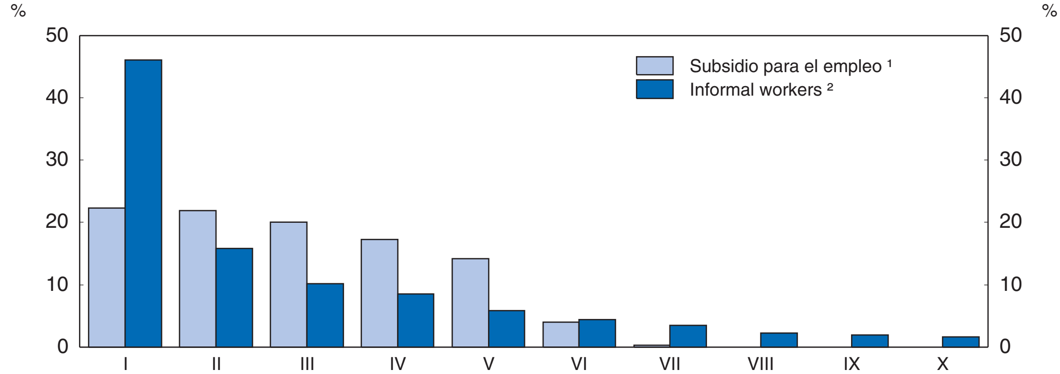
	Income-tested programmes as % GDP	Public social expenditure as % of GDP
Australia	5.6	16.0
Canada	3.7	16.9
Finland	1.4	24.9
Greece	2.2	21.3
Ireland	4.3	16.3
Italy	1.2	24.9
Japan	0.6	18.7
Korea	0.8	7.5
Mexico	**0.8**	**7.2**
Netherlands	3.6	20.1
New Zealand	3.3	18.4
Poland	0.9	20.0
Portugal	2.7	22.5
Slovak Republic	1.0	15.7
Spain	2.6	21.6
Sweden	1.1	27.3
Switzerland	1.7	18.5
Turkey	0.5	10.5
United Kingdom	5.0	20.5
United States	1.2	16.2
OECD average	2.1	19.3

Note: The following income-tested spending items are included: spending on "other contingencies – other social policy areas" as in the *OECD Social Expenditure Database* (SOCX), income-tested spending on the unemployed (*e.g.* unemployment assistance payments for Germany), income-tested support payments to elderly and disabled (*e.g.* Belgium, and the United Kingdom), other income tested payments (family cash transfers) but do not include specific housing subsidies, spending on Active Labour Market Policies, or income-tested medical support.
Source: OECD Secretariat calculations based from *OECD Social Expenditure Database* (*www.oecd.org/els/social/expenditure*).

Mexico's in-work tax credit can complement cash transfers to the poor, but should be reviewed

Mexico's *subsidio para el empleo* can help to strengthen formal employment by itself or in combination with the proposed social assistance benefit (see Box 2.1). The recently approved *Programa de Primer Empleo*, which grants additional tax deductions to firms hiring workers to be registered with social security for the first time, is meant to serve the same goal. However, the efficiency of these programmes should be reviewed. Some design features may need to be reconsidered. The *subsidio para el empleo* is an in-work tax credit that declines in individual wage income. For the lowest incomes, this results in a negative tax liability. In principle the tax credit could help increase workers' income or lower labour costs for employers' depending on the tax incidence. This has the potential to strengthen formal employment, as it would either become more attractive for employees through higher income or for employers through lower labour costs. While the in-work tax credit is clearly progressive with respect to formal labour income (Figure 2.4), it is not well targeted at the lowest incomes as it subsidises more around 60% of the formal labour income distribution. Yet, the largest part of informal workers is concentrated at the very lowest labour incomes with more than 60% falling into the two lowest deciles of the formal labour income distribution. The in-work tax credit is also not very effective as a poverty alleviation mechanism, which is evidenced by its distribution across household income deciles (Figure 2.5). This is because the subsidy is targeted at formal workers, who tend to

Figure 2.4. **"Subsidio para el empleo" and informal workers by deciles of the formal labour income distribution**



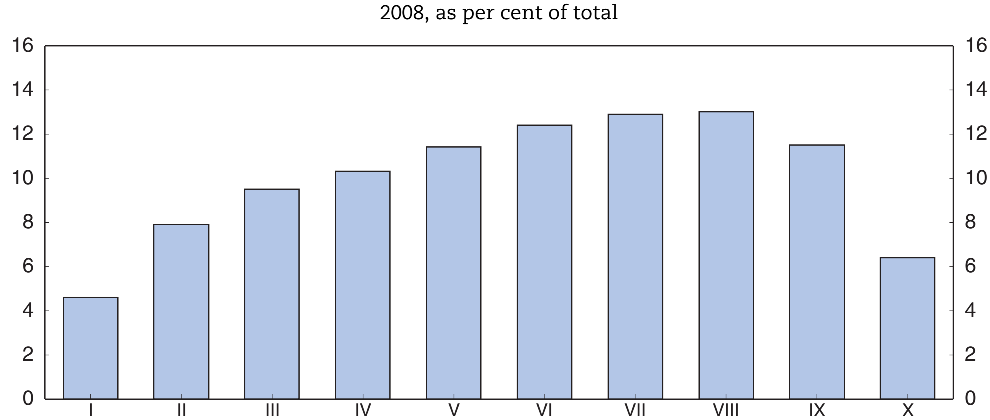
1. Share of each decile in the total subsidy.
2. Share of informal workers with income corresponding to the range of each decile of formal labour income.

Source: ENIGH data.

StatLink http://dx.doi.org/10.1787/888932383641

Figure 2.5. **Distribution of "Subsidio para el empleo" across households income deciles**

2008, as per cent of total



Source: Scott (2010).

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have higher wages than their peers, and the range of subsidised income is quite large. In addition, formal workers can live in relatively rich families when other household members have higher wages or other sources of income. In Mexico, more than 20% of workers with a wage that is among the 30% lowest within the formal wage distribution live in households that are among the 30% richest with respect to per capita household income.

Mexico should evaluate the in-work tax credit to assess to what extent it reduces in-work poverty and promotes formal employment. The government could consider concentrating the in-work tax credit more at the lowest incomes to enhance the positive effect on formal employment. Concentrating the subsidy at the two lowest deciles of the formal wage distribution would allow doubling it for each worker and still save 10% of the total subsidy.

As another alternative, the government could also consider making the tax credit dependent on family income to target it better at poor working families. However, this would be administratively much more involved as it would require moving towards household-based income tax declarations. On the other hand, in-work tax credits based on family income have been shown to reduce poverty in other OECD countries (Immervoll and Pearson, 2009). However, this would come at the cost of weakening work incentives for second earners in families with income in the withdrawal range, but there are ways to address this.

Research on in-work tax credits in OECD countries has shown that these benefits unambiguously raised employment among lone parents and primary earners, while reducing hours worked and – in some cases – employment rates among second earners (Immervoll and Pearson, 2009). However, this negative employment effect was outweighed by the positive effect on other groups. In any case, the negative effect on second earners can be mitigated. The income at which withdrawal starts could be increased and the withdrawal rate could be lowered for households with several earners. Alternatively, the top-up tax credit for each member with formal employment could be made dependent on the income of the highest-income earner only. While this would dilute the focus of the tax credit on the lowest-income families, thus also being costlier, it would enhance work incentives. At the extreme, the tax credit could remain dependent on workers' individual income only with no means test regarding other sources of income or wages of other family members like the *subsidio para el empleo.* This would dilute targeting on low-income families, but would alleviate negative work incentives for second earners.

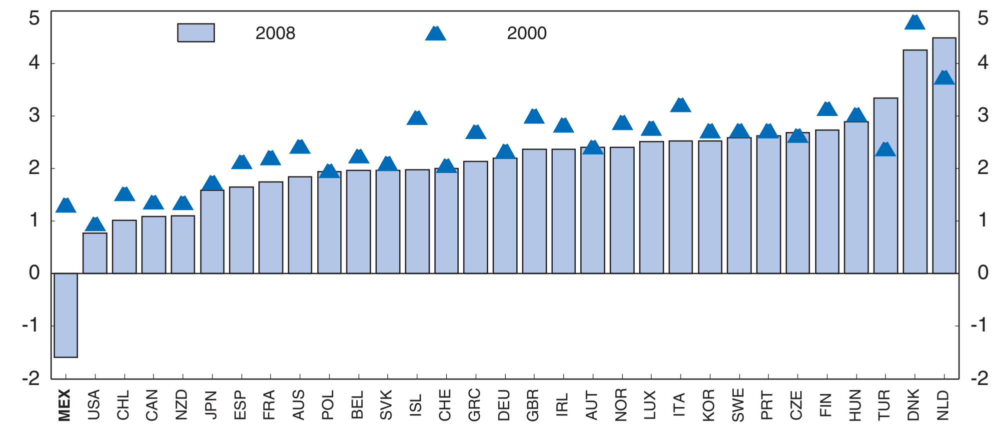
Help for low-income households to better cope with energy costs should be restructured

Mexico spends large sums on energy subsidies. Subsidies for electricity, gasoline, diesel and liquefied petroleum gas were more than 1½ per cent of GDP on average each year over 2005-09 according to government estimates (Secretaría de Energía, 2010). Electricity subsidies in Mexico are among the largest in the world in absolute terms, with the costs of supply exceeding the average residential electricity price by around 250%. Their cost is more than twice the federal investment budget for electricity (Komives *et al.,* 2008). The subsidy has increased over recent decades as numerous summer tariffs, attributing higher subsidies to larger volumes in warmer regions, were added to an already complex schedule based on increasing-block tariffs that accord larger subsidies to lower-volume consumers. Only the highest-volume consumers receive no subsidies, but this group has shrunk over time due to additional subsidised summer tariffs in warm regions and reclassification of consumers. There are also large electricity subsidies for the agricultural sector, in particular a subsidy of more than two thirds the cost of electricity for farmers who pump irrigation water. Fossil-fuel subsidies are also large, although the government has recently worked to reduce them. A price-smoothing mechanism for gasoline and diesel, which adjusts domestic prices with a lag to international price movements, can result in large implicit subsidies in times of rising oil prices. In 2008 the subsidy was worth 5 times the *Oportunidades* programme. There are also tax exemptions for marine fuel.

Environmental tax revenues are low in Mexico, which is in part related to gasoline and diesel subsidies**.** In 2008 Mexico had large negative environmental tax revenues, though these have declined since then in absolute terms in part thanks to efforts to better align domestic fossil-fuel prices with international opportunity costs (Figure 2.6). This is because gasoline and diesel subsidies are recorded as a negative excise tax in Mexico's fiscal accounting. Excise tax revenues for gasoline and diesel continue to be negative, although by a smaller amount than in 2008, as the government gradually increased consumer prices throughout 2010. This has been very welcome. Excise taxes on gasoline and diesel can be positive when international fuel prices are stable or falling, but even then they continue to be small in international comparison (Figure 2.7).

Figure 2.6. **Environmentally related tax revenue**

As per cent of GDP



Source: OECD/EEA database on instruments used for environmental policy.

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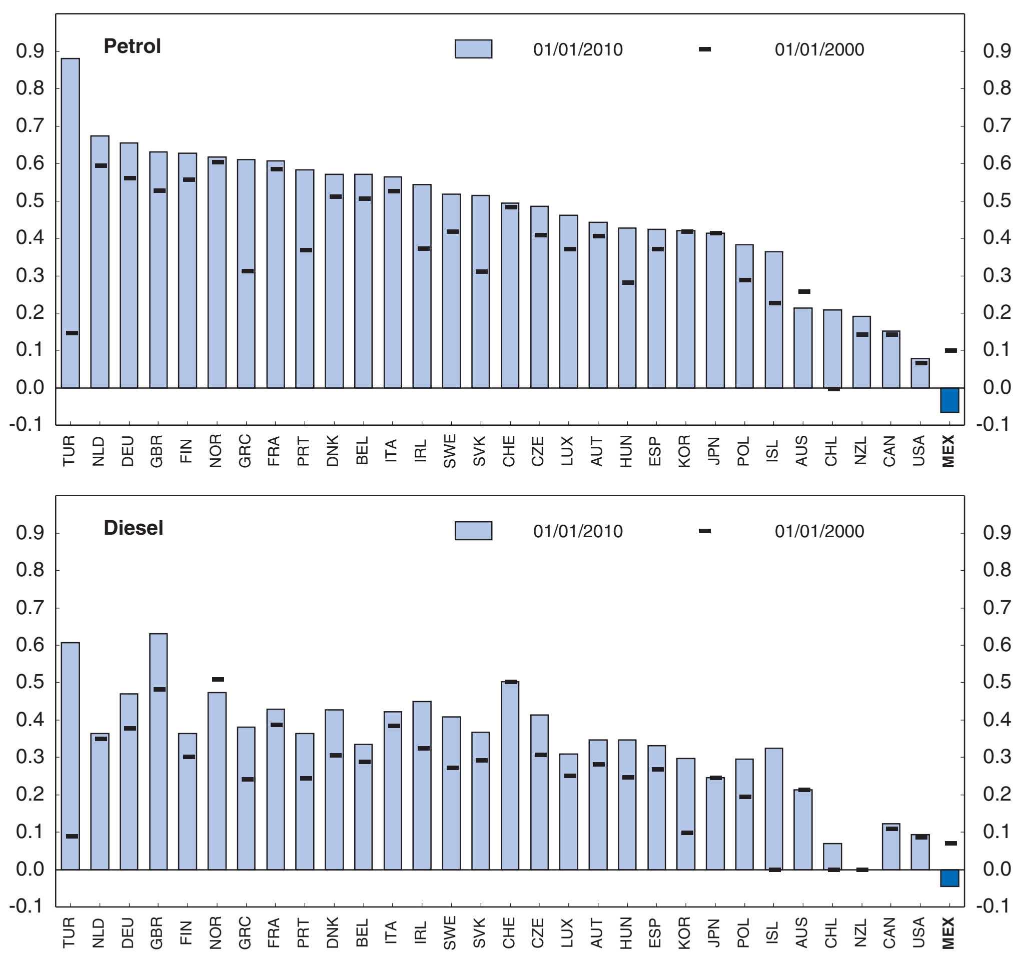
Figure 2.7. **Tax on petrol and diesel**

Euro per litre[1]



1. Using 2009 exchange rates.

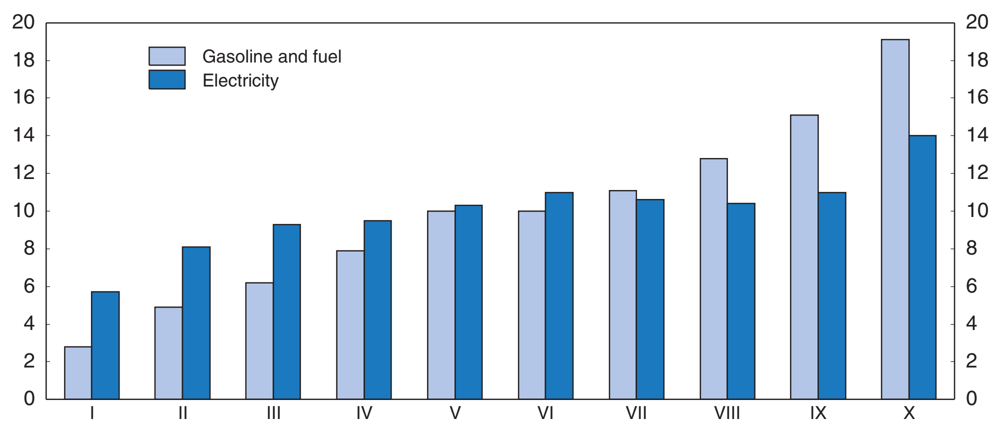
Source: OECD/EEA database on instruments used for environmental policy.

StatLink http://dx.doi.org/10.1787/888932383698

Energy subsidies are inefficient as a poverty-alleviation mechanism, because a large part is captured by higher income groups. The share of the two top income deciles in total electricity subsidies is substantially larger than for the three lowest income deciles, although larger subsidies are attributed to lower-volume consumers (Figure 2.8). This is because the larger volumes consumed by richer consumers more than compensate for the lower subsidy per kilowatt hour. The subsidy benefitting higher-income groups increases with the size of the summer subsidy, because this means higher subsidies for larger volumes (Komives *et al.,* 2008). A similar argument holds for gasoline and diesel, as the share of higher-income deciles in total consumption of these fuels is much larger than for lower-income deciles (Figure 2.8). Agricultural electricity subsidies are highly regressive, as they are largest for farmers with concessions for pumping irrigation water, the better-off part of the rural population. The Gini coefficient for agricultural subsidies is an estimated 0.9, very close to maximum inequality, which would be one (Guevara-Sanguinés, 2006).

Figure 2.8. **The distribution of energy subsidies across income deciles**

As per cent of total, 2008



Source: Hacienda (2010), *Distribución del pago de impuestos y recepción del gasto público por deciles de hogares y personas.*

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Energy subsidies create incentives to consume more energy and invest less in energy-efficiency, with harmful effects on the environment. Market prices for energy generally do not reflect the social cost of energy consumption, in particular greenhouse-gas (GHG) emissions and their effects on climate change. Taxes on energy consumption or other ways of pricing emissions, such as emission trading systems (ETS), would be needed to internalise these effects. Subsidising energy instead goes in the wrong direction, with many more undesirable side-effects on the environment. In Mexico, agricultural electricity subsidies artificially lower prices for pumping irrigation water, which accounts for close to 80% of the country's water use. This has resulted in an over-exploitation of groundwater. In fact, 100 of Mexico's 282 major aquifers are overexploited (Comisión Nacional del Agua, 2010). Results include water scarcities that jeopardise supply to households and farmers, increasing supply costs, desiccation of wetlands and rivers, with a subsequent loss of the aquatic ecosystem, and intrusion of saline and heavy metals into the groundwater, with serious consequences for agricultural production and farmers' livelihoods. The subsidy renders investment in more efficient sprinkler or drip irrigation unprofitable. Research shows that reducing the subsidy to just one third of electricity costs would result in a 19% reduction in water extraction (Guevara-Sanguinés, 2006; Muñoz *et al.,* 2006). Although demand for irrigation water is somewhat inelastic, this would be enough to put some aquifers back in balance and buy time for others. Likewise, subsidies for residential electricity prices lead to increased energy consumption. In fact, consumption increases with the size of the summer subsidy.

Mexico is making important efforts to reduce GHG emissions and removing energy subsidies will be important to ensure policy coherence. The government promotes renewable energies and invests in energy efficiency in the state-owned oil and electricity companies, as well as in the industrial, residential, commercial and public sectors. There are also subsidies for households that invest in energy-efficient equipment and appliances (*Programa de Sustitución de Equipos Electrodomésticos para el Ahorro de Energía*), including fridges and air conditioning. In addition, there is a new programme aiming to substitute incandescent light bulbs with fluorescent lamps that was announced last December together with new regulations that will phase out the sale of inefficient light bulbs in the following years. Promoting energy-efficient appliances helps to lower the cost of energy subsidies by reducing demand. Yet, promoting energy-efficient appliances and equipment through subsidies while at the same time subsidising energy consumption is costly. Energy subsidies also reduce incentives for adopting the energy-efficient appliances. Removing electricity subsidies and introducing carbon pricing over time would be cheaper from a fiscal point of view. It would also be more efficient, in the sense that it would ensure that households exploit the cheapest mitigation strategies first. These may not always coincide with the measures that the government has chosen to subsidise, though cost-benefit analysis carried out by the government suggests that the net benefits from current programs are quite high. Such a policy could be complemented with subsidies for lower-income households to invest in energy-efficient appliances if this is needed to ease credit constraints. The government should thus step up its efforts to reduce energy demand subsidies at the same time as promoting energy-efficient appliances.

Better targeting of energy subsidies is one of Mexico's declared goals in its energy strategy and there is progress, but implementation remains politically difficult. One goal in the National Energy Strategy is to gradually move to energy price schemes that reflect the opportunity costs of consumption, while protecting poor customers with better targeted subsidies. The government has implemented a new cash-transfer programme connected to *Oportunidades* that is supposed to help poor households cover their energy needs. However, efforts to bring energy prices more in line with costs need to be stepped up. The government has regularly increased the prices of gasoline and diesel over 2010 and this has been very welcome, though they remain below their opportunity costs. Energy subsidy withdrawal is not faster in part, due to the difficulties with raising political support for increasing energy prices. The 2002 attempt to reduce electricity subsidies for high-volume consumers is testimony to this. It resulted in the introduction of a yet more subsidised summer tariff and a reclassification of millions of consumers to more highly-subsidised tariff schedules.

Replacing energy subsidies with targeted cash transfers for lower-income household, such as an expanded *Oportunidades* or a social assistance-type benefit, would enhance spending efficiency and help Mexico reach its ambitious climate-change-mitigation goals. Given that higher income households currently capture the largest part of energy subsidies, withdrawing and replacing them with targeted cash transfers that fully compensate poorer households would actually result in fiscal savings. Moreover, cash transfers are superior to consumption subsidies because they avoid distorting price signals. In the case of energy subsidies this is particularly important, as artificially low prices will lead to an increase in consumption, while a decrease in consumption is needed instead to limit greenhouse-gas emissions. With its endeavours to mitigate climate change, Mexico is playing a leading role among non-Annex I countries that have not committed to explicit emission-reduction targets within the Kyoto protocol. Mexico hosted a meeting of the parties to the United Nations Convention on Climate Change in December 2010 and it has formulated ambitious emission-reduction targets of its own (Box 2.2). The goals are aspirational and dependent on financial and technological help from developed countries, according to the government's climate change strategy.

Box 2.2. **Mexico's climate-change targets and ways to reach them**

Reducing greenhouse-gas emissions sufficiently to limit future temperature increases requires substantive action by both developed and emerging countries. In its *Programa Especial de Cambio Climático* (PECC), Mexico has announced an aspirational target to cut national greenhouse-gas emissions by 50% until 2050 compared to 2000. This is very ambitious. Mexico was the first non-Annex I country to adopt such a target and it has played an important bridging role among Annex I and non-Annex I countries in the UN's climate change negotiations. These efforts are very commendable.

A study (Johnson *et al.*, 2009) indicates that a large number of mitigation projects, such as a better use of the potential of public transport or co-generation at PEMEX, that would help Mexico reduce its carbon emissions have net financial benefits even if the reduction of environmental externalities is not accounted for. Some of these projects with a positive net present value are being implemented, but others are not. Reasons include administrative and regulatory barriers. For example, not all projects with positive net return and a large effect on emission reduction at PEMEX are going forward. This is because investment in exploration often has higher expected returns, internal control rules for investment remain complex and the government wants to avoid undue increases in PEMEX's debt given that the company is already highly indebted. Corporate governance and management capacity may also need to be bolstered to enable PEMEX to engage in all profitable energy efficiency projects.

Broadly speaking, mitigation projects that would help Mexico to reach its emission-reduction goals can be divided into three main categories. A part of the 30% emission reductions with respect to the baseline that will need to be achieved by 2030 to remain on track with climate change mitigation goals can be attained by implementing projects with positive net present value which would be feasible if administrative and regulatory barriers were removed. Another part could be attained with projects that have a positive net present value but large up-front investment costs that would require some financial help from more developed countries. This could come from a rapid-response financing mechanism that is being developed as part of the negotiations of the UN Climate Change Convention. Finally, there is a group of projects with small negative net present value or net costs at today's energy prices. For these projects to become profitable, it would be necessary to price emissions in line with their social cost through a carbon market, which could either involve tradeable emission rights or carbon taxes. In particular, the latter makes sense only when current energy subsidies are withdrawn.

A government mandated study points to high costs of inaction. In one scenario, these costs reach 6% of today's GDP (based on a discount rate of 4%) which is estimated to be three times as high as the mitigation cost (Galindo, 2008).

Withdrawing energy subsidies fully would be a vital first step to establish Mexico more firmly as an emerging country leader in climate change mitigation. OECD simulation studies show that removing energy subsidies in developing countries would make an important contribution to global greenhouse-gas emission reductions (OECD, 2009b).

Opportunities to gradually reduce energy subsidies should therefore not be missed. In the case of gasoline and diesel, the price-smoothing mechanism could be eliminated or at least accelerated to ensure rapid convergence to international reference prices. Ensuring that national retail prices are never lower than international reference prices would go some way in bringing fuel prices closer to social costs, although closing the gap fully would require higher energy taxes. While the government had announced regular price increases in 2010 this can be changed any time. Introducing a rule on how to adjust retail prices to international reference prices would better isolate the mechanism from political pressures. Introducing this rule in times of decreasing energy prices would make the move politically easier, but it is necessary in any case. This would increase the sensitivity of government revenues to fluctuations in international energy prices according to Mexico's fiscal accounting, as energy subsidies are recorded as negative revenues. Mexico could consider accompanying such a mechanism with a larger hedge on oil prices or, ideally, larger savings in the stabilisation fund. Electricity subsidies, in turn, could be removed by adjusting tariffs gradually in line with production costs, including a profit margin. Large electricity subsidies are partly a result of high costs of electricity provision. Mexico has raised the efficiency of the electricity sector but further progress will be an important step towards reducing subsidies in this sector. It will also limit the impact of lower subsidies on consumers.

Complementary measures could alleviate the impact of lower energy subsidies on consumers

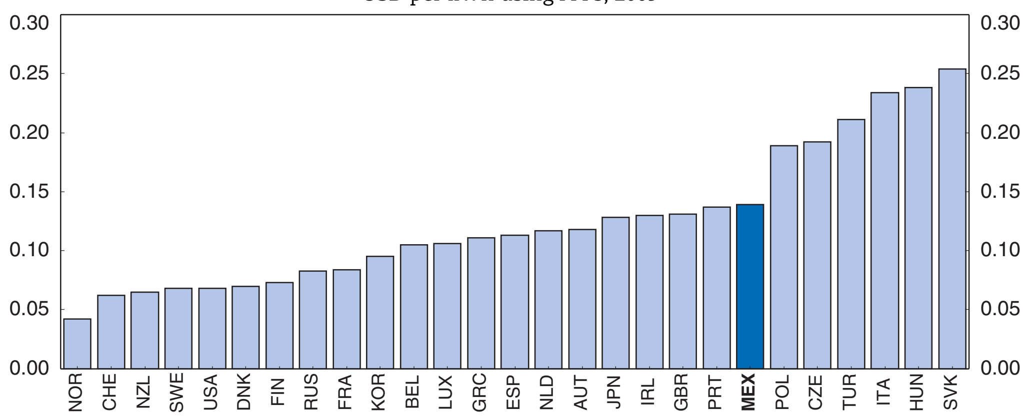
If energy subsidies are gradually reduced, some measures could be taken to reduce the impact of lower subsidies on consumers to make the reform more acceptable. This could include upgrading the public transport system or subsidies that help low- and middle-income households to insulate their houses and invest in energy-efficient equipment and appliances, in line with programmes that are already being implemented in Mexico. These measures would have further beneficial effects on emission reductions, while mitigating the burden of higher electricity prices on households.

Raising the efficiency of the electricity sector further would also be an important step to alleviate the burden of lower subsidies on households, by reducing electricity prices. The government recently closed down *Luz y Fuerza del Centro* (LyFC), a highly inefficient state-owned electricity company. It required large direct subsidies from the federal government every year to cover mounting operating losses, including obligations for highly generous pensions and customer subsidies. Blackouts were frequent and distribution losses were large, often related to energy theft. The remaining state owned company, *Comisión Federal de Electricidad* (CFE) has taken over LyFC's customers, which should help reap efficiency gains. This has already helped to reduce the time that customers in Mexico City have to wait for an electricity service from an average of 10 months to 4 months (World Bank, 2010). CFE is more efficient and has made further progress in recent years. It has invested in new generating capacity and it has upgraded its transmission grid, while reforming its once overly generous pension system to bring it in line with the capital-funded defined-contributions systems prevailing in the private sector and the federal administration.

Further progress is possible, however. This is evidenced by unsubsidised prices for electricity supplied to industry, which are higher than in most OECD countries, restricting the country's competitiveness (Figure 2.9). While this is to some extent due to the fact that Mexico needs to generate most of its electricity through hydrocarbons or coal due to its geographical characteristics, business still perceives the energy infrastructure as inadequate (Figure 2.10). The government could further work towards enhancing the

Figure 2.9. **Electricity prices for industry**

USD per kWh using PPPs, 2009[1]



1. 2008 for Austria, Belgium, New Zealand and Spain.

Source: IEA, *Energy Prices and Taxes Database.*

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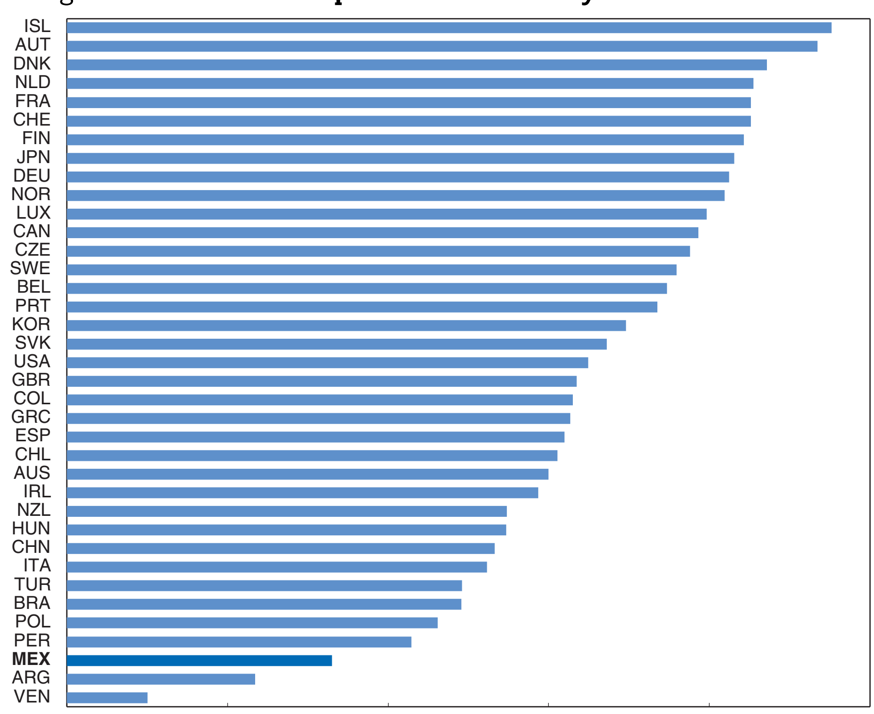
Figure 2.10. **Business opinion on electricity infrastructure**[1]



1. "Is the energy infrastructure is adequate and efficient?" Value 10 indicates the most positive perception.

Source: IMD, *World Competitiveness Yearbook 2010.*

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corporate governance and management of CFE, for example by setting goals based on performance indicators using efficient international electricity companies as a benchmark. In the longer term, the government could move towards introducing more competition in electricity generation, for example by following the strategy outlined in the *Mexico Survey* of 2007, which would involve establishing a full-fledged wholesale market with an independent system operator with no interest in generating assets who would match supply and demand.

Mexico should also consider an emission trading system or higher environmental taxes

Once energy subsidies are removed, introducing an emissions trading system (ETS) or broad-based GHG taxes would be a good approach to start pricing emissions more in line with their social costs. To some extent participating in emissions-trading systems may be more attractive for Mexico than raising carbon taxes, as it opens opportunities to obtain funds from abroad to finance investments in energy efficiency. On the other hand, taxes are easier to implement, because an infrastructure for this is already in place. Mexico is already involved in global efforts to reduce emission through the Clean Development Mechanism (CDM) of the Kyoto Protocol. While emissions are not capped in Mexico, like in other non-Annex I countries, Mexico can obtain credits from projects that lead to reductions in GHG emissions. These credits are referred to as certified emissions reductions (CERs). It can then sell these credits to countries that have emission reduction commitments. While this does not result in additional emission reductions by the country which purchases the credit, it helps countries with reduction commitments to attain their targets by exploiting cheaper abatement possibilities in non-Annex I countries. At the same time, non-Annex I countries obtain financing to participate in global emission reductions. Three quarters of all CDM-projects are hosted in four countries, namely China, India, Brazil and Mexico. However, CDM-projects in Mexico have created fewer credits than expected. Many project managers have found it tedious and difficult to prove that their project is an additional investment that would not have occurred in the absence of the mechanism. While Mexico accounts for around 4.5% of all registered CDM projects, its share in CERs is only 1.6% CERs.[*] The uncertain future of the CDMs and the Kyoto protocol in general has also added to market scepticism regarding this mechanism. Another opportunity that might arise at some point would be a North American emissions trading system. While the prospect of a nationwide emission trading system in the United States has become more distant, there are better chances for further regional cap and trade systems to arise in North America.

Should an emissions trading system be established in the United States, it may be in Mexico's interest to join in. In particular, Mexico, having cheaper abatement possibilities than the United States could sell emission rights to its northern neighbour. This would help finance investments in emission reductions. In the absence of federal policies, some regions in the US and Canada have developed their own schemes. This includes the Western Climate Initiative, where some northern Mexican states are already observers. Mexico has gained some experience from an internal emission trading system at PEMEX. This could be revived and extended first to the electricity sector and then gradually to other key industries. The government has included the introduction of a national carbon market by 2011 as a goal in its national climate-change programme. The programme mentions both taxes and trading

* Data from *www.cdmpipeline.org*.

schemes as instruments to be explored. However, these plans face challenges. The electricity and oil sectors are dominated by state-owned monopolies in Mexico, which may have soft budget constraints. Their incentives for output reduction in response to higher emission costs would be lower than in a competitive market and this may also apply to their incentives to invest in new energy-efficient technologies. Therefore, carbon prices may have to be accompanied with technology standards and regulation, unless Mexico were to allow more competition in these sectors. Furthermore, the presence of federal, state and municipal governments in environmental policy-making adds another layer of complexity to the enforcement. The private sectors is very likely to resist policy measures that may affect competitiveness *vis-à-vis* China. Finally, the development of corporate GHG inventories has not been common practice in the private sector and neither has verification by third parties, despite the government's experience in national GHG inventories.

Another option would be taxes on emissions. There are currently two taxes on cars and other vehicles which can serve environmental purposes, but there are better options. One is the *Impuesto sobre Automóviles Nuevos* (ISAN), the second is the *Impuesto Sobre Tenencia o Uso de Vehículos* (ISTUV). The ISAN is a tax on the value of new cars, including imports. This can raise incentives to buy used cars, which may potentially be more polluting. A solution would to make the ISAN dependent on technical standards, in particular levels of pollution. The ISTUV taxes both old and new vehicles depending on their value and in some cases their weight. The tax has been reduced for new cars at the federal level and will be abolished for all vehicles in 2012, but states are entitled to levy it and some do. Others are likely to pass legislation before 2012. In any case, none of these taxes would approximate emissions very well and are thus not a very efficient carbon-pricing mechanism.

A tax on petrol and diesel according to carbon content combined with mandated technology standards can be a good alternative. This can approximate a tax on automobile emissions (Goulder and Parry, 2008). To attain the same emission reduction, a tax combined with a technology standard can be lower than without it. This may be desirable at least in the beginning, as new taxes are always difficult to implement, and starting at a high rate does not make this easier. A recent World Bank study on low-cost mitigation strategies suggests that border vehicle inspections that would restrict the import of used cars with emissions exceeding certain standards along with a vehicular inspection and maintenance programme in big cities, including restrictions on older vehicles, could lead to important emissions reductions (Johnson *et al.,* 2009).

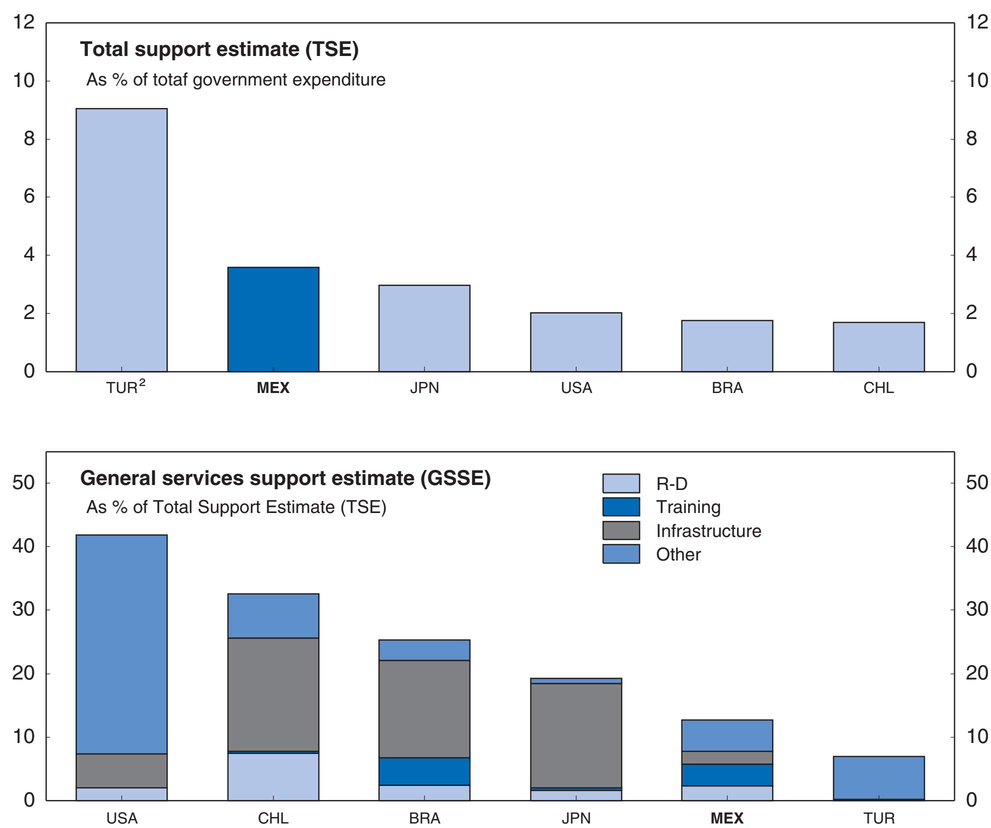
There is scope to raise the efficiency of agricultural spending

Substantial efficiency gains can be reaped in agricultural spending. While public spending on agriculture as a share of agricultural GDP is high in Mexico compared to other Latin American countries (World Bank, 2009) and OECD countries (Figure 2.11), productivity growth rates are comparatively low (Avila and Evenson, 2004). This suggests that the effect of public spending on agricultural productivity is low. Moreover, an important share of agricultural spending is not compatible with Mexico's climate change goals, including electricity subsidies for pumping ground water and *Ingreso Objetivo*, a price support programme that targets mostly low-value and in some cases water-intensive crops using scarce water resources. Both programmes distort production patterns, moving them away from efficient resource use and comparative advantage (World Bank, 2009). These programmes are also conflicting with the objectives of other spending programmes, including those that aim to improve the efficiency of irrigation water use. Altogether, this points towards a lack of strategic planning in agricultural policies.

The low productivity of agricultural spending in Mexico is likely related to a low share of spending on productive public goods, such as infrastructure, training and research and development. This is evidenced by the low share of spending on general services – including research and training and infrastructure spending – in total support for the agricultural sector (Figure 2.11). This includes also producer support – which as a share of gross farm receipts is well below the OECD average in Mexico – and the taxpayer cost of consumer subsidies less import tariffs. Within the agricultural spending category proper, more than 80% of funds are devoted to private goods, such as income and price support (World Bank, 2009). It would be desirable to redirect some of the less efficient expenditure on productive activities to public goods, such as irrigation improvement and management, drainage and transport infrastructure, research and training. Research suggests that increasing the share of agricultural spending on public rather than private goods can have a significantly positive effect on agricultural per capita income (López and Galinato, 2007).

Figure 2.11. **Agricultural support estimates**[1]

2005-2008 average



1. The total support estimate is the annual monetary value of all policy-based gross transfers from taxpayers and consumers to support the agricultural sector, the general services support estimates is the annual monetary value of general services to agricultural producers collectively, including research and development and training.
2. 2006-2008.

Source: Producer and Consumer Support Estimates, OECD Database 1986-2009.

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Spending with serious negative externalities, such as electricity subsidies and *Ingreso Objetivo* is high and it should be gradually withdrawn (World Bank, 2009). The negative effects of electricity subsidies have already been discussed. *Ingreso Objetivo* is a deficiency payment programme that provides subsidies equal to the difference between the market price and a reference that is meant to ensure a fair income for farmers producing these goods. While such price-support measures may be justifiable in emergency situations, it is used as a permanent support system in Mexico covering 10 basic crops (mainly grains) in certain states. *Ingreso Objetivo* has been shown to distort production heavily towards the supported crops, which are not among the most profitable, while often being water-intensive. *Ingreso Objetivo* also creates incentives for overproduction as transfers are dependent on production although subject to some limits. Thus the subsidy tends to lower productivity and harm the environment. The government should consider ending *Ingreso Objetivo* and electricity subsidies and divert the resources to less distortive and more productive uses, including investment in rural infrastructure, training and education. In fact, the federal Ministry of Agriculture's new operational rules would strengthen spending on these items. The ministry has also commissioned the OECD to evaluate Mexico's technology transfer and capacity building tools in the agricultural sector. While spending under *Ingreso Objetivo* has significantly declined since 2007, this has been an automatic effect of higher international prices. Savings have largely been used to finance subsidies for hedging the same commodities in the future markets. It would be preferable to seize the opportunity to significantly reduce price support, while international prices are high, and maintain these reductions in spending on price support even when international prices fall. During a transition period, beneficiaries could receive cash transfers as a temporary compensation measure, but these transfers should be withdrawn fast, for example by defining a pay schedule that is digressive over time. Both subsidies are in large part captured by higher-income producers, as the richest 10% receive 60% of electricity subsidies and 90% of a family of programmes, *Apoyos a la Comercialización*, which includes *Ingreso Objetivo* (Scott, 2010). Figure 2.3 also shows that agricultural subsidies, which include *Ingreso Objetivo,* are regressive. Thus, there is no rationale to support beneficiaries with cash transfers for long. The example of another agricultural support programme, *PROCAMPO,* shows that it is important to re-assess decoupled compensatory transfers after some time.

PROCAMPO assigns lump-sum transfers to land owners that had cultivated certain crops prior to NAFTA to compensate them for the removal of direct price support programmes under less trade protection. The programme was later amended to make it more easily accessible to poor subsistence farmers and increase the transfers to this group to make it more progressive. Lump-sum transfers have been much celebrated, as they are decoupled from production and prices, and thus less distortionary than price support. However, if their prime goal is to compensate farmers for the withdrawal of price support, they are unlikely to be well suited to attain other goals and their rationale should be re-assessed after some time. PROCAMPO was originally designed to last 15 years after the introduction of NAFTA to cushion its impact, but although this period has ended in 2010 there are currently no plans to withdraw it before 2012. Cash transfers would usually be intended to serve as a poverty alleviation mechanism, but as such PROCAMPO is not well targeted. Being tied to land ownership, it leaves out an important target group – the rural landless – while including large commercial farmers. PROCAMPO devotes benefits to small subsistence farmers and is thus less regressive than other large-scale agricultural subsidy programmes (see Figure 2.3). Nevertheless, a third of benefits go to the richest rural decile and 23% go to only 2.6% of farmers who are within the richest decile of the nationwide income distribution (OECD, 2006). By contrast, small subsistence farmers with less than 2 hectares of land obtain only 13% of the benefits. More recent studies confirm the finding that PROCAMPO is captured in large part by a few relatively well-off producers (World Bank, 2009). PROCAMPO was meant to allow the conversion of land to use it for activities with higher returns. Yet, a decade after its introduction almost half of the beneficiaries, small-scale and large-scale producers alike, stated that they were unaware that they were allowed to use their land to plant any crop, while only a little more than 5% reported that they had converted their land (OECD, 2006). Since PROCAMPO has served the goal of cushioning the impact of NAFTA, it is time to re-assess the programme. Unless it can be redesigned to serve other purposes, the programme should now be withdrawn to devote resources to more productive use.

Overall, agricultural spending is probably even more regressive than the analysis of individual programmes suggests, as large commercial farmers are likely to cumulate transfers and subsidies from different programmes. No integrated database is currently available that would allow the government to analyse such accumulation effects. The government is working on establishing such a database. This is welcome, as it would help to better assess the distributional impact of agricultural spending and it could be used to limit the total amount of support that individual farmers can receive. As a first step towards withdrawing the more inefficient programmes, total subsidies and transfers that individual farmers or companies can receive could be capped based on the new database. PROCAMPO already limits the transfer that individual farmers can receive as an individual programme.

There is also a need for more thorough and long-term impact evaluation of agricultural programmes and their interplay to provide for better strategic planning of agricultural spending. While the *Programa Especial Concurrente* (PEC) was originally intended to serve as such a planning mechanism, so far it is little more than an annex to the budget where agricultural and rural development spending is displayed (World Bank, 2009). This is in part due to the complexity of the task, as the PEC contains more than 90 programmes implemented by 13 different ministries plus subnational governments. Some streamlining in the allocation of agricultural policies to different ministries may be possible. Another issue is that the Ministry of Agriculture chairs the commission that is supposed to direct resources within the PEC. For a line ministry with no power over other members of the commission, this is a formidable task. Allocating the presidency of the commission to a stronger ministry, such as the President's Office or the Ministry of Finance, which is responsible for looking into the effectiveness and quality of public expenditure and has some power to obtain a discontinuation of spending programmes, might help in this respect. The Ministries of Finance and Agriculture have achieved some commendable progress by using performance budgeting indicators to identify particularly ineffective or redundant programmes. This has helped in discontinuing some of them. These efforts are welcome and should continue. A second element would consist in streamlining responsibilities of agricultural and rural development spending to reap efficiency gains and make the task less heavy. Evaluations are mandatory, but they are often conducted annually and few evaluations go beyond checks of consistency and of whether spending has reached its target population. More impact evaluations over longer periods would be needed. This should also encompass evaluations of the PEC as a whole, as subprogrammes sometimes have impacts that counteract each other. Mexico has commissioned the OECD to working on an in-depth study of the institutional arrangements governing the development, implementation and evaluation of agricultural policy that will provide recommendations for alternative arrangements. These would result in a clearer attribution of responsibilities and increase efficiency, effectiveness, transparency, coherence and stability in the public administration of agricultural policy in Mexico.

The government works to reduce its operational and personnel costs

The government has also launched a programme to reduce the operational and personnel costs of the federal administration. Measures include centralising and reducing government purchases of material and services and hiring and wage freezes for lower-ranking government employees. For higher-ranking government employees there have been wage freezes since 2003 and in 2006 a 15% salary cut was implemented along with suppression of posts. The government also aims to identify and eliminate the duplication of tasks and services within and across ministries and government. Several subsequent expenditure reduction programmes have led to cumulated savings of 145 billion pesos in 2010 prices, around 1¼ per cent of GDP. A further programme aims to reduce personnel and operational spending by 40 billion pesos over 2010-12. A number of the savings measures correspond to the suppression of posts or efficiency gains in government operation or purchases and are thus permanent. The resources will be re-assigned to public investment infrastructure and social programmes according to the government.

Efforts to improve the efficiency of public administration are laudable and should continue; at the same time the government should avoid spending cuts that could undermine the quality of services. The opportunity to realise savings by eliminating duplication of programmes, tasks and services should not be missed, and a lot of potential to go further in this direction remains. For example, two ministries are responsible for agricultural policies, the ministry of agriculture and the ministry of agrarian reform, and many other ministries operate some rural and agricultural spending programmes. The two ministries of agriculture could certainly be merged and be given responsibility for most or all agricultural and rural policies so as to reap efficiency gains. There are a number of smaller ministries, such as the ministry of tourism and the ministry of public administration that could be integrated into other ministries. The government has proposed several of these mergers as part of the fiscal reform in 2009, but they were not approved by Congress. The search for integration and rationalisation of tasks and administrative structures within and across ministries should also continue. At the same time, the government should be careful to avoid spending cuts that jeopardise the quality of their personnel or the services that they deliver. It would be appropriate to assign savings in administrative and operational spending to other areas with high social returns, of which there are many in Mexico, rather than cutting overall spending.

Broadening the tax base

Only effective and efficient tax expenditures should be retained

Recent tax reforms, including a higher VAT rate, the introduction of an alternative minimum tax on business income (IETU) and a tax on cash deposits (IDE) along with temporary increase of the corporate tax rate and the top marginal personal income tax rate (Box 2.3), have helped to strengthen Mexico's structural tax revenues by around

2 percentage points of GDP according to government estimates. However, Mexico has important spending needs related to its efforts to invest more in productive capacity and maintain these higher levels of spending on infrastructure, while also strengthening social policies. The financing of pension and healthcare services will likely pose challenges in the long term. Thus, further efforts to strengthen tax revenues will be needed in the medium term. This would also reduce Mexico's fiscal dependence from oil revenues, which are volatile mainly related to price movements, and subject to uncertainty about production levels in the long term, although less so than in the past. Tax reform should mainly focus on broadening the tax base, as this would also help to make the tax system more efficient. Most tax rates in Mexico are similar to those in OECD countries. Only the top personal income tax rate in Mexico is lower than almost anywhere in the OECD (Table 2.2). Mexico could probably envisage higher tax rates for the highest incomes, but overall low rates cannot account for low tax revenues.

Table 2.2. **Latest published OECD tax statistics**

	% OF TOTAL TAX REVENUES					Top statutory personal income tax rate on average in	Top corporate income tax rate on 1 January	Standard VAT rate
	TAX/GDP RATIO	Personal income tax	Corporate tax	Social security contribution	Consumption taxes			
	2009 (Provisional)	2008	2008	2007	2008	2010	2010	2010
Mexico	**21**[1]	**28**		**13**	**59**	**30.0**	**30.0**	**16.0**
Australia	27[1]	38	22	0	27	46.5	30.0	10.0
Canada	31	37	10	15	24	46.4	29.5	5.0
Chile	18	46		6	51	40.0	17.0	19.0
Denmark	48	52	7	2	32	44.3	25.0	25.0
France	42	17	7	37	24	45.8	34.4	19.6
Germany	37	26	5	38	29	47.5	30.2	19.0
Greece	29	15	8	38	35	45.0	24.0	19.0
Japan	28[1]	20	14	39	18	50.0	39.5	5.0
Korea	26	15	16	22	32	38.5	24.2	10.0
Sweden	46	30	6	25	28	56.0	26.3	25.0
Switzerland	30	31	11	23	22	41.7	21.2	7.6
Turkey	25	17	7	25	45	35.7	20.0	18.0
United Kingdom	34	30	10	19	29	50.0	28.0	17.5
United States	24	38	7	25	18	41.9	39.2	–
OECD Average	*35*[1]	*25*	*10*	*25*	*32*	*43.4*	*25.8*	*18.0*

1. Data for 2008.
Source: *Taxing Wages* (OECD, 2009); *OECD Tax Database*.

Tax expenditures can be costly in terms of foregone revenue and create opportunities for tax planning and evasion, as tax filers can falsely declare their income under a category that is tax-favoured. They also create distortions by increasing demand for tax-favoured goods and services. While tax expenditures may be a valid policy instruments in some cases, they should be used only if their effectiveness and efficiency is well established.

Revenue losses due to tax expenditures are estimated at nearly 20% of government tax revenues (around 4% of GDP) according to the Ministry of Finance (Table 2.5). Recently the government has started to deduct an estimate of tax evasion from estimated tax expenditures to better reflect additional revenues that can reasonably be expected from

Box 2.3. **The Mexican tax system**

Income tax (ISR) applies to corporations and individuals. Corporations pay a flat rate of 30%. Individuals have a progressive rate with a maximum marginal tax rate of 30% (Table 2.3). The rate has been temporarily increased from 28% over 2010-12 and will fall to 29% in 2013. Unincorporated businesses pay personal income taxes on their cash flow according to a progressive schedule, but investments are depreciated in line with those of corporate enterprises.

Table 2.3. **ISR schedule (in Mexican pesos)**

Lower limit	Upper limit	Fixed quota	Marginal rate
0.01	5 952.85	0.00	1.92
5 952.85	50 524.92	114.24	6.40
50 524.93	88 793.04	2 966.76	10.88
88 793.05	103 218.00	7 130.88	16.00
103 218.01	123 580.20	9 438.60	17.92
123 580.21	249 243.48	13 087.44	21.36
249 243.49	392 841.96	39 929.04	23.52
392 841.97	and higher	73 703.40	30.00

Source: SAT website.

There is also an in-work tax credit for dependent employees with the following schedule.

Table 2.4. **In-work tax credit table (annual values)**

Lower limit	Upper limit	Tax credit (MXN)
0	21 227.52	4 884.24
21 227.53	31 840.56	4 881.96
31 840.57	41 674.08	4 879.44
41 674.09	42 454.44	4 713.24
42 454.45	53 353.80	4 589.52
53 353.81	56 606.16	4 250.76
56 606.17	64 025.04	3 898.44
64 025.05	74 696.04	3 535.56
74 696.05	85 366.80	3 042.48
85 366.81	88 587.96	2 611.32
88 587.97	And higher	Not eligible

Source: CEFP (2010).

The business flat rate tax (impuesto empresarial a tasa única, IETU) is tax on cash flows with a credit for wages and social security charges. However, the credit does not apply to fringe benefits. It is an alternative minimum tax at a tax rate of 17.5%. The income tax is creditable against IETU. It entered into force on 1 January 2008 as a way of limiting tax planning related to the numerous exemptions allowed by the ISR.

The state-owned oil enterprise, PEMEX, is subject to a modified income tax regarding its manufacturing activities, such as refining. Moreover, it pays several charges associated with activities where there are rents, such as oil and gas extraction, specified in the Federal Royalties and Fees Law.

Box 2.3. **The Mexican tax system** *(cont.)*

The tax on cash deposits (impuesto a depósitos en efectivo, IDE) entered into force on 1 July 2008. IDE is levied at the rate of 3% on the amount exceeding MXP 15 000. It is creditable against the income tax.

The value added tax (VAT) of 16% is levied on taxable supplies of goods and services as well as on imports of taxable goods and services into Mexico. Exports, food, medicines and a few other goods are zero-rated. Some specified transactions, including medical and educational services, are exempt.

Excise taxes (impuesto especial sobre producción y servicios, IEPS) are levied on specified goods and services. Taxes are levied under a value added system, up to the wholesale level. Sales to the final consumer are normally not taxed. Cigarettes, gasoline and diesel are taxed only at the producer or importer level The IEPS on gasoline and diesel has two elements, one being a fixed tax per litre levied by states and a second one corresponding to the difference between national retail prices, which are set by the government, and the international reference price. This second part can be negative, when international reference prices rise fast, because the government adjusts national retail prices only slowly.

A special excise tax (impuesto sobre automóviles nuevos, ISAN) is levied on new automobiles. For automobiles with a capacity of up to 15 passengers, the rates are progressive and vary, in accordance with the average transfer price, from 2% to 17%. The rate for trucks with a capacity of up to 4 250 kg, trailers and semi-trailers is 5%.

The states and the federal district levy a payroll tax on wages paid for dependent personnel services, generally at a 2% flat rate, applied on the gross amount of salaries paid by employers to employees. Certain states may apply rates between 1 and 2.5%, and may grant exemptions as a measure to promote the creation of employment in underdeveloped regions.

Both employers and employees are obliged to make bimonthly contributions to the social security system *Instituto Mexicano del Seguro Social* (IMSS) for the private sector and *Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado* (ISSSTE) for the public sector. In addition to paying their own contributions, employers must withhold and remit the contributions of their employees. Contributions are calculated on the employee's earnings. Employers are also required to contribute an amount equal to 5% of an employee's daily earnings to the National Housing Fund (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, INFONAVIT) to finance the construction of low-cost housing units. Employers and employees have to contribute to a capital-funded defined contributions pension system managed by private providers. Altogether social charges and mandatory payments to private insurance amount to roughly 20% of gross wages plus a fixed base contribution for healthcare of 20% of the minimum wage.

Real estate is subject to annual municipal taxation, the rate ranges from 0.05% to 1.2%. The acquisition of real estate is subject to municipal taxation, typically at rates from 1% to 5%.

broadening the tax base. This is largely what accounts for the decrease in the estimate of tax expenditures after 2009. Since businesses pay either IETU or regular income tax, the estimates of tax expenditures within these two regimes are weighted with their share in total income tax revenues when adding up to the total. This is a rough measure to account for double counting. For firms that pay IETU tax expenditures within the regular business tax regimes are not available and should not be counted. In fact, the IETU closes these loopholes to some extent.

Providing a tax expenditure budget is commendable, but the Mexican government could go a step further. Complementing the budget with thorough evaluations of the effectiveness and efficiency of a few individual tax expenditures each year would be useful. It would help lawmakers and the general public assess which tax expenditures work well and are worth the revenues foregone and which ones could be reduced or replaced by more efficient and transparent instruments, such as direct spending, to attain the same goal. Indeed, some tax expenditures, such as zero rates and exemptions within the VAT have been extensively analysed. Yet, for others, including some special regimes for specific sectors or firm sizes, the tax credit for employees or reduced and zero rates for fringe benefits thorough evaluations are not available.

Table 2.5. **The size of tax expenditures in terms of lost revenues**

in % of GDP unless indicated otherwise

	2003	2004	2005	2006	2007	2008	2009	2010
Income tax	2.85	2.65	3.64	2.85	2.64	2.09	2.30	1.76
a) corporate income tax	1.35	1.38	2.32	1.71	1.27	1.31	1.44	1.09
b) personal income tax	1.49	1.27	1.32	1.14	1.37	0.77	0.85	0.66
business flat tax						0.79	0.75	0.55
VAT	1.65	1.66	1.72	1.68	1.88	1.73	1.91	1.51
Specific consumption taxes	0.71	0.27	0.16	0.16	0.42	1.64	1.12	0.56
Various tax reliefs	0.32	0.17	0.21	0.14	0.24	0.11	0.12	0.06
Total	5.52	4.75	5.72	4.84	5.19	5.47	5.32	3.79
Total in % of tax revenues	32	28	32	27	29	27	32	

Source: Servicio de Administración Tributaria and Ministry of Finance, *Presupuesto de Gastos Fiscales*.

The special tax regimes should be reconsidered

Mexico has a large number of special regimes providing favourable tax treatment to export assembly (*maquila*) firms, transport and agricultural firms, small firms and intermediate firms (Box 2.4). While tax losses associated with these special regimes are not overly large according to Mexico's tax expenditure budget (around ½ per cent of GDP in 2009) their full cost goes beyond this. First, the tax expenditure budget does not take full account of the associated revenue losses, especially for the regime benefitting the *maquilas*. Second, special regimes and other tax expenditures complicate the tax code and can make it easier for firms to engage in tax planning or in tax evasion, by underreporting or misreporting their revenues, increasing the costs in terms of foregone revenues. They can also lead to distortions by diverting an inefficiently large amount of resources to sectors that benefit from favourable tax treatment. Given the disadvantages of Mexico's dependence on highly volatile export assembly described in Chapter 1 it seems questionable whether there is a rationale to subsidise *maquiladoras* with a special tax regime. The original purpose of the *maquiladora* regime was to avoid double taxation for foreign firms that outsourced assembly activities to Mexico. To the extent that this is now taken account of by double tax treaties, Mexico should review the *maquiladora* regime and consider withdrawing it over time. More generally, the costs and benefits of all special tax regimes should be carefully evaluated and only regimes of proven efficiency should be retained.

There can be a rationale for special tax regimes for small and unproductive firms, especially in countries with high informality, because a good part of tax compliance costs are essentially fixed and therefore more difficult to bear for these firms (OECD 2009a). This is a rationale for simplified tax declaration procedures for small firms, *e.g.* by taxing presumptive income thus easing the accounting burden. Low productivity of small, informal firms can also justify simplified tax regimes with some reductions in the tax burden to allow these firms to survive once they formalise. This is likely to be an issue in Mexico, where many small, informal firms are much less productive than formal and in particular larger counterparts as discussed in Chapter 4. Offering a simplified regime with a reduced tax burden can thus help to integrate these firms into the tax net. Without tax relief they might choose to remain informal, because their tax burden would not allow them to survive. On the other hand, there is also a rationale to limit the time during which firms can benefit from a reduced tax burden, because supporting unproductive firms that cannot improve their performance for long is likely to distort the allocation of resources, lower aggregate productivity and thus tax revenues. Yet, there is a fine balance to strike in a country like Mexico where many workers with low skills may simply not be able to improve their productivity sufficiently to find employment in the formal sector. Therefore, forcing firms to graduate from simplified tax regimes after some years should be combined with some technical help to comply with labour and tax laws and regulations to avoid a high cost in terms of lost activity and employment. The tax relief within special regimes has to be carefully calibrated to ensure that higher revenues from the integration of more small firms into the tax net outweigh losses due to lower rates or simplified procedures. Strong enforcement is also needed to ensure that at least the reduced tax burden is actually collected.

There are some doubts that the special regime for small enterprises in Mexico is effective in combating evasion; at the same time the regime is costly. The Mexican special regime for small enterprises (REPECO, *Régimen para pequeños contribuyentes*) is quite generous with a high tax allowance and low rates (Box 2.4). Yet, firms that benefit from REPECO evade 95% of their tax liability (Fuentes *et al.,* 2010) indicating that this regime is not very effective in combating tax evasion.

Box 2.4. **Special tax regimes in Mexico**

Small enterprises with earnings up to around USD 150 000 benefit from a special regime the *Régimen para pequeños contribuyentes* (REPECO). Earnings up to four minimum wages are tax free and above that there is a tax rate of only 2% on presumptive earnings. A fixed amount of MXN 100 is paid as VAT each month. States that have signed a collaboration accord with the federal government on tax collection can collect REPECO by estimating small company's taxable income and establishing fixed quotas to be paid based on that each month.

There is an intermediate regime for unincorporated enterprises just above this threshold with earnings up to MXN 4 million (around USD 300 000). These firms benefit from cash accounting and thus immediate deduction of capital expenses. The threshold for immediate deduction of capital expenses is significantly higher (MXN 10 million) for some agricultural and transport firms.

Box 2.4. **Special tax regimes in Mexico** *(cont.)*

Professionals and unincorporated entrepreneurs can file taxes based on cash accounting but with depreciation rules equivalent to those of enterprises that file taxes based on accrual accounting.

There are also special tax regimes for agricultural and transport sector firms and export assembly firms (*maquiladoras*). Agricultural entrepreneurs enjoy immediate or accelerated deduction of capital expenses, including land, a special tax allowances of 20 minimum wages for each partner of incorporated agricultural businesses up to a cap and a reduction of more than 30% of their tax liability. Some non-incorporated transport enterprises can deduct 10-15% of their revenues from their tax base. *Maquiladoras* pay taxes on a fraction of their assets or their operating costs plus expenses rather than on profits. Furthermore, a couple of years ago their tax base has been lowered further through a tax exemption and their VAT is zero-rated as for all exports.

Tax relief provided to small businesses may nonetheless lead to benefits in terms of increased formalisation. Spain had some success with a specialised unit in the tax authority to deal with taxpayers in its special regime for small enterprises, performing tax audits, while lending technical support to firms to comply with tax rules. Financial institutions, business associations and subnational governments are also engaged in this kind of support (Junquera and Pérez, 2001; IADB, 2005).Together with increased enforcement efforts, including the creation of a special agency and courts to fight tax evasion (Box 2.5), these measures have helped Spain to increase tax revenues from small enterprises by more than 70% (Farrell, 2004; Capp *et al.*, 2005). As revenues are sometimes difficult to verify, some countries, including Spain, have been successful with using physical characteristics, such as number of employees or energy consumption to determine the tax liability of small firms (OECD, 2009a; Farrell, 2004).

Box 2.5. **A broad reform – strengthening tax revenues in Spain**

Spain had increased its tax revenues from 15% to close to 35% of GDP between 1970 and 2000. In the 1980s tax revenues increased by 10 percentage points of GDP. A broad-based approach, including tax policy, tax administration and social security reform contributed to this success. An important improvement in the willingness of citizens to pay taxes seems to have played a role, as well, which may have been related to an improvement in the quality of government services and a tax system that was regarded as fairer than its pre-reform version.

Before Spain embarked on a series of reforms in 1977, its tax system was fragmented with many special treatments and regimes as well as a low contribution of personal income taxes to overall revenues. Only 1% of the population was subject to a "general" income tax, while a schedular system of taxation prevailed, which taxed different types of income with different rates. In contrast, the share of social contributions was high, raising revenues of around 10% of GDP. There were ample opportunities to evade taxes, in particular for high-income individuals, and evasion carried little risk as it was not a criminal offence, fines were low and the centralised tax administration had few staff in international comparison. Accounting for widespread tax evasion among higher-income individuals, the Spanish tax system was probably regressive overall (Onrubia, 2006; Martínez-Vazquez and Torgler, 2005).

Box 2.5. **A broad reform – strengthening tax revenues in Spain** *(cont.)*

In the 1980s, Spain embarked on far-reaching reforms, including the introduction of VAT and a broad-based personal income tax, focusing on vertical equity and progressivity and a corporate tax without the special regimes and treatments that had characterised the previous system.

A major effort to modernise the tax administration followed these reforms with a decentralisation of the tax agency, substantial increase in personnel, upgraded professional careers for tax officials, computerised services and improved assistance for taxpayers. As a result the number of taxpayers was multiplied by almost 40 between 1977 and 2003 from 400 000 to 15.5 million (Onrubia, 2006). Later the tax administration was turned into a semi-autonomous agency, granting some further managerial independence, tax evasion became a criminal offense and special courts responsible for tax evasion were introduced.

At the same time, the healthcare system was overhauled. In the mid-1980s Spain turned its social insurance healthcare system, which was financed by social charges and confined to contributors, into a national health system open for everybody. Coverage increased dramatically as a result. Financing was gradually shifted from social charges to general taxes. There is some evidence that this improvement in coverage with healthcare had a positive impact on citizens' willingness to pay taxes.

Over the reform period, roughly 1980-1995, the willingness to pay taxes increased considerably, with the number of people stating that tax evasion was "never justified" increasing from 50 to 70% (Martínez-Vaquez and Torgler, 2009). It was at 65% in 2007. A better quality of social services, including a less fragmented healthcare system with broader coverage, and greater perceived fairness of the tax system may have contributed to this improvement. Survey evidence and laboratory experiments suggest that willingness to pay taxes and compliance are positively influenced by the efficiency of the government, the quality of public services and the perceived fairness of the tax administration (Cummings *et al.*, 2007).

The tax administration of REPECO enterprises has recently been devolved to the states, making it important to strengthen their tax enforcement capacity. Tax collection within the REPECO sector has actually increased somewhat since the states have taken responsibility, but tax evasion remains large. States have been allowed to retain extra revenues that they obtain through auditing REPECO firms, as an incentive to enhance enforcement, and this measure has met with some success. Mexico will have to take further steps to enhance tax enforcement capacity at the state level, for example by offering joint training of staff at the federal and state levels on auditing techniques. It will also be important that different levels of government and the social security agencies continue their efforts to share and match data sources, as compliance can be enhanced by a systematic matching of information from several sources, such as social security records, tax returns and information from banks. The federal tax administration *Servicio de Administración Tributaria* (SAT) already uses matching techniques, but this can be developed further. Staff at state tax administrations may require additional training to use these tools effectively.

There are reasons to consider restructuring the tax burden on small enterprises. The relatively high tax allowance for REPECO entrepreneurs increases their incentives to underdeclare workers, because they cannot deduct social contributions from their tax base, which reach almost 40% of wage income for the lowest-income workers. This creates incentives for businesses to rely on the services of self-employed or undeclared workers. Workers also face an incentive to become self-employed or work as *comisionistas* to the extent that they do not fully value the benefits associated with social security, which may be an issue in Mexico, as discussed in Chapter 4. These are reasons to consider whether some of the burden of social security financing can be shifted from formal labour income to other tax bases, including at least to some extent the revenues of small business owners. Since 2008 REPECO firms have to pay the IETU (Box 2.3) and this should increase their tax burden in most cases, as the rate is higher and there is no tax allowance. This is a good opportunity to evaluate, how much tax relief for small firms is needed to promote formalisation.

A thorough evaluation to re-assess some of REPECO's features would thus be desirable. This should include the issue whether the tax relief granted to small businesses is higher than needed and how to establish a strong graduation mechanism. For example, Mexico could require a re-qualification through an audit every five or ten years or even limit altogether the period of eligibility. Mexico could consider abolishing its intermediate regime (see Box 2.4) as one well-designed special regime for small enterprises with a strong graduation mechanism and support should suffice. The rationale for having several special regimes for different firm sizes, in contrast, is unclear. It would also be worth considering sufficiently high tax credits or allowances within the regular tax system to accommodate less productive small firms, while abolishing special regimes altogether.

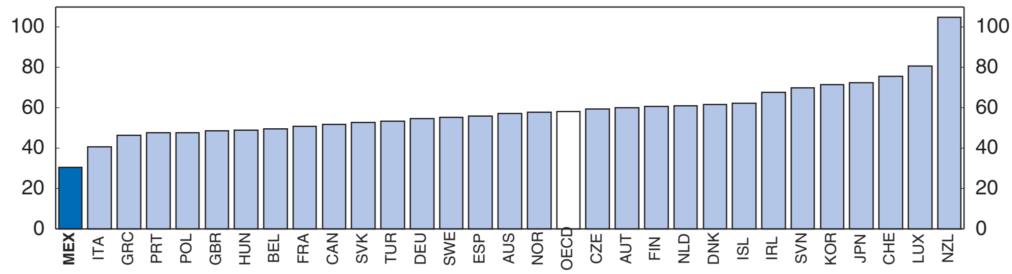
The VAT tax base should be broadened with compensations for lower-income households

Tax expenditures within the VAT system include zero-rated goods, exempted goods and reduced rates in border regions. According to government estimates this leads to foregone tax revenues of around 2% of GDP (Table 2.5), or 1½ per cent when tax evasion is taken into account. Dalsgaard (2000) estimates that foregone revenues related to zero-rated VAT on food alone amounts to 1.8% of GDP, which is ½ a percentage point of GDP higher than the Ministry's estimate. Fuentes *et al.* (2010) find an even higher value of 2.2% for this category and estimate total tax expenditures in the VAT regime at 5.4%. These studies are based on national accounts rather than micro data. However, they do not take into account adjustments to account for consumption that is not taxed, such as home production, parts of government consumption and tax evasion. Taking these items into account would reduce their estimates and bring them more in line with that of the government. The VAT revenue ratio, which measures actual VAT revenues as a percentage of potential revenues that could be obtained when applying the standard VAT to all final consumption, is at around 30% in Mexico, lower than in any other OECD country (Figure 2.12). The ratio is a combined measure of the size of tax expenditures and evasion. Implicitly it suggests that together both account for around 7% of GDP.

Lower VAT rates conceded to border regions, while less costly – with foregone revenues estimated at 0.13% of GDP – may still involve important distortions. The initial justification for reduced rates at the border was to reduce incentives for border shopping to the United States, where retail sales taxes are lower than Mexican VAT rates. The preferential zone initially covered a territory extending twenty kilometres into the country from the border. Over time, however, it has been expanded to include entire states. A recent study

Figure 2.12. **Effectiveness of value added taxes as measured by the VAT revenue ratio**[1]

2005[2]



1. The VAT revenue ratio (VRR) is defined as the ratio between the actual value added tax (VAT) revenue collected and the revenue that would theoretically be raised if VAT was applied at the standard rate to all final consumption. This ratio gives an indication of the efficiency of the VAT regime in a country compared to a standard norm. The calculation for Canada is for federal VAT only and the OECD aggregate is an unweighted average of data for the countries shown.
2. 2009 estimates for Mexico and 2007 for Slovenia.

Source: OECD, *Consumption Tax Trends*; *OECD Revenue Statistics Database* and Ministry of Finance of Slovenia.

StatLink http://dx.doi.org/10.1787/888932383793

found modest evidence that value added is 12-15% higher in zones initially favoured by this tax expenditure, suggesting that it may have affected the distribution of economic activity within the country (Davis, 2010). It may be desirable for Mexico to reconsider lower VAT in border regions.

The rationale for tax exemptions and zero rates within the VAT system is to limit the regressive impact of VAT. In fact, the share of the tax expenditure in household income is higher for lower income households, although this is less pronounced for exempted than for zero-rated goods (Table 2.6).

Table 2.6. **Tax incidence of VAT tax expenditures**

Decile	Zero-rated VAT (food and medicines)		VAT exempted (housing payments and education and medical services)	
	Share in tax expenditure (%)	in % of household income	Share in tax expenditure (%)	in % of household income
I	6.9	34.9	3.5	15.6
II	8.3	22.6	5.2	12.7
III	9.3	17.7	6.6	11.2
IV	9.6	14.5	7.5	10.1
V	10.0	12.3	7.9	8.6
VI	10.0	9.7	8.7	7.6
VII	10.5	8.2	9.7	6.8
VIII	10.3	6.3	11.4	6.3
IX	11.2	4.8	14.9	5.7
X	14.0	2.1	24.6	3.3
National		6.5		5.8

Source: Based on CEFP (2010).

Nevertheless, zero rates and exemptions in VAT are inefficient as poverty alleviation measures. While they are progressive in that the benefits make up a higher portion of low-income households' revenues, higher income households capture the largest part of the benefit in absolute terms (see Table 2.6). That is, much like energy subsidies they are poorly targeted. It would therefore be desirable to replace zero rates and exemptions within the VAT system with targeted cash transfers to poor households, such as the social assistance benefit proposed above. Dalsgaard (2000) estimates that taxing food at the regular VAT rate could yield additional tax revenues corresponding to 1.8% of GDP, while fully compensating the two lowest income deciles would cost only ¼ per cent of GDP. By contrast, if Mexico wanted to raise an extra 1½ per cent of GDP worth of VAT revenues by increasing the regular VAT rate without tax base broadening instead, while compensating the two lowest income deciles, this would require increasing the VAT rate by close to 8 percentage points (World Bank, 2007).

In spite of the obvious advantages attempts to broaden the VAT base while compensating the poor have failed, so far, and there may be no easy success strategy. In 2009 the government proposed a reform to introduce a 2% tax on all sales including food and medicines, while increasing the *Oportunidades* benefits. Parliament rejected this proposal and decided on an increase of VAT from 15% to 16% instead, while keeping the structure of exempted and zero-rated goods. *Oportunidades* transfers were increased to compensate the poor for the change, including an expansion of coverage to urban areas. Sometimes proposals are discussed that would levy the full VAT rate on most food products while excluding a set of basic staples that make up a large part of the consumption basket of lower-income households. This measure would cushion the regressive effect of a VAT base-broadening. However, negotiating the set of staples to be excluded is a challenge and the definition of such a basket could lead to important legal challenges in courts. VAT base broadening, while compensating the poor with cash transfers, would be less prone to political horse-trading. Starting with a reduced rate on now zero-rated and exempted goods may be a sensible transitional step. Past experience has shown that such a reform is not easy to implement, but given its advantages further efforts are warranted. The only strategy that could eventually lead to success may well be persistence in explaining the benefits of VAT base-broadening and repeated efforts to launch new reforms that would gradually withdraw VAT exemptions and zero rates.

The government should move towards taxing untaxed wage elements

Taxing all wage elements with the same rate would be an important step to broaden the income tax base, simplify the system and ensure horizontal equity. Many wage elements and fringe benefits are fully or partially tax exempt for workers. This includes wages on supplementary hours, bonuses, income from employer-sponsored savings funds as well as employer-sponsored scholarships, employer-sponsored food vouchers, childcare, cultural and sporting activities and reimbursements of medical costs. Corresponding revenue losses for income taxes on salaries alone amount to around ½% of GDP according to government estimates. Additional tax losses that occur because companies are allowed to deduct these elements from their tax base are not quantified. Fully or partly tax exempt fringe benefits can reach up to 30% of an average workers wages (Alvarez Estrada, 2010). These exemptions are hard to justify and leave ample room for tax planning. At the same time they contribute to horizontal and inequities because smaller companies are often not able to offer sophisticated salary packages with a substantial contribution of tax-exempt fringe benefits to the same extent as larger companies. Vertical inequities arise, because only higher income individuals who pay taxes are able to benefit from these arrangements. There would be reason for Mexico to consider moving towards taxing more of these benefits in the same way as "regular" wage elements to limit tax planning. Intermediate solutions would include taxing all such benefits in the hand of the employer, as in Australia, or disallowing the deduction of such benefits against corporate profits, as in Hungary (Webb, 2001). Mexico has adopted a similar solution within its alternative minimum tax regime for businesses, which is discussed in the next section. In cases were subsidies may seem warranted, perhaps for childcare facilities, the government could consider direct subsidies instead, as this would be more transparent.

Deciding on the future business tax model requires a thorough evaluation of the business flat tax

The government has introduced an alternative minimum tax in 2008 (*Impuesto Empresarial a Tasa Unica*, IETU) to limit revenue losses resulting from tax planning within the business tax system (see Box 2.3). The IETU has to be paid to the extent that it exceeds the tax liability based on business taxes within the regular personal and corporate income tax schemes. While there is a tax credit for social security contributions and wages, which effectively leaves both untaxed, this does not apply to tax exempt wage elements. This limits tax planning opportunities quite considerably. The business flat tax was in part introduced, because the alternative of eliminating tax expenditures was not politically feasible.

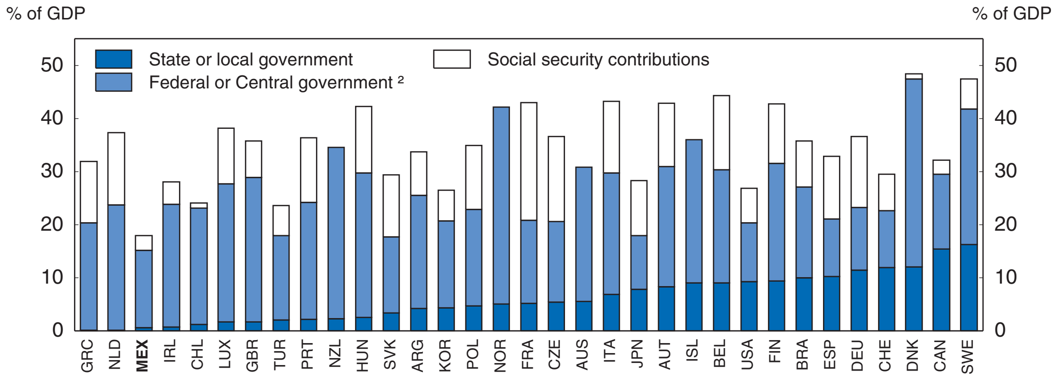
Given that the IETU was introduced shortly before the crisis, it is too early to assess its full potential. In any case, it has helped to limit revenues losses from tax loopholes, which is welcome. The IETU should thus be maintained for the moment. At the same time, Mexico should take advantage of the evaluation of the IETU mandated by Congress due in mid-2011 to further develop its tools to broaden the tax base and simplify the system. The disadvantage of the present system is that businesses and entrepreneurs have to file for two different types of business taxes at the same time, although it should be noted that this is no novelty in Mexico, as the IETU has a predecessor which was a tax on assets. Nevertheless, in the long run, it would be ideal to have a simpler business tax system. However, the IETU would only become redundant, if Mexico could significantly broaden the base of its regular business tax system. Otherwise, the IETU should continue to play its important role in closing tax loopholes. Retaining only the IETU is another option that Mexico could consider, but this should not lead to revenue shortfalls, which might require a higher rate. There are also complicated transition costs to consider when moving towards immediate deduction of investment expenses, as in IETU, and its recognition in double tax treaties would be a prerequisite, which is not guaranteed. Retaining both systems is another alternative, but benefits would have to be weighed against the complexity for taxpayers to file for two different types of business taxes. Authorities expressed the view that the attraction of the IETU in terms of closing tax loopholes consists in its co-existence with the traditional business tax systems, because most tax planning measures are attractive only under one of the two regimes, but not under the other, which makes an accumulation of tax planning opportunities less likely.

Increasing subnational government tax revenues in Mexico

While Mexico's subnational governments have few taxing powers, they have not exploited them fully, partly due to limited incentives and capacity to use them. This has led to low tax revenues at the subnational level. One issue is that it is easier for states to lobby for higher transfers from the federal government, rather than bearing the political cost of tax increases themselves. In 2007 the states' and municipalities' share in tax revenues accounted for only 2% and 1% (Figure 2.13) respectively, and revenues cover only a small

Figure 2.13. **Subnational government revenues**

As per cent of GDP, 2008[1]



1. 2007 for Australia, Chile, Greece, Japan, Mexico, Netherlands and Poland.
2. Including Supranational taxes.

Source: OECD, *Revenue Statistics Database* and *Latin American Revenue Statistics.*

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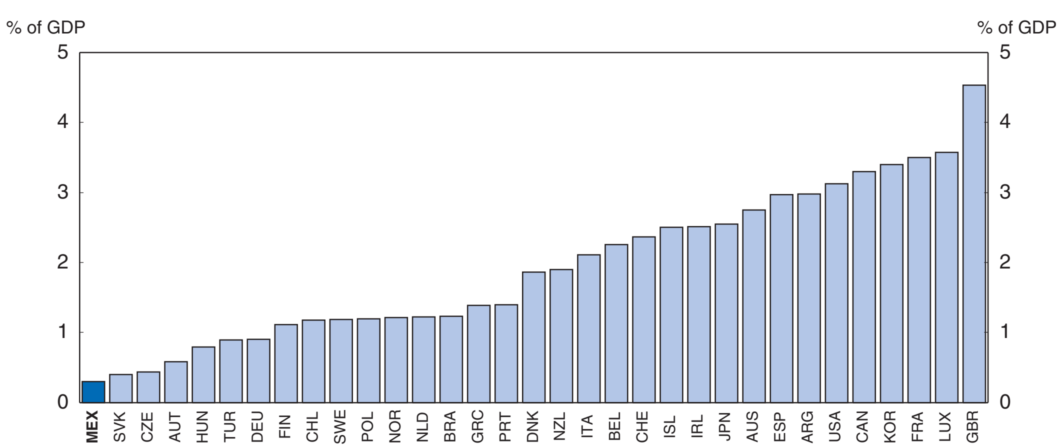
share of subnational government spending. The rest is covered by grants from the federal government, which are administered through various funds. Payroll taxes account for the largest part of states' own revenues. Although easy to collect, they are not ideal, not least because they increase the cost of formal labour (OECD, 2005). Past attempts to allow states to levy a sales taxes or a surcharge on income taxes were abandoned, because they were not used. This is probably related to limited capacity to levy taxes and to weak incentives, as it is easier for states to lobby for higher federal grants than to step up their tax raising efforts. Most recently, a state excise tax on gasoline was established and states were granted the right to levy sales taxes on goods that are subject to federal excise taxes. However, excepting the payroll tax these taxes have a rather narrow base. Moreover, most states do not fully exploit these opportunities.

Municipalities collect real estate taxes, but revenues are exceptionally low even in comparison to Latin American peers (Figure 2.14). One problem consists in outdated land

Figure 2.14. **Taxes on property**

2007



Source: OECD, *Tax Revenue Database* and *Latin American Revenue Statistics.*

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registers, which lead to undervaluation of property. Another is lax local administration and enforcement of taxes. Both issues are related to limited capacity, but also to weak incentives to collect higher property taxes. Mayors in Mexico can only run for a single three-year term and this is insufficient to reap the benefits of taking the unpopular step to increase property taxes. The federal government recently presented a political reform that would allow for the reelection of mayors. This would go a long way towards improving these incentives.

One possibility to strengthen property taxes is for municipalities to engage in state programmes to update land registers. Some municipalities in Mexico are exceptionally small and lack well-trained personnel. It might be easier for states to hire and train the personnel and provide the infrastructure that is needed to update land registers. It would also be easier for mayors to engage in unpopular tax increases when this is part of a state-wide programme. Extending the three-year term for mayors, as proposed by the federal government, or abolishing the no-reelection provision might also help, although the problem of weak capacity in many municipalities would remain a challenge. Raising real estate taxes would also be a relatively effective option. In principle it is relatively easy to enforce this tax, because real estate taxes are difficult to evade. Moreover, with a sufficiently high exemption threshold, it would be possible to achieve a progressive profile and tax households with high income, which is important for a country with high inequality.

The central government has done some work to increase states' incentives and capacity to collect their own taxes, but schemes are relatively complicated and some carry risks. Incentives to collect taxes at the state level were raised in the past by tightening the regulatory environment for subnational borrowing, discontinuing extraordinary transfers to states and providing information on federal investment projects, including those with a strong local impact. However, federal transfers have continued to increase over time and this weakens incentives for states to use their taxing powers to cover a larger part of their spending. On the other hand, the formulas for various funds that distribute non-earmarked federal transfers to states now include both the level and increase in subnational government tax collection. This is intended to reward states' efforts to collect taxes. One fund distributes money to states based on their tax collection within the REPECO regime and the value of confiscated goods at the border. Giving states the authority to audit federal taxes and keep most of the returns has also met with some success. In addition, the federal government has introduced some incentives to make it more attractive for mayors to collect higher taxes, such as the possibility to securitise future tax revenues through a development bank. However, channelling various incentives through different funds is complicated and intransparent, although easier to implement than more far-reaching fiscal federalism reform. Moreover, allowing states to securitise future tax revenues can lead to unpleasant surprises in the future regarding the sustainability of state finances if expectations of future revenues increases are not met.

More broad-based reforms to fiscal federalism could be envisaged in the long run that combine fiscal equalisation with strong, but simple incentives. Further increases in federal transfers should be limited so that states have an incentive to raise more of their own revenues to make up for this. Conferring taxing powers for broader tax bases to the states, *e.g.* via surcharges on income taxes or VAT, should then meet with more success. This should be combined with a well-functioning and transparent fiscal equalisation mechanism, which would make sure that poor states have the necessary resources to strengthen their growth potential sufficiently to catch up. At the same time, allowing states to gain higher revenues at the margin through their own tax collection efforts would be an efficient incentive mechanism to entice states to improve their growth potential and tax enforcement. This would separate re-distribution from incentives that are meant to enhance efficiency, which has proven successful in other OECD countries (Bloechliger *et al.,* 2007), such as Canada, Switzerland and Spain, and it is likely to work better than using the formulas of various transfer funds to create similar incentives.

Making further progress in combating tax evasion

There has been significant improvement in tax collection in recent years and continuing these efforts further would help strengthen Mexico's tax revenues. Table 2.7 suggests that overall tax evasion has declined from close to 40% of potential revenues to a bit more that 20%. Factors that have contributed to the reduction in tax evasion observed over recent years include registration campaigns that the federal tax administration, *Servicio de Administración Tributaria* (SAT), is conducting together with state administrations, the use of risk models to identify tax payers with a high probability of evasion and efforts to reduce compliance costs and combat corruption within the administration. Further progress is possible, though, as revenues foregone due to tax evasion still correspond to more than 20% of potential revenues. International comparisons are difficult, as studies on tax evasion are scarce. Yet, a study from the 1990s (Nam *et al.,* 2001) suggests that evasion of VAT was lower in most European countries at the time than in Mexico today. Five out of ten countries had evasion rates below 5% of potential revenues and only Italy (35%) had a higher evasion rate than Mexico today, while Spain, Belgium and Greece had evasion rates around 20%, similar to Mexico. At the same time, survey data suggests that tax evasion remains a much more pronounced problem in Mexico than elsewhere in most other OECD countries (Figure 2.15).

The tax authority, SAT, has taken a number of measures to raise the efficiency of its auditing activities and these efforts should continue. Risk models have improved SAT's ability to identify taxpayers with a high probability of evasion, which has helped raise the effectiveness of audits. Forty-seven per cent of audit costs were recovered in 2010 compared to twenty-six per cent in 2004. Extra tax collection related to audits has almost doubled since then. Assuming that more effective audits lead to better compliance, the overall returns are probably even higher. However, OECD data on tax administration

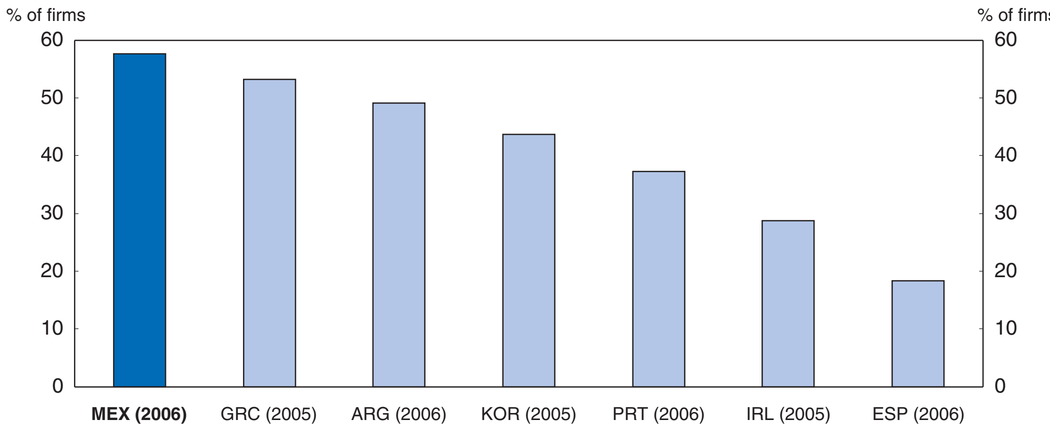
Table 2.7. **Estimates of tax evasion in Mexico**

Tax	2000		2008	
	As% of potential revenues	As % of GDP	As % of potential revenues	As % of GDP
Value Added	23.22	0.97	17.7	0.81
Personal income tax – professionals and entrepreneurs in the small business regime (REPECO)	86.19	0.24	95.7	0.19
Personal income tax – professionals and entrepreneurs outside REPECO	84.48	0.53	77.2	0.54
Personal income tax – rental income	93.53	0.41	80.7	0.34
Personal income tax – salaried employees	31.38	0.77	15	0.37
Corporate income (ISR-PM)	48.26	1.55	13.4	0.32
Total	**39.61**	**4.57**	**23.3**	**2.6**

Source: Fuentes *et al.* (2010).

Figure 2.15. **Tax evasion across countries**

As % of firms expressing that a typical firm reports less than 100% of sales for tax purposes



Source: World Bank, Enterprise Surveys.

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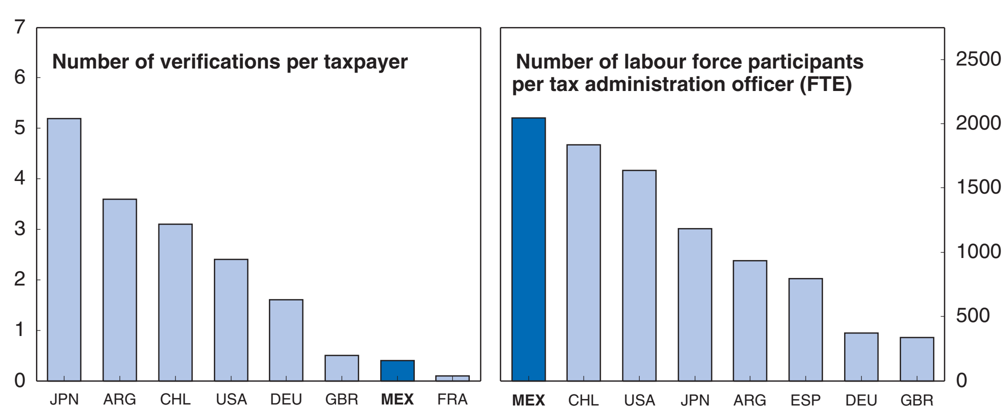
suggests that the risk for tax evaders of being subject to verification procedures is low in international comparison and so are fines. The percentage of taxpayers whose returns are verified every year looks somewhat low (Figure 2.16), although cross-country comparisons have to be interpreted with some caution, because definitions of what constitutes verification can differ across countries. At the same time the number of economically active persons per tax audit staff looks rather large in Mexico, although it should be noted that only federal staff are reported in Figure 2.16. The ceiling for administrative fines at seventy-five per cent of evaded taxes is low compared to many OECD countries, where it often exceeds the amount of evaded taxes, in some cases significantly so (OECD, 2008). Mexico should consider increasing its tax auditing staff and fines. What will be even more important, however, is to refine and extend the use of risk models, step up training, particularly on auditing techniques, and continue to develop

Figure 2.16. **Tax enforcement across countries**

2007



Source: OECD, Centre for Tax Policy and Administration, Tax Administration in OECD and Selected Non-OECD Countries: Comparative Information Series (2008).

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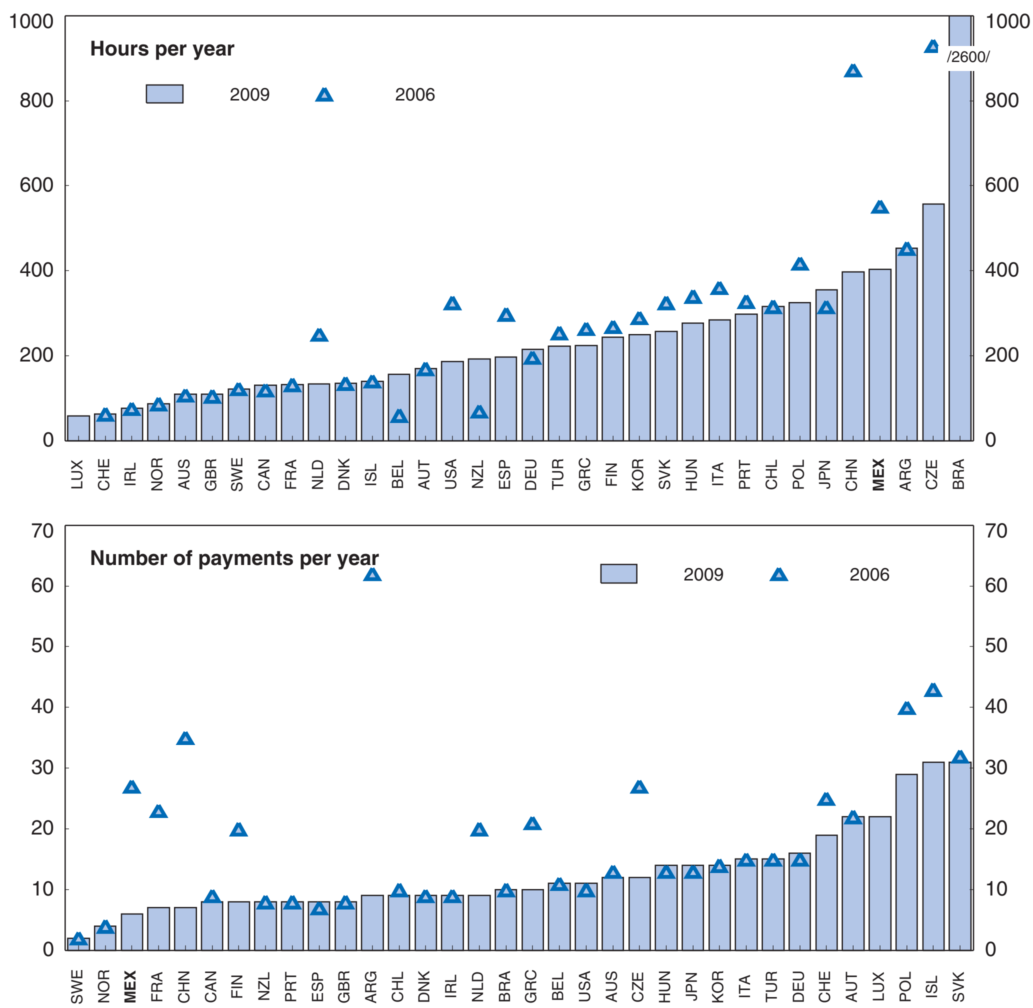
attractive pay and career paths for qualified tax administration staff. States, where progress in enhancing the capacity of tax administrations is very uneven, will have to engage in similar efforts. Mexico should organise joint training for state and federal tax administration staff as they will frequently have to work together. The example of Spain (see Box 2.5) shows that a decentralised and qualified tax administration can be crucial in increasing tax collection.

SAT conducts registration campaigns together with state tax authorities to expand the registered taxpayer base. The intention is to include informal employees and entrepreneurs in the taxpayer base and update the data for formal workers. The registered taxpayer base has more than tripled since 2003 and corresponded to sixty-two per cent of the economically active population in 2009. The largest part of the increase corresponds to salaried employees who have only been included in the taxpayer base since 2004. However, the number of self-employed entrepreneurs has also increased by more than 30%. An expanded and updated taxpayer registry, including salaried employees, helps to reduce informality and facilitates cross-checking with other data sources, *e.g.* the social security registry of *IMSS* and *ISSSTE*. These important efforts should continue.

The new tax on cash deposits (*Impuesto a Depositos Efectivos*, IDE) recently introduced in Mexico has helped update the taxpayer registry and promote audits. IDE is a withholding tax on cash deposits – the rate of which increased from 2% to 3% in 2010 – which is fully creditable against other federal taxes. It will be reimbursed even if it exceeds other tax liabilities. The main attraction of this tax is that it facilitates tax audits, as people who do not credit IDE against other tax liabilities are likely to evade taxes. IDE also entails an incentive to register or correct outdated data in taxpayer registry to be able to credit it against other taxes. As a result, close to 400 000 taxpayers have corrected their registered taxpayer data. However, the government should carefully monitor whether the tax leads to avoidance behaviour in that citizens resort to payments in cash and cash holdings outside banks. It should also be careful to minimise the disruptions for the formal economy by continuing efforts to provide fast refunds.

Compliance costs have long been considered to be too high, but the country is making important progress. Mexico has greatly reduced the number of payments per year that companies have to make (Figure 2.17) and has facilitated compliance via electronic tax filing for payroll, property and social security taxes that has recently been overhauled to make its use even easier. In 2009, 92% of annual tax declarations were submitted electronically compared to 9% in 2003. However, time spent on tax filing remains relatively long according to the latest World Bank data (Figure 2.17). In part, this is due to the new alternative minimum tax for businesses, which entails tax filing for two different types of taxes on business income. Recently, Mexico has taken important further measures to ease tax compliance. For the IETU the government moved from monthly to annual declaration and monthly VAT declarations will not have to be complemented with an annual declaration any longer. Approval by a certified accountant of companies' balance sheets will no longer be needed for tax or for social security purposes. Likewise a certified accountant's approval is no longer needed to obtain IDE refunds. This way the system will be much more based on self-assessment than previously. According to the World Bank Doing Business indicators, this has helped to bring the average annual number of hours for businesses to file taxes down from 517 to 404. These efforts are very commendable.

Figure 2.17. **Number of payments and time spent for paying taxes**



Source: World Bank, *Doing Business* 2006 and 2011.

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Mexico also has to make efforts to spend tax money efficiently in line with citizens' preferences to raise their willingness to pay tax, which is somewhat weak in comparison to other Latin American countries. According to Survey data from *Latinobarometro*, 60% of Mexicans think that tax evasion is never justifiable compared to 85% of Argentineans, 80% of Colombians and 66% in Latin America as a whole. This seems to be related to some extent to the perception that public money is not well spent. The share of Mexicans who responded that people evade taxes because they are ill-spent was 35% in 2004 compared to 18% in Chile and 27% in Brazil. However, this is a big improvement compared to the late 1990s when this share was higher than 50% in Mexico. This may be due to Mexico's efforts to increase the value of its public services, including through stronger social policies, and to enhance fiscal accountability through the adoption of the Fiscal Responsibility Law in 2006, the introduction of performance-based budgeting and evaluations of different spending programmes. Mexico should continue its efforts to make public services more valuable to its citizens and to enhance its fiscal transparency.

Concluding remarks

Almost none of the reforms discussed in this chapter are easy to implement. Yet, although it is politically difficult, Mexico needs to continue working on broadening its tax base and making the tax system simpler, to reduce tax avoidance and evasion, and on making the tax-benefit system more progressive and efficient. Replacing inefficient consumption subsidies, including for energy, with better targeted cash transfers has proven difficult in the past. However, the country has so much to gain from such a reform in terms of a greater effectiveness in protecting the poor and the environment. Therefore, efforts to implement such a reform need to continue.

Box 2.6. **Main recommendations to strengthen taxes and improve the efficiency of spending**

- Gradually withdraw zero rates and exemptions within the VAT system and energy subsidies. Eliminate or accelerate the price-smoothing mechanism for gasoline and diesel. Adjust electricity subsidies gradually so that they exceed production costs by a reasonable profit margin.
- Increase targeted cash transfers to the poor, for example through Oportunidades or by introducing a social assistance benefit.
- Gradually withdraw energy subsidies, as well as zero rates and exemptions within the VAT system.
- Following the removal of energy subsidies, consider introducing broad-based greenhouse gas emission taxes or an emission trading system.
- Gradually remove *Ingreso Objetivo* and *Procampo* and divert some of the resources to spending on productive public goods. As an intermediate step consider limiting the amount of total subsidies that single farmers can receive.
- Continue efforts to streamline agricultural spending programmes.
- Continue efforts to enhance the efficiency of spending on public administration, but avoid spending cuts that could undermine the quality of services.
- Evaluate all special business tax regimes and retain only those of proven effectiveness.
- Evaluate the small business tax regime, including whether tax relief is higher than needed to integrate small firms into the tax net. Strengthen tax enforcement and consider a requalification after some years or a sunset clause.
- Evaluate the in-work tax credit and consider targeting it more on the lowest incomes.
- Move towards taxing all wage elements with the same rate.
- Evaluate the new alternative minimum business flat tax. In the long term, consider moving towards a simpler business tax, but keep IETU in place, unless the tax base of the regular business tax system can be broadened significantly. Encourage states to launch programmes for municipalities to update land registers.
- Limit the growth in transfers to states and launch a more broad-based fiscal federalism reform with an efficient fiscal equalisation mechanism and a conferral of larger tax bases to the states.
- Enhance tax enforcement through extended use of risk models, training and attractive pay and career paths.

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Chapter 3

Structural reforms in regulatory, competition and education policies to achieve faster productivity growth

Productivity growth has been insufficient over the past two decades for a convergence of Mexican living standards to the OECD average. Structural reforms in the areas of business regulation, competition policy and education will be crucial to stimulate productivity and foster the catching up process. The OECD has worked with Mexico in all of these areas to develop reform strategies. Efforts to reduce the regulatory burden for firms, including start-ups, should continue. There is also a need to better co-ordinate ongoing administrative simplification efforts at the federal and state levels. The recent competition law reform will strengthen enforcement of cartel law. Undue restrictions on firm entry and expansion in key network industries should be lifted to enhance productivity in potentially competitive segments. Higher quality education and more equitable access to it will be needed to help Mexicans develop their productivity potential in full. A key ingredient will be better teachers. Clear standards for teacher performance are needed to improve their initial education and professional development and to develop a teacher evaluation system that would guide their career development and help them develop their potential. School financing is currently complicated and uneven, leading to inequities. Given that overall spending on education is comparable to OECD levels, Mexico should work towards efficiency gains in the sector and creating a system that provides more reliable funding for all schools.

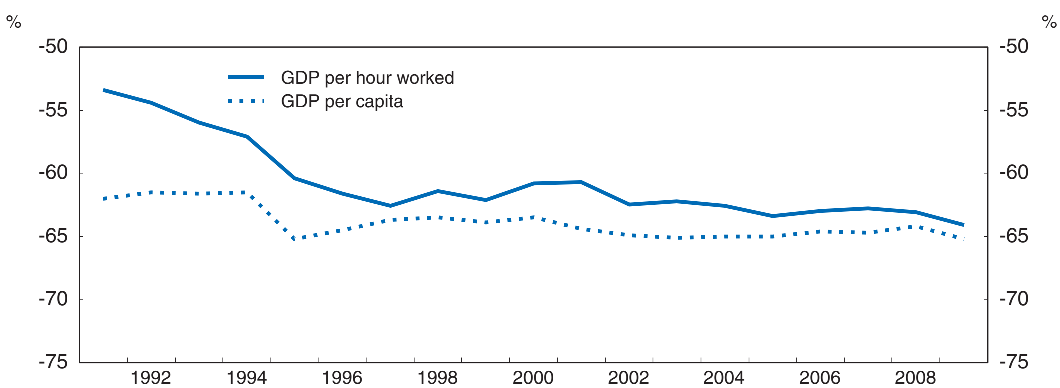
Strengthening productivity growth is one of Mexico's major challenges. Real GDP per capita growth over the last 20 years has been disappointing, in part related to past crises and increasing competition from countries with similar factor endowments. At 1.2% growth was lower than the average in Latin America and the Caribbean of 1½ per cent, and much lower than in developing countries of East Asia and the Pacific, where GDP per capita grew at an annual average of 7.3%. During this period Mexico's GDP per capita growth was not sufficient to converge towards the income of richer OECD countries (Figure 3.1). Mexico's gap in GDP per capita *vis-à-vis* the richest third of OECD countries is mainly due to weak labour productivity (Figure 3.2), which was insufficient to lead to convergence.

Strengthening productivity growth will require a broad-based strategy. One important element will be stronger product-market competition through better enforcement of competition law and high-quality regulation that ensures fair access for all entrepreneurs to markets at reasonable costs. Mexico needs to work further on limiting the costs for businesses to operate in the formal economy, in particular the regulatory burden (Chapter 4). The country also needs a stronger education and training system that allows educated individuals to reach their full potential and strengthen their productivity. This would also help to reduce poverty and income inequality, in particular if Mexico works towards enhancing equitable access to high-quality education.

The OECD supports Mexico in several of these areas. OECD competition experts have conducted joint analysis with the Mexican competition regulator *Comisión Federal de Competencia* (CFC) to identify barriers to competition and propose reforms. OECD regulation experts have worked with the Ministry of Economy and subnational governments to develop tools that would help reduce the costs of business regulation, while ensuring

Figure 3.1. **Gaps in GDP per capita and productivity**

Gap to the upper half of OECD countries[1]



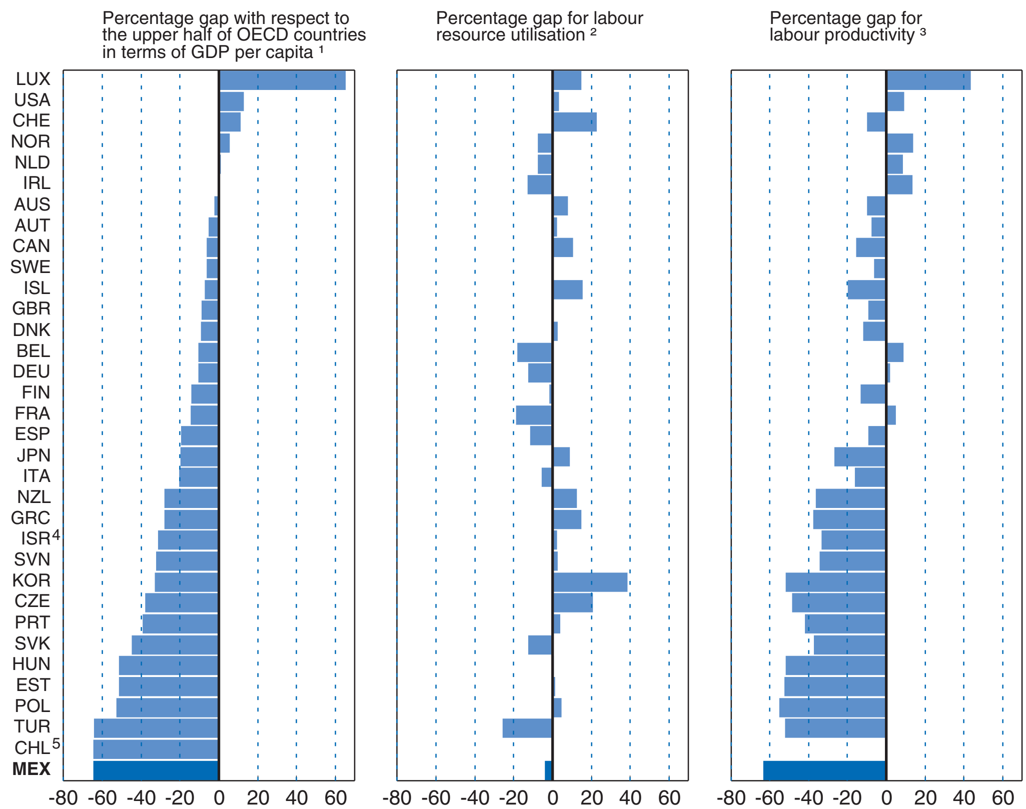
1. Percentage gap with respect to the simple average of the top 17 OECD countries in terms of GDP per capita and GDP per hour worked (in constant 2005 PPPs).

Source: OECD, *Going for Growth 2011* (forthcoming).

StatLink http://dx.doi.org/10.1787/888932383907

Figure 3.2. **The sources of persisting real income differences**

2009



1. Relative to the top 17 OECD countries in terms of GDP per capita, based on 2009 (2008 for Chile, Israel and Slovenia) purchasing power parities (PPPs).
2. Labour resource utilisation is measured as total number of hours worked divided by the population.
3. Labour productivity is measured as GDP per hour worked.
4. The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
5. Data of hours worked are not available for Chile.

Source: OECD, *Going for Growth 2011*.

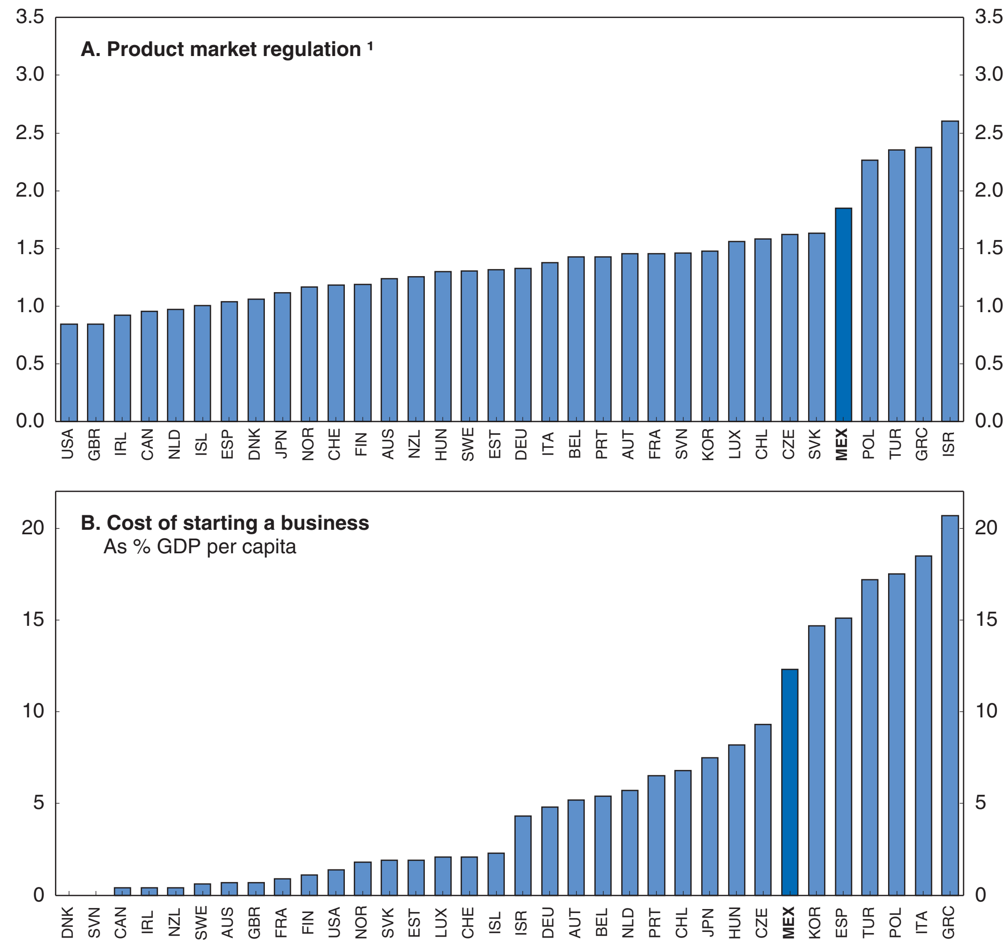
StatLink http://dx.doi.org/10.1787/888932383926

coherence and streamlining across different levels of government. OECD education experts have worked with the Ministry of Education to develop a reform strategy that would enhance the quality of Mexican schools. This chapter summarises progress that Mexico and the OECD have achieved together and suggests reforms that would help advance this agenda further.

Improving regulation can have a significant impact on productivity growth

OECD research suggests that allowing more competition, while reducing the costs of business regulation could help Mexico increase productivity significantly. The OECD product-market regulation indicator (PMR) shows that regulation is relatively restrictive in Mexico (Figure 3.3, see also Woelfl *et al.,* 2009). This is mainly due to barriers to entry, investment or foreign ownership in services and network industries, including telecommunications, transport and electricity. Regulatory burdens for firms are still important, notwithstanding major recent improvements. OECD simulations (see Box 3.1

Figure 3.3. **Product market regulation and cost of starting a business**



1. Overall indicator, the scale of the indicator is 0-6 from least to most restrictive of competition.

Source: OECD, *Product Market Regulation Database*; World Bank, *Doing Business 2011*.

StatLink http://dx.doi.org/10.1787/888932383945

for details on the methodology) suggest that if Mexico brought its regulations in line with OECD best practice, labour productivity could be as much as 18% higher after 10 years. It could be 9% higher in a more moderate reform scenario, whereby Mexico's regulatory reform matched the PMR indicator score of the average of Belgium, France, Italy and Portugal. A breakdown of the effect of different reform efforts suggests that reforms in network industries could bring particularly high productivity payoffs. Far-reaching reforms in these sectors, including the full separation of ownership of essential infrastructure from competitive segments, would bring twice the productivity benefits of administrative regulatory reform, including the simplification of procedures for starting a business. These estimates – in particular the exact values – have to be interpreted with some caution. Nevertheless they give a sense of the order of magnitude of productivity improvements that Mexico could achieve when engaging in administrative and competition reform.

In Mexico competition in network industries is limited either by restrictions on foreign and private investment, such as in the production of gas and distribution of electricity, in

Box 3.1. **The model used for the empirical simulations**

The labour productivity effects of the simulated regulatory reforms are calculated for each sector separately, and then aggregated to a weighted average of the overall economy. The estimation equation used in the empirical model is the following:

$$\Delta \ln LP_{ijt} = \delta\,(\Delta \ln LP_{jt}^{leader}) + \sigma\, prodgap_{ijt-1} + y_1\, PMR_{ijt}^{ict} + y_2\, PMR_{ijt}^{non\text{-}ict}$$
$$+ \alpha\,(PMR_{ijt-1} * prodgap_{ijt-1}) + \text{country/industry dummies} + \text{time dummies} + \varepsilon_{ijt}$$
$$\text{with } \varepsilon \sim N(0, \Sigma).$$

In this equation, the indices i, j and t denote countries, industries and years, respectively; LP denotes labour productivity; prodgap is the "productivity gap" – which is measured as the (log) difference between the level of productivity of a given sector in each country and that of the productivity leader – and PMR is the regulation impact indicator of anti-competitive product market regulation. Fixed effects for each country-industry combination are included so as to account for unobserved time-invariant factors affecting productivity growth in a particular sector or country (*e.g.* natural endowments or location). Time dummies are also included to control for global productivity shocks in any given year.

The simulations proceed in two steps. First, the simulated policy changes are defined at the level of sector-specific regulation indicators for each non-manufacturing sector. These changes in service sector regulation measures are translated into the corresponding knock-on effects for each sector of the economy, including manufacturing sectors, on the basis of input-output relationships between different sectors of the economy. This approach captures the idea that a sector that relies relatively heavily on inputs from a given non-manufacturing sector is likely to be affected relatively strongly by changes in that non-manufacturing sector. These knock-on effects are measured by the indicators that are referred to as regulation impact indicators in Conway and Nicoletti (2006).

In a second step, the impact of this reform on labour productivity growth is simulated for each sector of the economy using a dynamic empirical model. More precisely, an estimate of the reform impact is obtained by comparing the model predictions on labour productivity outcomes both with and without the hypothetical regulatory reforms. In the empirical model labour productivity growth in a given sector and country depends on its ability to keep pace with the growth of the same sector in the country with the highest sector-specific level of labour productivity (the productivity leader) by either innovating or taking advantage of technology transfers. The prospects of catching up with the productivity leader are affected by the policy environment in follower countries. In particular, Aghion and Griffith (2005) stress the role played by institutions that promote (or hinder) firm rivalry and/or entry of new firms in raising (or curbing) incentives to enhance productivity. In the model presented here, these institutions are proxied by the OECD indicators of anti-competitive regulations described above.

each of which a single state-owned firm dominates the industry, or by the overwhelming dominance of the private market incumbent in the telecommunications sector. The simulation exercise suggests that the impact on labour productivity would be particularly large if thorough reforms were undertaken across a number of sectors. At the same time, far-reaching reforms in these sectors are politically difficult, not least because there are powerful vested interests in preserving the status quo. Therefore, strong communication of the benefits of structural reforms is very important.

Mexico has pursued reforms in network industries for long with both successes and failures. Privatisation of airports has enhanced competition in the sector, although there are still barriers to entry worth addressing. The closure of *Luz y Fuerza del Centro* – a highly inefficient state-owned company – has gone some way in enhancing the efficiency of the electricity sector. This has helped to reduce the time that customers in Mexico City have to wait for an electricity service from an average of 10 months to 4 months (World Bank, 2010). The concession of fibre optic networks with national coverage together with new radio spectrum allocations will allow for infrastructure competition in the telecommunications sector. However, more far-reaching reforms in the electricity, gas and telecommunications sectors have been limited by the need to mobilise large political majorities to change the constitution or – in the telecommunications sector – by regulatory and judicial weaknesses confronted with powerful vested interests. The impact of reforms to ease administrative burdens is smaller, but they could still help to improve quite significantly on Mexico's weak productivity performance. At the same time, administrative reforms are much easier to implement than far-reaching reforms of network industries, as no legislative changes are required and vested interests that would resist change are a lot less powerful than in network industries.

Mexico is making efforts to ease business regulations

The government is in the process of simplifying procedures to start up a new business

Mexico has achieved substantial progress in regulatory reform. Regulations are now subject to quality controls and more transparent mechanisms have been introduced to attain high quality regulation. Market openness and competition are explicit goals in the regulatory reform framework. Regulatory impact assessment (RIA) – a comprehensive analysis of impacts, costs and benefits of regulations – has been a mandatory requirement for new regulation proposed since 2000. Furthermore, most states have either a decentralised commission or a department within a ministry – usually the Ministry for Economic Development – in charge of regulatory improvement. Thanks mainly to efforts to ease administrative regulatory burdens for business start-ups, Mexico has climbed up 6 ranks in the World Bank's latest ranking of countries' business environment (*Doing Business*) and was the only OECD country among the top ten "most improved" (World Bank, 2010).

Notwithstanding these improvements, more needs to be done to improve business regulation and reduce its complexity. The cost of starting up a new business as measured as a percentage of GDP per capita remains comparatively high, more than double the average in OECD countries. The World Economic Forum's indicators of regulatory quality indicate, as well, that Mexico needs to do more to bring its regulatory quality in line with some of the richer OECD countries (World Economic Forum, 2009). High entry costs can increase informality and inhibit structural change, competition and innovation, thus hampering productivity growth.

With the support of the OECD, Mexico has started several initiatives to reduce unnecessary regulatory burdens, in particular for business start-ups, and increase regulatory quality. The launch of the one-stop shop *tuempresa.gob.mx* in August 2009 was a decisive step to reduce the cost of starting a new business. The site allows entrepreneurs to comply largely online with all federal procedures required to register a new business, significantly simplifying a process that formerly involved not only high fees, charges and taxes, but also a lot of time. The government plans to integrate a wider set of procedures into *tuempresa.gob.mx*, which would be a welcome measure to reduce the regulatory burden for businesses that are already operating.

OECD research suggests that the cost reduction that entrepreneurs can achieve when registering their enterprise through *tuempresa.gob.mx* is substantial (OECD, 2009). OECD calculations show that the costs of registering a new business could be reduced by two thirds. Results from the World Bank's latest *Doing Business* report confirm the beneficial effects of *tuempresa.gob.mx*: the number of days required to register a new business went down from 13 to 8 and the number of formalities from 8 to 6 following the introduction of the one-stop shop. These improvements helped Mexico leap 23 places in the "Starting a Business" ranking (World Bank, 2010).

However, more needs to be done to increase the usage of the one-stop online site. As of December 2010, 25 437 citizens had managed their start up formalities using the portal, an average of about 1 590 users per month. So far, the government has promoted the site through brochures and other information material for specific stakeholders, such as business groups and universities, and in speeches. More extensive campaigns in the media will also be needed. The government should start to engage in more extensive media campaigns to make the one-stop shop known to a wide range of potential entrepreneurs. A second reason for the low usage of the portal is insufficient support from some interest groups, such as subnational governments and notaries. The Ministry of Economy should therefore enhance its engagement with strategic partners, such as subnational governments and notaries, to gain their support for the one-stop shop.

There is also a need to strengthen co-ordination with the subnational levels of government to maximise the impact of efforts to simplify procedures for business start-ups. As many formalities required to open a business take place at the municipal level, municipalities have adopted a programme to simplify these procedures called System for Quick Business Start-up (SARE). The system allows low risk businesses to start operations 72 hours after filing for registration and there is evidence that this has induced more firms to register, as discussed in Chapter 4. States and municipalities should co-operate with the Ministry of Economy to make *tuempresa.gob.mx* operational in their jurisdictions and establish business start-up portals at the state and municipal levels that would cover formalities currently bundled under SARE, to be interconnected with *tuempresa.gob.mx*. Managing start-up procedures online would greatly simplify the process and which could even help reduce opportunities for corruption, as direct contact between officials and entrepreneurs would be avoided. This could help strengthen the positive impact on formality and productivity, since corruption lowers the value of formality, while increasing its costs, thus reducing incentives to formalise, as discussed (see Chapter 4). Subnational governments should also commit to promote the portal and increase its usage. Federal and subnational authorities should work to interconnect *tuempresa.gob.mx* with state and municipal start-up portals.

The regulatory review "Base Cero" is set to improve the quality of regulation in Mexico

In January 2010, President Calderón announced a regulatory review process to update the entire stock of federal regulations. The objective is to improve and simplify regulations to favour productivity and facilitate technology absorption, so as to strengthen innovation as a basis of economic growth. Each ministry identified formalities and regulations they considered worth reviewing. In the second stage, regulations were assessed according to:

i) their incidence, that is the number of times that a business has to comply with the regulation; *ii)* the administrative cost associated with complying with the regulation; and *iii)* savings that could be reaped by reducing transaction costs either through elimination or simplification of the regulation. Several OECD countries, including Canada and Korea, have carried out similar exercises. Thanks to strong political leadership and consultations with the business sector to identify regulations in need of reform, the regulatory burden was reduced.

A number of formalities for exporters, importers, the farming and livestock sectors, start-ups and tax filers have already been simplified thanks to the initiative. Trademark registration and the presentation of training plans and programmes will be incorporated to *tuempresa.gob.mx*, so that these formalities can be completed online. The plan for the period 2010-11 is to simplify formalities related to foreign trade, taxes, public procurement and infrastructure development, labour flexibility, starting up a business, housing development, and access to finance. Projected savings amount to about $35 billion pesos.

In addition, Mexico is aligning technical regulations (NOMs) with those of the United States and Canada under the *Base Cero* initiative. The main objective is to eliminate redundancies in certifications. In the future compliance with international standards will automatically imply compliance with NOMs. This could also facilitate technology absorption and promote competition in the standardisation industry.

Despite the ambitious goals of the *Base Cero* programme and its positive initial results, the initiative would benefit from adopting a more comprehensive approach to the review exercise by extending its scope to a wider range of high impact economic processes and to procedures that apply at different stages of the life cycle of business. Strengthening consultations with relevant stakeholders, particularly businesses would also help to increase the impact of simplification and address the most burdensome formalities. Furthermore, measuring and communicating the results better to the main stakeholders and the general public would help gather support for the initiative. The government should also make it clear to stakeholders that these exercises need to be carried out periodically, so that further gains are realised and regulations evolve to address changing needs. The federal government could also consider promoting the idea of carrying out similar review exercises at the subnational level, as in the state of Baja California.

The Federal Commission for Regulatory Improvement (COFEMER) is also co-operating with the OECD to enhance its regulatory impact assessment (RIA) system. The previous system became burdensome for ministries and departments, as they were required to prepare a complete RIA, even if proposed regulations had only minor costs and impacts. The OECD provided advice based on international best practices, including Australia, Canada and Ireland, to reform Mexico's RIA system. After the reform COFEMER can now concentrate its resources on regulations with the highest costs and burdens and the administration does not have to conduct a full RIA when introducing low-cost formalities or procedures. An electronic cost calculator was introduced to classify regulation initiatives as either high or low impact and the template to assess low impact regulations was simplified reducing the time that officials have to spend on this exercise. COFEMER should support the implementation of the upgraded RIA system by training personnel in line ministries and agencies to use it. COFEMER has taken first steps by publishing guidelines on how to draft RIAs.

Subnational governments need to be engaged in the reform efforts

A lack of horizontal and vertical co-ordination of regulation across levels of government can lead to redundancies, overlap and even inconsistencies, increasing the cost of regulations and reducing transparency. In Mexico, subnational governments have extensive regulatory powers. Federal, state, and municipal authorities have the capacity to design, implement, and enforce their own regulations. In some cases, boundaries for each level of government are defined, but in many others there are overlaps. Along with the efforts at the national level, it is necessary to engage subnational governments (states and municipalities) in the regulatory reform agenda. Many of the most burdensome formalities are administered at the subnational level. Even though some of the 32 state governments have adopted regulatory reform policy frameworks and use innovative tools, such as e-government, the degree of progress and commitment varies significantly across states (Garcia Villareal, 2010).

The Ministry of Economy and the OECD, jointly with the Mexican Institute for Competitiveness (IMCO), carried out a research project to reduce the regulatory burden and enhance competitiveness at the subnational level. This project identified the most burdensome formalities for the business sector in each participating state by pinpointing the costliest and most time-consuming stages and requirements in license and permits processing. Based on this, the OECD and IMCO provided specific recommendations for reform. Examples are provided in Table 3.1. The OECD also provided recommendations for improvements based on a study of best practices in three Mexican states and three provinces of other OECD countries.[1] These efforts served as an input to draft a toolkit to simplify subnational regulations and formalities.[2] The federal government should encourage states and municipalities to apply the recommendations in the toolkit, which will help improve their regulatory practices in the short-term, raising awareness of the issue and creating an opportunity for systematic regulatory planning in the longer term.

Table 3.1. **Burdensome formalities and requirements in the process to start up a business and recommendations to simplify them**

Problem	Recommendation
Information about requirements to complete different formalities is inaccessible, which creates confusion for the users and opens the door for corruption.	Use as many means as possible to make the information about formalities and requirements accessible and transparent for the user. To the extent possible, make use of electronic means (website, chat, etc.).
Lack of co-ordination between different offices *(e.g.,* urban development municipal offices and state cadastral offices), creates redundancies and hinders the possibility to simplify and consolidate formalities.	Establish a shared database to allow immediate communication and updates between offices and avoid requirements for citizens to present original documentation to different government entities.
The stages in which public notaries participate represent a significant share of the total costs of starting up a business.	Make use of electronic tools to streamline and drive down the costs of the stages in which public notaries participate. The Ministry of Economy has already designed tools such as the system for Immediate Registration of Businesses (RIE) to achieve these objectives.
Registration for the state payroll tax (ISN) is burdensome and requires the physical presence of the businessman in the offices of the Treasury.	Allow electronic registration by establishing and interconnecting start up portals of states with tuempresa.gob.mx.

While it is important for subnational levels of government to develop their own regulatory framework, as they are often closer to the field, multi-level co-ordination will remain critical. Furthermore, states and municipalities should work on implementing regulatory reform to reduce the gap between those that are already advanced and those that have barely started. The federal government should engage subnational governments in the regulatory reform agenda to create dynamic regional business environments.

Mexico needs more competition to spur growth and improve consumer welfare

Despite improvements over the past years, scope remains for improving the functioning of competition in Mexico. Past OECD studies and the *Comisión Federal de Competencia* (CFC), the Mexican competition authority, found high levels of concentration and weak competition in many sectors of the Mexican economy. Improving the functioning of competition, including by sectoral reforms that would facilitate new firm entry and growth in network sectors, will be a key factor to achieve higher productivity growth rates, as suggested by the simulation exercise (see Box 3.1). This is because competition disciplines managers and thus helps reduce costs, while reinforcing incentives for innovation and the adoption of new technology. Competition can also lead to higher levels of employment (Nicoletti and Scarpetta, 2005) and enhance the resilience to economic shocks (Duval *et al.*, 2007).

Stronger competition would also enhance consumer welfare, in particular for lower-income individuals. A joint OECD/CFC study found that 31% of the average Mexican household's spending is devoted to products produced in monopolistic or highly oligopolistic markets (CFC, 2009; Urzúa, 2009). The share is even higher for lower-income households, 38% for the lowest income decile compared to only 24% for the richest decile.

The recent reform of the competition law is a major step ahead

One key route to increasing competition is through vigorous enforcement of a well-designed competition law. Enforcement has evolved rapidly in Mexico since the enactment of the first competition law in 1993. Since then, the law has been modified on several different occasions, most recently in 2006. Among other amendments, the 2006 reform allowed the CFC to create a well-respected leniency programme. This reduces penalties for firms that provide evidence on cartel operations, thus strengthening incentives for cartel members to co-operate with the authorities. Furthermore, the amendments allowed the CFC to impose structural remedies, such as divestitures, in monopoly cases; strengthened and simplified procedures related to efficiency considerations, merger notification, and included additional conducts that may constitute relevant monopolistic practices. The CFC has matured into a credible and well-respected agency with relatively strong levels of independence, a feature deemed essential for competition authorities to avoid special pleading.

Nevertheless, the 2006 version of the law lacked some important enforcement tools. Congress now passed a reform to address these lacunae. The reform further enhances CFC powers to gather information, establishes maximum penalties that are substantial enough to deter wrongdoing, increases efficiency of investigations and enhances the transparency and predictability of CFC procedures. One weakness of the previous situation was that the CFC had to announce office visits in advance and could only seek information previously requested. The new law now allows unannounced visits significantly increasing the likelihood of collecting useful evidence from suspects. Penalties were previously predicated upon a multiple of the minimum wage, which yielded maximum fines of about USD 7 million. Gains from illicit conduct could often far outweigh this figure. Thus, previous fine levels failed to deter serious cartel behaviour. The new reform increases maximum fines to 10% of company revenue in Mexico, thus ensuring that fines can provide real deterrent value. The reform also expands the scope for criminal prosecution against individuals engaged in cartel activities and enhances operating efficiency by allowing settlements between the CFC and companies under investigation. Previously, settlements could not occur before finalisation of an investigation, delaying the process and forcing investment of resources even when both sides expect a similar outcome from the investigation. The reform will strengthen enforcement and enhance predictability and transparency.

One key topic partly addressed by the law that has been previously identified by the OECD as meriting reform is the way that *amparos* are handled. *Amparo* proceedings are similar to the *habeas corpus* figure in other countries and are established by the constitution, to grant all persons protection against acts of government. It can be brought by any party based on wide-ranging grounds, including that a law is unconstitutional or that an agency action is not supported by substantial evidence or founded on reasoning that is illogical or contrary to general principles of law. CFC investigations and cases, like those of regulatory agencies, are routinely subjected to multiple *amparos*, leading to court orders suspending CFC proceedings. Sometimes these appeals can unnecessarily delay or undermine actions and decisions by the CFC and other regulatory bodies that would otherwise have a beneficial effect on competition. It can take years before a court makes a final decision on whether or not a law or a regulation can be applied. *Amparos* are useful to check the arbitrary use of government power, but their efficiency could be improved. Building expertise in economic issues within Mexico's judicial system would help. Judges who hear *amparo* cases are sometimes unfamiliar with competition law or economic regulation issues. The new law foresees that appeals to CFC resolutions will now be referred to courts that are specialised in competition law. This might reduce the lengths of proceedings and increase the quality of courts' decisions, although establishing these new courts may take time and requires further legal changes. *Amparos* will still be available to companies affected by CFC decisions. Previously, the CFC had also organised many seminars for Mexican magistrates, judges and their staff about competition law and regulatory issues since 2006. Speakers included judges from the United States and Europe as well as competition enforcers from other jurisdictions. Since 2004, the percentage of *amparo* suits won by economic agents has fallen from above 50% to less than 20%.

Reforming sector-specific regulations

The new competition law amendment is a major step forward towards stronger competition across the Mexican economy, but sector-specific measures are also needed. In particular, undue restrictions on new firms in network industries need to be lifted and anticompetitive practices in the pharmaceutical sector should be curbed.

Airline and airport sector

The airlines sector in Mexico was first liberalised in the early 1990s but the financial crisis in the mid-1990s stopped the process, as the government had to bail out the two major airlines, *Aeroméxico* and *Mexicana*, and became their principal shareholder. It was not until the mid-2000s that a second liberalisation process occurred with the entry of half a dozen low-cost carriers. Although the recent opening of bankruptcy proceedings in the case of *Mexicana* suggests that full service carriers can have difficulties in adapting to the new market conditions, it is a positive sign that the government has not come to the rescue of the company but rather let the market play its role.

Competition in the airline sector is generally considered a success, but further improvements are possible. Domestic passenger growth averaged 5.4% from 1989 to 2008 and the concentration level in the sector (as measured by the Herfindahl-Hirschman Index) fell by more than half between 1989 and 2008. A joint CFC/OECD (Ros, 2010) analysis shows that fares are approximately 30% lower on average on the routes where a low cost carrier operates. The main impediment to competition in the Mexican airline industry is entry conditions at Mexico City Airport. Landing and takeoff slots are not only allocated inefficiently but also they are often difficult for new entrants to obtain. According to a joint OECD/CFC analysis (Ros, 2010), this has resulted in Mexico City Airport´s capacity being underutilised and fares on routes that involve Mexico City being between 40 and 80% higher than on comparable routes elsewhere in Mexico.

A better allocation of slots at Mexico City Airport would require abandoning the allocation mechanism currently in place, which is based on grandfathering, puts artificial restraints to the development of a secondary market for slots, and is controlled by a committee mainly composed of incumbent airlines. In this sense, airport conditions would be much improved if the Ministry of Communications and Transport (SCT) not only implemented a market-based mechanism – such as auctions – to systematically allocate slots in those hours where the demand for slots exceeds existing capacity, but also allowed the development of a more dynamic and transparent secondary market for this scarce good. Slot auctions and slot resale need to be put in place to permit successful entry and expansion of airlines. In this case, moreover, it would be advisable to implement accumulation limits to prevent distortions to effective competition as well as to delegate the co-ordination of the new system to an independent body. Although Mexico City Airport is empowered to auction slots in saturated hours since 2005, this has not yet been done. This can be attributed to the fact that the administrative definition of saturation used does not incorporate airlines' demand for slots. In addition, the airport has never published the rules that would govern the auctions. The exit from the market of several small airlines, and more recently of *Mexicana*, provides a unique opportunity for immediately moving to auction slots in saturated hours, thereby improving the efficiency and competition of the country´s air transport industry.

Allocation of airport space in Mexico City Airport is not the only challenge for the industry. Despite the significant entry that has occurred in the last years, SCT still has many rules in place that have the potential to unduly limit further new entry and expansion. Unduly restrictive route-specific concessions are one issue. Airlines currently need a route-specific concession that states times of flight operations and requires service without long interruptions. SCT, moreover, has discretion in awarding concessions and approving new routes and schedules. In this context, relatively few companies have concessions. Given that it is not clear that concessions are needed at all provided that safety rules are followed, it appears that the legal need for a concession could be eliminated for any airline whose aircraft, safety procedures and pilot licenses meet ongoing safety requirements. Alternatively, if Mexico opts to maintain the system of concessions, some reforms would help strengthen competition. First, concessions should allow airlines to provide service on any route, as long as they maintain safety notification requirements on a route-by-route basis. Second, airlines should be free to change schedules upon simple notification. Third, the government should eliminate the rules whereby airlines lose their right to a route after failing to take up services 90 days after receiving approval or after interruption of services for 180 days.

Banking sector

The retail banking sector in Mexico is highly concentrated and interest margins are high. According to Chiquiar and Ramos-Francia (2009) interest margins are high in international perspective. With respect to deposit accounts, two firms share close to 50% of the market. With respect to credit/debit cards, in 2007 the four largest banks in Mexico were responsible for between 85 and 90% of the transactions in credit and debit cards, a figure that has not changed much since 2002 (Castellanos *et al.*, 2008). Comparable figures for the top two banks were between 60 and 70%. A CFC/OECD market survey found that 95% of those interviewed who had a least one banking product had never changed banks. This compares with switching rates of 13%-30% for different banking products in the UK over a five-year-period for example, where switching rates are lower than elsewhere in the EU at least for personal current accounts (Office of Fair Trading, 2008). Low switching rates in Mexico could be related to high switching costs, although it could also be related to inertia.

Mexico has launched a number of actions that could reduce the perceived and actual costs of switching. The OECD recommended that the government require banks to provide transparent information to customers so they can easily assess the costs of bank switching. The bank a customer switches to should be permitted to switch payment orders upon the customer's request. In order to ensure that new banks can easily start and expand, it was recommended that access to jointly-owned bank infrastructure such as card network infrastructure and credit bureaus be available on minimal terms. In order to ensure that smaller banks have the opportunity to expand, lower pre-requisites for opening a new branch were recommended.

These recommendations have now been incorporated into the legal and regulatory framework and this is a major step ahead for competition in the Mexican banking sector. These legal changes are now being implemented and the government should make sure that this proceeds as quickly as possible to enhance bank competition in Mexico.

Inter-city bus transport sector

Inter-city bus services have been provided in a liberalised environment since the 1990s, but improvements to the competitive framework are possible. This would benefit consumers, especially low-income groups who account for much of the demand for inter-city bus transport in Mexico. Although there are over 1 800 firms with permits to operate inter-city bus service in Mexico, most of these firms own less than 5 buses and provide services on very few routes. Many of these firms are part of the four principal private operator groups in Mexico who own buses and co-ordinate bus operations in Mexico. For many routes, these groups do not offer competing services. On low-demand routes, this can be determined by the cost structure of the industry. However, regulatory changes could enhance competition in a number of cases with beneficial effects. OECD/CFC analysis for first-class services suggests that the presence of competitors would lead firms to reduce prices by as much as 10%. If the market is contestable, then potential entry can be enough to constrain prices to a similar extent (CFC and OECD, 2010).

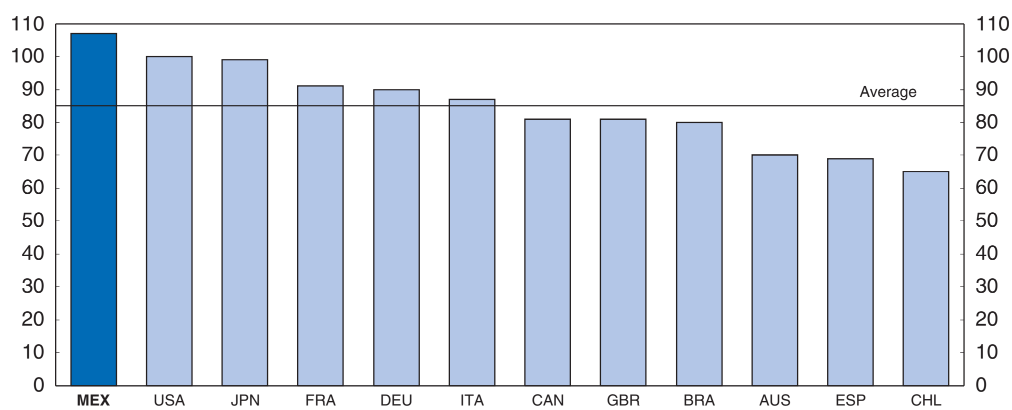
Unduly restrictive regulatory barriers to entry or expansion, for example unnecessary constraints on obtaining permits, should be relaxed and authorities should ensure non-discriminatory access to bus terminals. It would be valuable for the government to ease the process for obtaining permission to provide inter-city bus transport. Currently, the regulator is required to use demand and investment studies as a basis for the decision to allow further firms in the market. This creates high entry costs and puts the state in the role of planning supply. Letting market forces operate is likely to be more efficient. Thus, the requirement for the regulator to base decisions on new firm entry on studies of demand and investment should be dropped**.** Furthermore, in some cases access to existing bus terminals may be essential for competitors to enter. In these cases it may be worth establishing access conditions to terminals owned by one company. Access can be essential when construction of a new terminal is not economically feasible or is refused by the local government.

Pharmaceutical sector

In the pharmaceutical sector, strengthening competition would help bring down exceptionally high prices. Pharmaceutical prices in Mexico are the highest among a sample of 12 countries (Figure 3.4). At the same time "out-of-pocket" expenditures – expenses not covered by insurance plans – are particularly high, corresponding to 81% of total pharmaceutical expenditures (OECD, 2010e). As a result, Mexico's per-capita consumption of pharmaceuticals is the lowest in the OECD. In a country with strong income inequalities and high rates of poverty, ensuring access to high-quality medical services for everybody requires special efforts.

Figure 3.4. **Price indices for medicines, 2005**[1]

USA = 100, nominal exchange rate



1. Price to the public.

Source: Danzon, P and M. Furukawa (2008), "International Prices and Availability of Pharmaceuticals in 2005", *Health Affairs*, Vol. 27, No. 1, pp. 221-233.

StatLink http://dx.doi.org/10.1787/888932383964

More transparent procedures for public procurement and an easing of government restrictions on generic pharmaceuticals would help to strengthen competition in the pharmaceutical sector. The social security institute (IMSS), the competition authority (CFC) and the OECD have agreed to co-operate to promote competition in public procurement. Starting in 2011, IMSS will conduct all its purchases, including medicines, through reverse auctions, which will greatly limit the scope for corruption and make collusion between pharmaceutical firms much more difficult. One reason for the lack of competition is government restrictions on generic pharmaceuticals that impede firm entry. Until recently, for instance, firms selling generics were required to operate a plant or laboratory in Mexico.

This requirement has now been lifted, which may contribute to increase the market penetration of generics from its currently very low level. However, the new law still needs to be implemented by aligning administrative rules with it. The government should strive to implement the new law as fast as possible. Non-branded generics represent less than 17% of the market for pharmaceuticals whereas in the United States the figure is 66.5%.

To promote more competition in generic pharmaceuticals, Mexico could facilitate the accreditation of producers who are interested in participating in the Mexican market. It would help if the government could issue criteria concerning the substantive aspects of the litigation most frequently associated with pharmaceutical patents, namely legality of extensions of patents in the pipeline and the awarding of patents for pharmaceutical compositions and adapted doses. This would make it more difficult for incumbents to seek an excessive extension of their patents through legal actions and it would enhance legal certainty, while reducing entry barriers, for generics producers. Increasing consumer demand for generics is also important. Publicity campaigns to increase consumer awareness of the quality of generics can be helpful.

Bid-rigging has been a problem in the generic pharmaceutical market, and the government has started to take action. A CFC investigation identified widespread bid rigging by manufacturers to state purchasers of generics. However, after the government changed bidding procedures in 2005 and 2006 to make it more difficult for firms to divide the market between them and increase international supply, prices for the 20 top-selling generic drugs declined by an average of 19% (Estrada and Vasquez, 2011). Fines against the bid riggers are relatively small, though, given the low legal maximum fine by international standards, suggesting the importance of increasing maximum fine levels with amendments to Mexico's competition law. A scandal reported by the media in November 2010 suggests that bid rigging is still a live issue for government policy in the pharmaceutical sector.

As in other countries, doctors often receive generous incentives and benefits from pharmaceutical firms for prescribing their products. At a minimum, pharmaceuticals firms should be required to make their marketing practices and expenditures that target doctors transparent. Mexico could also consider imposing restrictions on the kind and the size of incentives that doctors are allowed to accept, including "gifts" and expenses to participate in seminars. Many OECD countries place strict limits on any transfer of value between pharmaceutical firms and physicians. These limits are intended to prevent physicians from prescribing medicines based on the incentives they receive from its producer rather than on its medical effectiveness and its cost efficiency. Another option is to require doctors to prescribe medications by the generic compound name only, allowing patients to choose the cheapest option in the pharmacy. Pharmacies should be required to supply generics. Currently, doctors can still prescribe medications by their brand name, and pharmacies are then required to supply the prescribed brand.

The government is engaged in a number of efforts to promote generics, including a process to renew all medicine registration procedures that will conclude this year, leaving only generics complying with bioequivalence requirements; promotional and informational campaigns to deepen the adequate prescription and use of generics; and a current revision of the conceptual framework of intellectual property to assess areas of improvement.

Telecommunications sector

Fixed and mobile telecommunications remain a problem, particularly interconnection conditions which determine how much it costs to transfer calls between networks (CFC and OECD, 2009). Growth in fixed-line services has been flat, as consumers are switching to wireless and cable telephony. Nevertheless, Mexico's per-capita access to telecommunications services (fixed-line, wireless and cable modem) is significantly below the OECD average. This is in part a result of higher prices: According to OECD data, Mexican prices for moderate use mobile phone services exceed the OECD average by around 30% and fixed-line prices for moderate-use consumer and business services exceed OECD averages by 67% and 82% respectively in purchasing power parity terms. In 2009 and 2010, CFC issued five declarations of substantial market power that give the telecommunications regulator, COFETEL, the authority to impose regulations on the corresponding enterprises. According to a CFC-OECD study, if average telephone prices in Mexico were at the OECD average, consumer benefits would total USD 15 billion annually.

There is scope to improve the regulation of interconnection between networks, both in fixed-line and mobile telephony. COFETEL has issued an interconnection plan that calls for interconnection rates to be based on cost models. This is a good approach and consistent with that used in other OECD countries. The development of long-run incremental cost models and the determination of relevant parameters should be based upon a transparent methodology and subject to audits by independent experts.

In fixed-line telephony, Telmex sets a charge called a "long distance resale rate" for terminating calls to those local calling areas where it has a monopoly. COFETEL has maintained since 2001 that the long-distance resale service is an interconnection service and hence subject to interconnection regulation that would yield much lower rates, and ruled in 2008 that the rate should fall to about 15% of its current value. However, this ruling has been subject to a yet unsettled *amparo* suit. At the minimum, the government could consider merging local calling areas to have fewer that are non-competitive.

Interconnection conditions in mobile telephony are also problematic. Both SCT and a judge have determined that mobile interconnection rates should be considerably lower than actual rates. The ruling sets a rate for 2010 of 0.42 pesos per minute compared to the actual rate of 1 peso per minute. Yet, the regulator has no authority to regulate interconnection tariffs in mobile ex-ante for all cases. It can only propose changes for specific cases when a legal dispute arises between operators. The telecommunications regulator COFETEL should be authorised to regulate interconnection tariffs ex-ante to foster competition among operators as well as sector growth. Following a complaint by several competitors the CFC recently imposed a 1 billion USD fine on the incumbent in the mobile telephony market for monopolistic practices related to interconnection charges.

The telecommunications regulator COFETEL should be authorised to declare bottlenecks and essential facilities and to establish non-discriminatory conditions for access to these facilities. Access rules should be established in a clear and precise manner through legislation in order to avoid inefficient judicial review. Additionally, legislation should include the possibility of unbundled access to essential infrastructure when it promotes competition and does not harm investment incentives. Unbundled access would create access to parts of the incumbent operator's network, allowing competitors to grow without having to build out a complete network themselves. One issue is the unbundled access to the local loop (the connection between the telephone exchange office and a home). For instance, local loop capacity could be rented out to providers offering DSL services. When establishing unbundled access to parts of the incumbent's network, the authorities should make sure the incumbent retains sufficient incentives to maintain the network and viable projects to build new infrastructure are not put at risk. It would be valuable to establish in the law that interconnection tariffs and tariffs associated with unbundled network access be regulated based upon long-run incremental costs.

Finally, the state-owned electricity monopolist *Comisión Federal de Electricidad*, CFE, owns a fibre-optic network and opening some of its capacity to competitors of the market-dominant telecommunications company has the potential of significantly spurring competition in the sector. The network has already been opened to competitors, which is a major step forward. The tariffs should be based upon a long run incremental cost methodology. The recent auctioning of broadband spectrum may further contribute to a more competitive telecommunications sector.

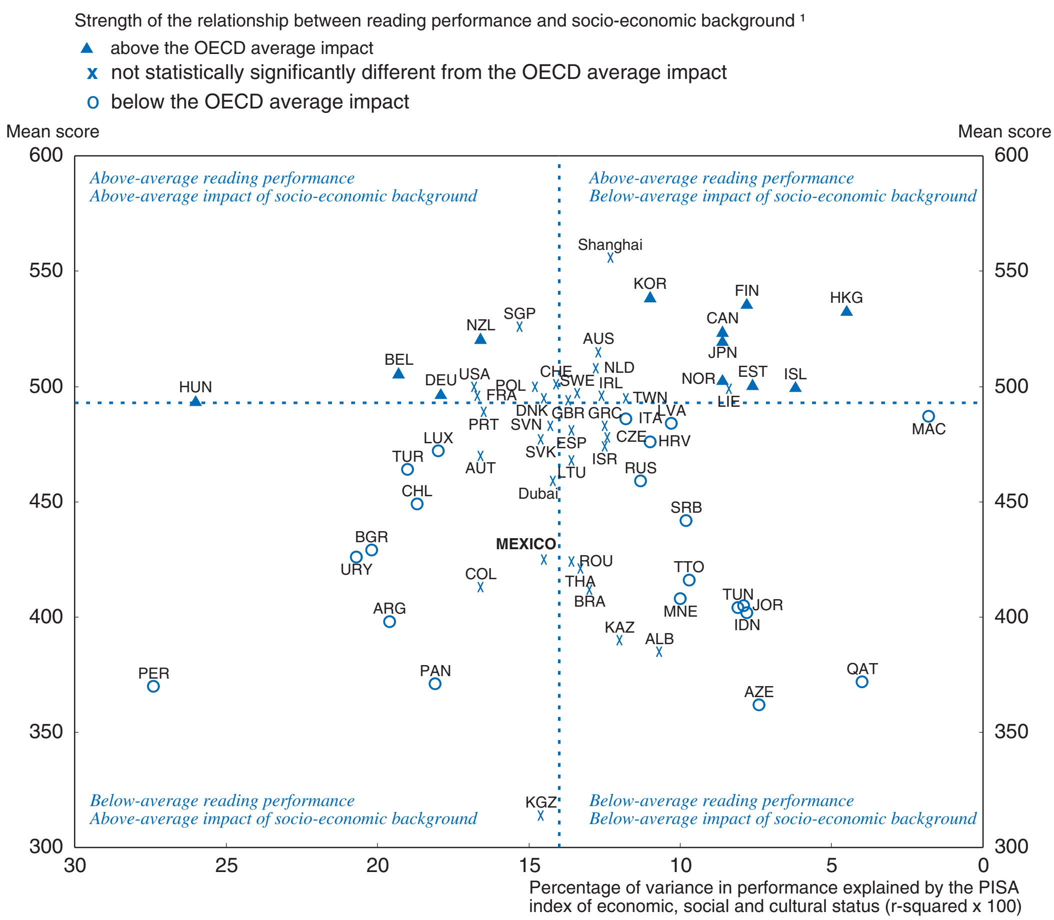
Better education would enhance economic growth and the well-being of Mexico's citizens

Education can improve welfare in several dimensions

Mexico has increased its investments in education and the number of children attending school considerably, but further efforts to improve the quality and equity of education are needed. The share of public education spending in GDP has risen over recent years and at 4.8% it is around the OECD average of 5.2% (OECD, 2010a). Given that public spending overall is relatively low in Mexico, this translates into the highest share of education expenditure in total public spending in the OECD. However, due to the size of Mexico's young population, the amount spent per student is low by international standards even when adjusted by Mexico's GDP per capita: as a share of GDP per capita Mexico spends 15% per primary student compared to an OECD average of 20%, 16% per secondary student compared to an OECD average of 24% (OECD, 2010a). In terms of the number of children going to school and the level at which they graduate Mexico has achieved some significant progress over recent decades in a context of tight budgets, great linguistic diversity, sizable internal and cross-border migration, and a considerable proportion of the population – currently 15% – living on less than USD 2 per day. Today's enrolment rate of children aged 5 to 14 is almost universal (Aguerrondo, *et al.*, 2009; OECD, 2010a). The proportion of students graduating at upper secondary level has risen from 33% in 2000 to 44% in 2008, reducing the upper secondary attainment gap between Mexico and other OECD countries, although it remains sizeable. In Mexico, only 51.6% of 15 to 19 year-olds are enrolled in formal education compared to an OECD average of 81.5%. Moreover, results from the OECD Programme for International Student Assessment (PISA) show that Mexican students are far from achieving similar results as their OECD peers (Figure 3.5). The impact of socio-economic background on results is strong, indicating that more equitable access to high-quality education is needed.

Strengthening the quality of education and ensuring more equitable access would enhance productivity, economic growth and development. Recent studies have confirmed that the cognitive skills of the population have a strong positive impact on individual earnings, the distribution of income, and economic growth (Hanushek and Wößmann, 2007). It is indeed stronger than the impact of the number of years of schooling that individuals have achieved. The share of individuals that master basic literacy and the share

Figure 3.5. **The relationship between socio-economic background and performance in reading, PISA 2009**



1. For example, all countries in the upper right quadrant combine above-average student performance in reading with high equity (as measured by the low impact of student socio-economic background on results). On the other hand, a group of countries in the bottom left quadrant combine below-average performance with low equity (high impact of socio-economic background on results). OECD mean used in this figure is arithmetic average of all OECD countries.

Source: OECD (2010d), *PISA 2009 Overcoming Social Background: Equity in Learning Opportunities and Outcomes*, Vol. 2: *Analysis*, OECD, Paris.

StatLink http://dx.doi.org/10.1787/888932383983

high performers both have independent significant effects on growth according to these authors (Hanushek and Wößmann, 2009). Their estimates also suggest that the high-performer effect is larger in poorer countries. Making high quality education available will also ensure that children, who would otherwise risk becoming lower-productivity workers, are better able to develop their full potential. In the longer run, this would help Mexico raise the productivity of its workers, in particular at the lower end of the distribution, thus helping more citizens to participate successfully in the formal economy. Higher quality education with more equitable results has also been shown to improve public health, strengthen social cohesion and reduce crime (Wilkinson and Pickett, 2010, Field, *et al.*, 2007; Lyche, 2010). Figure 3.5 shows that some countries are able to achieve good average learning results with high equality in secondary education. This indicates that more children can develop their skills to their full potential in school, provided that the right policies are in place.

Mexico's education system faces several challenges. Many schools and their teachers operate under very difficult conditions. Teaching and leadership quality and support structures are weak for many schools. In some regions there is extensive absenteeism and late arrival of teachers, reducing effective teaching hours. Many teachers teach in one school in the mornings and another in the afternoons, or are in a different type of employment in addition to teaching. In many rural or isolated areas they teach in small schools where there are few opportunities for teamwork and learning from each other. There are important concerns about the quality of the training, selection and allocation of teachers to schools; the professional careers of teachers; and the quality of support for schools and teachers from school directors, supervisors and others who lead and manage the system.

There are already some good signs of progress. For instance, Mexico has shown significant progress in the recent years in terms of student achievement and the enrolment of 15-year old children. PISA results between 2003 and 2009 show a particularly improvement in mathematics, making Mexico the country with the largest increase (33 points) in its mean score. Mexico thus seems to be on the right path. If these trends persist, Mexico should be able to reach its performance goals in 2012. Mexico has made considerable efforts to develop student performance tests (ENLACE, EXCALE and PISA).

To step up Mexico's efforts to improve the education of its young generation, Mexico and the OECD established a co-operation agreement between 2008 and 2010 to develop strategies for improving the quality and equity of schooling. The main focus of the agreement was on strategies to improve the quality of the teaching profession and on school management, leadership, social participation, incentives and stimulus. The main recommendations and strategies that the OECD has developed with Mexico during this collaboration are outlined in the following paragraphs. The recommendations focus on basic education, because without strong improvements in this area efforts to improve other parts of the education and training system would be futile. The recommendations can be easily extended to the upper secondary level (Box 3.2).

Standards for teacher performance should guide reforms to improve teaching and school management

The single most important policy reform Mexico can make in order to improve education outcomes for its young people is to build a good system to recruit, prepare, evaluate and develop the best teachers for all schools. Together with teaching, the quality of school leadership and management are important prerequisites to better help students learn in school. At present teachers and directors do not have appropriate initial education and training. The mechanisms of teacher allocation to posts and to schools have improved in recent years in some states with the introduction of the new teacher licensing examination. Although this goes in the right direction, these mechanisms are not yet sufficient and need to be further developed. At present, training and appointments to leadership posts are not consistent with what schools need to help students improve their results. Reforms to improve initial teacher education and professional development and to develop teacher evaluation should be guided by clear standards for teacher performance that are currently still lacking.

Mexico needs to develop and use a nationwide, coherent set of standards defining competences of teachers and school principals that they need to help their students attain their full learning potential. A first strategy to improve quality and equity of schools and student learning is to develop a clear definition of the roles and responsibilities of teachers and school leaders. Standards for teacher performance would also require a clear definition of the knowledge and skills students are expected to develop in each subject at different grade levels. The government has recently started relevant work on classroom teaching standards, school standards and curricula standards. During the school year 2008/09 a pilot project of the "Standards for Basic Education" was conducted in 480 primary schools and 128 lower secondary schools. They were developed observing Mexican teachers in schools with good results. This appears to be an interesting approach and a good start. Now it will be important that teachers get more involved in the development of these standards and provide feedback. Moreover, states that may have already developed their own set of teaching standards should be part of this process, as should potential users of the standards for different purposes such as training or evaluation.

One challenge will be to attract better qualified recruits to the teaching profession. If teaching is to acquire the status of a well-regarded profession in Mexico, the first step must be to improve the calibre of applicants to initial teacher education institutions, especially, but not exclusively, at the Teachers' Colleges (*Normales*). One way to achieve this is to raise the bar for entry into initial teacher preparation (ITP) programmes and to establish a national entrance screening exam and other assessment tools for people who want to train to become a teacher. There are almost twice as many applicants to the *Normales* than teacher posts to be filled later on. A failure to screen candidates before they enter teacher training can lead to inefficiencies, as some will learn that they can never practice the profession only after years of studies. Moreover, allowing only the best candidates to enter teacher training could increase the quality of instruction at *Normales* and improve the reputation of the teaching profession.

Normales and other institutions running programmes of initial teacher preparation (ITP) need to be substantially improved if they are going to remain the country's principal vehicle for preparing its teachers. The first step should be to put in place a set of rigorous accreditation standards for all Normales and other teacher training institutions.

Mexico has started to professionalise teacher appointments with its new teacher licensing examination *(Concurso Nacional de Asignación de Plazas Docentes)*. This exam aims to identify capable teachers among those who want to enter the profession for the first time, teachers without a permanent position and teachers aiming to have a second permanent post (*doble plaza*). Successful participation in the exam is the prerequisite to obtain a permanent post. Mexico should further develop and improve the new teacher licensing examination. The exam is currently limited to a two hour multiple choice test. Enriching its content, *e.g.* by adding essay writing and oral assignments, could enhance the exam as an instrument to identify capable candidates. The exam should be used to ensure that only candidate teachers with a minimum level of competences are allowed to enter the profession. Those who do not reach this level should have access to extra training, such as the levelling courses that Mexico has developed, which are also a welcome instrument to support in-service teachers. The federal government should also work to convince those states that have refused to adopt the teacher licensing examination to join the initiative later on. Mexico should further pursue its efforts to develop a similar licensing mechanism for principals' posts.

Mexico has no formal induction programme for beginning teachers that would help them learn their profession with the support of mentor teachers. Moreover, there is no probationary period for teachers before obtaining a permanent post. However, the first years of practice have been shown to be essential for teaching quality in later years (Hobson *et al.*, 2009; Larsen *et al.*, 2005), and there are concerns about initial teacher education and the initial selection of teachers in Mexico (OECD, 2010c). It is important to implement a formal induction period with substantial support for all beginning teachers (including those with non-permanent posts) and a probationary period for beginning teachers to demonstrate in practice that they are capable of effectively facilitating student learning. This would allow schools to retain only those teachers who meet the nationwide performance standards that are to be defined. However, teachers in the probationary period will need to have access to high-quality mentoring and support when required to meet those standards. A prerequisite for an evaluation of young teachers to help identify competent candidates is therefore a well-qualified cadre of principals and mentor teachers.

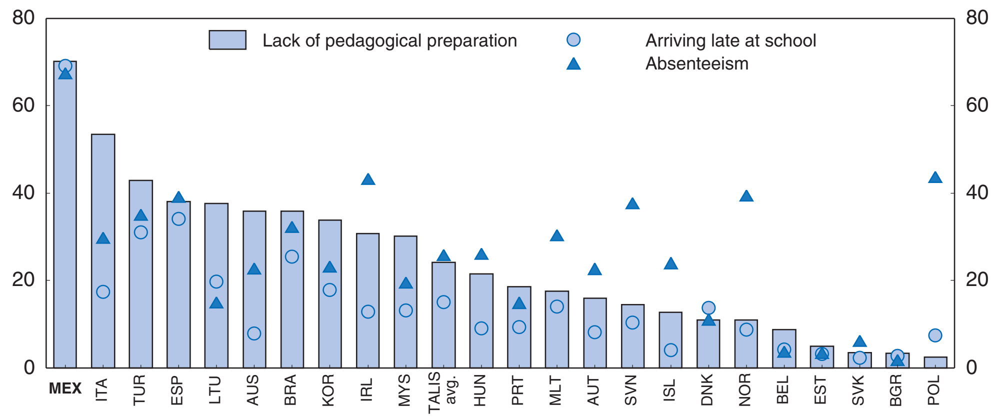
To improve the recruitment of teachers, teacher posts – including vacancies for in-service teachers – should be open for competition. Whereas new posts are now filled by means of the competitive teacher examination, most of the vacancies for in-service teachers are allocated through mixed commissions composed of members from the state education authorities and the trade unions. The waiting time is the main criterion that increases teachers' chances of obtaining the post of their choice. One improvement to better match teachers and schools would be to open all vacant posts to competition and improve its selection criteria, including through taking into account results on the competitive teacher examination. Moreover, schools should be allowed to choose from a shortlist of candidates.

There should be objective procedures to find suitable candidates to become principals, which take account of tests, portfolios and track record. Appointments for directors should be made from a shortlist of candidates, all of whom are qualified in terms of meeting the standards for school leadership. It should be the responsibility of the states to ensure that each school is led by a properly qualified and trained director. States should convene an appointment panel to decide which candidate will be best for the school and its needs. It is desirable that the school community is involved in choosing the principal, possibly through representatives of parents or the school council.

The quality of professional development and its relevance for teachers and schools needs to improve and incentives to engage in professional development should be more in line with desired results. Among countries that participated in TALIS, an opinion survey of teachers, Mexico has the highest percentage of teachers reporting that they would have liked to have received more professional development than they did – more than 80% – indicating that teachers do not feel well prepared for their job. TALIS also shows that the percentage of Mexican teachers whose school director reports a lack of qualified teachers as a factor hindering students' learning is almost twice the average of other participating countries (Figure 3.6). Many teachers fund their own choices beyond the courses offered by the federal government and the states, indicating that the supply of courses does not always correspond to their needs. In fact, the percentage of Mexican teachers who had to

Figure 3.6. **Behaviours that directors report as hindering school instruction**

2007-2008



Source: OECD (2009), *Creating Effective Teaching and Learning Environments: First Results from TALIS.*

StatLink http://dx.doi.org/10.1787/888932384002

pay for the whole cost of their professional development is more than twice the average across TALIS countries, 19%, compared with an average of 8%. The current supply of professional development is dispersed across a range of different providers and organisations and teachers say that the courses offered to them may not be relevant to their needs. Development options should be diversified and made more coherent and relevant to school needs. Current efforts to make the National Training Catalogue (*Catálogo Nacional de Formación*) more relevant should continue.

Principals should also receive training focused on their role as instructional leaders before they take up duties. Organising induction programmes for principals and ensuring relevant in-service training should help principals rise to their task. Developing nationwide standards for school leaders will open the possibility to evaluate directors based on clear criteria. Mexico should consider awarding training points to principals based on whether their training is tailored to their needs. The new National Training Catalogue includes an important section of courses offered by different institutions focused on school management and leadership in 2010, which is an improvement.

A standards-based teacher evaluation system is urgently needed in Mexico. Different studies suggest that the current promotion mechanisms for educators, the teachers' career ladder (*Carrera Magisterial*) and to a lesser extent career progression programme (*Escalafón*), may not be effective in evaluating teachers' performance (Nieto de Pascual Pola, 2009; Santibáñez, 2002; Guevara and Gonzalez, 2004). This suggests that Mexico does not have an adequate evaluation system for in-service teachers or the means to identify and reward outstanding teachers. Low-quality teachers are not identified and thus they often stay in the classrooms. This may contribute to the negative perception of teachers and also to weak student results. Mexico should work on a teacher evaluation programme based on the nationwide standards to be developed. In its first years, it should mainly help teachers to progress towards individual goals with adequate professional support opportunities. Once the system is implemented and there is consensus about its rules, the system can be used to reward excellent teachers and support less well-performing teachers, guiding them towards professional development. Teachers who are persistently poor performers should be excluded from the education system (OECD, 2010c; OECD, forthcoming). However, any new teacher evaluation programme should be rolled out slowly and carefully. It should be implemented first in schools where competent directors and mentor teachers have been identified and trained. In addition, there are important local and state efforts to evaluate and assess education. The Ministry of Public Education (SEP) is currently developing an evaluation system based on value-added measurement to have further evidence of what a school specifically provides to the development of its students. The government also works on establishing a unique calendar for all student and teacher evaluations in 2011.As recommended by the OECD the government is negotiating a universal teachers' evaluation initiative with the teachers' union to improve professional development and guarantuee continuous improvement and a proposal to reform the teacher career path (*Carrera Magistral*), which would put considerable emphasis on teacher performance. An incentive scheme based on teacher performance is already being implemented.

School funding needs to become more reliable and equitable and school autonomy needs to increase

In spite of adequate levels of overall spending on education, many schools operate with sparse resources that need to be distributed better across schools. More than 90% of resources are devoted to staff compensation. Other funding is directed only to a limited number of schools on application through more than 200 different federal and state programmes. Many of the smallest and poorest schools receive no funding under the current programmes because they do not have the administrative capacity to complete the application process or handle the reporting requirements. Today the most advantaged 50% of the schools receive most of the programmes' resources, while schools in low income areas have poor public infrastructure and often less qualified teachers. Current allocation of resources leaves little room for improvements in the schooling infrastructure. In practice, in many schools parents need to contribute to the funding of professional materials and school infrastructure, often through school shops that are administered by parent-teacher-associations. A fundamental issue therefore is the distribution of financial resources in the system, which should be based more on needs. More reliable funding for school material and specific programmes for all schools would be preferable.

Revising state funding formulas and replacing the multitude of special school funding programmes by a single improvement grant would enhance funding equity and reduce the attainment gap between advantaged and disadvantaged schools. In the state funding formulas, schools serving the most disadvantaged areas could receive proportionally more money per student. Moreover, a single, flexible grant that all schools would receive could be shaped to respond more closely to school needs and priorities than the current array of special funding programmes. The grant should be administered by the state, which would become the body that commissions education from schools.

Mexico has one of the lowest levels of autonomy in schools across OECD countries, with principals having currently little or no autonomy to decide on how their school is managed, including teacher employment. School leaders are central to establishing a school culture and capacity conducive to better student performance (Pont *et al.* 2008). To professionalise principals and to establish a basis on which to hold them accountable, school leaders need to be given more autonomy in making decisions. However, in Mexico where capacity and leadership training for school directors are still to be developed, it is important first to strengthen capacity. On the one hand, pilot projects across municipalities or groups of schools could be explored to provide more autonomy, financial delegation and local management. On the other hand, it is necessary to develop support structures that allow schools to be autonomous. In school systems with well developed and prepared school directors, clear norms and regulations for schools and support arrangements to ensure equitable results, a large degree of school autonomy may be a viable solution (OECD, 2010c).

To strengthen accountability and raise awareness of the value of education Mexico has adopted a policy that demands every school to set up social participation council, in order to enhance engagement with the parents and the community. To fulfil their tasks properly over time these councils need to exercise some influence over important matters such as: the selection of school staff and resources, the curriculum design and other school organisational arrangements.

Box 3.2. **Main recommendations to improve productivity**

- Co-operate with subnational governments to interconnect state and municipal portals for business start-ups with the new online one-stop shop for federal start-up regulations. Engage strategic partners, such as notaries and subnational governments, to support the portal and make it more widely known to the public through media campaigns.
- Consider extending the *Base Cero* initiative to a larger set of economic processes that have a large impact on productivity, not only the start-up phase.
- Implement the new regulatory impact assessment scheme.
- Encourage states and municipalities to apply the toolkit for the simplification of subnational regulations. Co-ordinate regulation across government levels.
- Set up specialised *amparo* courts with economic expertise to hear cases from agencies that deal with economic issues.
- Limit grandfathering of airport slots to ensure fair and efficient auctioning. Consider abolishing the requirement of route-specific concessions and allow airlines to operate as long as they fulfill safety notification requirements.
- Ease restrictions to obtain a license in intercity bus transport and ensure non-discriminatory access to essential facilities. In particular, drop the requirement for the regulator to base the decision regarding the entry of a new firm on demand and investment studies.
- Implement effectively the legal changes to facilitate access to banking services and to ease banks' access to essential facilities.
- Quickly implement the removal of the requirement that firms need to operate a plant or a laboratory in Mexico in order to be allowed to sell generics. Require doctors to prescribe medications only by their generic compound name.
- Merge local calling areas. Authorise COFETEL to regulate interconnection ex-ante, declare bottlenecks and essential facilities for all telecommunication sectors and establish non-discriminatory access conditions to these facilities. Allow unbundled access to essential infrastructure when it promotes competition provided that this does not undermine investment incentives. Interconnection tariffs should be based on long-run incremental costs.

Box 3.2. **Main recommendations to improve productivity** *(cont.)*

- Define nationwide standards for teacher performance and improve initial teacher education through accreditation standards for teacher training institutions. Improve the new teacher licensing examination and open all teacher posts to competition. Professionalise the appointment of directors.
- Professionalise the training and selection of principals to assume greater responsibility for teacher employment and pay.
- Gradually introduce a teacher evaluation system.
- Provide schools with reliable financing, in particular through a more efficient allocation of resources, for example by revising state funding formulas and replacing the multitude of special school funding programmes by a single improvement grant.

Notes

1. This report can be consulted at: *www.oecd.org/document/15/0,3746,en_2649_34141_44973455_1_1_1_1,00.html*.
2. The toolkit can be consulted at: *www.oecd.org/document/14/0,3746,en_2649_34141_46967374_ 1_1_1_1,00.html*.

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Chapter 4

Informality

Mexico has a relatively large informal sector by OECD standards. While this is in part a symptom of limited development and low productivity, it can also be to some extent its cause, as informal firms stay small to hide their activities and have limited access to productivity-enhancing government services, such a protection of property rights and training. A long-term and broad-based strategy with education at its core is needed for Mexico to reach its productivity potential and fight informality. Lowering the costs of formality, while enhancing its benefits and increasing the cost of non-compliance with labour and tax laws, will be an important part of this strategy. This would include more flexible labour laws, a further reduction in the business regulatory burden and a rethink of the social security package to enhance its attractiveness for low-wage workers and limit costs by making service provision more efficient.

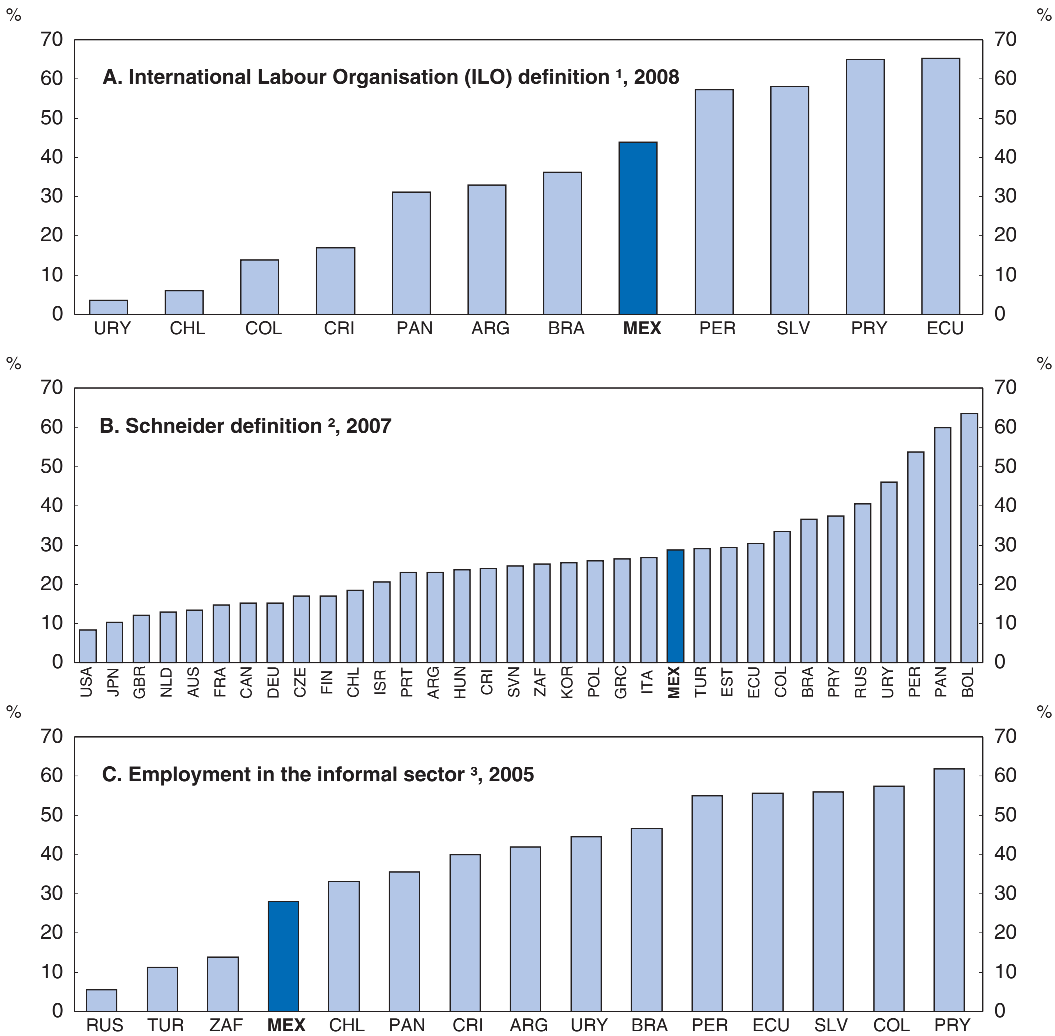
An active strategy to fight informality is warranted

Mexico has a relatively large informal sector by OECD standards (Figure 4.1, Panel B). Many firms are not registered and do not comply with business and tax laws or regulations. It is important to note, however, that there are different degrees of informality. A firm can be completely informal, when it does not declare its activity or its workers and does not comply with any of the laws and regulations that apply to it. But a firm may also be registered, while still evading taxes to some extent and declaring some, but not all of its workers. Finally, a firm may be in compliance with most tax and labour laws, but prefer working with self-employed workers rather than salaried employees to avoid complying with – and paying for – social security. In Mexico a significant part of the population is not covered by pensions and health care provisions, either because they are self-employed or undeclared dependent employees (Figure 4.1, Panel A). Reflecting the different degrees of informality and the variety of aspects associated with them, there are many different measures of informality and the estimate of the share of informal employment or production can vary widely, depending on which measure is chosen. While there is nothing illegal about self-employment as such, independent workers are sometimes classified as informal, precisely because they are not covered by social security, but also because in fact many of them do not comply with labour and tax laws at least in developing and emerging countries where the informal sector is large. Alcaraz *et al.* (2008) correct the measure that relates informal employment to a lack of coverage with work-related pension and healthcare (Figure 4.1, Panel A) by eliminating those self-employed workers, who are registered with tax or local authorities or with a business association. This correction lowers the statistic for Mexico by roughly 10 percentage points to around 43%. The statistic for other countries in this graph is not corrected and does include self-employed workers who are registered. Figure 4.1, Panel C shows the share of employees in informal enterprises. In most countries' definitions, this does not include unregistered employees in larger or registered enterprises. Thus, this measure is generally lower than the measure of informal employment in Panel A.

While informality is to a large extent a symptom of limited economic development and low productivity, it can also reinforce low productivity growth leading into a vicious cycle. This is why policies to support formality are warranted. Strong education and training would be an important element of a strategy to fight informality, as this would help more people to develop their full productivity potential and thus thrive in the formal economy. Policies to strengthen education are discussed in Chapter 3. This chapter discusses first the risks that a large informal sector poses to productivity. It then reviews policies that can help promote formality by reducing its costs and strengthening its benefits, while increasing the costs of informality through stronger enforcement. Measures to enhance the benefits of formality by making the social security package more attractive for low-wage workers are discussed in the final part of the chapter.

Figure 4.1. **Informality across countries**

Schneider definition,[1] 2007



1. ILO definition. Urban population without coverage for health and/or pension in 2008. For Mexico this measure is corrected by substracting those self-employed workers who are registered with tax or local authorities or with a business association, as in Alcaraz *et al.* (2008).
2. The Schneider definition of the shadow economy uses a multiple indicator multiple cause (MIMIC) model to estimate the shadow economy econometrically with a structural equation with one latent variable. It is an attempt to estimate all market-based legal production of goods and services that are deliberately concealed from public authorities to avoid payment of income taxes, social security contributions, respect of legal labour market standards and administrative procedures. While the method relies on strong assumptions and results thus have to be interpreted with caution, this is the only indicator of the informal economy that allows a comparison across a wide range of countries.
3. The indicator counts individuals as informal, who are employed in an unincorporated enterprise in the non-agricultural sector with fewer than 5 employees that is not registered. Some countries' definition, including Mexico's, differs from the harmonised definition suggested by the International Labour Organisation and the data are thus not strictly comparable. 2005 or nearest year.

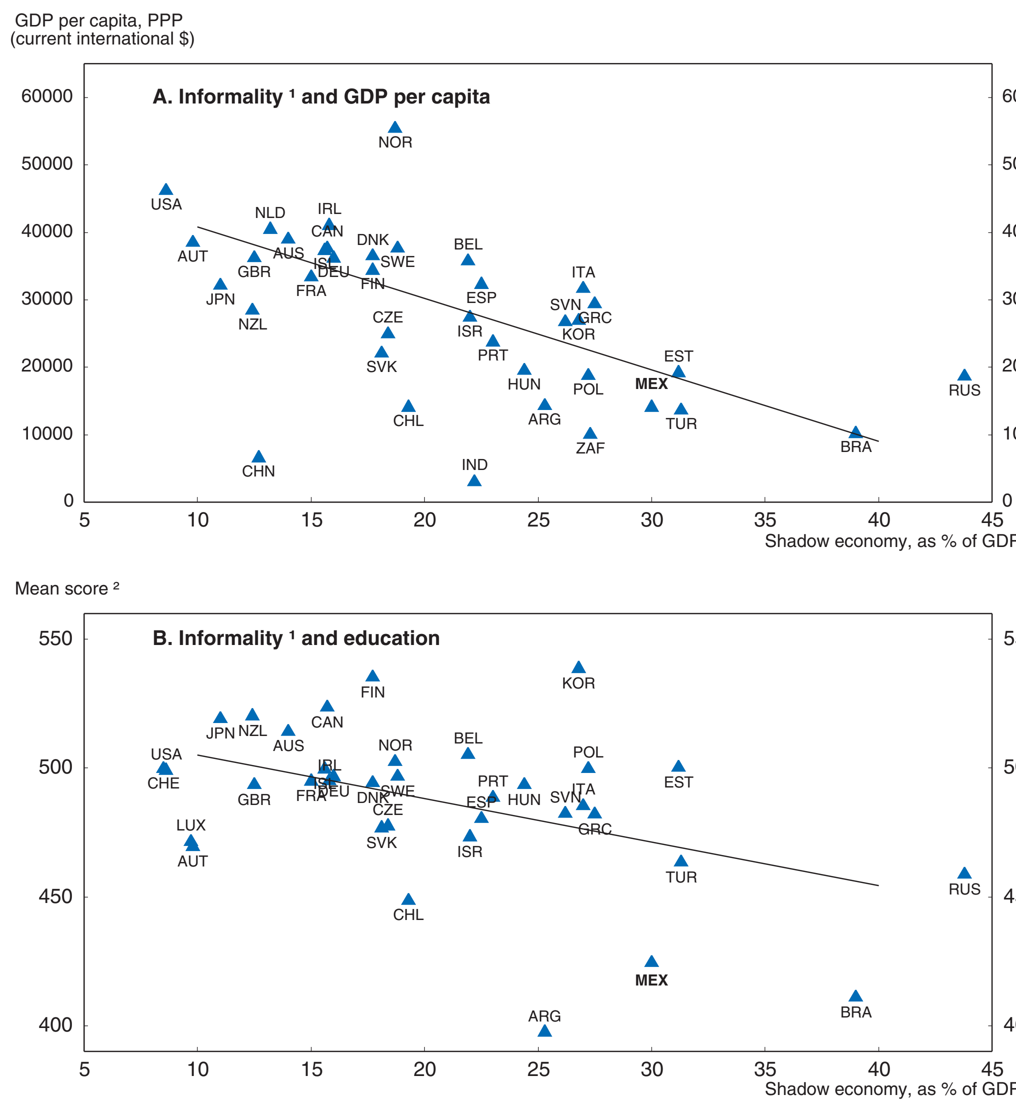
Source: ILO (2009), *Labour Overview – Latin America and the Caribean*; Schneider, F., A. Buehn and C. Montenegro (2010), "New Estimates for the Shadow Economies all over the World", *International Economic Journal*, 24:4; ILO, *Key Indicators in the Labour Market.*

StatLink http://dx.doi.org/10.1787/888932384021

Informality can be a symptom, but also a cause of lower productivity

The size of the informal economy is strongly related to economic development, in particular income per capita and – to a lesser extent – learning results, as measured by PISA (Figure 4.2). One explanation would be that relatively unproductive workers, of which there are more in less developed countries, have difficulties producing profitably or finding

Figure 4.2. **Informality and economic development**



1. The Schneider definition of the shadow economy uses a multiple indicator multiple cause (MIMIC) model to estimate the shadow economy econometrically with a structural equation with one latent variable. It is an attempt to estimate all market-based legal production of goods and services that are deliberately concealed from public authorities to avoid payment of income taxes, social security contributions, respect of legal labour market standards and administrative procedures. While the method relies on strong assumptions and results thus have to be interpreted with caution, this is the only indicator of the informal economy that allows a comparison across a wide range of countries.
2. Average score in reading, mathematics and science.

Source: World Bank, *World Development Indicators 2009* and Schneider, F., A. Buehn and C. Montenegro (2010), "New Estimates for the Shadow Economies all over the World", *International Economic Journal*, 24: 4, 443-461; OECD, PISA 2009 Results.

StatLink http://dx.doi.org/10.1787/888932384040

employment in the formal economy given the costs of taxes and regulation. This is supported by evidence that informal firms are very small and unproductive compared to even the smallest formal firms, but especially so in comparison with larger formal firms (La Porta and Shleifer, 2008). The same authors find that formal firms are run by much better educated managers. A second important factor in less developed countries is the limited enforcement capacity. Agencies that enforce labour and tax laws in poorer countries are often less well-managed than in richer countries or they lack sufficient qualified personnel. In many cases there are problems with corruption. While this would suggest that informality can disappear over time as a country develops and is able to enhance its enforcement capacity, there are reasons to view informality as a problem in its own right that merits specific action, as it is likely to be not only a symptom, but also a cause of lower productivity – hindering economic development – and it is associated with social problems.

Individual workers may sometimes choose an informal over a formal job (Box 4.1) and deliberately renounce social security coverage, because they find benefits are not valuable

Box 4.1. **The formal *versus* the informal labour market in Mexico**

Empirical evidence on the informal labour market shows that a large number of workers move frequently between the formal and informal sectors in both directions, suggesting that some may chose informality voluntarily given their financial constraints and their opportunities (Maloney, 1999; Pagés and Stampini, 2009), though available information is not conclusive about the relative importance of voluntary informality. The relative expansion of the informal sector in downturns is almost entirely explained by reduced job finding rates in the formal sector, which in richer OECD countries is the main factor explaining the increase of unemployment in downturns (Bosch and Maloney, 2008). Comparing probabilities to switch across different employment states with a benchmark that would be observed under no segmentation, Pages and Stampini (2009), however, do find evidence that workers prefer formal over informal jobs: the probability of moving from the informal to the formal sector exceeds the benchmark, while it is close to the benchmark for movements in the reverse direction.

For Mexico there is evidence that employees in the informal sector suffer a wage penalty, which may to some extent be indicative of a productivity gap. Observing workers who switch between the formal and informal sectors Alcaraz *et al.* (2008) find that formal sector wages are on average 13% higher than informal sector wages for the same worker. Bargain and Kwenda (2010) find largely the same wage penalty for salaried employees, while self-employment is associated with an earnings premium of around 15% on average compared to salaried employment in the formal sector according to their findings, although it is negative in the lower 15% of the earnings distribution. Pagés and Stampini (2009) find a lower wage penalty of informal *versus* formal salaried work, around 5% for low- skilled workers and 10% for high-skilled workers, while the wage premium of self-employment is positive only for low-skilled workers. It should be noted that higher earnings for the self-employed do not necessarily imply higher productivity or utility, as the valuation of social security benefits that are available only for formal salaried workers would need to be taken into account. There may also be a risk premium for self-employment. Conversely, given that the evidence for a positive wage differential in formal salaried work compared to informal salaried work is rather robust, this can be taken to some extent as an indication of a productivity differential between the formal and informal sectors, as the valuation of benefits and lower risk would have to be added to higher formal sector wages.

enough given the costs or because they cannot afford to insure income and health risks, for example if their earnings barely cover their basic needs. Yet, this can lead to negative outcomes from a societal point of view, such as widespread poverty in old age and poor public health, impinging also on productivity. Without social assistance or effective unemployment insurance workers without savings who are hit by an income shock may feel compelled to remove their children from school with negative effects on their education and their ability to develop their productivity potential. Low coverage can also increase the cost of social security for those who do contribute, since they have to provide for those who are not covered through tax-financed schemes or because the risk pool is weaker with fewer contributors. That can lead to lower net benefits for contributors and thus stronger incentives to stay informal.

Informal firms use and congest public infrastructure without contributing to the resources to build and maintain them, as tax evasion among informal firms is widespread. According to World Bank Enterprise Surveys informal firms in various developing countries consider that typical firms in their sector evade around 75% of their tax liability, compared to 22-35% depending on firm size in a sample of formal firms (La Porta and Shleifer, 2008).Tax evasion hampers the capacity to spend on public investment in infrastructure and in education. Yet, these investments are needed to lay the foundations for stronger productivity growth and thus also a greater capacity of firms and workers to take part in the formal economy and pay taxes.

Informality can impinge on the productivity of firms who act in this sector. First, the need to hide their activities is a constraint on their growth which may inhibit otherwise efficient vertical and horizontal integration and internal firm growth. In sectors with increasing returns to scale this would hamper productivity growth. However, informal firms are likely to locate in industries where efficiency losses are limited, helped by the fact that the demand for capital-intensive goods is lower in less developed countries (World Bank, 2007). What is probably more important, though, is that small firm size is likely to hamper access to finance and thus possibilities to invest in modern equipment. Mexican data on micro firms and small enterprises show that no more than around 10% of small Mexican firms report having received credit from a formal financial institution or from informal sources (Fajnzylber *et al.,* 2006). Small firms are also much less likely to adopt new technologies (López Acevedo, 2002) or invest in training of their employees than larger firms (World Bank, 2006), which is likely to affect their productivity negatively. Mexican firms' investment in training for their employees has been shown to have a positive impact on productivity (López Acevedo *et al.,* 2005). This effect is especially strong for formal external training. In part, the fact that training is rarer in smaller companies may well be related to the fact that informal firms in particular have very limited access to training sponsored by the government or business associations.

Moreover, informal firms' ability to interact efficiently with providers, customers and the government is limited as they lack not only access to finance, but also to government services, such as enforcement of property rights and government training programmes, which should enhance the efficiency of production. Although sales lost to theft are high in developing countries compared to industrialised countries, World Bank data suggests that informal firms spend heavily on security and protection payments to gangsters, but make little use of the police, as they report less than 15% of cases. In contrast, such reporting rises quickly with firm size. Formal firms, in particular large ones, are also much more likely to use courts to settle payment disputes than informal firms (La Porta and Shleifer, 2008).

Informality can also hurt aggregate productivity growth via the effects of unfair competition. While informal firms tend to be small and less productive, avoiding taxes and business regulation helps them to lower their costs. If this outweighs their disadvantage in productivity, this would allow them to gain market share from more productive formal competitors (Farrell, 2004, OECD, 2007b) in inefficient ways and slow the process of creative destruction of unproductive firms (World Bank, 2007), thus lowering aggregate productivity. World Bank Enterprise Surveys indicate that close to 20% of Mexican firms identify informal and anticompetitive practices as the main obstacle to doing business (World Bank, 2006). This share is higher among larger firms, which may suggest that this perception is partly due to informal firms exploiting their competitive advantage related to tax evasion and avoidance of regulation. However, it should be noted that the concern can also refer to anticompetitive behaviour from formal competitors, as the survey question does not differentiate between informality and anticompetitive practices by formal firms. Moreover, it is not uncommon for formal and informal firms to be linked, for example through subcontracting arrangements. This seems to be a widespread phenomenon in Mexico and the government has recently reacted with a law proposal to combat the practice of firms using subcontractors to bypass labour laws, as discussed further below. Because of these linkages it is not always possible to distinguish the effects of informality on formal and informal firms.

Distortions that increase the informal sector may distort the allocation of labour and capital in the economy with a negative effect on aggregate productivity. This can be the case, for example, if one cause of informality is that workers value social security benefits at less than their cost (see Levy, 2008). This would drive a wedge between the cost of labour (wages and social security benefits) and its marginal productivity in the formal sector, as workers try to switch into the informal sector. As a result, there would be an inefficiently high number of informal workers and wages and marginal productivity in this sector would fall, while increasing in the formal sector. Aggregate productivity would be lower than in the efficient case, as marginal productivity would differ across the two sectors. Higher wages in the formal sector would also reduce capital profitability in that sector, creating incentives for inefficiently high investment in the informal sector. A similar argument would hold if the benefits of registering a business were valued below their costs, for example because the judicial system was inefficient and there was widespread corruption. As businesses and workers try to avoid the cost of formalisation an inefficiently large number of resources would then be employed in the informal sector that could yield higher returns in the formal sector.

A relation between high informality and lower productivity is empirically well established, although causality is not always clear. Firm level estimates show that firms which report having started operating without registering exhibit on average much lower output per worker even after controlling for firm size, time in business, sector and region (World Bank, 2007). In Mexico this difference is as high as 30%. Moreover, each 10 percentage point increase in the tax and social security evasion rates in a sector or region is related to a reduction of labour and total factor productivity of 7 and 10% respectively in a panel of Latin American and Carribean countries (World Bank, 2007). Fajnzylber *et al.* (2006) find that micro firms reporting taxes exhibit higher levels of profits even after controlling for employment, size and capital stock.

Policy reforms are needed to reduce informality and enhance productivity

A broad-based and long-term strategy is needed to combat informality. One element will be stronger enforcement. This is particularly important for informal labour that is provided within relatively well-performing formal businesses, for example through subcontracting arrangements or under-declaration of workers. However, as many workers and firms operating in the informal sector are particularly unproductive, they might not be able to survive in the formal sector given its costs and benefits. Therefore, a strategy to combat informality also needs to comprise measures to reduce the costs of formality, such as compliance costs with regulations, and to strengthen its benefits, including the quality of government services when it comes to protecting property rights, but also health and education services. This would make it easier for relatively unproductive firms to survive in the formal sector. In fact, many of these measures are likely to help both formal and informal firms and workers to become more productive. When complemented with further support for small, unproductive firms to enhance their efficiency, such as technical assistance to comply with tax and labour laws (Box 4.2), education and training, this should help increase firm performance and labour productivity across the economy. A strategy to combat informality also needs to include strong efforts to improve the quality of basic and adult education and training, as one of the key determinants of informality is the low productivity of firms and workers operating in this sector.

Box 4.2. **Helping small firms to increase productivity**

Establishing business development centres can help to provide the smallest enterprises with advice and basic training to foster their productivity. Evidence suggests that there is a positive role for business associations and training in the profitability of small firms in *Mexico* (Fajnzylber *et al.,* 2009)

Training and technical help, including with compliance with tax laws and regulations, can foster formalisation. In *South Africa* a programme offering training for small informal businesses co-ordinated by producers of investment goods is an interesting example (Kenyon, 2007). The organisers provide a package of training and credit conditional on formalisation to help expand their own market.

Support by business associations also facilitated formalisation of firms in the north of *Italy*. These associations provided technical assistance to comply with tax rules at the beginning. Later they helped with product market certification and access to finance. Similar help is provided by *Spanish* business associations in co-ordination with the tax agency. This programme targets small businesses that entered in the special tax regime.

Mexico has developed these kinds of services through its programme *Mexico Emprende* with web-based information and a number of business centres that attend micro as well as small and medium-sized enterprises throughout the country.

Easing regulatory hurdles and streamlining procedures

Making regulation simpler and easier to comply with should help all agents in the economy to enhance their productivity, while strengthening formalisation. Overly burdensome regulation can make it costly for firms to formalise, but it can also hamper competition and thus productivity in the wider economy. This may be a factor limiting formalisation in Mexico, as labour regulations as well as business registration procedures are perceived as somewhat stringent, despite significant recent improvements.

Dismissal regulations for regular employment are relatively strict in Mexico compared with most OECD countries. Labour court procedures are complex, lengthy and costly. It is very difficult to establish in court that redundancy or poor performance is a valid ground for dismissal, leading to unfair dismissal litigation. This along with strict provisions relating to collective dismissal can create incentives to rely on undeclared employees, outsourcing to temporary work agencies or self-employed workers. This is relatively easy as temporary work agencies are largely unregulated. In fact, firms that do not necessarily hide their activities and are therefore part of the formal sector in principle often use subcontracting and outsourcing to temporary work agencies as a means to rely on cheaper, informal workers that are easier to dismiss. Relaxing the provisions for regular employment somewhat, while strengthening those for temporary employment should help avoid this kind of behaviour, as firms' incentives to rely on regular labour would rise. This could also lead to higher aggregate productivity, as incentives to invest in personnel are stronger when workers are employed on longer term contracts.

A recent labour reform proposal in Mexico would address some of these issues. It limits the accumulation of due wages during labour trials to 6 months. Currently, there is no limit, which raises incentives for dismissed workers and their lawyers to prolong labour trials. This has even led to cases of corruption where judges agreed to prolong the trial in return for sharing accumulated due wages. The average resolution time for a case of unjustified dismissal under federal jurisdiction is now around 38 months, and even longer for cases under state jurisdiction. The new provision would limit the costs of dismissal and the uncertainty surrounding it. Evidence from other OECD countries suggests that uncertain administrative and legal procedures may impose a higher burden on dismissals than direct costs (OECD, 2007a). Therefore, the new provisions may entice employers to hire more workers under formal arrangements. The law would introduce short-term trial and training contracts, ranging from one to six months. This may raise employers' incentives to consider more unskilled and inexperienced workers, especially young people, for formal employment. The reform would also make it easier to contract employees for intermittent tasks, such as seasonal work and work that does not have to be performed the full week, month or year. The reform is still under discussion in Congress, but if it were implemented along the lines of the original proposal, this would ease the burden of employment protection legislation quite substantially (Figure 4.3) and would give more legal certainty in terms of hiring and dismissal.

Figure 4.3. **Employment protection legislation (EPL) for regular workers, 2008**

Scale from 0 (least restrictions) to 6 (most restrictions)

1. Estimate takes into account the proposed reform.

Source: OECD, *OECD Indicators on Employment Protection Database.*

StatLink http://dx.doi.org/10.1787/888932384059

Implementing the reform proposal would be a step in the right direction**.** Reducing the cost of unfair dismissal litigation is welcome. In the medium term, Mexico should also consider reducing the scope for unfair dismissal litigation, by making it easier to succeed in court when bringing forward repeated poor performance and redundancy as legal grounds for dismissal. To gain support for such a reform, Mexico could envisage strengthening the protection for unemployed workers, which is very weak and has undesirable side effects on pension income (Box 4.3). One way to do that would be to further increase the government's contribution to strengthen the unemployment component of the pension accounts. In addition, a tax-financed insurance component could be added to the system, similar as in Chile. Tax-financing would avoid that a stronger unemployment component weakens pension income. A stronger unemployment benefit system could strengthen incentives for workers to formalise, although it would have to be carefully designed to avoid that a weakening of work incentives results in higher unemployment. An alternative way to strengthen the protection of unemployed workers would be to introduce a social assistance-type cash benefit as suggested in Chapter 2, although this would be challenging reform involving important administrative changes. However, with such a scheme in place it would no longer be necessary to allow unemployed workers to draw on their pension savings with beneficial effects on their retirement income.

Box 4.3. **Strengthening protection for unemployed workers in Mexico**

A well-functioning unemployment insurance system can help workers avoid large drops in consumption during an unemployment spell (Gruber, 1997). It can also have productivity-enhancing effects as the income replacement gives workers time to search for employment which matches their skills well (Acemoglu and Shimer, 2000). In the case of Mexico, it can allow workers to take the time to find a new job in the formal sector and thus avoid moving into the informal sector, where they are likely to be less productive, as recent empirical work on workers switching between the formal and informal sectors suggests (Alcaraz *et al.,* 2008). On the downside, an insurance-based unemployment benefit system that is too generous can limit job search incentives to such an extent that costs outweigh benefits.

Mexico has currently no separate unemployment benefit system, but workers are allowed to draw on their individual pension accounts during a maximum of three unemployment spells, if they have contributed at least for three years. The government eased access conditions for this withdrawal and increased the maximum amount that is allowed to be withdrawn in the recent recession. At the same time, it increased the government subsidy for pension accounts, the *cuota social*, and targeted it more strongly on low- and medium income workers.

This arrangement is similar in principle to individual unemployment accounts and it shares its advantages compared to traditional unemployment insurance where the risk is pooled. In particular, the costs of unemployment benefits are internalised, as worker draw on their own savings which will reduce their pension replacement rate later on (Hartley *et al.,* 2010; Stiglitz and Yun, 2002). Negative effects on workers' incentives to search, which may occur in insurance-based unemployment benefit systems should thus be limited, provided the worker is not strongly myopic neglecting the effect on income during old age.

Box 4.3. **Strengthening protection for unemployed workers in Mexico** *(cont.)*

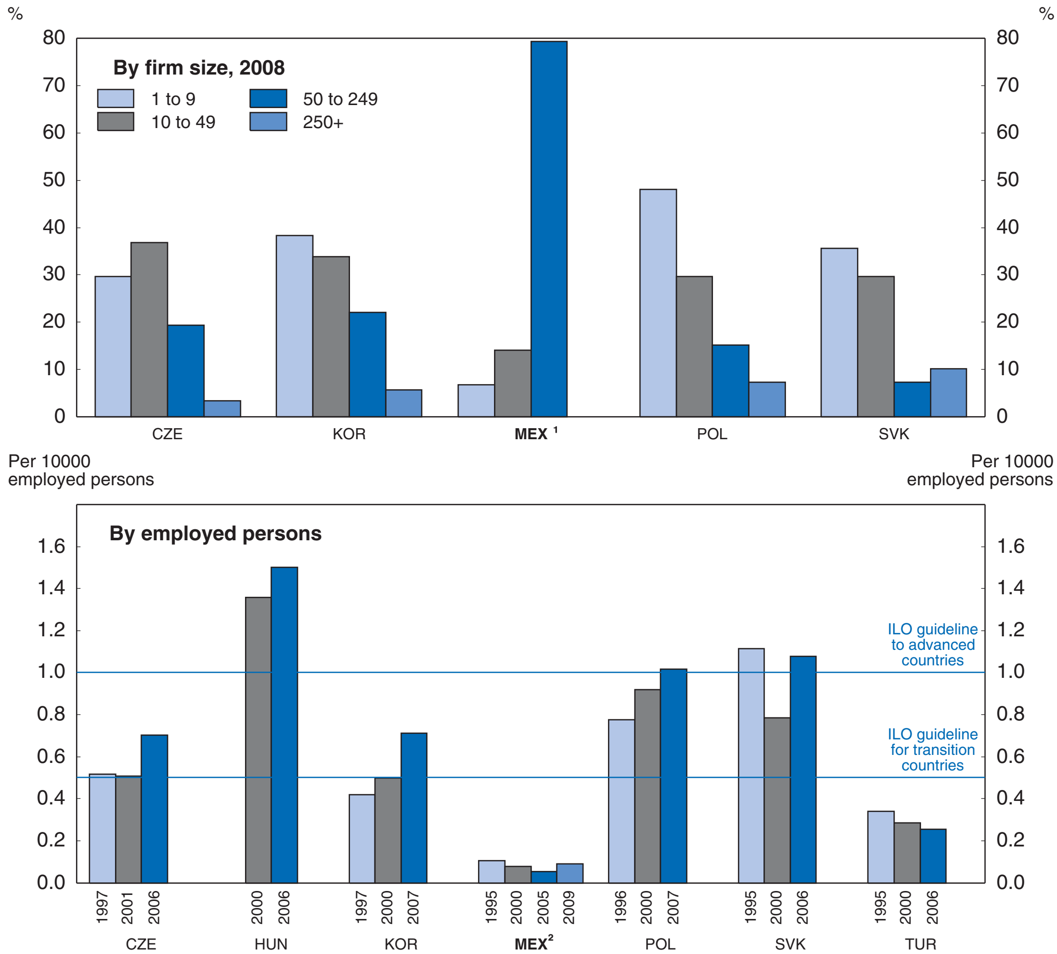
However, the system is also likely to share the disadvantages of unemployment benefits based on individual accounts, which can be particularly pronounced in economies with large informal sectors and wage inequalities. The experience with the Chilean individual account system has shown that those workers who are most likely to be affected by unemployment, in particular employees with short-term contracts and frequent moves into and out of formal employment, are also those who are least likely to have accumulated sufficient amounts in their individual savings accounts to provide for effective protection during an unemployment spell. In fact, a large number of individual accounts had accumulated less than one monthly minimum wage in Chile in 2008. It is for this reason that Chile recently eased access to the Solidarity Fund, which complements the individual accounts with a traditional unemployment insurance based on risk pooling. Stiglitz and Yun (2006) show that it is optimal to complement unemployment insurance based on withdrawal from pension savings with a tax-funded insurance element, except in the unlikely case where workers are completely risk-neutral. The insurance element should be bigger the bigger the risk, that is the length of the unemployment spell compared to the length of the working life in formal employment.

In Mexico, similar as in Chile, lower-wage workers are more likely than wealthier peers to have unstable employment relationships with frequent moves into and out of formal employment and thus a low balance in their pension accounts. Drawing on these savings is likely to jeopardise their retirement income even further. While ensuring sufficient retirement income for all will require completing the pension reform process that Mexico has initiated, there is also a rationale for Mexico to devote more funds to the combined pension and unemployment savings account and perhaps complement the latter with a tax-financed insurance element.

The reform also imposes stricter regulations on firms that resort to outsourcing, but the capacity of the labour inspectorates may need to be stepped up for the reform to become effective. Firms using outsourcing or subcontracting arrangements are obliged to verify if the subcontractor complies with labour and social security laws. This complements a similar provision, that was introduced in the social security law in 2009, with increases in fines. More generally maximum fines for infractions of the labour law would be increased almost 16-fold with the reform. The new law proposal also includes numerous provisions to improve working conditions for workers, including longer resting periods for household workers and anti-discrimination provisions. While all these measures are welcome, Mexico may have to step up the capacity of its labour inspectorates to ensure enforcement of the new regulations. The reform proposal would require firms in high-risk activities to be certified by private verification units that are approved by the government. This would be a step towards strengthening the capacity of labour inspection in Mexico. Although Mexico has increased the number of labour inspectors by more than 70% in recent years, staffing levels remain much lower than in other lower-income OECD countries (Figure 4.4). The largest part of labour inspections is conducted in bigger firms, although these are less likely to be informal.

Mexico is making notable progress in reducing the time and costs required to register a new business. Administrative burdens are often perceived as relatively high in Mexico. The percentage of firms identifying business licensing and permits as major constraints is high in international comparison and so is the score of the OECD Product Market

Figure 4.4. **Labour inspections**



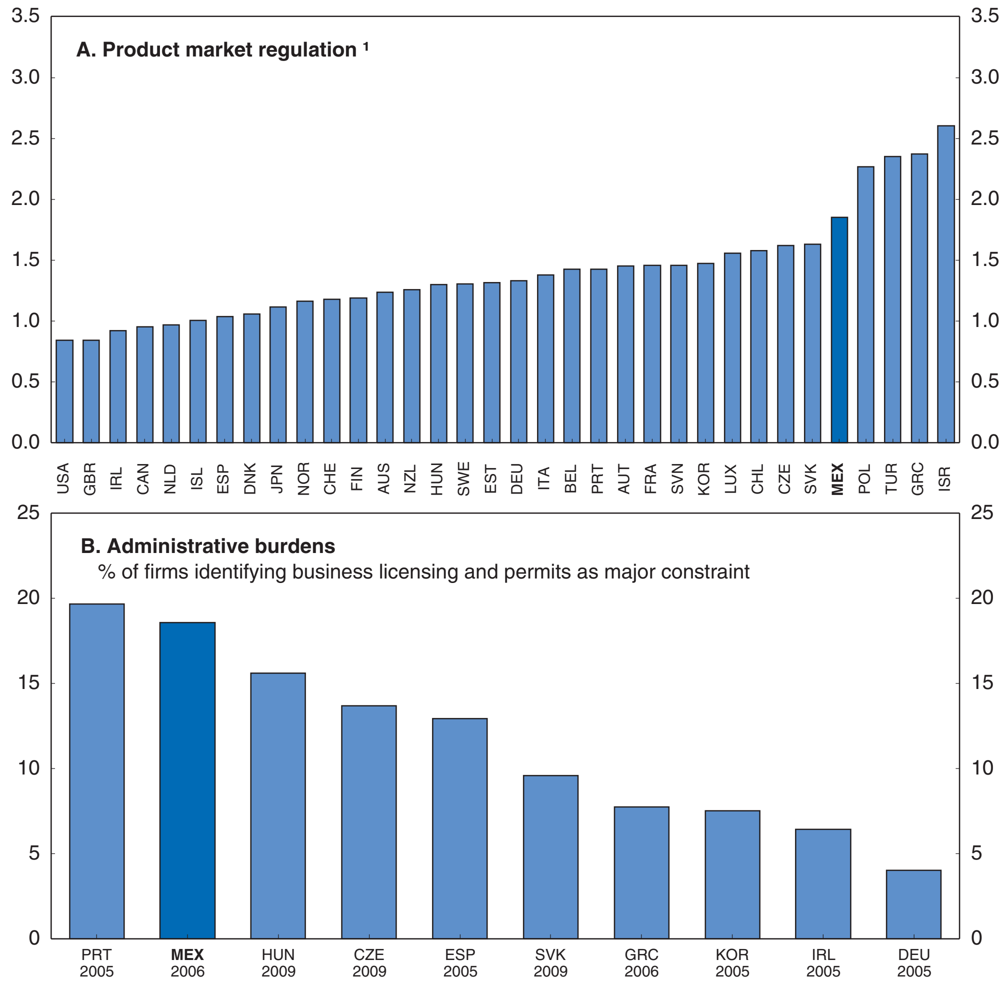
1. For 50 and more.
2. Federal labour inspections only.

Source: OECD (2008), *OECD Employment Outlook*, OECD, Paris; Mexican data for 2009 provided by the authorities.

StatLink http://dx.doi.org/10.1787/888932384078

Regulation indicator, pointing to relatively restrictive regulation and burdensome procedures (Figure 4.5). However, Mexico is making progress on this. The recent introduction of an on-line one-stop shop *tuempresa.gob.mx* to comply with federal regulations to start up a new business is discussed in Chapter 3. Research on previous efforts in Mexico to reduce the time required to comply with municipal start-up regulations under a scheme called SARE, "Sistema de Apertura Rápida de Empresas" suggests that this can have some positive impact on formality. The reduction in the number of days required to register a business from 30 to 1.4 lowered formalisation costs. Evidence suggests that this led to a moderate but robust increase of firm registration. Kaplan *et al.* (2007) estimate an increase in the flow of newly registered firms of about 4-8% based on data from the social security agency IMSS, corresponding to about 12 to 19 new formal jobs created per municipality and month as a result of SARE. Bruhn (2008) finds a higher impact based on employment surveys, which include data on entrepreneurs in

Figure 4.5. **Product market regulation and administrative burdens**



1. Overall indicator, the scale of the indicator is 0-6 from least to most restrictive of competition.

Source: OECD, *Product Market Regulation Database* and *World Bank Enterprise Data*.

StatLink http://dx.doi.org/10.1787/888932384097

addition to salaried employees. The estimated effect corresponds to an increase in the stock of registered firms by 6%.

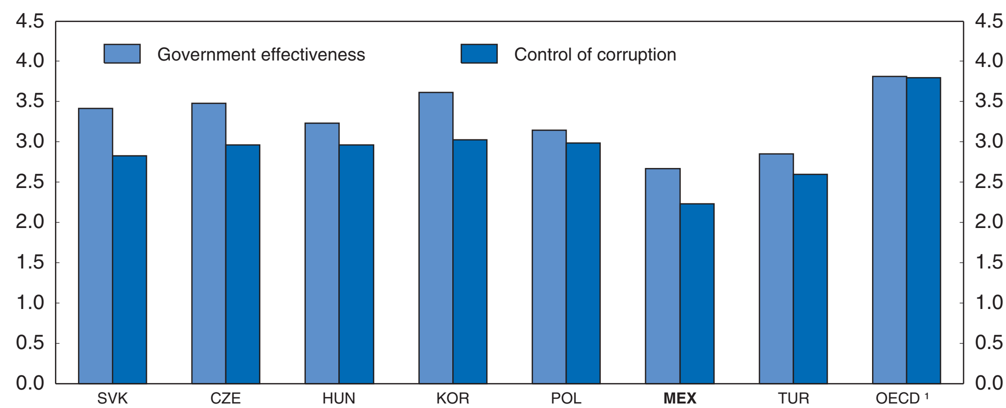
However, the reform seems to have done little to promote formalisation of previously informal firms. Most of the effect comes from start-ups instead. One possible explanation for this would be that costs of formality, for example social security contributions and taxes, are more important than registration costs. Unproductive firms would then still have an incentive to avoid formalisation. In fact, both studies discussed before provide evidence that informal business owners are of lower ability than those of the formal firms or wage earners in the formal sector.

Corruption may limit the benefits of greater ease of registration. If corruption is widespread firms may prefer to hide simply to avoid contact with officials who may ask for bribes. Moreover, the benefits of formalisation might be lower as it would not enhance the enforcement of contracts to the same extent as could otherwise be expected. Kaplan *et al.* (2007) cite anecdotal evidence that health and safety regulations are often used by bureaucrats to obtain bribes, as officials search for even minor non-compliance. These authors also find that the SARE programme was less successful in municipalities with higher corruption levels. Thus, fighting corruption will be a crucial element in any programme to promote formalisation. World Bank data suggest that Mexico needs to do more to control corruption and promote the effectiveness of government to enhance the benefits of going formal (Figure 4.6).

Nevertheless, even if lowering the costs of registering has only an impact on new firms this should decrease the relative weight of informal firms over time. Mexico's efforts discussed in Chapter 3 to reduce the costs of doing business more generally should also help promote a reallocation of resources to more productive formal firms as their costs are lowered.

Figure 4.6. **Government effectiveness and corrupt control**

Rated from 0-5 (worst-best), 2009



1. Unweigthed average.

Source: World Bank, *Worldwide Governance Indicators Database*.

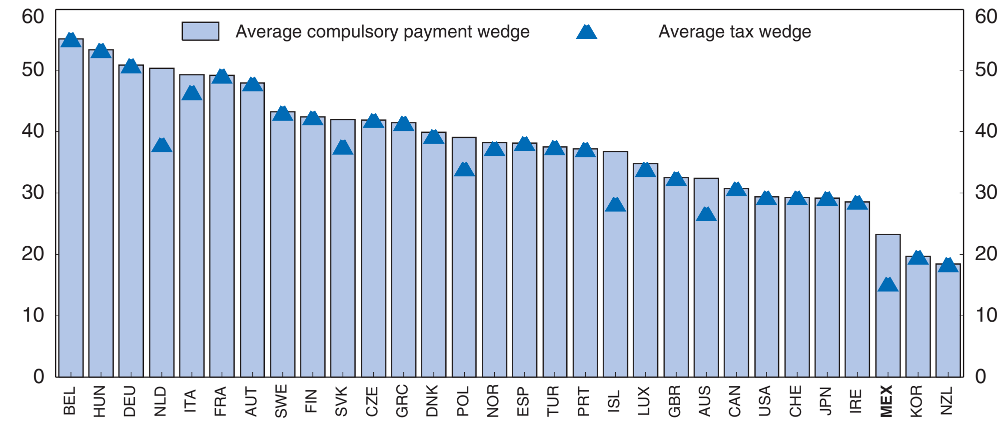
StatLink http://dx.doi.org/10.1787/888932384116

Dealing with the effects of social security contributions on informality

Overall, labour taxes in Mexico are moderate, but there are probably simpler ways to reach the same effect. The tax wedge on average wages in Mexico, including compulsory payments to private pension funds, is comparatively low (Figure 4.7) exceeding only those in New Zealand and Korea. Yet, social contributions alone are higher than this for workers earning less. Given that they are regressive mainly due to a fixed base contribution that employers have to make to the healthcare system, social contributions as a percentage of wages are largest for minimum wage earners, close to 40% (Figure 4.8). The share of Mexican firms citing health insurance as the biggest labour regulation barrier to formalising workers is particularly large compared to other Latin American countries (World Bank, 2007). As social contributions declining with income at the lower end of the pay scale are unusual, social contributions on low wages are actually high in Mexico in international comparison. This effect is compensated by an in-work tax credit, the *subsidio para el empleo*, however, which is higher than the lump-sum health contribution for the lowest wages. Mexico has recently introduced further income tax deductions for firms hiring workers that are registered with the social security agency for the first time, the *Programa de Primer Empleo*. This would further lower the labour costs for these workers. The

Figure 4.7. **Average compulsory payment wedge and average tax wedge**

As per cent of augmented total labour costs, 2009

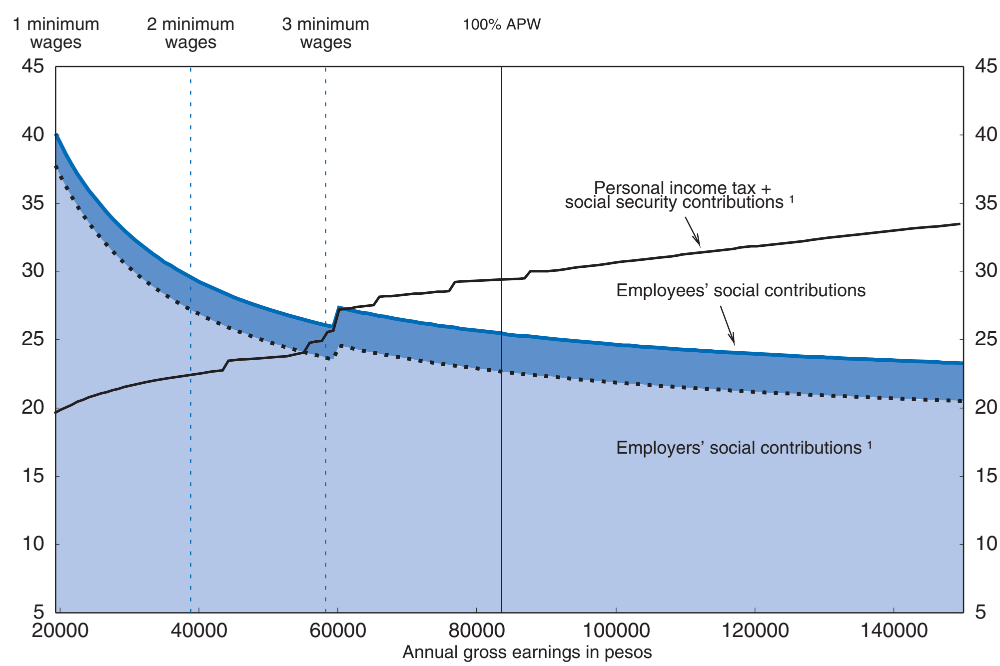


Source: OECD, *Taxing Wages Database*.

StatLink http://dx.doi.org/10.1787/888932384135

Figure 4.8. **Social charges in Mexico**

2009, per cent of earnings



1. Includes contributions made by employers to the retirement Fund (SAR) and the housing Fund (INFONAVIT) as well as for discharge and old age insurance.

Source: OECD, *Taxing Wages 2008-2009*.

StatLink http://dx.doi.org/10.1787/888932384154

overall combination of low tax wedge, high social security contributions, *subsidio para el empleo* and now *Programa de Primer Empleo* implies that the wedge incorporating all of these factors is moderate, but compensating high social charges with tax credits and deductions for workers and employers is a relatively complicated way of ensuring a moderate tax burden on low-wage workers. Making social charges more progressive would be easier and more transparent.

Social charges on low-wage workers could be reduced by introducing a health charge that is proportional to actual wages, thus reducing the burden on lower-wage workers while increasing it for higher-wage workers. Reduced rates for the lowest-wage workers could be considered, as well. This could be implemented in a revenue-neutral way. These measures would allow reducing the tax burden on low-wage earners even further. Alternative, tax credits and deductions could be limited to broaden the tax base, in particular if Mexico wanted to maintain a low, but positive tax burden on low-wage workers for fairness reasons. In any case, the effects and efficiency of the *subsidio para el empleo* and *Programa de Primer Empleo* should be evaluated, as well as the effects of more progressive social charges, to make these decisions.

Although the labour tax burden does not appear to be very high in Mexico, there are a number of reasons to think that the impact of social charges on formality might be stronger than the labour tax wedge by itself suggests:

- First, social security charges are high in relation to the tax burden on small businesses. Social charges have to be paid on the first peso earned, while income of small businesses is tax-free up to four minimum wages. The *subsidio para el empleo* and *Programa de Primer Empleo* lower the tax burden on low-wage workers and in some cases their employers. Nevertheless, the structure of social charges and small business taxes increases the overall tax burden on small businesses that declare their workers, as the benefit of tax-deductibility of social charges is lower the lower the business tax base. This is also an incentive for workers to choose self-employment over salaried employment to the extent that they do not fully value social security services. Restructuring the tax burden by lowering the burden on low-income labour while increasing other taxes, including those on small businesses, may therefore be worth considering (OECD, 2008).
- Some low-wage workers may value a number of the services included in the mandatory social security package at less than their cost. This would reduce incentives to contribute to it. Less than half of low-wage workers manage to retain jobs in the formal sector for 25 years during their working life, which would guarantee a minimum pension roughly equivalent to the minimum wage (Casal and Hoyo, 2007). In addition, savings for middle income workers are often too low to generate adequate retirement income. The capacity of the healthcare sector is low compared to other OECD countries, in terms of nurses and doctors in relation to the population and in terms of hospital beds even compared to Turkey. The fragmentation of the system across the formal and informal sectors, as well as between the public and private sectors, contributes to limitations in quality and efficiency, for example because it is difficult to share capacity. Finally, access to housing loans from the social security's housing agency, to childcare and to recreational activities is very limited, especially for low-wage workers who do not live in urban areas.
- In addition, weak enforcement capacity has to be taken into account. Low wage workers are abundant in Mexico and enforcement capacity remains relatively weak, despite recent improvements, in particular due to low levels of staffing at the labour inspectorate. This makes evasion of social charges easier (OECD, 2008).

Taking services out of the social security package, that are better financed via general taxes, would help make it more attractive to poor and rural workers. Some services within the social security package are hardly available for poor and rural workers, who still have to contribute to their financing via social charges. They could probably be provided more efficiently if they were integrated with equivalent tax-financed programmes for informal workers. This includes housing benefits, childcare and recreational activities. Social security childcare facilities are limited and available mainly in urban areas. Sport facilities and other infrastructure for recreational activities, as well, are located in urban areas and thus hardly available for rural workers. Subsidised mortgages are allocated based on a point-system that favours higher-income workers, although the government has made some efforts in recent years to ease the access to mortgage credit subsidised by the social security housing fund for lower-income workers. There would be merit in taking housing benefits, childcare and recreational activities out of the social security package and merge them with equivalent tax-financed programmes. This would help lower social contributions removing disincentives to formalise for rural and poor workers, who now have to pay for these services although they have limited access to them. While low-wage workers would probably still have to contribute to the financing of these services when they are tax-financed, this would not depend on their labour status any more. Thus disincentives to become formal would be lowered. The government already introduced the possibility to waive a part of the social charges for rural day labourers and construction workers to make up for the fact that they have limited access to some of the services. However, taking those services out of the social security package altogether seems preferable, because the group of workers that has limited access to these services goes beyond construction workers and rural day labourers. This would allow integrating these services with equivalent tax-financed programmes that already exist for informal workers, with an opportunity to improve strategic planning and thus programme efficiency.

There would also be merit in considering moving towards an integrated basic healthcare regime. Currently there are two different social security health systems for the private sector (Instituto Mexicano del Seguro Social, IMSS) and the public sector (Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado, ISSSTE) financed via social charges, as well as a new, largely tax-financed system, *Seguro Popular,* for workers without access to social security and their dependent family members. Mexico introduced this system to ensure universal health insurance coverage as a first stepping stone towards a unified and universal system. Mexico has made important progress with extending the coverage of basic health insurance to the informal workforce through *Seguro Popular* introduced in 2003, with an expected coverage of close to 50 million people in 2011. This is welcome from a public health perspective, but working towards a more integrated health care system would increase efficiency and avoid any disincentives to formalise that could stem from differences in financing schemes. It should be noted, though, that for now most studies have found no evidence that the introduction of *Seguro Popular* has increased the informal sector (Knox, 2008, Barros, 2009 and Heckman and Villareal, 2010), although one study did find a small negative effect on formal job creation (Bosch and Campos-Vásquez, 2010). Mexico should continue to monitor this issue closely. In any case, integrating Mexico's various healthcare systems may also help improve their quality, raising incentives for workers to formalise. Each healthcare system has currently its own infrastructure and providers. Sharing this capacity has been difficult, which has led to inefficiencies. For example, some capacity is underused while there are bottlenecks elsewhere, often in the same city.

Mexico is already working to integrate its different healthcare systems to reap efficiency gains. The different healthcare systems have started buying patented medicines together. This has led to annual savings of around 9 billion pesos each year according to government estimates. Thanks to a new integrated database, health data can now be transferred more easily between different healthcare systems. The Health Ministry is developing clinical guidelines for 400 diseases for all three health systems to make sure that standards match. Finally, the Ministry has now developed a common tariff system for all three health systems. This will make it easier to share capacity, raising efficiency. Eventually, every health system should be able to buy services from any provider. Continuing the integration process along these lines should help raise efficiency.

Moving towards tax-financing or other integrated financing schemes for a universal basic healthcare could reduce social charges significantly. In the extreme moving towards full tax-financing of the healthcare system would reduce social charges for minimum wage earners from close to 40% of wages to a little over 16% and from 28% to 16% for workers earning two minimum wages. Depending on how this is financed, it could also help reduce the tax wedge for low-wage workers even further, increasing the demand for this type of worker to the extent that the tax incidence is on the employer. However, Mexico may want to maintain a small positive tax rate on low-wage workers so that they continue contributing to the government services they use. Financing the healthcare package via progressive income taxes – higher rates or a broader base – would unambiguously reduce the tax wedge on low income workers, but other financing options could have similar effects. Withdrawing VAT exemptions and zero rates, as suggested in Chapter 2, while compensating the lowest income deciles with targeted tax transfers would also lower the financing burden on formal low-wage workers. However, these options would require a comprehensive tax reform. To the extent that this is difficult to achieve, other financing options could be considered. For example, Mexico could limit tax-financing to a very basic healthcare package for all citizens. Alternatively, the package could be financed via fees, which could be waived for the lowest-income households. The package could be relatively narrow covering only a set of diseases with catastrophic expenses, as originally intended for *Seguro Popular*. Services that go beyond this could be financed via social charges for workers with formal employment. Alternatively, a choice of top-up insurances could be offered against fees. Mexico's efforts to extend the coverage of basic health insurance are very welcome, but sound financing needs to be ensured.

In Spain unifying healthcare systems while moving towards tax-financing combined with stronger tax enforcement has helped to strengthen tax revenues considerably over time, as discussed in Chapter 2. It has also improved healthcare coverage (World Bank, 2007; Zubiri, 2006). The associated reduction in social contributions was used to finance pensions and an unemployment benefit system, which may have helped increasing compliance with tax and labour regulations. Research has shown that strengthening public service quality can help to strengthen the willingness to pay taxes, as explained in Chapter 2. While structural unemployment increased sharply in Spain in the wake of these reforms, this is probably not related to any of these reforms. It has more to do with different shocks, including from oil prices and the opening of the economy to the common European market, in the context of relatively rigid labour laws and thus limited wage flexibility. A number of OECD countries with low unemployment rates offer far more generous benefits than Spain.

In Mexico, there are opportunities to devote a larger share of social charges to pensions or unemployment benefits and this would be welcome. It may help make the social security package more attractive to workers, thus promoting formalisation. The replacement rate for pensions can be rather low, in particular for medium-income earners. Low-income earners, who often have patchy employment histories moving into and out of formal employment, often struggle to stay in the formal sector for 25 years, which is the requirement to obtain a minimum pension just above the minimum wage independently of whether funds accumulated in the pension account are sufficient to cover this. In that sense, increasing the funds that go to workers' pension accounts would be welcome. It would increase the value of the social security package for low-income workers. There is also a rationale to devote larger funds to unemployment benefits.

The government has submitted a proposal to Congress that would redirect resources from the housing fund to pensions and this is welcome. Currently, the housing fund, administered by Infonavit, receives 5% of gross wages; the pension account receives 6.5% plus a subsidy (*cuota social*). The proposal would gradually redirect resources from Infonavit to a flexible-use subaccount within the pension system, until the contributions to the latter reach 10.5% of wages. Starting from 2018 Infonavit would only receive 1% of gross wages. The resources deposited within the flexible subaccount would still be available to the individual workers for housing. At the same time, the proposal would strengthen workers' saving capacity for retirement. The idea behind this is that Infonavit has improved its efficiency and it can now re-finance itself on the market. In the absence of reform, it is expected to accumulate a large long term surplus. As the pension savings of many workers are too low to provide for adequate income in old age, increasing the funds that go to the pension account would be welcome.

However, a more comprehensive pension reform would be needed to provide effective basic pension coverage for all, while preserving incentives to save. The reform would probably need to offer a means-tested non-contributory basic pension and top-ups for those who do not manage to save sufficiently as in Chile. Such a reform has to be carefully calibrated, though, to provide sufficient incentives for low-wage earners to save. Therefore, a comprehensive reform that takes these design issues into account is preferable to unco-ordinated, piecemeal reform efforts that are occurring now, as different non-contributory pensions have been introduced in single states, such as Mexico City. This could result in a dangerous run to the top, which could quickly lead to financing problems. It is also important that Mexico finishes the transition of its defined benefits pension systems to capital-funded defined contributions system before introducing a basic non-contributory pension in order to co-ordinate the different pillars. Very significant reform efforts have taken place that transformed the national pension system for private sector employees (IMSS), for federal government employees (ISSSTE) and for several public enterprises so that the majority of workers now participate in defined contributions system. However, the pension system of Pemex and a number of severely underfunded systems for public enterprises and state level government employees still have to be reformed. The federal government should work with the states to promote this transition and design a basic non-contributory together once a national capital-funded pillar is in place.

Finally extending the obligation to contribute to social security to self-employed workers could improve coverage, while limiting incentives to stay informal through self-employment. However, it would pose significant implementation challenges. Yet, it should be considered at least for higher-income workers. The share of self-employed workers in Mexico is high and universal coverage would be an important aim for some of the services provided within the Mexican social security package, including pensions and healthcare.

This would probably lead to longer contribution histories for those workers who frequently move into and out of the formal sector, thus securing higher retirement income for them. In addition, this would lower incentives for businesses to use the services of self-employed rather than salaried workers. It would also reduce incentives for workers to avoid formalisation. Experiences with such a reform have been favourable in the case of the pension systems in the United Kingdom and Hong Kong China (Hu and Stewart, 2009). Chile is also working to extend the obligation to buy pension insurance to self-employed workers.

Fighting informality requires a long-term and broad-based strategy, which is not easy to implement and will take time to take effect. The large number of low-productivity workers in Mexico who struggle to thrive in the formal economy will not be able to enhance their skills sufficiently in a short period of time. Yet, Mexico can take a number of measures to make it less costly and more attractive to join the formal economy. This is likely to have some positive impact on the economy's aggregate productivity, independent of these workers ability to enhance their skills.

Box 4.4. **Main recommendations to reduce informality**

- Adopt and implement the labour reform proposal.
- Consider easing procedures to dismiss workers based on poor performance or redundancy Review whether the labour inspectorate needs more staff to enforce labour laws.
- Continue efforts to reduce the regulatory burden for firms, to fight corruption and to promote government effectiveness.
- Consider removing childcare, housing benefits and recreational services from the mandatory social security package and merge them with equivalent tax-financed services for the general population.
- Continue efforts to integrate different healthcare packages to reap efficiency gains. Consider moving towards integrated financing of a basic universal healthcare package.
- Adopt and implement the reform proposal to channel funds from the social security housing fund to the pension account.
- Work with the states to complete the transition of defined benefits to capital-funded defined contributions pension systems and consider introducing a national non-contributory pension pillar and top-ups for workers with low balances in their pension accounts that are designed to preserve saving incentives.
- Consider extending the obligation to contribute to social security to self-employed workers.

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