

## 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 These subsidies should be gradually withdrawn in line with the government's goals.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.

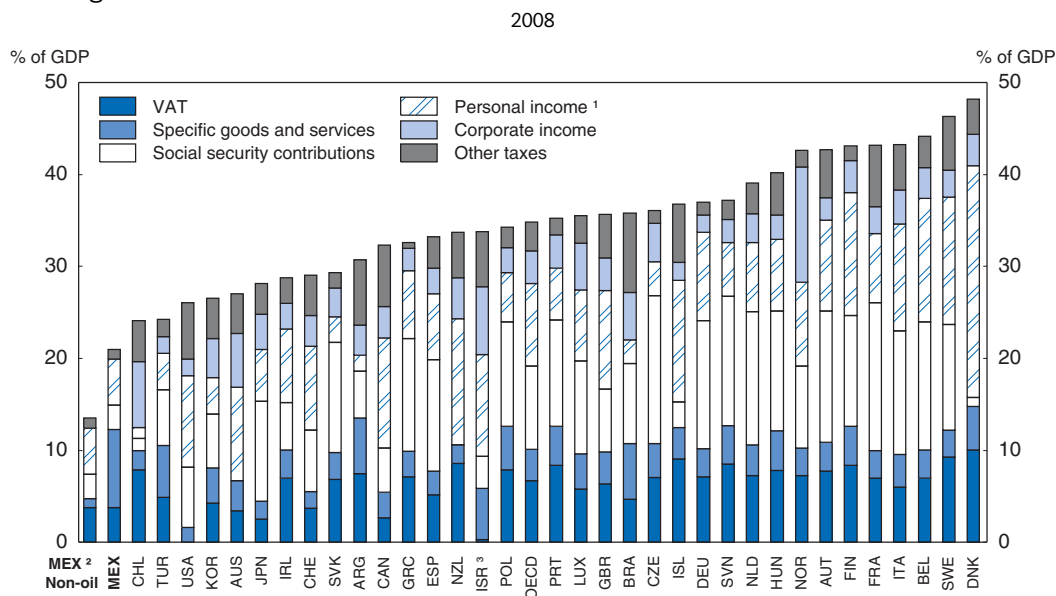
Opportunities to enhance spending efficiency should not be missed. Mexico spends substantial amounts on energy subsidies, but these are inefficient when it comes to alleviating poverty, as a large part is captured by higher-income groups. At the same time, energy subsidies are harmful for the environment, 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



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.

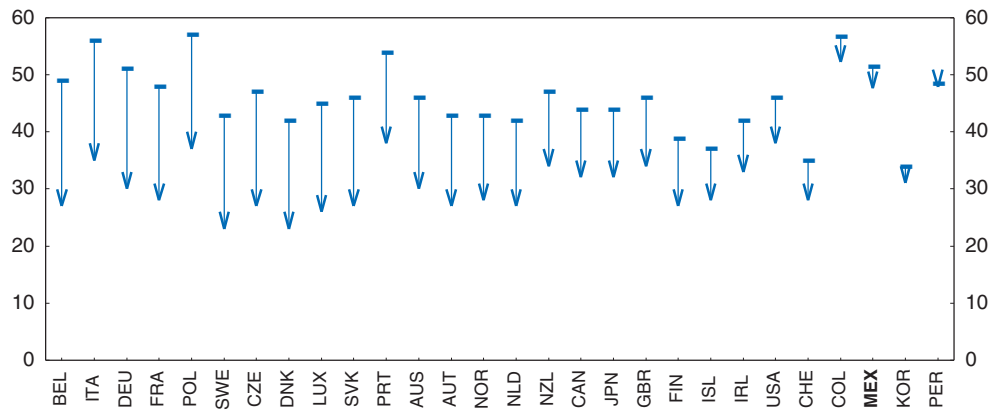
## Improving spending efficiency

### **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<sup>1</sup>



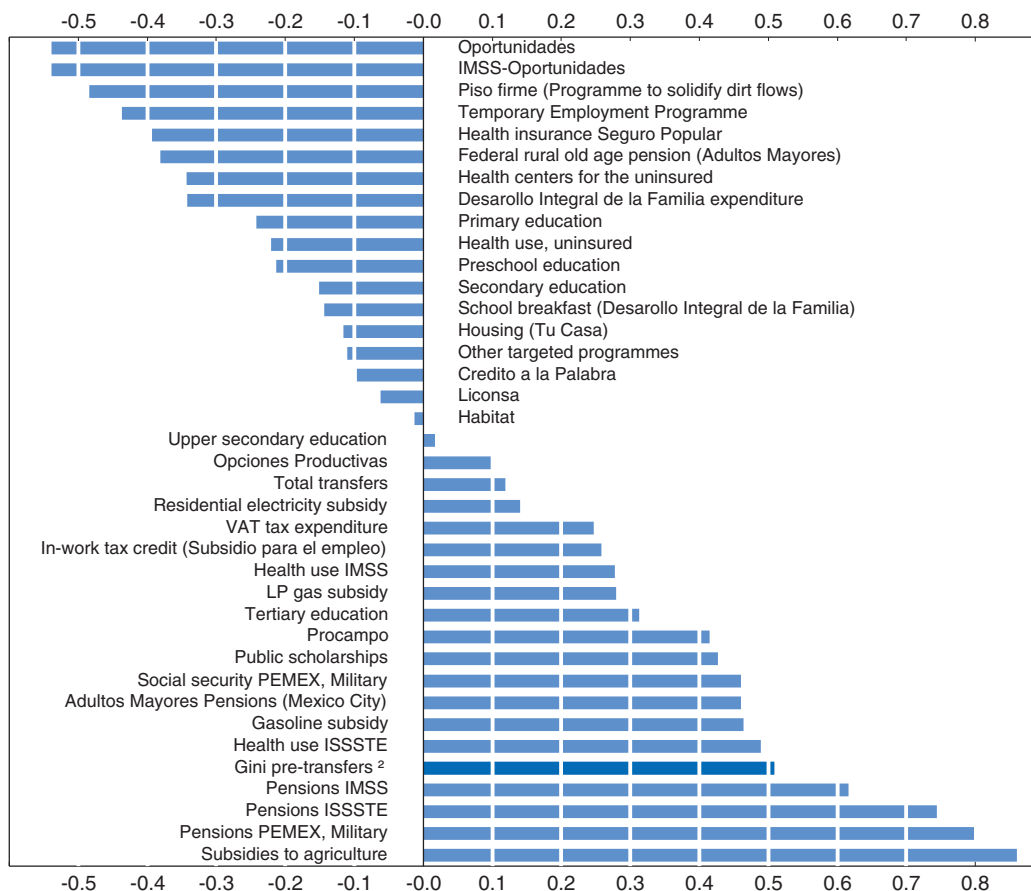
1. 2008 for Mexico, 2003 for Colombia and 2004 for Peru.

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<sup>1</sup>

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).

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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
<b>Mexico</b>	<b>0.8</b>	<b>7.2</b>
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

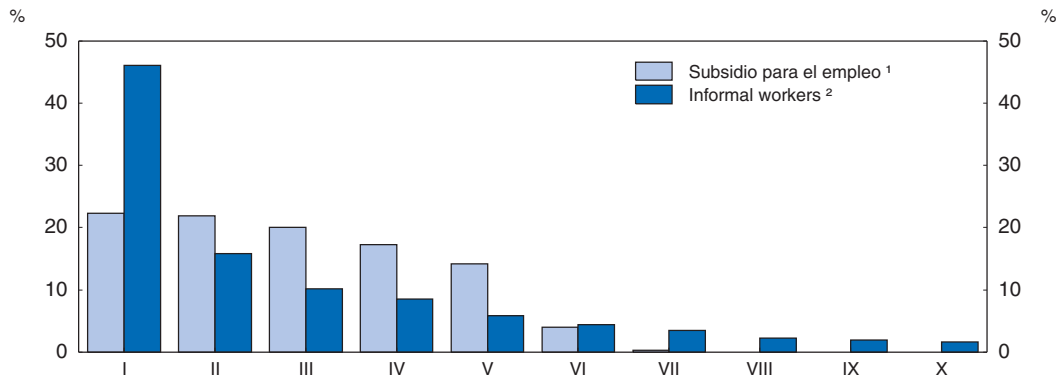
Note: The following income-tested spending items are included: spending on “other contingencies – other social policy areas” as in the OECD Social Expenditure Database (SOCX), income-tested spending on the unemployed (e.g. unemployment assistance payments for Germany), income-tested support payments 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](http://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**



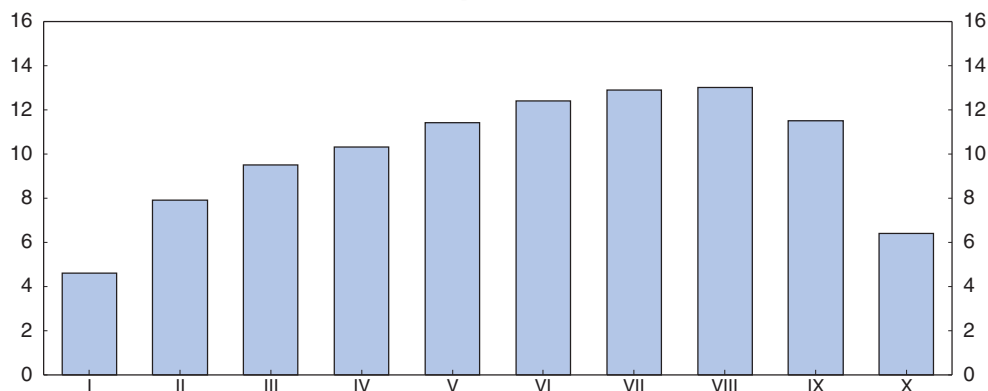
1. Share of each decile in the total subsidy.
2. Share of informal workers with income corresponding to the range of each decile of formal labour income.

Source: ENIGH data.


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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.

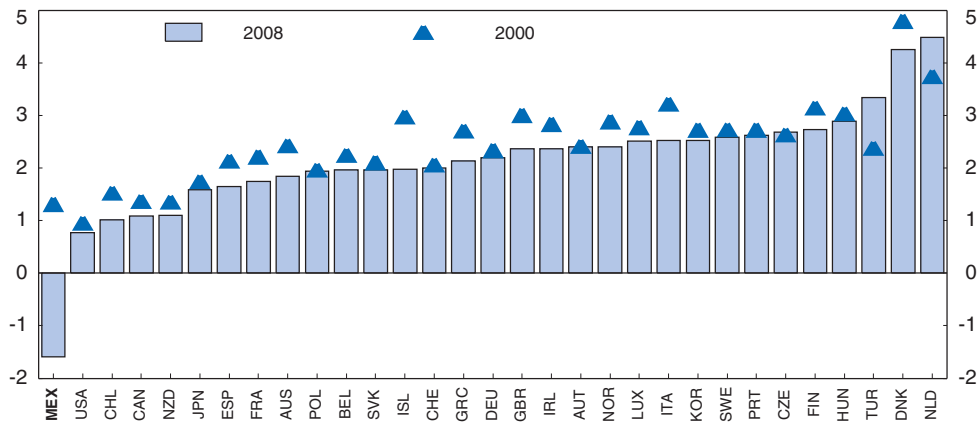
### **Help for low-income households to better cope with energy costs should be restructured**

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

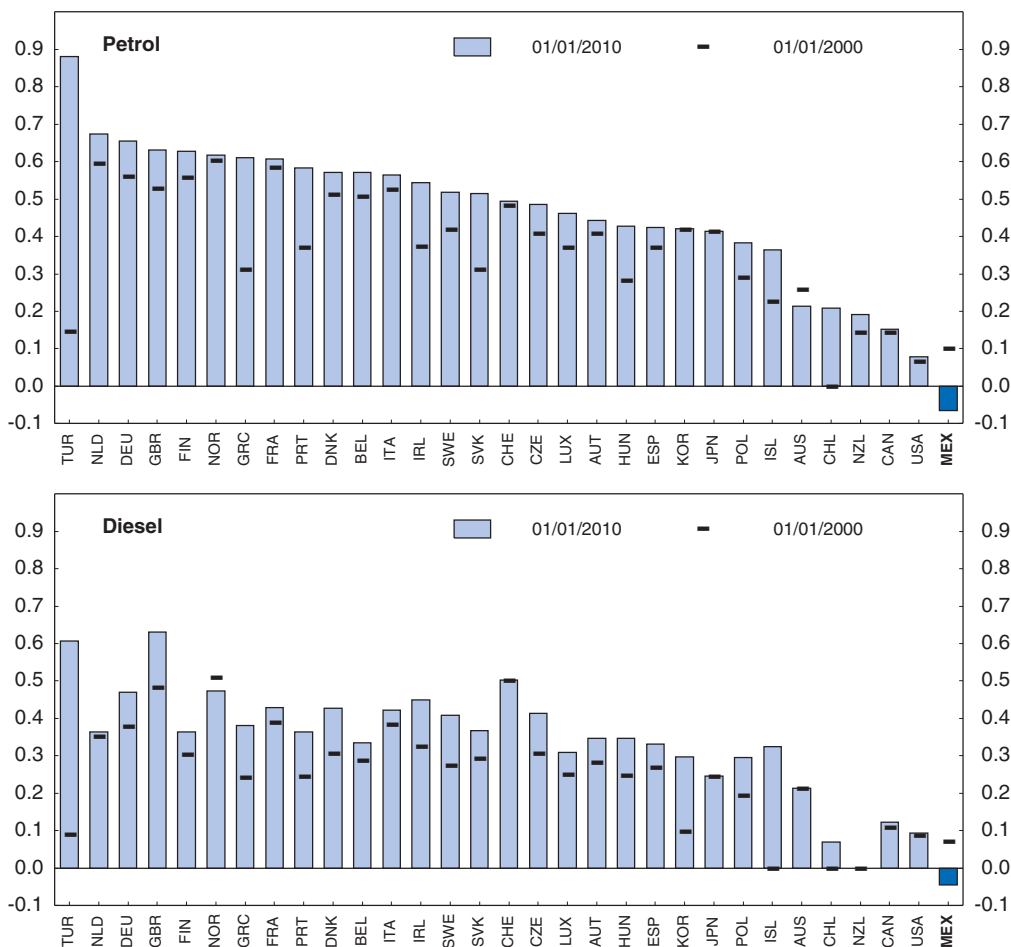


Source: OECD/EEA database on instruments used for environmental policy.

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

Euro per litre<sup>1</sup>



1. Using 2009 exchange rates.

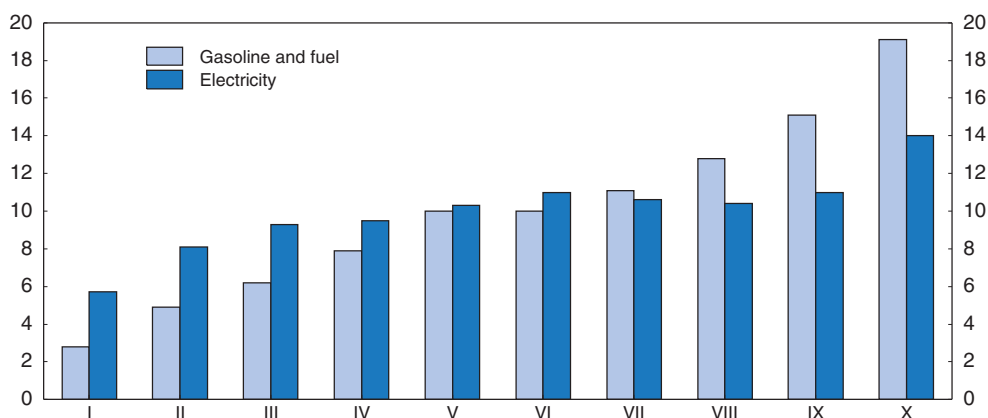
Source: OECD/EEA database on instruments used for environmental policy.

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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**

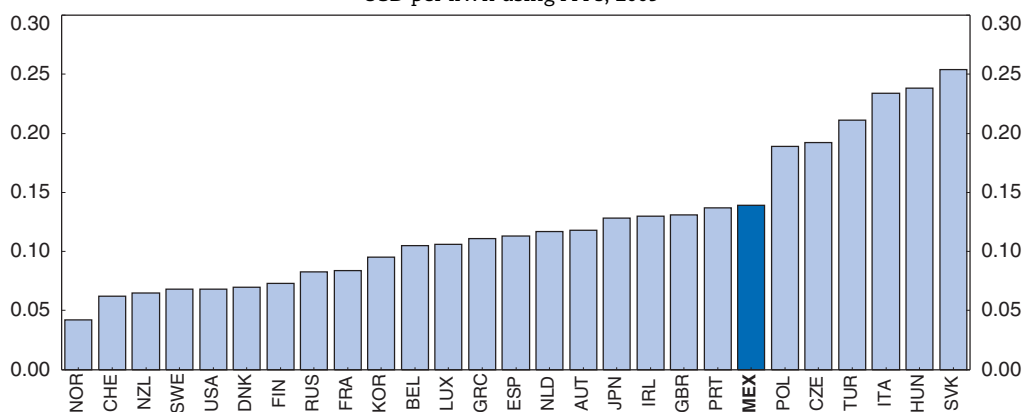
If energy subsidies are gradually reduced, some measures could be taken to reduce the impact of lower subsidies on consumers to make the reform more acceptable. This could include upgrading the public transport system or subsidies that help low- and middle-income households to insulate their houses and 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<sup>1</sup>

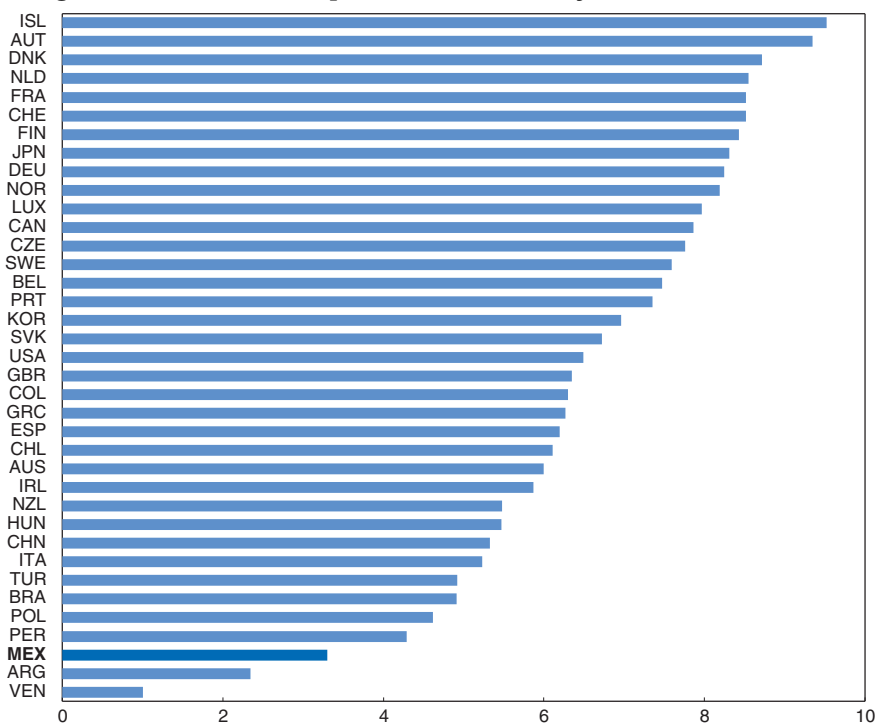


1. 2008 for Austria, Belgium, New Zealand and Spain.

Source: IEA, Energy Prices and Taxes Database.

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Figure 2.10. **Business opinion on electricity infrastructure**<sup>1</sup>



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](http://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 be 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**

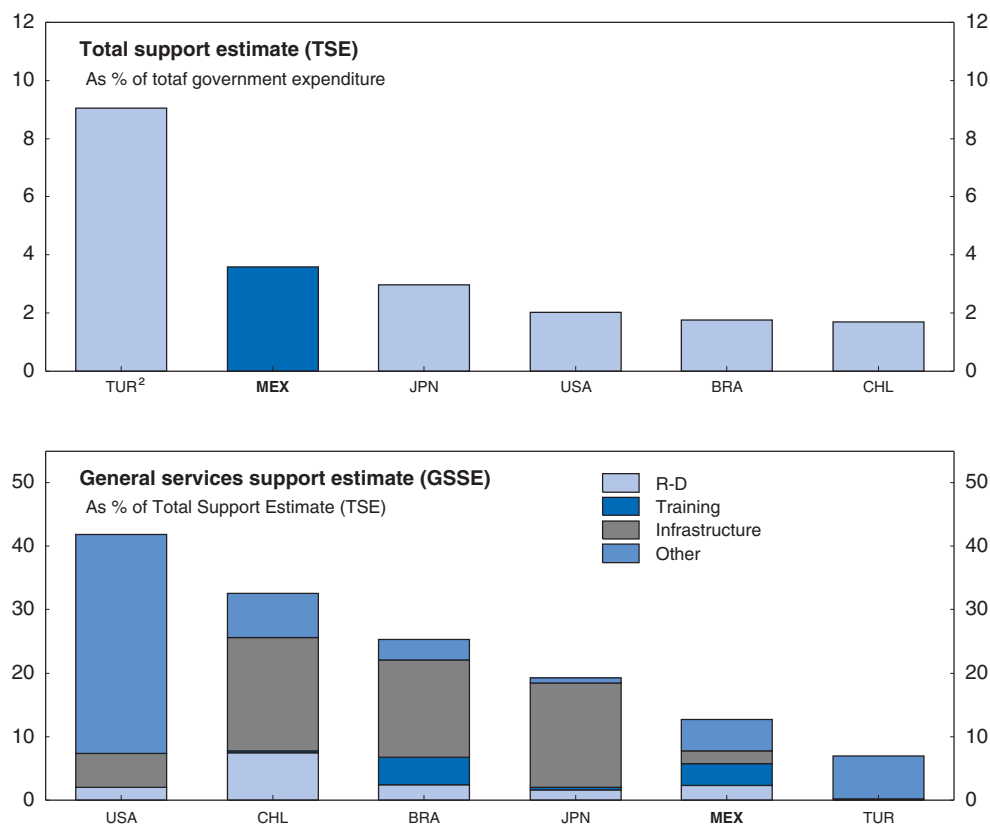
Substantial efficiency gains can be reaped in agricultural spending. While public spending on agriculture as a share of agricultural GDP is high in Mexico compared to other Latin American countries (World Bank, 2009) and OECD countries (Figure 2.11), productivity growth rates are comparatively low (Avila 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**<sup>1</sup>  
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 sub-

programmes 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			
<b>Mexico</b>	<b>21<sup>1</sup></b>	<b>28</b>	<b>13</b>	<b>59</b>	<b>30.0</b>	<b>30.0</b>	<b>16.0</b>	
Australia	27 <sup>1</sup>	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 <sup>1</sup>	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	–
<i>OECD Average</i>	<i>35<sup>1</sup></i>	<i>25</i>	<i>10</i>	<i>25</i>	<i>32</i>	<i>43.4</i>	<i>25.8</i>	<i>18.0</i>

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 under-

declare 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.

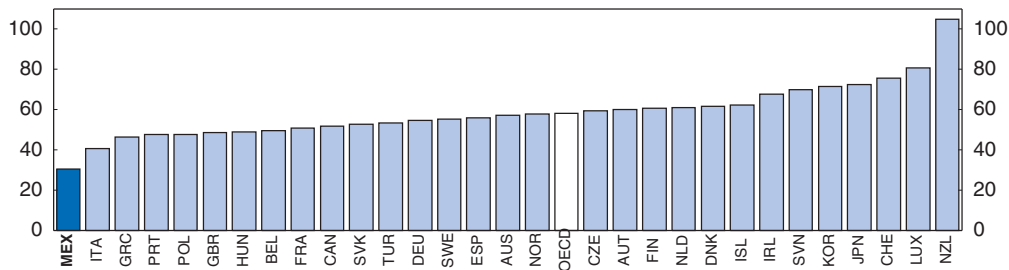
A thorough evaluation to re-assess some of REPECO's features would thus be desirable. This should include the issue whether the tax relief granted to small businesses is higher than needed and how to establish a strong graduation mechanism. For example, Mexico could require a re-qualification through 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<sup>1</sup>**  
2005<sup>2</sup>



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  $\frac{1}{4}$  per cent of GDP. By contrast, if Mexico wanted to raise an extra  $1\frac{1}{2}$  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  $\frac{1}{2}$ % 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 where 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**

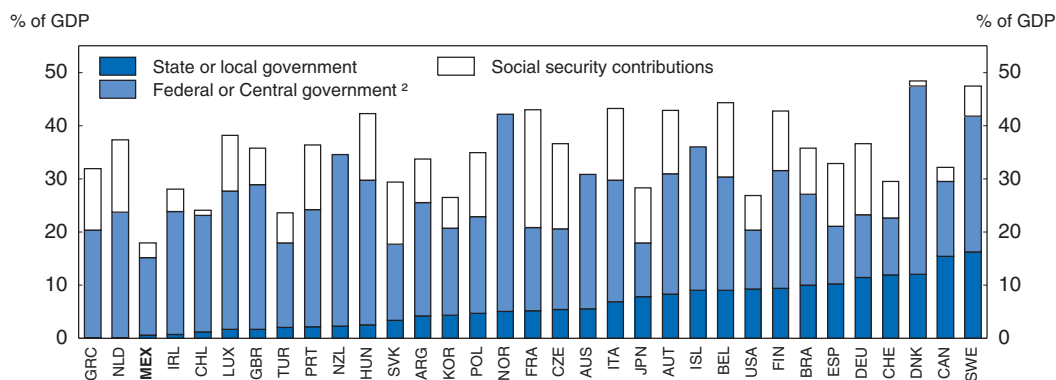
The government has introduced an alternative minimum tax in 2008 (*Impuesto Empresarial a Tasa Unica*, IETU) to limit revenue losses resulting from tax planning within the business tax system (see Box 2.3). The IETU has to be paid to the extent that it exceeds the tax liability based on business taxes 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<sup>1</sup>



1. 2007 for Australia, Chile, Greece, Japan, Mexico, Netherlands and Poland.

2. Including Supranational taxes.

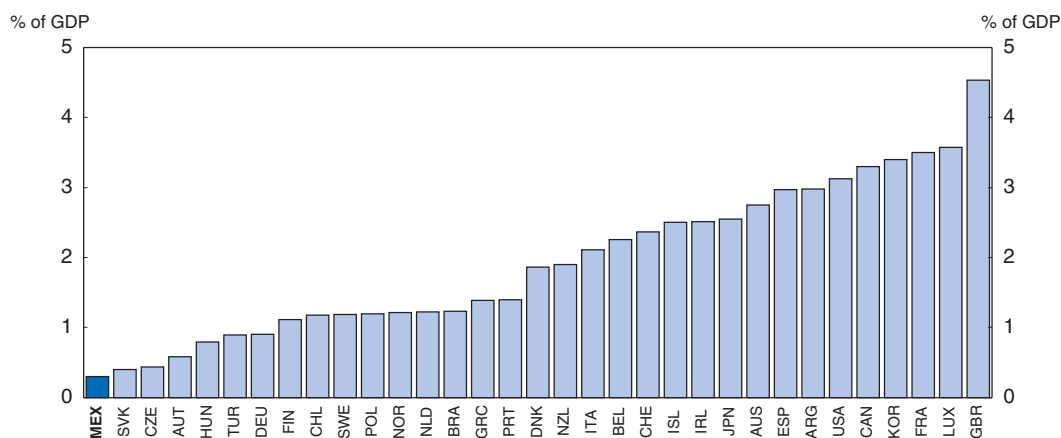
Source: OECD, Revenue Statistics Database and Latin American Revenue Statistics.

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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 than 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

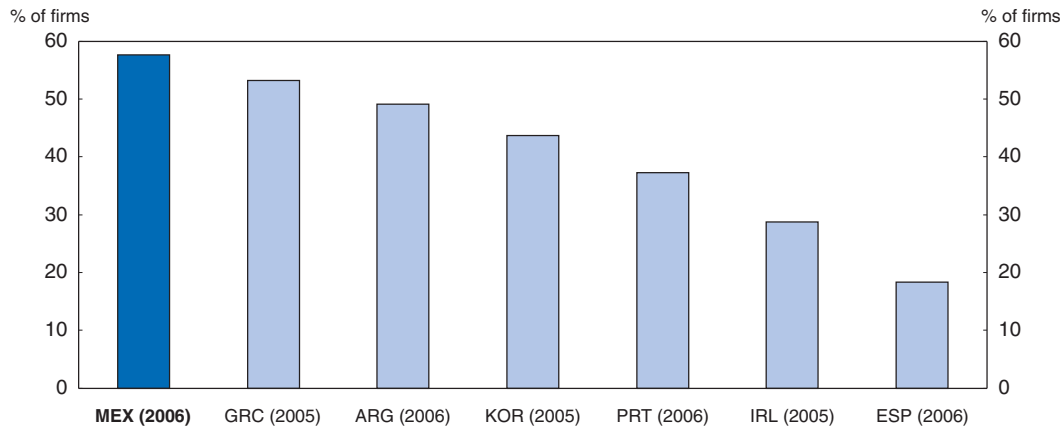
Table 2.7. **Estimates of tax evasion in Mexico**

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
<b>Total</b>	<b>39.61</b>	<b>4.57</b>	<b>23.3</b>	<b>2.6</b>


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



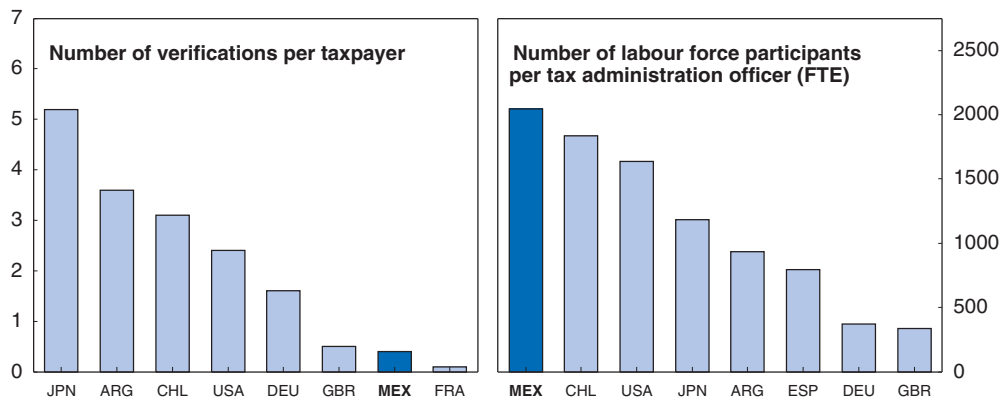
Source: World Bank, Enterprise Surveys.

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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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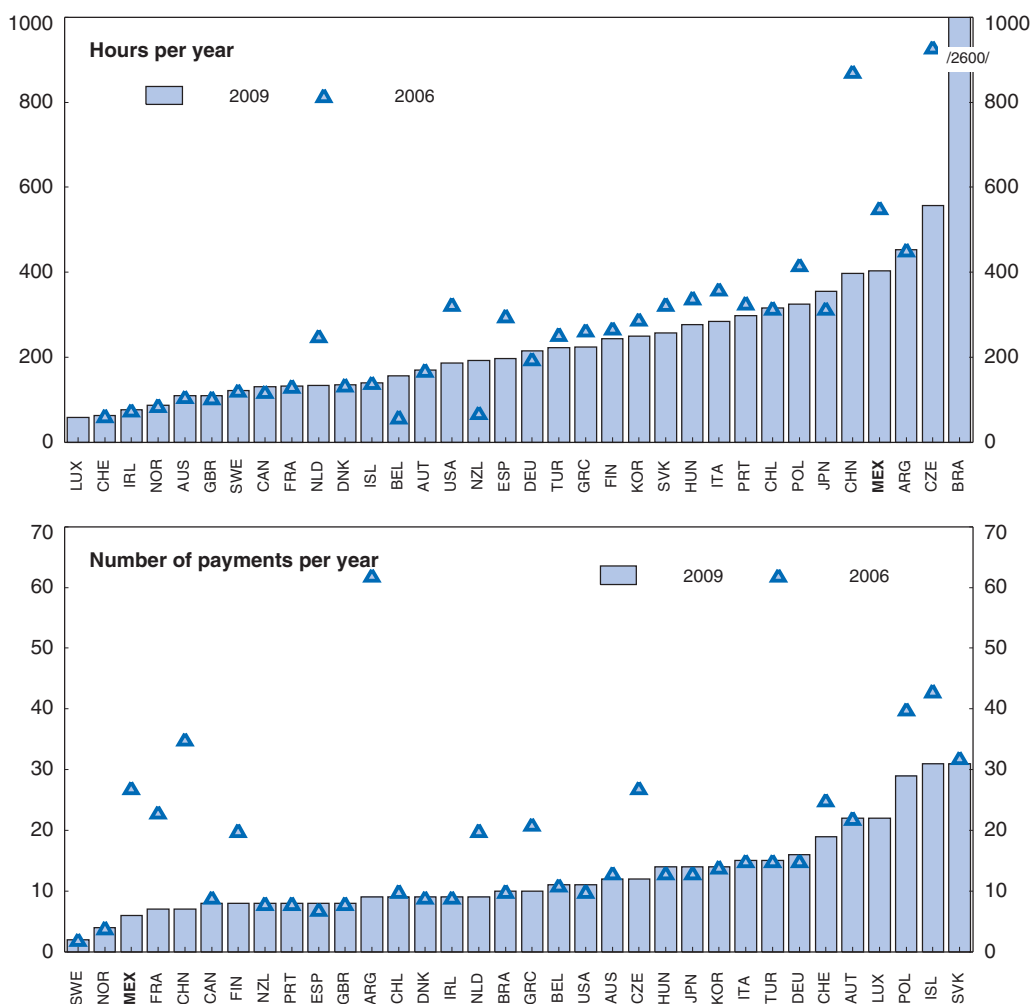
attractive pay and career paths for qualified tax administration staff. States, where progress in enhancing the capacity of tax administrations is very uneven, will have to engage in similar efforts. Mexico should organise joint training for state and federal tax administration staff as they will frequently 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 Depósitos 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 Argentines, 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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