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

The economic situation and policies of the Czech Republic were reviewed by the Committee on 4 October 2011. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 19 October 2011.

The Secretariat's draft report was prepared for the Committee by Artur Radziwill and Zuzana Smidova under the supervision of Andreas Wörgötter. The draft has benefited from valuable background research by Jan Korda, seconded from the Czech Ministry of Finance and by Elie Chachoua, a consultant. Research assistance was provided by Margaret Morgan.

The previous Survey of the Czech Republic was issued in April 2010.

Information about the latest as well as previous Surveys and more information about how Surveys are prepared is available at www.oecd.org/eco/surveys.

BASIC STATISTICS OF THE CZECH REPUBLIC

LAND

Area (1 000 km^2)	79	Major cities (1 000 inhabitants)	
Agriculture (%)	44	Prague	1 257
Forest (%)	33	Brno	371
		Ostrava	304

PEOPLE

Population (1 000)	10 532	Employment (1 000)	5 055
Inhabitants per km^2	134	Agriculture (%)	4
Natural increase in population (1 000)	10	Industry (%)	38
Net immigration (1 000)	16	Services (%)	59

GOVERNMENT

Public consumption (% of GDP)	21	Chamber of Deputies, October 2011	Seats
General government total revenue (% of GDP)	39	Social Democratic Party	56
General government deficit (% of GDP)	5	Civic Democratic Party	53
Public debt, Maastricht definition (% of GDP)	37	TOP 09 and Mayors Party	41
		Communist Party	26
		Public Affairs Party	21
		Independent	3
		Total	200

PRODUCTION

GDP, current prices (billion CZK)	3 775	Origin of value added (%)	
GDP per capita (USD, current prices)	18 795	Agriculture	2
Gross fixed investment (% GDP)	24	Industry	36
		Services	58

FOREIGN TRADE

Exports of goods and services (% GDP)	68	Imports of goods and services (% GDP)	65
Main exports (% of total merchandise)		Main imports (% of total merchandise)	
Machinery and transport equipment	49	Machinery and transport equipment	38
Manufactures	31	Manufactures	31
Chemicals	7	Chemicals	12

CURRENCY

Monetary unit: Czech koruna			
Currency units per USD, 2010	17.33	Currency units per euro, 2010	24.44
Currency units per USD, mid-October 2011	17.92	Currency units per euro, mid-October 2011	24.74

Executive summary

The Czech economy was hit through the external trade channel during the recent crisis, but it had no significant domestic imbalances, so macroeconomic policies had room for supporting activity and the recession was relatively short. Nevertheless, the recovery is less dynamic than in other economies in the region and further risks are arising from the international slowdown and sovereign debt crises. The government should therefore continue a broad based reform programme to enhance economic growth and make it more robust to economic shocks. It should build on past recommendations to improve the business environment, strengthen the education system, promote innovation and increase labour market flexibility. This Survey focuses on challenges in the following areas:

In order to strengthen the ***fiscal policy framework*** *the introduction of an explicit debt target should be considered and an independent fiscal institution should monitor and assess the budget as well as fiscal performance on all levels of government. Budgetary documentation should become more transparent and include performance indicators.*

The ***pension system*** *performs well in terms of keeping old age poverty low, but is not providing much diversification. The introduction of a new voluntary defined contribution pillar ("second pillar") is a step in the right direction, which needs to be well communicated and accompanied by regulatory measures to allow the public to make informed choices. In particular, consideration should be given to establishing a central clearing house in order to keep fees low. Payouts in the form of annuities and life-cycle investment strategies should be the default options.*

The ***health care*** *system functions well by and large, however, there is scope for improvements. While implementation of a diagnosis-related group payment system should strengthen cost-consciousness among providers, a national capacity plan agreed by the major stakeholders should help to reduce excess capacity, in particular in the hospital sector. Soft gate-keeping and digitalisation of patients' documentation can enable better care management. Mandatory active substance prescription as well as implementation of a digital prescription can help to keep costs of pharmaceuticals under control.*

The Czech Republic has an ***energy- and carbon-intensive economy****, leaving important energy and emission saving opportunities underutilised due to insufficient incentives. This poses a risk to public health and energy security, increases the burden of agreed emission targets and might also mean foregone opportunities for growth. Instruments promoting energy efficiency need strengthening and should be more rigorously evaluated and better co-ordinated. To provide the right price incentives, excise tax rates on all fossil energy fuels should be harmonised to complement the EU Emission Trading System, notably by increasing the relative price of diesel. Support for renewable energy needs to be provided in a technologically neutral way to minimise its cost. Upgrading transport infrastructure and the attractiveness of public transport will be essential for containing the growth of emissions in this sector.*

Assessment and recommendations

Slowing convergence calls for a broad based reform effort

The Czech Republic is the most successful central and eastern European economy, measured in GDP per capita in Purchasing Power Parities and Prague is among the richest capitals in Europe. However, the country is still far behind where it was relative to the region[1] in earlier times and convergence with the top OECD countries has stalled recently (Figure 1). Available estimates of potential growth rates suggest a rather sluggish medium-term real convergence of about 1 percentage point per year, down from about 1½ percentage points before the crisis. This deceleration is attributable to the slowing of trend labour productivity growth in the Czech Republic while there is acceleration in the OECD. The growth bonus linked to the post-communist transition, external opening and EU accession has been largely used up, the population is ageing fast, and increasing international energy and raw material prices will pose a further burden on growth. The economy is already well integrated in regional supply chains, the capital stock seems to be on a par with other EU countries and the FDI stock is above the EU average. Consequently, the share of Czech exports in the EU manufacturing good markets may have effectively peaked (IMF, 2011). Further convergence is therefore dependent on the transition to a more innovative, skill-based and more energy efficient economy producing higher value added goods and services.

This *Economic Survey* recommends reinvigorating dynamism into the economy in four broad areas:

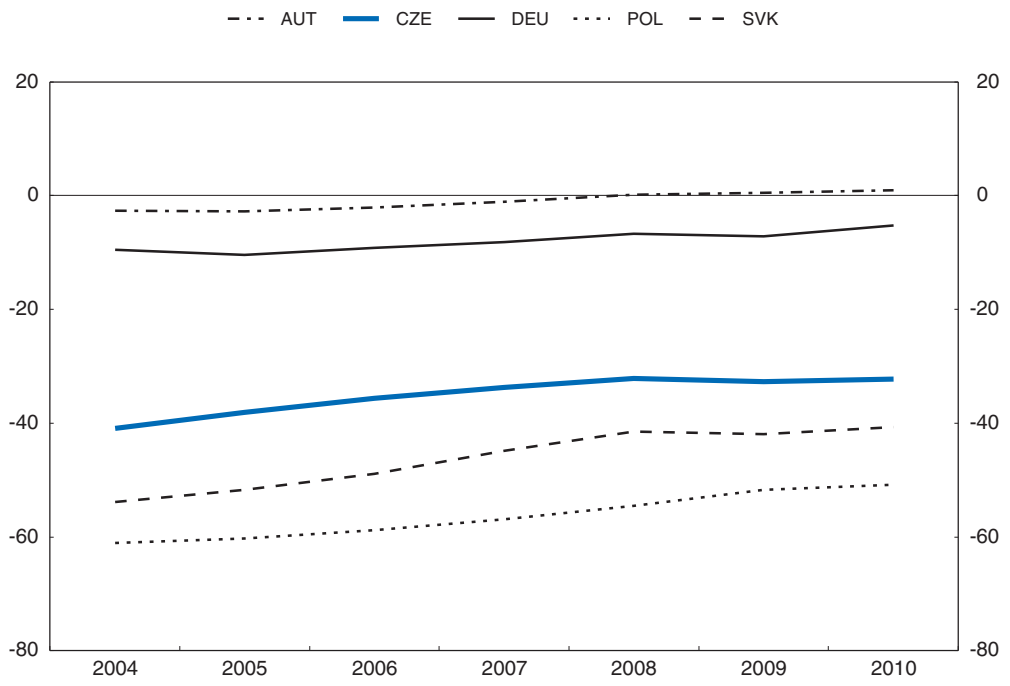
- Strengthening the fiscal policy framework to safeguard consolidation and make fiscal policy less pro-cyclical in good times.
- Revisiting recommendations from earlier *Surveys* on improving the business environment, education reform, innovation and technology adoption, as well as some remaining labour market issues. The government has recently adopted the comprehensive *Competitiveness Strategy* (see Annex A2) which foresees measures that go a long way in these areas.
- Improving public spending efficiency in order to support the economy with better and/or more affordable public services.
- Lifting the burden on the economy from an inefficient and polluting energy system by improving incentives, removing price distortions and better targeting support measures.

The moderate recovery is likely to slow down due to deteriorating external conditions

A post-crisis recovery has so far been led by exports (Table 1) and has remained relatively moderate compared to regional peers (Figure 2). GDP expanded by 2.7% in 2010, reflecting relatively strong export performance and restocking. However, final domestic demand

Figure 1. **Real convergence has stalled recently**

Gap in GDP per capita, %



Note: The gap is calculated as GDP per capita in a country *minus* the simple average GDP per capita in top ranking OECD countries as a per cent of the latter. GDP per capita is volume, USD at 2008 purchasing power parity and reference year.

Source: OECD, *National Accounts Database*.

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remained weak, even though domestic imbalances and an excessive credit boom were avoided prior to the global crisis and the Czech Republic did not suffer from a domestic financial crisis. Private consumption was damped by the high unemployment rate and by on-going fiscal consolidation, which was also negatively affecting government consumption. Investment declined in 2010 in the wake of a global reassessment of investment plans. The first months of 2011 showed signs of the recovery becoming stronger and more broadly-based. Since then, however, the picture has been changing again. The Czech economy expanded by 0.9% in the first quarter of this year, but only by 0.1% in the second quarter. Foreign trade slowed down, despite impetus still coming from the automotive industry, and industrial production decelerated. Retail sales stagnated and PMI and confidence indicators deteriorated.

The growth outlook in the Czech Republic is now overshadowed by the sharp deterioration in external conditions, as the recovery almost came to a halt in many OECD economies and world trade is stagnating. In the euro area, the main trading partner for the Czech Republic, recent indicators suggest that activity growth is soft, especially in manufacturing, with output expectations continuing to weaken amidst declines in order books. The growth slowdown is projected to be temporary in the second half of 2011 and in the first half of 2012. In the context of slowing growth and the risk of increasing unemployment, the government should intensify its consultations with social partners about the usefulness of subsidising the current short time work schemes and clearly specify the temporary nature of such interventions. Ideally, such schemes should be coupled with training measures.

Table 1. **Short-term macroeconomic indicators**

	2008	2009	2010	2011	2012	2013
	Current prices CZK billion	Percentage changes, volume (2005 prices)				
GDP at market prices	3 848.4	. .	2.7	2.1	1.6	3.0
Private consumption	1 883.2	. .	0.6	–0.1	0.6	2.6
Government consumption	759.4	. .	0.6	–1.3	1.1	1.1
Gross fixed capital formation	1 031.2	. .	0.1	2.9	3.6	4.5
Final domestic demand	3 673.8	. .	0.5	0.4	1.5	2.8
Stockbuilding[1]	82.6	. .	1.4	–0.4	0.0	0.0
Total domestic demand	3 756.5	. .	1.9	0.0	1.5	2.8
Exports of goods and services	2 508.1	. .	16.6	9.2	4.2	5.9
Imports of goods and services	2 416.2	. .	16.2	7.0	3.6	5.9
Net exports[1]	92.0	. .	0.9	1.7	0.3	0.3
Memorandum items						
GDP deflator	–	. .	–1.7	0.0	1.9	1.2
Consumer price index	–		1.5	1.7	3.1	2.0
Private consumption deflator	–		0.4	1.7	3.1	2.1
Unemployment rate	–		7.3	6.9	6.7	6.4
General government financial balance[2]	–		–4.8	–3.7	–3.4	–3.4
General government gross debt[2, 3]			37.6	40.2	41.7	42.8
Current account balance[2]	–		–3.1	–3.3	–2.7	–4.2

Note: National accounts are based on official chain-linked data. This introduces a discrepancy in the identity between real demand components and GDP. For further details see *OECD Economic Outlook Sources and Methods*, available at *www.oecd.org/eco/sources-and-methods*.

1. Contributions to changes in real GDP (percentage of real GDP in previous year), actual amount in the first column.
2. As a percentage of GDP.
3. Maastricht Criterion.

Source: OECD, *OECD Economic Outlook 90 Database*.

Monetary policy should be ready to act

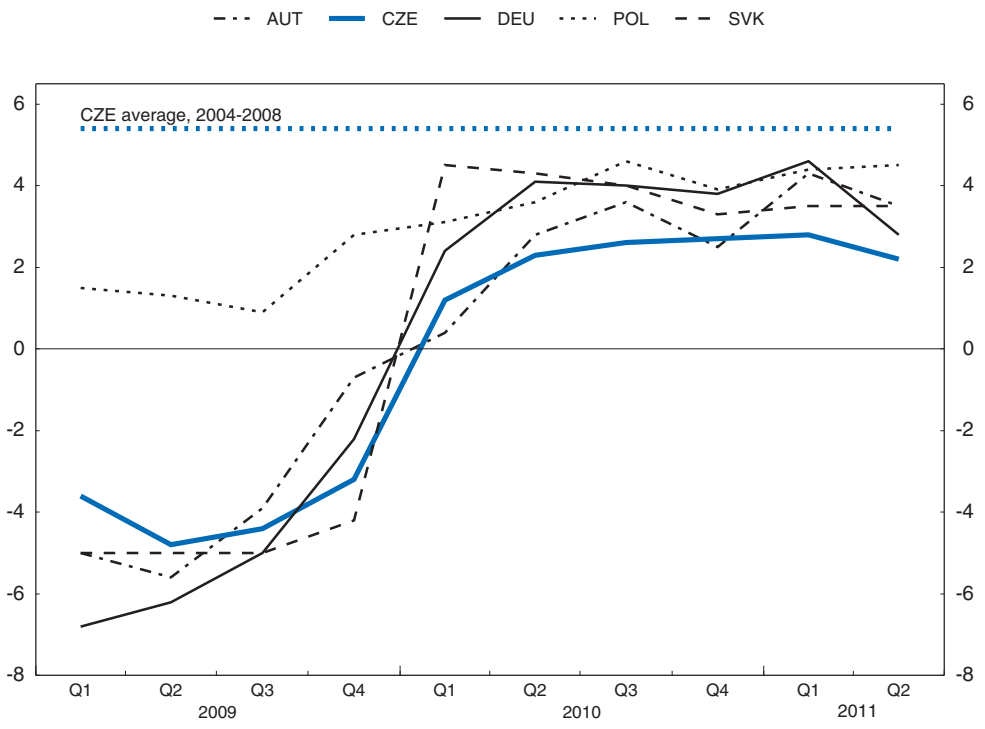
Although inflation picked up during 2010, this was mainly due to increases in indirect taxes and regulated and commodity prices. This year the headline rate has been close to the central bank's target of 2%, while core inflation remained close to zero (Figure 3). Since May 2010 the central bank has maintained the policy interest rate (2 week repo rate) at a historically low level of 0.75%, ¾ percentage point below the main ECB rate. Inflation will further accelerate temporarily in 2012, due to the scheduled hike in the lower VAT rate and ongoing rent deregulation, but core inflation and monetary-policy relevant inflation that excludes first-round effects of tax and administrative prices changes will remain moderate. Inflationary expectations also remain firmly anchored. At the current juncture, monetary policy should be ready to react as downside risks for the domestic economic outlook stemming from economic conditions in the euro area materialise. In this context, it is welcome that the Czech National Bank has expressed its preparedness to move its interest rates in either direction.

The financial sector is stable but post-crisis credit growth is only moderate

The mostly foreign-owned financial sector did not require public support from the Czech government, although some parent banks received support from their home authorities. As Czech subsidiaries have had a strong domestic capital base and inward retail orientation, contagion from parent banks has not materialised. Capital and liquidity ratios remain comfortable, and the recent stress tests performed by the Czech National Bank

Figure 2. **The post-crisis recovery is moderate**

Real GDP growth, year-on-year, %



Source: OECD, *National Accounts Database.*

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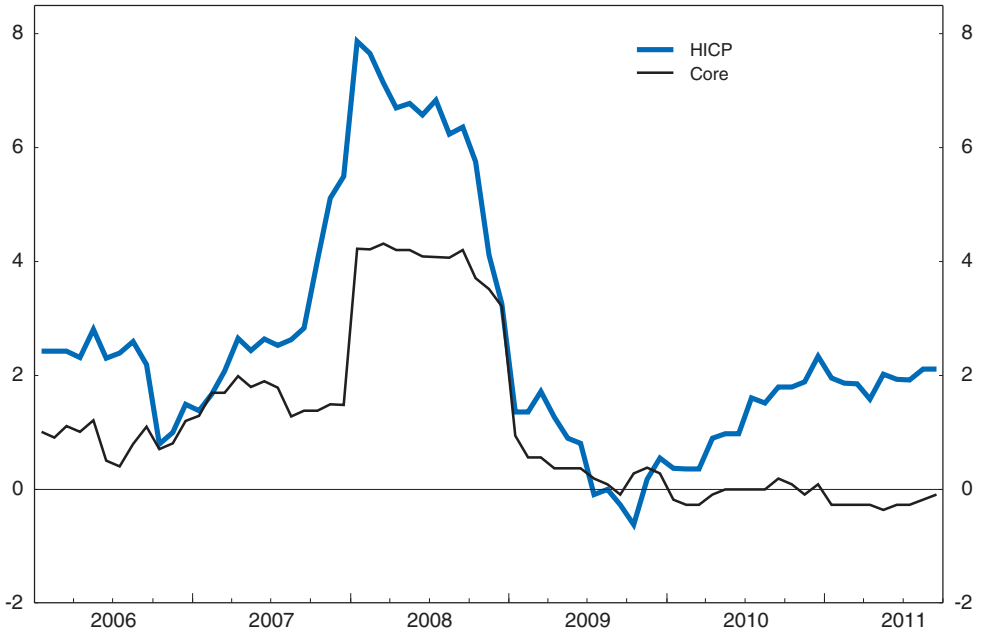
Figure 3. **Core inflation remains low**

Annual growth, %



Note: Core refers to the harmonised index of consumer prices (HICP) excluding food, energy, alcohol and tobacco.

Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932531442

confirmed the resilience to severe negative shocks. The deterioration of credit quality has stopped, and the share of non-performing loans has recently stabilised at 6.6%, which is in line with the euro area average and below regional peers. Credit growth that had stalled in the crisis, continues to be only moderate in the recovery, constrained by low demand, cautious lending practices, and lending rates that did not fall by the full amount of monetary policy rate reduction. In particular, corporate credit continues to grow only modestly, reflecting and contributing to the sluggishness in investment. While the Czech Republic avoided pre-crisis asset bubbles, house prices continue to decline, if only moderately, which complicates balance sheet repair.

Having an independent currency played some positive role in the post-crisis adjustment

The koruna depreciated strongly at the peak of the crisis, but promptly resumed its long-term trend of strengthening. The real exchange seems to be currently close to its fundamental value. Compared to neighbouring Slovakia, the depreciation provided some, but not decisive, support to the export sector in the downturn, and the subsequent appreciation partly offset externally driven upward price pressures (Jevcak, 2011). On the other hand, interbank rates fell more rapidly in the euro area in response to central bank policy actions, so that Slovakia, as a member of the euro area, benefited from lower lending rates than the Czech Republic for several quarters. The effect on credit growth of not being in the euro area is however unclear: credit growth was weaker than in Slovakia, but stronger than in Germany, a euro-area country. Long-term bond yields in the Czech Republic have been below those of Slovakia for about a year now, suggesting a low or perhaps even negative interest premium due to remaining outside the euro area. Standard&Poor's upgraded the Czech Republic's credit rating by two notches to AA– in August, citing the authorities' commitment to fiscal consolidation and a prudently managed economy.

Fiscal consolidation is under way and would be supported by strengthening the policy framework

The 2010 general government deficit of 4.8% of GDP turned out better than originally budgeted due to lower debt servicing and administrative costs. In the 2009 recession, public finances were in a position to allow discretionary counter-cyclical policies of around 2% of GDP. However, the debt to GDP ratio – at around 38% according to the Maastricht definition – has doubled over the past 10 years and a balanced budget was not achieved even during the period of strong growth prior to the crisis. Without consolidation in both 2010 and 2011, the general government deficit would have stayed above 5%, leading to deteriorating debt dynamics. However, the authorities are pursuing budgetary tightening, with an emphasis on expenditure restraint in 2011, limiting its medium-term negative impact on growth. In particular, cuts in the central-government wage bill are underway. Planned consolidation measures for the following years of the medium-term outlook are mainly revenue based. The consolidation in the draft state budget for 2012 relies primarily on tax increases, notably an increase of the preferential rate of VAT, in a two-step move to unify the two existing rates. The authorities plan to reach a deficit of 3.7% of GDP this year, 3.5% in 2012 and a balanced budget in 2016. With deteriorating growth prospects, the authorities should be prepared to allow automatic stabilisers to work, while accelerating the strengthening of the fiscal framework and maintaining the commitment to prudent medium-term fiscal targets.

Czech fiscal policy has been relatively prudent in bad times but showed only a weak ability to reduce debt in good times, suggesting gains to adopting a rules-based fiscal framework (Kopits, 2011). The Czech Republic introduced medium-term expenditure ceilings in 2004, but they were regularly increased. Further strengthening the framework has been on the agenda of the current government for some time. On-going discussions about a fiscal rule have not yet come to a final conclusion but the government plans to enshrine a fiscal rule in the constitution to increase its credibility. A general principle – such as requiring the government to issue a debt target for its period in office – should be considered. This could then be supported by medium-term nominal expenditure ceilings, formulated taking into account the cyclical position of the economy as well as future growth prospects. Moreover, such a framework should account for tax expenditures in order to avoid the temptation of pro-cyclical fiscal loosening during times of cyclical revenue upswings. Given the constitutional independence of municipalities, the fiscal rule needs to be backed by an internal stability pact, clarifying in which way the different layers of government will contribute to adherence to the rule.

An independent fiscal institution assessing the adherence to the rule, would complement the reformed fiscal framework. Such a body needs to have a clear mandate and adequate resources. It should focus on the macroeconomic dimensions of fiscal policy and should report to the parliament, in order to strengthen its independence and reduce perceived partisanship of the budgetary process. The budgetary council that is currently planned would assess the fiscal costs of new legislation and be located in the prime minister's office. This might help fulfil the existing requirement of including budgetary costs of any new legislative proposals, but the narrow focus and lack of independence might hamper its efforts to decisively enhance broader aspects of fiscal policy making in the Czech Republic.

Past reforms went a long way, but further reform effort is needed to support growth

Structural policies can raise medium-term growth (OECD, 2011a). Indeed, significant recent improvements are making the economy more flexible (Annex A1). However, more can be done in areas that are important for maintaining and eventually raising medium-term economic growth (Box 1) such as the business environment, promoting innovation, facilitating the transfer of domestic and foreign knowledge into economic activity and broadening the base for life-long learning as discussed in the previous issues of *OECD Economic Surveys of the Czech Republic* and *Going for Growth* recommendations (OECD, 2006, 2008, 2010a, 2011a). As the Czech population is ageing at one of the highest rates in the OECD, continued growth will be conditional on further improvements in labour productivity while maintaining the traditionally high labour force participation.

The *Competitiveness Strategy,* adopted recently by the government, responds to the medium-term challenges faced by the country, which is highly commendable (Annex A2). *The Strategy* offers a whole-of-government and comprehensive approach to structural reforms. Its overall aim is to advance the economy's competitiveness so that by 2020 it ranks among the top 20 countries according to the global competitiveness index compiled annually by the World Economic Forum. This is to be done by a broad scope of action in the following areas: institutional framework, infrastructure, macro economy, healthcare, education, labour market, financial markets, business environment and innovation. In each area there are from three to six specific project proposals with clear goals, time-lines, responsible institutions (such as a ministry or other government agency) and assessment criteria. All

Box 1. **Past recommendations are still relevant for boosting future growth**

Much achieved…

Increasing labour market flexibility

The 2007 Labour Code contributed to higher employment flexibility, allowing, in particular, more flexible working hour schemes, with a view to reducing frictional unemployment. This has proved useful during the early phase of the downturn. Regional mobility was supported through a phased liberalisation of the rental market. A number of parametric reforms of the defined-benefit pension system increased the sustainability of old-age income replacement and incentives to remain active longer. The reform of sickness benefits greatly reduced widespread misuse. Current reforms of severance pay schemes are welcome and link entitlements to tenure. The low use of fixed-term and other non-standard contracts has motivated further legislative proposals. Reforms are planned in order to better reconcile work and family responsibilities (Annex A1).

Making the tax structure more growth and employment friendly

Several rounds of tax reforms shifted taxation from labour and entrepreneurial activity to consumption by introduction of a flat personal income tax rate, reducing the corporate income tax and phasing out tax exemptions and reducing the application of the lower VAT rate. Remaining issues that merit a comprehensive review include excessive tax expenditures for self-employed, high and bumpy average and marginal tax rates as a consequence of unco-ordinated tax and benefit choices for employees and a relatively low contribution from property taxation, in particular real estate, for which the tax base should be replaced by market values.

Reforming financial supervision under the roof of the central bank

All financial sector activities have been brought under the supervision of the central bank. Monitoring, risk assessment and regulatory activity are all in one hand, greatly reducing the organisational complexity of the task.

… and still much to do

Improving the business environment

Further progress expanding the range of services offered by Czech Points (one-stop information and formalities shops for business entities and individuals), unifying tax and social security collections, as well as aligning closer their tax base, is under way. Nevertheless, increasing the speed and reducing the cost of judicial proceedings, strengthening regulatory impact assessment of legislative proposals, and fighting corruption are priority areas as recommended in the *2010 Economic Survey* and the latest *Going for Growth* structural policy priorities (OECD, 2010a, 2011a). The *Anti-corruption Strategy* was adopted by the government in January 2011. It addresses two broad areas: functioning and oversight of public administration, including public procurement, and criminal investigation of corruption cases. The *Strategy* includes more than 50 wide-ranging measures with deadlines for implementation, and a regular monitoring exercise. The success in implementing these measure would have a crucial importance for enhancing the business environment. In addition, ensuring access to capital (for example, by pursuing initiatives to develop a venture capital market) remains a challenge, and strengthening competition in electricity and telecommunications progresses only slowly.

Box 1. **Past recommendations are still relevant for boosting future growth** *(cont.)*

Further education reform to promote human capital development

A nation-wide school-leaving exam, carried out for the first time in 2011, is a positive step towards fairer and more credible evaluation of students. However, education outcomes for 15 year-olds, as assessed by PISA scores, have worsened, and no action has been taken on the past recommendation to phase out streaming at the age of eleven, which hampers social mobility and human capital accumulation as analysed in the *2008 Economic Survey* (OECD, 2008). Despite considerable progress, tertiary education graduation rates remain below the OECD average. The governance and quality in the higher education sector also remain an issue. A plan for university fees with publicly guaranteed student loans in line with recommendations from the 2009 *Review of Tertiary Education of the Czech Republic* (OECD, 2009b) has been prepared, but it has not yet been approved. Finally, the *2008 Economic Survey* showed that more needs to be done to promote lifelong learning through better access to secondary and tertiary courses for adults and a more systematic approach to funding mechanisms, quality assurance, information and guidance. Several measures are now being implemented under the *Action plan for National Strategy on Life-long Learning and Further Education of Adults*, or are envisaged in the *Competitiveness Strategy*.

Supporting innovation and the adoption of new technology

While the Czech Republic performs well in terms of science and research, there is a room for improvement in terms of commercialising scientific progress. Innovation is overly dependent on foreign patents and researchers, making production vulnerable to relocation. Framework conditions for innovation should include enhancing co-operation between enterprises and universities, a task that was delegated to the Czech Technology Agency. Innovation policy remains highly fragmented being channeled through several different institutions. Despite recent emphasis on indirect funding, such as loan guarantees and tax credits, direct support (partly financed by EU structural funds) remains the main policy tool to foster R&D spending, limiting efficiency gains (OECD, 2010b). More systematic evaluation of public support effectiveness and tighter co-operation between different public bodies is warranted to use fully remaining efficiency improvement opportunities. The current work on a new innovation strategy to consolidate and prioritise support measures is therefore highly welcome, although picking-the-winner measures should be avoided. Finally, the *2010 Economic* Survey argued that promoting competition in ICT infrastructures and services, particularly in the rapidly expanding broadband sector, would also contribute to innovation and technology adoption (OECD, 2010a).

in all, there will be some 43 projects. Consistency with the national pro-export and cohesion strategies is also advocated.

The identified policy areas correspond to many recommendations provided in recent years by the OECD. A focus on improving framework conditions is welcome. Increasing competition in network services is one of the areas that could warrant additional attention. Prioritisation would be welcomed to ensure implementation of projects of crucial importance for overall success. Actions leading to early visible gains should also be clearly identified and promptly implemented to generate increasing support for the *Strategy*. A regular and widely published assessment of implementation, with strong political backing, would help to maintain the necessary reform momentum. The choice of

indicators and adequate monitoring, which should not become just a bureaucratic exercise, is therefore essential. A wider non-partisan ownership, based on discussions and consultations with social partners, is necessary so that the *Strategy* continues to guide structural policies independent of the composition of government, and thereby minimising the risk of reform reversals.

The government continues to consult structural policy issues with the National Economic Council of the Government (NECG). The NECG has produced a number of policy oriented documents looking at various aspects of the Czech economy that have fed into important government policy decisions and have stimulated a broader public debate. This practice is commendable and should be continued in order to examine key policy areas and perform competitiveness-impact assessments. For instance, the Australian Productivity Commission was instrumental in the process of structural reform in that country (OECD, 2009a). Another example is the Netherlands Bureau for Economic Policy Analysis (CPB). Recently, New Zealand decided to establish a similar institution, confirming that not only bigger countries see benefit from such institutional innovations.

Enhancing public spending efficiency would make the public sector less burdensome

Fiscal consolidation, spending pressures and a still relatively high average tax burden necessitate public sector efficiency improvements. Early reforms established the medium term spending framework and a treasury system is under implementation. As a result, macroeconomic fiscal indicators tended to undershoot budgeted targets. Together with the surge after the accession to the European Union however, fiscal principles started to give way to extra pro-cyclical spending. While fiscal indicators look good in comparison with a number of OECD countries and regional peers, it is nevertheless worrying that the government finds it very difficult to rein in spending programmes and associated expectations in the population about the size of publicly financed services, subsidies and transfers.

With growth expected to slow down in the medium- to long-term, due to the diminishing opportunities for real economic convergence and an ageing of population, it becomes even more essential to contain the burden of the public sector on the real economy through efficiency improvements. As mentioned above, the fiscal policy goal is to reach a balanced budget by 2016 and to set the debt ratio on a declining trajectory as of 2013, conditional upon sustained economic growth. With the tax burden already on a par with high-income countries, a substantial effort is planned on the expenditure side of the budget. Unlike in past consolidation episodes, efficiency savings now form a significant share of the current consolidation plan. Long-term expected increases of public spending on pensions and health care linked to ageing are estimated at 6.4% of GDP by 2060.[2] This underscores the need for expenditure control in these sectors and elsewhere. Indeed, major reform efforts in health care and pensions are under way and have to some extent already been legislated (see below). The *Survey* reviews the main areas of ongoing reform efforts; budgetary management framework that is essential for ensuring efficiency, and the two main spending sectors, pensions and health care.

Budgetary management and control should promote efficiency

Improvements in budget management and control are essential for spending efficiency and containing overspending. There has been long-standing criticism of the budgetary documentation, mainly for its complexity and lack of comprehensiveness (Transparency

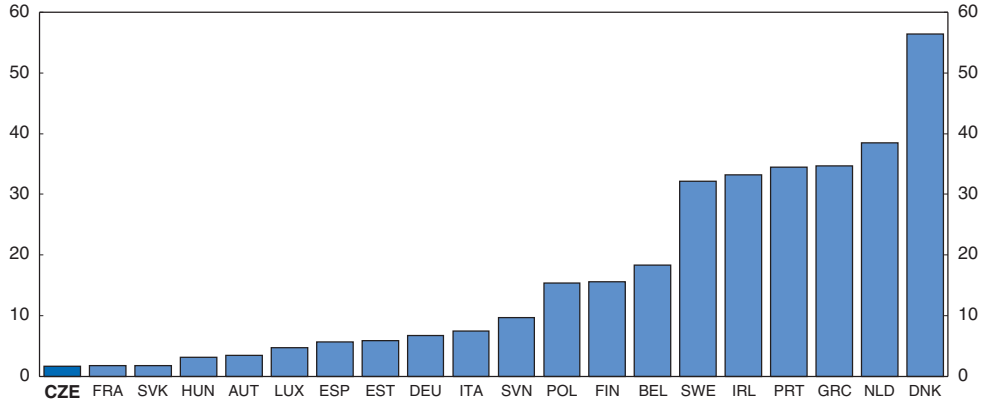
International, 2006) and further improvements in this direction are needed. Potentially, the publication of an overall assessment of the budget by an independent fiscal institution would be helpful in enhancing transparency and accountability. The Czech budgetary process is one of the very few in OECD not to use any performance indicators that offer a better understanding of efficiency of various government policies and spending programmes during the formation of a new budget. Once the technical implementation of the treasury system is in place and human resources are freed, the authorities should draw on the experience of other OECD countries to implement performance oriented budgeting for the Czech state budget and extend such an approach to sub-central governments. Also, a regular tax expenditure report should be part of the annual draft budget proposal in order to increase transparency and evaluation of this claim on public resources, as recommended in previous *Surveys* (OECD, 2010a). First estimates suggest that 3.1% of GDP is spent annually in this form.

Improvements in public procurement are crucial and have been singled out as the main area for efficiency savings under the current consolidation plan (Ministry of Finance, 2011, NECG, 2011b). The purchases of goods, services and works by government and state owned-utilities accounted for over 25% of GDP in 2008, second highest in the OECD after the Netherlands. Anecdotal evidence, reports on selected spending programmes by the Supreme Audit Office, and comparisons of costs of big infrastructure projects all point to considerable scope for improvement in procurement practices. An amendment to the existing public procurement law, currently being debated in the Parliament, proposes substantial changes, notably lowering the limits for tenders, streamlining procedures, and bringing more transparency into the process. These plans should be implemented as soon as possible, together with proposals for centralising government purchases. The progress in implementing the *Anti-corruption Strategy* can play an important role in increasing efficiency of public procurement, leading to potentially large savings.

The Czech Republic stands out among OECD countries in terms of the number of sub-central governments. While there is no conclusive evidence on the ideal size of a municipality, the average size of Czech local governments, at just over 1 600 inhabitants, is extremely small by international comparison (Figure 4). Many of them are probably too

Figure 4. **Municipality size is very small**

Average number of inhabitants per municipality, 2009-10, thousands



Source: CEMR (The Council of European Municipalities and Regions) – Dexia, *EU Subnational Governments*, 2010/11 edition.

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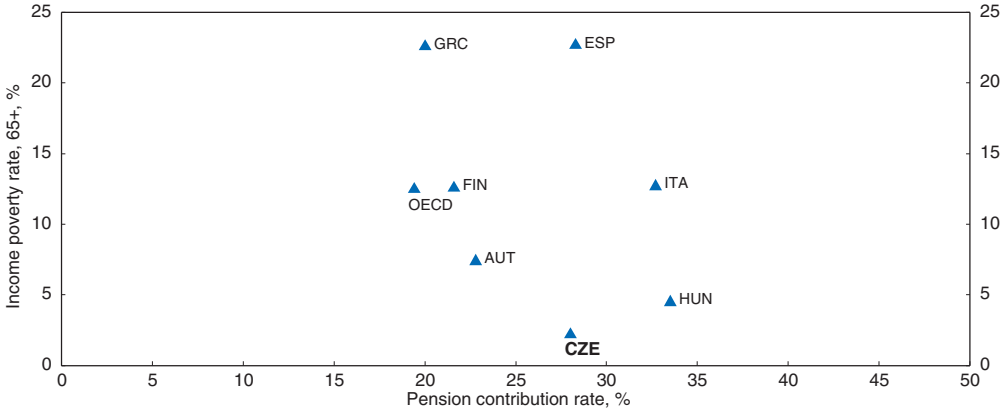
small for the efficient provision of public services (OECD, 2006), although no indicators are available at the central level on cost and quality of municipal service provision. Compiling and publishing such indicators would help to benchmark the municipal performance in providing public services and identify the potential for efficiency improvements across the country. Ideally, small municipalities should be merged, although their constitutional independence and current societal preference for such wide municipal network make mergers difficult. The authorities should continue to foster inter-municipal co-operation and joint provision of services. Some public services are already concentrated in bigger municipal units and the planned shift of the social benefits administration to a network of newly centralised Labour Office is welcome as it takes advantage of economies of scale. Previous incentive schemes for mergers among the small municipalities had only a limited impact. Changes in the tax-sharing formula strengthened revenues for the smaller municipalities in the past and a currently proposed amendment reduces the revenues for four largest cities, but continues to offer only small incentives for mergers. The formula is also not transparent in distinguishing between the tax raising capacity of a municipality and the transfers it needs to receive from the central level. To make sub-central governments more accountable to their electorates, they should be assigned greater tax autonomy and the degree of earmarking should be reviewed. To balance this out and to further strengthen the fiscal responsibility of sub-central governments, the authorities should introduce an "internal stability pact" that sets borrowing limits on local budgets and ensures that the local fiscal policy is in line with the overall national goals.

There are still over 100 state-owned or controlled enterprises (SOE) in the Czech Republic that employ over 3% of total workforce, including the post office, railways, airports and the national airline, the incumbent energy producer and the national forestry manager. As SOEs are vulnerable to the risk of soft budget controls and inefficiencies, ensuring their accountability and the quality of corporate governance is crucial (OECD, 2011e). Partial privatisation and listing on the stock exchange, as recently suggested by the NECG, would improve transparency of company accounts, but full privatisation (alongside regulation where necessary to protect consumers) should be considered. Careful consideration should be also given to the oversight of SOEs within the public sector. The authorities should consider consolidating all corporate state holdings and stakes under one roof. This centralised governance should be exercised at arm's-length. The government should act as a major shareholder, but shift responsibility and accountability for operational decisions to firm-level management. If appropriate, such institution could also be charged with the privatisation of SOEs. Useful conclusions can be drawn from the experiences of similar institutions in Finland, Germany and Austria. Slovenia recently established such a central authority (see OECD, 2011f).

Planned reforms should improve the sustainability and diversification of the pension system

The public pay-as-you-go defined-benefit (DB) system, which provides the overwhelming majority of retirement income with expenditures of 8% of GDP, has so far performed well in terms of preventing pensioners' poverty (Figure 5). The contribution rate is high and poverty alleviation is brought about by a considerable degree of redistribution within the entitlement scheme, resulting in a replacement rate of around 90% for a worker with half of the average wage, while higher income earners can expect replacement rate of only about a half of that.

Figure 5. **The pension system protects well against poverty**



Note: The income poverty rate, 65+ is the percentage of persons aged 65 and over with incomes less than 50% of the national median household disposable income in the mid-2000s. The pension contribution rate is pension contributions (by employer and employee) as a per cent of employee gross earnings in 2009. Selected countries have similar contribution rates to the Czech Republic. OECD is the average of the 21 members for which data is available.

Source: OECD, *Pensions at a Glance*, 2011.

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A tentative summary assessment of the current, modified, and a newly legislated retirement income systems is possible based on five broad criteria outlined in a previous *Survey* (OECD, 2006): poverty-prevention function, benefit/contributions link, diversification, fiscal sustainability and retirement incentives. Such an assessment confirms the generally positive direction of changes in public pension provision, although it underlines the importance of securing adequate funding for a transition to the multi-tier system that is currently under way (Table 2).

Table 2. **Assessment of the evolution of the pension provision system**

	Poverty prevention	Benefit/ Contributions link	Retirement incentives	Retirement income diversification	Fiscal sustainability
Current public DB	xxx	x	xx	x	x
Parametric changes of the DB	xxx	xx	xx	x	xxx
Parametric changes of the DB and DC carve-out[1]	xxx	xxx	xxx	xx	xx

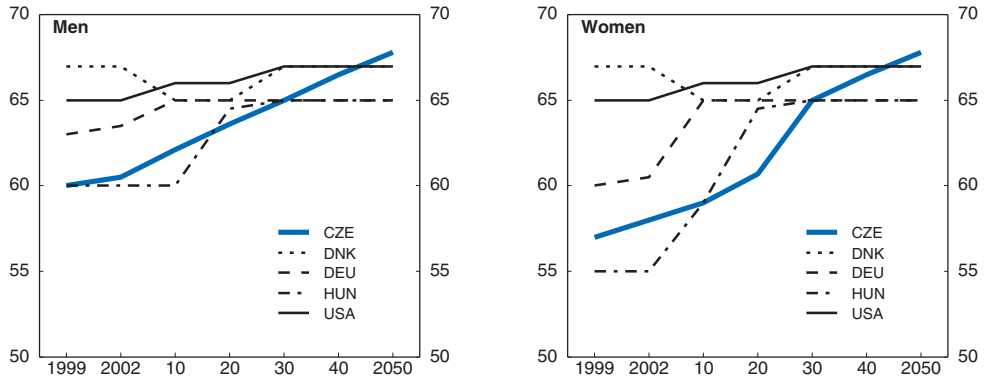
1. Note that fiscal sustainability assessment does not include extra revenues from VAT and other sources that have been identified to finance the immediate fall-out of social contributions

Source: OECD analysis.

A set of parametric changes entered into force in September 2011 modifying the public part of the pension system. These include adjustment of the benefit formula and extension of earnings' coverage, changes of indexation of pensions and increasing the statutory retirement age (Figure 6). The statutory retirement age will be unified for men and women reaching 66 years and 8 months by 2041, and it will continue to increase two months per year up to a not yet specified ceiling. The new legislation also smoothes the penalisation formula for early retirement. These changes go a long way towards improving the sustainability of the public scheme, and strengthen the link between benefits and contributions. In particular, the increase in the statutory retirement age significantly improves the balance of the defined-benefit tier. The authorities estimate that projected

Figure 6. **Statutory retirement age will increase fast**

Legislated pensionable age, years



Note: Pensionable age is defined as the age at which people can first draw full age-pension benefits (that is, without actuarial reduction for early retirement). The definition is designed to be comparable across countries and may be below the pension age set in national legislation. Refer to the source for more details. Selected countries have broadly similar life expectancy to the Czech Republic.

Source: OECD, *Pensions at a Glance*, 2011.

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deficits will be reduced by over 4% of GDP in the long term, with a maximum deficit of the public DB tier of just over 2% between 2046 and 2066, when the impact of population ageing is projected to be the strongest. Moreover, the increases in the retirement age would keep remaining life expectancy at the pensionable age broadly constant at around 20 years beyond 2030. However, the announced path of retirement age increases might need adjustment if developments in life expectancy change. One way of doing so would be to link the pensionable age explicitly to life expectancy. As the retirement age rises, it will be increasingly important to strengthen policies tackling barriers to working longer, such as excessive seniority premia, low participation in life-long learning activities, and ageist attitudes (OECD, 2011d).

A voluntary defined contribution (DC) component will be added to the mandatory public scheme as of 2013 by carving-out 3 percentage points from the current contribution rate, combined with a mandatory 2 percentage points top-up of contributions for those deciding to make use of this option. This proposal is in principle welcome as a first step to diversify old age income provision, improve expected replacement rates across the income-profile (although at the cost of higher risk) and to reduce the public commitment for future pension payments. The introduction of the carve-out, together with lowering of ceilings on contributions to the DB pillar from six to four times the average wage, would strengthen the link between benefits and contributions, and reduce the degree of redistribution within the system. This would help to address tension highlighted by a Constitutional court decision that the public scheme does not provide adequate pensions for higher income earners given the size of their contributions. However, it would not significantly alter poverty prevention features of the DB tier, provided that revenue loss does not lead to a change in the benefit formula.

However, it is difficult to assess the impact of the carve-out on the financing requirements of the DB pillar in the transition period. Since participation in the DC tier is voluntary, the number of people who will take it up and the resulting fall in revenues to the DB tier are unknown. The authorities have adopted a cautious approach of choosing a relatively small

carve-out. Based on their estimates, assuming that only the upper half of the contributors will choose the DC-option, revenues to the DB-pillar would fall by less than 1% of GDP. The government will finance this revenue loss by a scheduled increase of the preferential VAT rate, constituting a first step in overall VAT rate unification, and by dividends of state-owned enterprises. However, the issue of financing the transitory revenue loss of the DB-component needs to be addressed with caution. Experience elsewhere highlights the importance of appropriate communication of the rates of return in the two pillars and management of such reform, including replacement of revenue losses in the DB-tier, in order to make sure that informed decisions can be made by the population and reform reversals can be avoided by governments.

Financial literacy is important for ensuring adequate savings for retirement. It is low in the Czech Republic (CNB, MoF, 2010), as in most other OECD countries, but it is receiving increasing attention. The OECD recommendations on financial education are being implemented; in particular, financial literacy is becoming a part of the school curriculum. Such efforts should continue. The design of the new DC tier should maximise the likelihood that individuals make decisions consistent with their long-term interest. Among various strategies, the DC tier will offer life-cycle plans. Also, by default 10 years prior to retirement assets will be gradually transferred to more conservative investment strategies. However, more should be done. Investment in higher-return assets in the early pension saving phase should be encouraged by making the life-cycle strategies an explicit default option. Annuities should become the default option for the pay-out phase. Last but not least, an appropriate public campaign explaining the DC tier to the public is crucial and regular reports on pension prospects should be prepared to inform the public about their prospective retirement incomes.

The management costs of a DC pillar have been an issue in a number of countries. In the Czech Republic, there will be caps on management fees at 0.3-0.6% of total assets, on fees on returns at 10% and on remuneration bonuses for the acquisition of new clients. However, contrary to earlier expert proposals, no centralised Swedish-style institution to negotiate rebates with assets managers is foreseen, as opposed to direct individual contracts between pension plan mangers and participants. A centralised, cost-efficient account administration of individual pension fund contributions should be considered; as it brings clear cost advantages and the current disclosure-based approach is likely to have only a limited impact given the generally low level of financial literacy.

Expected increases in health spending should be kept in check by improving efficiency

The Czech Republic is facing current and future spending pressures in the healthcare sector. Total health care expenditure at 8.2% of GDP, is still below the OECD average, but has been rising over the last 10 years. There is an immediate need to find available resources within the system since remuneration for salaried staff is set to increase during the current fiscal consolidation period, as agreed in a well publicised labour dispute. In the long term, cost pressures will continue to mount since rising income levels are associated with higher healthcare expenditures and population is ageing. The opportunities for efficiency improvement are, however, substantial. A cross country OECD analysis points to considerable potential life expectancy and amenable mortality gains in the Czech Republic, if the system was moved to the OECD efficiency frontier (Joumard *et al.*, 2010). Exploiting potential efficiency gains could also result in large savings, estimated for the Czech Republic at around 1.5% of GDP by 2017, which could take the form of cost savings or service improvements.

The existing multi-insurer model comprises not-for-profit institutions, which have to reimburse all publicly certified health services and compete in terms of quality of administrative services for members. Insurers can also offer additional services, free of charge. As this system works well overall, the authorities' agenda is focused on incremental efficiency improvements. A number of welcome measures, including advances in drugs price setting, streamlining of co-payments, tightening the regulatory framework for insurers as well as codification of patients and providers rights and obligations, are currently in the parliament and should take effect as of next year.

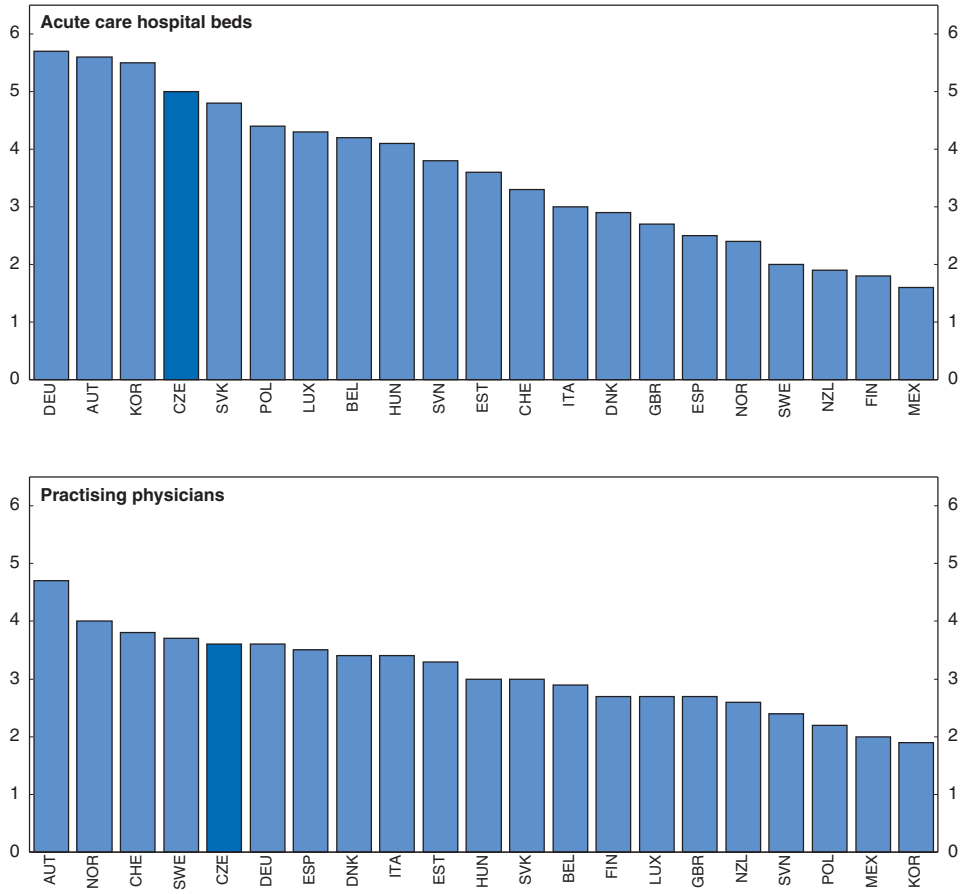
The Ministry of Health should play a stronger regulatory and supervisory role both in health insurance and the health provider sector. An initiative to review the structure of in-patient care could help to rationally reshape hospital capacity, together with economic pressures created by implementation of a more comprehensive provider pay system (diagnosis-related groups). The number of beds remains high despite considerable progress in reducing the capacity over time (Figure 7) and the occupancy rate is low, while the rate of hospital discharge is high. The review of in-patient capacities needs to include major stakeholders, such as regional authorities and insurance funds, as well as central government agencies, like the military and universities, and result in an agreed nation-wide plan, which aims for a reduction of excess capacity. This measure would be very timely, since medium-term framework contracts between providers and insurers expire next year. Compliance with such a plan could be linked to negotiations about a new remuneration system of the providers and used also for planning of new equipment. A co-operation agreement between the Ministry of Health and Ministry of Social and Labour affairs to jointly review the health and social care capacities is under way with a view to turning spare bed capacity into long-term care, where bottlenecks have been identified before. The cost-efficiency of such moves should be carefully examined.

Another route to address inefficiencies in the sector is to manage health care demand. The Czech system has a wide range of consumer choice as patients are free to choose both their insurer and the provider of services. While this has obvious advantages, in the absence of any gate-keeping function the number of consultations in the Czech Republic is high. In 2007, only Japan had a higher number of doctors' consultation per capita (OECD, 2010c). So far the efforts to contain excessive healthcare demand have focused mainly on out-of-pocket fees for consultations, hospitalisation and drugs consumption. Soft gate-keeping, based on financial incentives for referrals, as in France and Germany, would more effectively rationalise health care consumption, without deterring necessary treatment. The authorities see insurance funds as the main actors for care-co-ordination, but so far there is no legislative basis for it. Indeed, care management has recently been proposed for the chronically ill (NECG, 2011). Better care management and an increased role of GPs, both in terms of prevention and adequate follow-up, can also help to alleviate a high disease burden in the Czech Republic. Moreover, implementation of the planned e-Health system for sharing patients' electronic documentation can be conducive for better care management and help to address existing inefficiencies. Hence, the implementation of missing ICT systems needs to be a clearly identified policy priority while ensuring that private data protection is not compromised.

Pharmaceutical costs, although still below the EU average in terms of share of GDP, were rising fast prior to the downturn. To contain this increase, generic and positive lists of pharmaceuticals (determined by tenders organised by insurers) should bring savings in drugs spending. Mandatory active substance prescription should be introduced to contain

Figure 7. **The existing network offers scope for streamlining**

Number per 1 000 population, 2009



Note: Practising physicians are university graduates in medicine who provide services directly to patients. Data refers to year indicated or an adjacent year. Refer to source for details of concepts and comparability.

Source: OECD, *Health Database*.

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out-of-pocket expenditures and exemptions should be subject to tight medical justification. Also, a digitalised prescription system is planned and the authorities can take inspiration from recent initiatives in this area in other OECD countries, such as Estonia and Sweden.

Emphasis needs to be put on getting the underlying incentives in the multi-insurance system right. It is crucial to prevent cream-skimming by insurers by refining a risk-equalisation scheme that reflects medical characteristics. This should be achieved through introduction of so-called pharmaceutical cost groups, which are a good indicator of health care costs of specific groups of patients. Another crucial feature of a competitive health insurance market is the ability of insurers to select and contract with providers. Currently, only 7% of in-patient services are contracted in this way, compared to 20% in the Netherlands. The diagnosis-related group payments system is to become the main remuneration feature for in-patient care. It should facilitate more competitive contracting and improve incentives for more efficient care provision. The authorities see the role of insurers as a cornerstone in these efforts.

The authorities plan to exclude some types of health care services and above-standard services from the basic insurance package. This would contain health-care expenditure

increases, but definition and implementation of the basic benefit package will require systematic analytical work (OECD, 2010c). As medical technology advances, there will also be a need to periodically review coverage. In the medium term, a health insurance market may offer standard and above-standard service packages. Eventually, since the Czech authorities have opted for a multi-insurer model, there is a plan to introduce competition on nominal premiums among insurers, which has been recommended by the healthcare working group of the NECG.

Box 2. **Summary of main recommendations for improving public spending efficiency**

Strengthening fiscal framework

- Establish a responsibility for government to announce a debt target that is translated into medium-term expenditure ceilings broken down to individual ministries' targets. Establish an independent fiscal institution to assess the budget in light of the cyclical position and medium-term objectives.

Promoting spending efficiency through budgetary management and control

- Improve transparency of budgetary documentation.
- Introduce performance oriented indicators, extending such an approach to sub-central governments.
- Consider the introduction of an "internal stability pact" that sets borrowing limits on budgets of constitutionally independent municipalities.
- Implement plans for substantial changes to the public procurement law. Improve corporate standards and transparency of state owned enterprises.

Reforming the pension system

- Make sure the reforms of the defined benefit pillar and the introduction of a voluntary defined contribution pillar are well communicated and accompanied by appropriate regulatory changes.
- Pace of retirement age increases should be kept in line with changes in life expectancy.
- For the defined contribution pillar: consider a centralised clearing house for pension plans to keep down the administrative costs; make a life-cycle investment strategy the default plan for participants. Offer annuities as the default instrument in the pay-out phase.
- Improve the financial literacy and awareness. Prepare regular reports on pension prospects to inform the public about their future retirement incomes.

Improving health spending efficiency

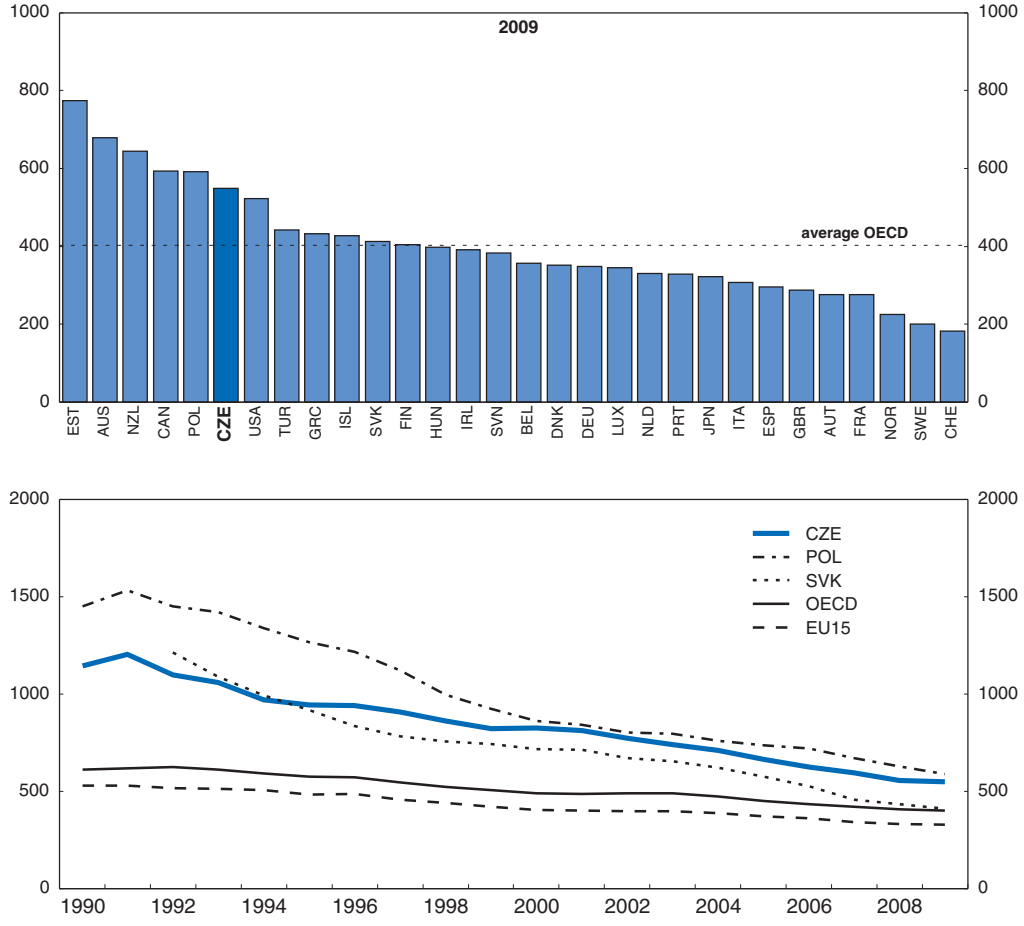
- Implement a diagnosis-related group payment system to strengthen cost-consciousness among providers.
- To help reduction in number of acute-care beds prepare a national capacity plan agreed by the major stakeholders that would guide medium-term contracts with providers, as well as co-ordinate investments and equipment purchases.
- Introduce soft gate-keeping and e-Health to improve care management.
- Stimulate co-ordinated purchases and auctions of drugs and other supplies. Introduce mandatory active substance prescription and electronic system to contain drug expenditures.
- Improve the risk-adjustment formula.

Improving energy system efficiency to support growth and meet greenhouse gas emission objectives

The Czech Republic has one of the highest ratios of greenhouse gas (GHG) emissions per unit of output in the OECD notwithstanding the substantial reductions that have been achieved in the last two decades (Figure 8). This is due to the high energy intensity of economic activity and an unfavourable – emission intensive – fuel mix (Table 3). These characteristics provide a major policy challenge but also scope for further improvements of the energy system that can reconcile environmental, energy security and public health objectives with sustainable economic growth to achieve convergence.

Figure 8. **Emission intensity is high in the Czech Republic**

Tonnes of CO_2 equivalent per million USD of GDP



Note: Greenhouse gas emissions in physical units (such as tonnes) are converted to CO_2 equivalent by multiplying the number of physical units by the global warming potential conversion factor for a given emission and country. GDP used is in 2005 constant prices at purchasing power parity. OECD is the average of countries in the top panel.

Source: United Nations Framework Convention on Climate Change (UNFCCC); OECD, *National Accounts Database*.

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High emissions are due to high energy intensity and an unfavourable fuel mix

Despite steady improvement, energy intensity, which declined by 2.5% on average between 1990 and 2008, remains higher than in Poland and Slovakia, and significantly above the OECD and the EU averages. This is explained by structural features, including

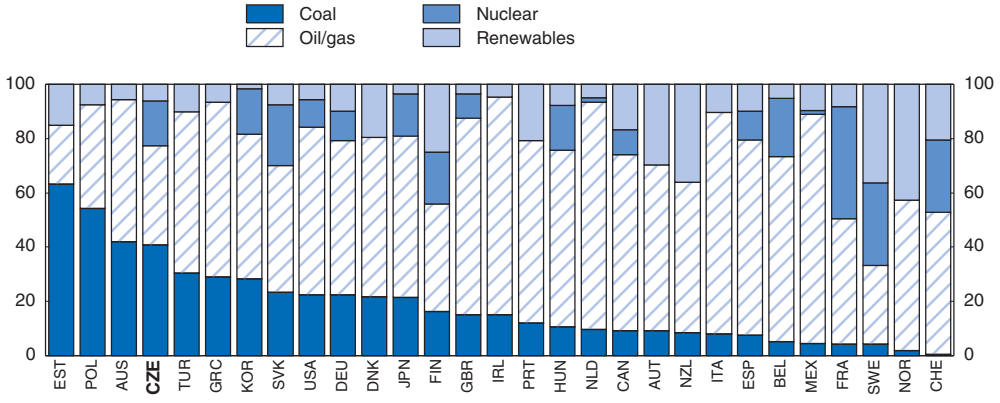
Table 3. **Decomposition of GHG emissions level in 2009**

	GHG/GDP	Energy consumption /GDP	GHG/energy consumption
Poland	590.9	100.8	5.9
Czech Republic	**549.3**	**106.4**	**5.2**
OECD average	424.1	99.7	4.3
Slovakia	412.5	102.9	4.0
Hungary	398.0	106.5	3.7
Germany	349.0	85.0	4.1
EU27 average	340.5	85.2	4.0
Austria	276.0	90.6	3.0

Note: GDP is in thousand 2005 USD using PPP exchange rates, GHG in Mt CO_2 equivalent and energy consumption in ktoe.
Source: IEA and OECD calculations.

high share of energy-intensive sectors, outdated power stations and heat supply units, road-based transport, and the large stock of relatively inefficient buildings. An unfavourable energy mix also contributes strongly to carbon emission intensity with coal accounting for more than 40% of total primary energy supply in 2009 (Figure 9). As a result, CO_2 emissions per kWh produced from different energy sources are substantially higher than OECD and EU averages, although lower than in nuclear-free Poland.

Figure 9. **Share of coal in energy supply is high**
Distribution of primary energy supply, 2009, %



Note: Renewables are hydro, geothermal, solar/wind/other and combustible renewables and waste.
Source: OECD/IEA, *Energy Balances of OECD Countries* (2011 edition) and OECD *Dotstat Database*.
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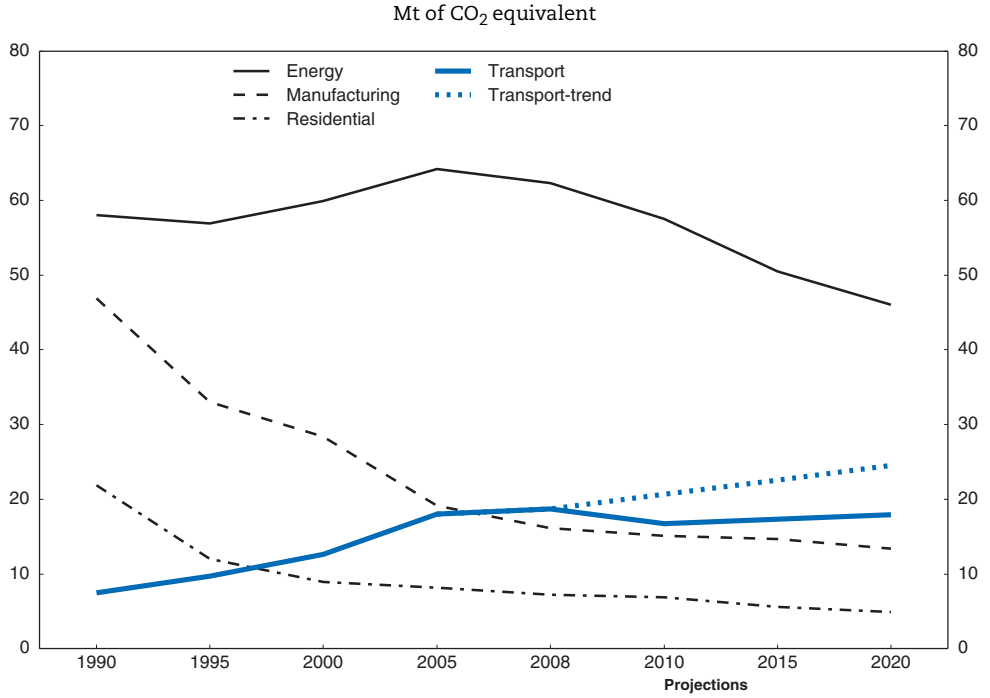
Meeting EU emission objectives will be challenging

While the Czech Republic will meet its Kyoto targets without additional measures, the EU Energy and Climate Package agreed in December 2008 sets more ambitious objectives to be achieved by 2020. Specifically, this legislation requires the Czech Republic to implement the EU Emissions Trading Scheme (ETS); limit increases in its GHG emissions to 9% in the sectors not covered by the ETS; increase the share of renewable energy in final energy consumption to 13%, including a specific 10% target in the transport sector; and achieve a national indicative target consistent with the target of a 20% improvement in energy efficiency at the EU level.

Meeting the targets will require a comprehensive transformation of the Czech energy system (Figure 10), embracing energy efficiency improvement across all sectors of the

Figure 10. **GHG emission from selected sectors: past trends and national projections**



Note: Greenhouse gas (GHG) emissions in physical units (such as grammes) are converted to CO_2 equivalent by multiplying the number of physical units by the global warming potential conversion factor for a given emission and country. One Mt = one million tonnes. Manufacturing includes construction.

Source: Czech government, *Reporting of policies and measures under Article 3(2) of Decision 280/2004/EC*, March 2011.

StatLink http://dx.doi.org/10.1787/888932531575

economy together with a substantial shift in the fuel mix towards less emitting energy sources and technologies. Neither of these changes will happen without further co-ordinated policy intervention. Market based instruments, such as carbon pricing should play a central role in the overall framework, while non-market based instruments should be used sparingly in case of well-identified market failures. While the ETS cap will enforce compliance with the emission target for large installations, the design of national policy will determine its broader economic cost. Meeting the non-ETS emission objective could also prove difficult, as emissions in the transport sector continue to increase rapidly (apart from a temporary slowdown due to the crisis). Finally, meeting the objective of renewable energy sources and biofuels will be costly, as the Czech Republic faces unfavourable sunshine, wind and hydropower conditions, and large-scale subsidised use of biomass and biogas for energy generation poses a risk to other sectors of the economy dependent on the same raw materials (IEA, 2010).

Moving to a less energy intensive economy will yield benefits

Energy security concerns are an important motivation for designing a transformation strategy towards a low-emission energy system, as reflected in the draft State Energy Policy. An improvement in energy efficiency that reduces domestic demand for energy sources is the least expensive way to enhance energy security and cut emissions. While coal is produced domestically, its reserves are diminishing and production cannot cover demand in the long run, especially for heating purposes. At the same time, replacing old and inefficient coal-powered power plants provides an opportunity to shift to less emitting

energy sources. Apart from the further development of renewables, given the limitation of their potential, expanding nuclear capacity while ensuring strict safety regulations and standards is an important strategic option. However, full life cycle costs of different fuel mix options should be considered, taking into account all externalities.

Energy system transformation would also have a positive public health impact. Burning fossil fuels is not only a primary driver of GHG emissions, but it is also linked to local air pollution, leading to problems such as smog, acid rain and indoor air pollution with a significant impact on human health, ecosystems, buildings and crops (Bollen *et al.*, 2009). A significant share of the Czech population lives in areas where the concentration of small particulate matter, which cause lung and heart disease, exceeds EU limits (IEA, 2010). In the case of the transport sector, negative local externalities include health-damaging noise pollution and accidents (Persson and Song, 2010). GHG emission reduction thus has important co-benefits in terms of public health improvements.

Negative economic and social impacts can be controlled

Manufacturing plays an important role in the Czech economy and contributes strongly to economic growth, exports, investment and employment. It is also relatively energy-intensive, and its competitiveness is thus sensitive to increases in energy prices which will be linked to emission abatement (Czech Industry and Transport Union, 2008). The risk of carbon leakage due to European abatement commitments is therefore a key concern of the authorities, even though there are factors that mitigate the risk to the Czech economy, and OECD model-based calculations suggest that the output losses in energy-intensive European industries due to the EU unilateral carbon abatement would not exceed 1% by 2020 (Burniaux *et al.*, 2010). To minimise this risk, the authorities need to concentrate on policies to reduce the sensitivity to energy prices through the more efficient use of energy and materials. Efficiency improvement is therefore not only essential for lowering emissions and energy security but also crucial for the growth and competitiveness of the Czech economy, as recognised by the 2011 *National Reform Programme*. Similarly, energy efficiency needs to ensure that emission objectives do not translate into constraints on growth in living standards. For example, the higher emissions from road transport can reflect increasing mobility and household energy consumption can reflect an increasing number of domestic appliances. Promoting less emission-intensive transport modes or more energy efficient equipment would therefore help to achieve higher future living standards on a sustainable basis.

A comprehensive policy framework needs to be based on carbon pricing

The policy framework leading to a cost-efficient and growth-friendly energy system transformation needs to be comprehensive, stable and consistent, with carbon pricing at its core, providing appropriate incentives for emission reductions (de Serres *et al.*, 2010). An important benefit of carbon pricing based on ETS auctions and carbon taxation is that it will generate additional fiscal revenues. The earmarking of these revenues should be avoided, in order to allow the government flexibility in financing policies with the highest marginal benefit across the full policy spectrum. All environmentally oriented public spending should be subject to *ex ante*, on-going and *ex post* evaluations, based on a common methodology.

Free allocation of ETS permits should be carefully monitored and evaluated

The Czech Republic is among the countries that are allowed an optional and temporary derogation from the rule that no allowances are to be allocated free of charge to power plants as from 2013. The authorities decided to use the derogation on the assumption that providing permits for free constitutes an efficient and necessary mechanism for supporting energy system transformation, given the scale of investment in the energy-generation sector, a very long-term horizon and energy security concerns. Granting free allowances would imply large costs for governments due to foregone fiscal revenues estimated at EUR 1.9 billion (or almost 1.2% of GDP in 2011) cumulatively between 2013 and 2020, according to the national authorities. The authorities should therefore carefully monitor and evaluate the implementation of the investment programmes. To inform future decisions, the efficiency of the free distribution of permits should be evaluated as most of the highly concentrated energy-generation sector in the Czech Republic enjoys high profitability and a good access to credit markets.

Carbon taxation needs to be harmonised

Existing excise taxes implicitly yield carbon prices that vary considerably across different fossil fuels (Table 4). While taxation of energy products reflects considerations beyond environmental externalities, notably fiscal objectives that call for higher taxation of consumption of less price-sensitive products, such excise rate disparities lead to perverse incentives. In particular, diesel is favoured compared to gasoline, as in several other EU countries (Egert, 2011). Despite high nominal rates, taking non-GHG externalities (such as local air pollution noise, congestion and accidents) into account, the implicit carbon price is negative in the case of diesel (and probably also for LPG – liquefied petroleum gas), even though uncertainty about the size of externalities is large (Persson and Song, 2010). An increase in diesel taxation could therefore be justified.

Table 4. **Implicit taxes on fossil energy sources, EUR for kg of CO_2**

Petrol	Diesel	LPG	Natural gas (households)	Natural gas (industry)	Light fuel oil	Coal
Implicit taxes (EUR/[kg of CO_2])						
227	160	50	0	6	10	2
Implicit taxes if the costs of local negative externalities are taken into consideration (EUR/[kg of CO_2])						
49	62	n.a.	n.a.	n.a.	n.a.	n.a.

Note: The external costs of local air pollution are based on CE DELFT (2008, Handbook on estimation of external costs in the transport sector), and the external costs of noise pollution, accidents and congestion are taken from Persson and Song (2010).
Source: Energy Regulatory Office and International Energy Agency. OECD calculations based on Egert (2011).

Several tax reliefs distort the existing energy taxation system and should be phased out. Among them, gas used for heating by households is exempted from excises, thus providing a wrong price signal and encourages switching out of district heating. Likewise, a very low tax rate on coal encourages its use for heating purposes. While increased excise taxes could lead to social hardship, this should be managed via the existing social assistance system. The current general exemption in excise taxes for fuels used in electricity generation introduces an inappropriate advantage for small installations that are excluded from the ETS and should be removed.

While excise tax rates should be realigned to provide a more uniform carbon price, the Czech government should support the recently proposed amendment to the EU Energy Taxation Directive that would set a minimum rate for taxes on fuels based on their energy and CO_2 content. The proposed changes will not only contribute to improving the tax incentives in the Czech Republic, but will also minimise competitiveness risks related with meeting the overall EU non-ETS emission objective.

Rebalancing renewable energy support, improving the grid and strengthening competition

Support for renewable sources is provided mainly to meet the EU renewable share objective, which would not be ensured by carbon pricing itself. The 2010 share of renewable electrical energy in total gross electricity production reached 8.4%, a doubling compared with 2004. However, one fifth of the increase was due to a solar panel boom spurred by overly generous feed-in tariffs, which absorbed substantial resources that could have been used to promote more economical sources such as biomass, biogas and wind (IEA, 2010). These incentives have been withdrawn. Although it is important to allow more flexibility in setting feed-in tariffs in the future for all types of renewable energy sources, uncertainty should be avoided by setting clear rules regarding future changes in feed-in prices and volume constraints. Germany provides a good example of a policy framework allowing tariffs to be adjusted on a regular basis to reflect developments in the installed capacity of renewable energy. More generally, the structure of feed-in tariffs reveals very high GHG abatement costs linked to solar panel energy (Table 5). Support should therefore be rebalanced in a technologically neutral way by lowering the dispersion in feed-in tariffs, so as to equalise marginal abatement costs and thus promote the highest-potential and lowest-cost technologies. Setting targets for specific technologies should therefore be avoided. Tradable renewable certificates could be considered as a replacement for feed-in tariffs.

Table 5. **Feed-in tariffs and implied producer subsidies**

Solar	Wind	Biogas	Biomass	Geothermal	Hydro
The ratio of feed-in tariffs to average market price of electricity production					
10.5	1.9	3.2	3.1	3.9	2.6
Direct producer subsidies implied by feed-in tariffs (EUR million)					
268.6	14.1	51.8	144.4	0.0	n.a.
Abatement costs (EUR/tonne of CO_2 equivalent)					
436	42	102	96	132	36

Source: Energy Regulatory Office and Power Exchange Central Europe, OECD calculations based on Egert (2011).

Investments in improved management of the grid, quick-start peak power generation and energy storage would increase room for decentralising renewable electricity production (IEA, 2010). Smart grids could ensure a more efficient use of electricity and energy savings. For example, smart meters could provide accurate and real-time information on electricity prices and consumption at the customer level, providing incentives for reducing demand with a view to reducing electricity bills and switching suppliers to benefit from lower prices. Also, increasing currently low competition at the retail level could increase the opportunities for energy service companies to enter the market and promote innovation at the customer level (Jamasb and Pollitt, 2008). Competition at the retail level should be therefore actively promoted.

Policies to promote energy efficiency

The *National Energy Efficiency Action Plan 2008-16* provides a non-binding target of energy savings of 9% in 2016 and several policies promoting energy efficiency are being implemented. Energy intensity remains among the highest in the OECD and the unused potential for energy savings is substantial. According to one study, buildings could account for roughly half and transport and industry for a quarter of an estimated 16 Mt of economically profitable CO_2 abatement potential due to energy savings (McKinsey and Company, 2008). The IEA study on *Implementing Energy Efficiency Policies* identified several opportunities for improvement in the policy framework, particularly regarding buildings and the transport sector (IEA, 2009). Thus the government should continue providing support for retrofitting the existing stock of buildings, although it is important that they be rigorously and regularly evaluated.

Considerable funds will be necessary to finance energy saving and emission reducing efforts. The use of EU structural funds for the support of energy efficiency under the next EU financial framework would be justified. Loans and loan guarantees should be used more often than direct subsidies for supporting projects that are cost-effective, but require high upfront investments. While the evolution of the State Environment Fund towards an environmentally oriented bank is being considered, deepening its co-operation with the Czech-Moravian Guarantee and Development Bank might be more appropriate to build on existing competence and experience. Various support programmes, notably the Green Investment Scheme and PANEL, should be better co-ordinated with different government institutions given clearly defined roles and competencies. At the very least, standardised methods are needed for processing and evaluating the effectiveness of the administration of grant programmes aimed at similar goals (Supreme Audit Office, 2011).

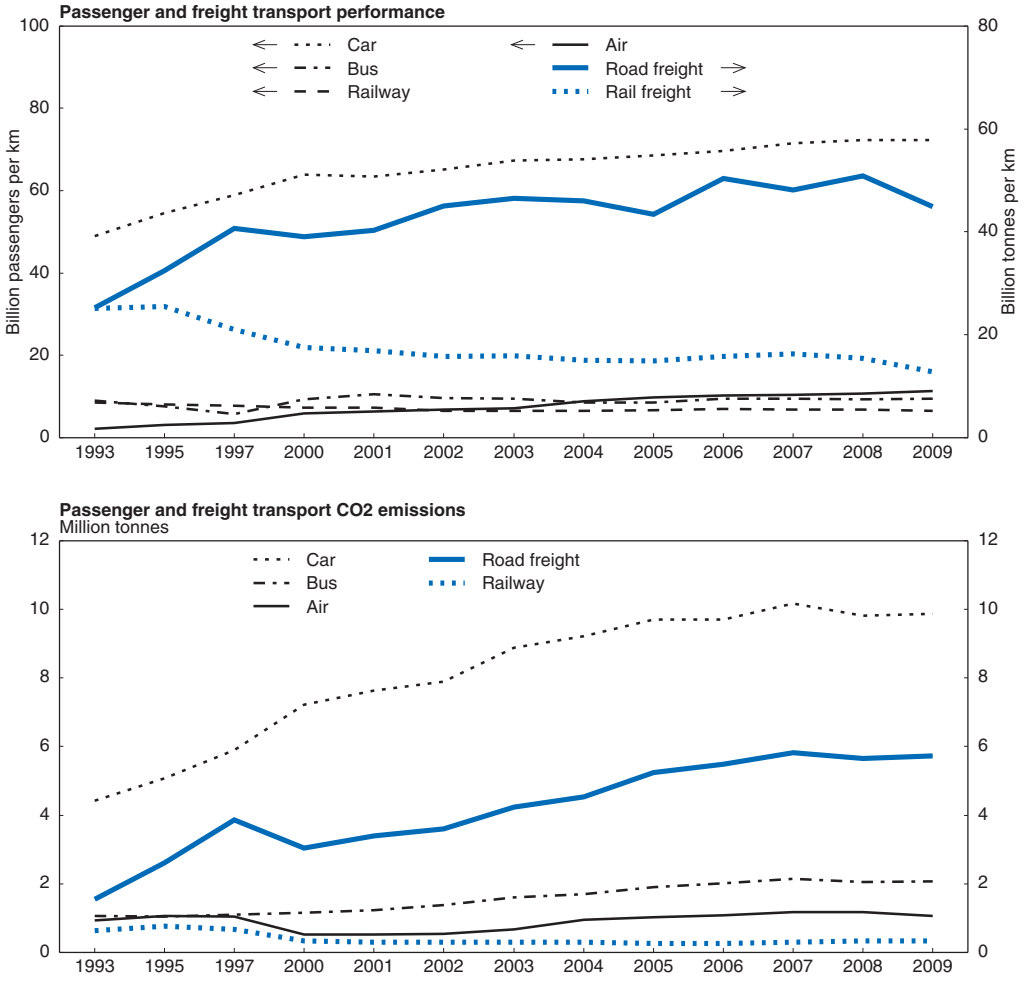
An increasing number of companies across different countries now perceive environmental challenges not as a barrier to economic growth but as a new opportunity for increasing competitiveness (OECD, 2011c). A new legal framework promoting Energy Performance Contracting (EPC, a method of contracting of a broad range of energy services, including designing, implementing and maintaining energy savings projects, based on in-depth analysis of a customer's energy system) and specialised Energy Service Companies (ESCOs) would be particularly useful in diffusing best practices in energy efficiency using market based instruments. The government intends to promote EPC and ESCOs among small and medium sized companies as part of the *Competiveness Strategy*. Unclear legislation and rules, as well as perverse incentives among public sector managers, are major obstacles to realising EPC within this sector (SEVEn, 2011). The government is now preparing legislation facilitating the use of EPC in public sector, which is a step in the right direction.

Energy providers could also play a more active role in promoting energy savings. While pilot initiatives undertaken by ČEZ on smart metering and smart grids in the town of Vrchlabí are a good first step (CENIA, 2010), it should be encouraged to utilise its capacity to provide energy saving services more broadly. Indeed, the introduction of energy saving certificates should be considered. Under such a scheme, energy providers would be required to undertake energy efficiency measures for their final users achieving a pre-defined percentage of their annual energy deliverance. As certificates are tradable, energy providers can either achieve savings on their own or purchase certificates, encouraging the development of energy service companies and bringing down the effective cost of energy savings (IEA, 2011).

Preventing emission increases in transport will be challenging

While carbon taxation should provide the basic incentive for emission abatement, additional measures need to be implemented in the transport sector, whose share of total emissions increased from 6% in 1990 to 15% in 2008, just as its share in total final energy consumption increased from 7 to 22%. This increasing trend was linked primarily to the rapid increase in passenger car and road freight transport (Figure 11).

Figure 11. **Growth in road transport outputs and emissions is rapid**



Source: Transport Centre, *Study on transport trends from environmental viewpoints in the Czech Republic 2009*, Brno August 2010.
StatLink http://dx.doi.org/10.1787/888932531594

In order to limit emissions growth without constraining the mobility of citizens and freight services, which are essential for economic growth, it is important to increase the consistency between transport infrastructure investment programmes and environmentally sustainable transport objectives, notably by strengthening environmental impact assessments. When deciding about transport investments sufficient priority should be given to their potential contribution to the improvement of the transport network as a whole. Opening railways further to competition, particularly in freight transport, could lead to lower prices and a better quality of services, shifting transport back to rail. Traffic

management in urban areas should involve traffic restrictions in city centres, parking fees and incentives to commute by public transport. It should also include an expansion in the infrastructure for cycling, as well as the implementation of a congestion charge for Prague and, if appropriate, other cities. Better integration of urban and suburban public transport, in particular concerning flat tariffs is needed to improve the efficiency and attractiveness of public transport, and requires a better co-ordination between national authorities, who are responsible for railway transport, and municipalities, who are responsible for buses and other public transport elements. Obstacles for private companies to run own transport networks for their employees should be eliminated.

The country has an old car fleet and its modernisation is relatively slow. The Czech Republic was one of only two EU countries with a higher average level of emissions of newly registered cars in 2008 than in 2004 (European Commission, 2009). The country continues to import a high number of used cars with weak emission performance, despite import duties on used cars and registration fees. Hence, to better control emissions from older vehicles and stimulate the renewal of cars, lorries and bus fleets, vehicle inspection and maintenance obligations need to be strengthened, to complement the stronger price signal from enhanced carbon taxation.

Box 3. **Summary of main recommendations on energy system efficiency**

Ensuring a comprehensive, consistent and stable policy framework

- Ensure full consistency among strategic policy documents to anchor private sector expectations about future policies. Implement comprehensive, standardised *ex ante*, on-going and *ex post* evaluations for all policy instruments.

Providing the right incentives for abatement and raising revenues through the ETS and carbon pricing

- Support implementation of carbon taxation at the EU level. Realign the excise tax rate on all fossil energy sources and products, based on their carbon content and other environmental externalities, notably by increasing the relative taxation of diesel. Remove several excise tax reliefs on fuel use. Monitor and evaluate the efficiency of free ETS permit allocations to inform future decisions.

Rationalising sectoral policies

- Use the opportunity given by the natural retirement of coal-fired power and heating plants to plan a strategic switch to low-emission sources and technologies. Rebalance support for renewables to promote the lowest cost sources in a technologically neutral way. Enhance competition in the energy sector and stimulate emission-reducing innovations, including the development work of smart grids and meters.
- Continue investing in energy efficiency measures. Use loan support instead of investment subsidies for projects that require high upfront investments, although being cost-effective overall. Increase the role of energy providers in promoting energy savings. Promote Energy Performance Contracting and the development of Energy Service Companies.
- Increase consistency between transport infrastructure and environmentally sustainable transport objectives. Improve the institutional co-ordination of transport and land use plans among the State, regions and municipalities. Further develop traffic management in urban areas, including traffic restrictions in city centres, parking fees and incentives to commute by public transport. Strengthen vehicle inspection and maintenance obligations to better control emission from older vehicles and stimulate the renewal of cars, lorries and bus fleets.

Notes

1. Between 1900 and 1950 the income per capita in what is now the Czech Republic is estimated to have been about 20% above neighbouring regions, which are now Austria (Banacek, 2001), while currently the Czech Republic trails Austria by about 40% of the EU27 average GDP per capita in purchasing power parities.
2. The European Commission is currently updating long-term projections of member states' pension systems. Estimations including the newly legislated changes should be available during the first half of 2012.

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ANNEX A1

Progress in structural reform

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

Past recommendations	Actions taken and current assessment
Making tax system less distortive	
Shift the tax burden from direct to indirect taxes, specifically from the taxation of labour and capital income towards taxation of consumption, environmental externalities and real estate.	Unification of VAT rates in two steps approved by the Lower House of the Parliament; the two existing rates to be unified at 17.5 per cent as of 2013 (Currently, base rate 20 per cent and reduced rate 10 per cent. The reduced rate will increase to 14 per cent as of 2012). Reversal of the system of super- gross wage approved by the government and sent to the Parliament, resulting in higher headline PIT rate but no significant effect fiscally.
Harmonise and simplify the definitions and tax bases for the personal income tax and social security contributions (SSCs). Reduce the number of tax expenditures. Introduce a single declaration covering all labour taxes.	Streamlining of different tax bases under way. A legislation eliminating some tax expenditures as of 2013 submitted to the Parliament.
Reduce the disparities in the tax treatment of dependent workers and the self-employed.	A proposal to broaden the tax base and lower the social security and health insurance contribution rates that would further reduce effective contribution of self-employed submitted to Parliament.
Reduce the disparities between the tax treatment of different sources of investment finance in the CIT and dividend taxation, at least by tightening capitalisation rules. Increase the neutrality of the CIT with respect to investment in different types of assets, by revising depreciation schedules and targeted investment incentives.	A proposal to exempt dividend was approved by the government and submitted to the Parliament.
Increase the real estate tax revenues by raising tax rates and linking the tax to actual market prices.	No action taken.
Improving functioning of the labour market	
Amend the Labour Code to allow notice period and severance pay obligations to be phased in according to length of service. Relax the provisions regulating the use of fixed-term and other non-standard contracts.	Reform proposal addressing the issue of severance pay and the use of fixed-term and other non-standard contracts under discussion in the Parliament.
Phase out current very favourable tax treatment of home ownership and liberalise full the rental market to encourage geographical mobility.	Full liberalisation of rents effective as of 2010 except in the largest cities, where it will take place only in 2013.
Widen the avenues to permanent residence and citizenship to increase economically beneficial immigration.	Card system for attracting skilled immigration has been altered to a wider scope and with less stringent conditions as of 2011.
Reduce or eliminate remaining spikes in marginal effective tax rates by smoothing the withdrawal of some benefits, particularly unemployment benefit and living allowance, and by gradually withdrawing the spousal tax credit.	Legislative amendment has been submitted to the Government with expected effect from January 2012 changing the calculation of living allowance to stimulate job searching and working activities of recipients. A reduction in social insurance premium paid by employers applied to part-time job for workers with disabilities and parents caring about their children up to 6 years of age is planned.

Past recommendations	Actions taken and current assessment
Increasing women labour participation	
Decrease of the span of a combined maternity and parental leave to at least two years.	No action taken, but changes in drawing conditions of the benefit planned to enable more flexibility and improve work incentives.
Widen the options for fathers to take leave for childcare.	Fathers have received the same right to take leave for childcare as mothers and are allowed to draw sickness insurance benefit when caring for the child.
Encourage different forms of provision of childcare services.	New law has been prepared, introducing new types of childcare services and development of the current one. The law is to be submitted to the government and parliament in 2011.
Conduct a comprehensive review of the tax and benefit system provisions as they apply to families with dependent children to reduce disincentives for second earners to take up work.	No action taken, but changes in drawing conditions of the benefit planned to enable more flexibility and improve work incentives.
Facilitating business entry and exit	
Reduce the minimum capital required for new companies.	New legislation was approved by the Government and sent to parliament reducing the guarantee capital needed to register limited liability company from CZK 200 000 to CZK 1.
Increase the speed and reduce the cost of judicial proceedings, particularly in respect of contract enforcement and bankruptcy.	No action taken.
Adopt and implement legislative amendments reducing administrative burdens.	Changes in Accounting Act and Tax Code Act aimed at reducing administrative burdens effective as of 2011. New acts aiming at improving the business environment effective in 2010.
Strengthening competition	
Strengthen third-party access rights in respect of natural gas distribution, move towards regulated third-party access for gas storage. Consider further unbundling of the dominant firm in the gas market.	Liberalisation in the gas market aiming for separation of gas transport and production as a part of so-called third EU energy package was completed together with unbundling of gas storage from dominant firm was also finished.
Step-up competition-promotion efforts in electricity and telecommunications. Enhance the role of the competition authority in addressing collusion, abusive practices and other sources of market power in these sectors, particularly in the rapidly expanding broadband segment of the telecommunications market.	No action taken. But, the competition authority in the process of an investigation on abuse of dominant position in the broadband market. Relevant electricity-related provisions of Third Energy Package were implemented, pending final approval of Energy Act amendment in the parliament.
Repeal the Act on Abuse of Significant Market Power in the Sale of Agricultural and Food Products.	Abolition of the Act foreseen in 2011.
Encourage entry in services, exploiting the opportunity created by implementation of the EU services directive.	Adoption of the Act on Free Movement of Services, implementing the EU services directive.
Improving the quality of regulation	
Strengthen mechanisms for screening regulatory impact assessment (RIA) when legislative proposals are considered, ideally by creating a strong regulatory reform unit close to the centre of government.	RIA agenda moved to the deputy prime minister office.
Create an effective mechanism for rigorously assessing the impact of regulatory and legal changes introduced during the parliamentary phase of the policy process.	Plans of appropriate legislative rules are being considered.
Adopt and implement the draft methodology for public consultations in connection with regulatory impact assessment.	No action taken.
Combating corruption	
Make public procurement more transparent and more competitive, including by enabling bidders to challenge questionable procurement decisions in a fair, efficient and timely manner.	An overhaul of public tendering legislation drafted. Various line ministries adopted new anti-corruption strategies.
Institute liability of legal persons, strengthen whistleblower protection and corporate compliance measures, as required by the OECD Anti-Bribery Convention.	New legislation on criminal liability of legal persons for foreign bribery has been drafted, approved by the government and sent to parliament. The legislation should enter into force by January 2012.

Past recommendations	Actions taken and current assessment
Extending e-government services	
Expand the range of services offered by Czech Points and of the means by which they may be accessed.	Expansion of Czech Points to private entities (banks) and development of other functionalities, for example the online contact points are under preparation.
Ensure adequate support for the development of e-government services at regional and municipal levels and to facilitate co-operation among municipalities to realise economies of scale.	The e-government service development in municipalities is now supported by "Regional Technology Centres" as a part of regional "the eGON centres", which provide training in regions and municipalities.
Exploit in full the potential of data boxes and "key registers" to strengthen co-ordination among public bodies, to evaluate their performance and to identify areas for further cost-saving measures or changes in administrative practice.	Consolidation of e-government portal solutions and streamlining online forms under preparation. Launch of the System of Basic Registers has been postponed by 2 years to 2012.
Reforming education	
Introduce tuition fees in tertiary education accompanied by publicly guaranteed student loans.	No action taken. Tuition fees will be introduced only after a system of financial support to students has been prepared (grants and loans), but not before 2015.
Avoid elitism in secondary education, including phasing out streaming at the age of eleven, and strengthen benchmarking of schools and students.	A unified final exam in secondary education took place for the first time in 2011 but encountered problems and needs further improvements. This year, the Ministry of Education, Youth and Sports will test practical skills of 11- and 15-year-old students, including in maths, Czech and English languages. At the beginning of next year, pilot benchmarking will be carried out, followed by a preliminary test. No significant action taken on other recommendations.
Promote lifelong learning through better access to secondary and tertiary courses for adult and a more systematic approach to funding mechanisms, quality assurance, information and guidance.	Introduction of new general education and training programmes aimed at adults as part of policy response to deteriorating labour market in 2009.
Reforming pension system	Substantial reforms planned – see Chapter 1 for details.
Reforming health care	Substantial reforms planned – see Chapter 1 for details.
Strengthening fiscal framework	Substantial reforms planned – see Chapter 1 for details.

ANNEX A2

Competitiveness Strategy for the Czech Republic

Main Elements

Institutions

Efficient and non-corrupt public institutions providing quality services to citizens and entrepreneurs

- Professionalisation of public sector services.
- Management under the magnifying glass (transparency of management of state property, "online budgets").
- Facilitating access for citizens and entrepreneurs to public sector services through computerisation.
- Reinforcing the assessment of regulatory impacts and corruption risks – including their position *vis-à-vis* European legislation, and improving citizens access to the law – e-*Sbírka* (e-collection of laws).
- Electronic arbitration proceedings and other tools to speed up law enforcement.

Infrastructure

The countrys competitiveness rises alongside the quality of its infrastructure

- Co-ordinated, cost-effective development of all modes of transport – *i.e.* road, rail, water and air, linking them to European networks.
- Increasing the competitiveness of rail transport in relation to road traffic and to rail transport in neighbouring states.
- Development of logistic systems (VLCs, optimisation of distribution processes).
- Quality management system for the maintenance and reconstruction of transport routes and high standards in transport.
- Creating a State Energy Policy (SEP).
- Improving access to high-speed internet services.

Macroeconomics

An economy with healthy and flexible foundations

- Act on budgetary discipline.
- Numerical fiscal rules.

- Exchequer.
- Taxes – a single collection point.
- A shift from taxing labour to taxing consumption.
- Minimising unnecessary exemptions.
- Creating a tax floor.
- Early warning system.

Healthcare

Financially sustainable healthcare at a European level

- Rationalise purchases of medical equipment and pharmaceuticals (bulk purchases in the form of electronic auctions, access to generic drugs, centralised prescriptions).
- Streamline financing (transition to pre-payments, co-ordination of care between providers, sharing health records).
- Real competition between healthcare insurers.
- Restructuring inpatient care (fewer acute care beds, more follow-up and long-term care beds).
- More precise definitions of standard/luxury, conditions for care provision.
- Preventive measures, incentives for prevention.

Education

Education as an engine of future economic and social development. Schools as preparation for life in an environment of dynamic change

- Improving the quality and availability of kindergartens.
- Aligning apprenticeships and professional undergraduate education more to the needs of employers, their greater involvement in professional training.
- Improving the quality of schools (introducing standardisation, evaluation, changing the role of the CSI).
- Changing the system of accreditation, the system of evaluating research and development at universities.
- Increasing the proportion of undergraduate students, particularly career-oriented degrees+ reducing the proportion of students taking masters degrees.
- Tuition fees with a system of universal loans with contingency repayment.
- Public information system on higher education.
- Enhancing literacy, mathematical and financial literacy and soft skills.

Labour market

A flexible labour market to facilitate the efficient use of human resources

- A significant increase in the employment of people over 55 years of age.
- Unifying the activities and simplifying the administrative agenda of public authorities (unifying benefits).
- Increasing the employment of women with young children (pre-school education).
- Significantly facilitating access to highly educated foreigners (basic change to the policy on aliens).

- Increasing the offer of part-time jobs.
- Support for rental housing.
- Motivating the less productive workforce to take up work, reducing the grey economy.

Financial markets

Financial sector that supports the competitiveness of the Czech economy

- Creating "seed funds" to create new, progressive companies (key role for the CMGDB).
- The predictability of key policies and sustainability of the reforms adopted.
- Verification of the functioning of the existing legal and regulatory environment and verification whether there are no unjustified market access barriers.

Business environment

A favourable environment and service for business and commerce

- Uniform data on the effect of legal regulations impacting businesses.
- Eco-audit.
- Minimum capital requirements, greater accountability of statutory bodies.
- Development of the *BusinessInfo.cz* portal.
- Amendment to the Act on investment incentives.
- Services for innovative business.
- Single Windows – single contact point for access to the EU.
- The option of calculating the tax base from statements made for the IFRS.

Innovation

Innovation as a source of future prosperity for the Czech Republic

- Identification of the key technological areas of the Czech Republic on the basis of foresight – prioritising support for R&D&I.
- Institutional reform of the innovation system – clear definition of roles + strong central authority.
- Changes in the evaluation of R&D institutions and programmes impacting funding – support for excellence.
- Optimising and developing services to support infrastructure for technology transfer.

Pro-export strategy

The development and diversification of exports as an engine of economic growth in the Czech Republic

- The creation of a Pro-export strategy for the Czech Republic for the period from 2012-20 and its close links to the Competitiveness Strategy of the Czech Republic.
- Lobbing for better conditions for international trade.
- CR representation abroad, with respect to its economic interests.
- Co-ordination of agencies and information sharing in pro-export activities (ICC, sectoral unions, CzechTrade, MIT and MFA, ?EB, CMDGB and commercial banks, EGAP).
- Modern state services (market research, business and market intelligence, following trends).

- Facilitating visas for trade purposes.

Cohesion strategy

Competitiveness strategy and cohesion strategy going in the same direction.

- Concentrating the cohesion policy on the quality of the business environment, on completing infrastructure projects, the labour market and the education system.
- Major reduction in the number of operational programmes and priority areas.
- Major simplification of the implementation structure.
- Simultaneous release of funds from multiple OP.
- Strengthening the role of intermediary bodies, increasing the rate of participation of beneficiaries.
- Increasing importance of non-subside support tools, emphasis on return on investment.
- The use of direct community programmes.

Source: Ministry of Industry and Trade.

Chapter 1

Enhancing public spending efficiency

The Czech fiscal position is generally sound and policy making is prudent. However, the fiscal framework was not strong enough to contain spending in the upturn and it would benefit from independent budget oversight. An anchor for the fiscal policy would be helpful, in the form of an explicit debt target coupled with corresponding spending ceilings and deficit targets.

The ongoing fiscal consolidation, spending pressures and an already relatively high average tax burden necessitate public sector efficiency improvements. There is scope for improvement in the management of government spending, mainly by enhancing transparency, introducing performance-oriented budget indicators at both central and local levels, improving the management of state-owned enterprises and developing the procurement practices of the public sector.

Legislated increases in the retirement age will improve pension system sustainability. A new defined contribution tier is being introduced which should help to diversify future retirement income. At the same time, there is uncertainty about the number of participants who will decide to divert their contribution to the new tier and hence about the implications for revenues in the existing defined benefit pension tier. Also, attention should be taken regarding administrative costs of the new tier, since these can have a significant impact on future replacement rates and therefore public support for it. With more emphasis on private savings, the financial literacy of the population also needs to be stepped up.

In healthcare the authorities plan to continue improving the multi-insurer model through incremental reforms such as limiting pharmaceutical costs and improving provider-payment system. The potential for efficiency improvement in healthcare network planning and better care management should be explored, while ensuring that insurers and health providers are given the correct incentives.

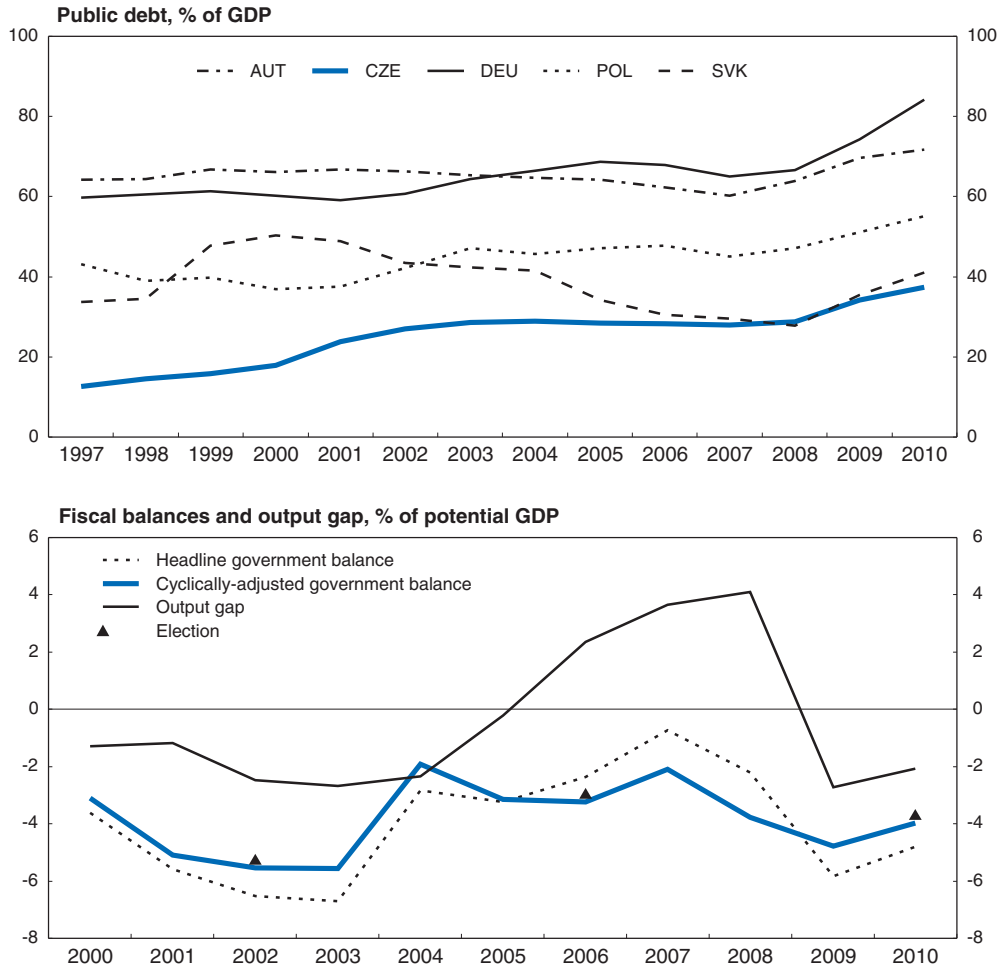
Fiscal consolidation, spending pressures and an average tax burden necessitate public sector efficiency improvements in the Czech Republic. Diminishing importance of real economic convergence and an ageing of population is likely to slow the economic growth in the medium- to long-term and so containing the burden of the public sector on the real economy becomes even more essential. The fiscal policy goal is to reach a balanced budget by 2016 and to set the debt ratio on a decreasing trajectory as of 2013, conditional upon sustained economic growth. The total tax burden (measured as total tax revenue as a share of GDP) prior to the downturn was already at or just above that of high-income countries such as Germany, Spain and the United Kingdom. Under the existing consolidation plan a substantial effort is planned on expenditure side of the budget (Convergence Programme, 2011). Unlike the past consolidation episodes in 2004 and 2007, efficiency savings form a significant share of the current consolidation effort at 0.7 and 0.8% of GDP in 2012 and 2013, respectively. Long-term expected increases of public spending linked to ageing, estimated at 6.4% of GDP by 2060[1] (European Commission, 2009), provide an even stronger need for expenditure control. Given public expectations of a continued improvement in the quality of public sector service provision, containing spending growth can be achieved primarily through spending efficiency gains.

This chapter examines ways to raise public spending efficiency. The first section looks at the macroeconomic fiscal policy framework and its ability to contain aggregate spending growth and ensure macroeconomic stability. The second section assesses the budgetary management framework that is essential for ensuring microeconomic efficiency. The third and fourth sections analyse the scope for improvement in two sectors that are key for containing spending pressures: pensions and health care. These are the two largest public spending categories, and they will be most affected by ageing pressures. Moreover, substantial reforms in both sectors are in the pipelines.

The fiscal policy framework is largely sound but can be further improved

The fiscal policy framework and the fiscal position came out of the downturn in a reasonable shape. This year, the budget deficit target is 3.7% and debt at 40.5% of GDP (Maastricht definition) – favourable figures when compared to regional peers (Figure 1.1). Fiscal policy-making is, in principle, governed by medium-term nominal expenditure ceilings and a medium-term objective of a deficit of 1% of GDP in structural terms. Three-year rolling expenditure ceilings have been in place since 2004. They are set every spring and discussed by the parliament in the autumn as a part of the state budget approval. In theory, such a framework allows the automatic stabilisers to work through the revenue side and results in a variable deficit fluctuating inversely with actual growth developments. With a focus on annual nominal spending, such a framework should be effective in controlling government expenditures and thereby also conducive to debt reduction and consolidation efforts.

Figure 1.1. **Fiscal policy has been generally sound**



Note: Public debt is gross, Maastricht criterion. The government balance is revenue minus expenditure; headline is per cent of GDP. The output gap is actual minus potential GDP.

Source: OECD, *Economic Outlook Database*.

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However, this framework was not strong enough to contain spending in the upturn. While average GDP growth over the period 2000-09 of 3.4%, the annual real percentage change of government expenditures was 4.1%. A balanced budget was not achieved even during the period of strong growth prior to the crisis. Unlike Slovakia, which used the opportunity of rapid economic growth to reduce the debt burden in the decade prior to the downturn by 25 percentage points of GDP, the Czech Republic increased its debt burden by 10 percentage points of GDP, although it remains relatively low (Figure 1.1). Nevertheless, while the policy may be characterised as somewhat loose prior to the downturn, it was not strongly pro-cyclical, and the overall election cycle does not seem to have had a strong impact. Czech fiscal policy can therefore be characterised by prudence in bad times but only a weak ability to contain spending in good times, suggesting gains to adopting a stronger rules-based fiscal framework (Kopits, 2011).

There have been challenges in the framework, mainly in implementation and adherence

The recent track-record of the fiscal framework has been mixed, reflecting the fact that it has encountered teething problems. Firstly, the achievement of the medium term objective has usually remained beyond a government's term in office (Convergence programme, 2004, 2007), which suggests that it had only a low political priority. Also, the political cost of diverging from the framework is low. The expenditure ceilings were increased when deficit targets under the EU's excessive deficit procedure were easier to meet during high growth period, as deficits became the key policy focus. The attention shifted away from the nominal expenditure ceilings as an anchor for policy-making. This was the case in 2005 and 2006, when there were substantial revisions of the ceilings for the outer years (Ministry of Finance, 2007). On the other hand, in 2007 there was counter-cyclical tightening, and in 2009 pro-cyclical tightening, of the ceilings.

Secondly, monitoring of adherence to the ceiling is cumbersome. Budgetary rules permit adjustments for a variety of factors: inflation developments that are significantly different from initial assumptions, changes in tax assignments between central and local governments, developments of EU fund allocations and major unexpected events. In practice, technical adjustments happen twice a year. The experience so far shows that there was only little public scrutiny when the ceilings were increased. Overall, absence of an independent systematic evaluation of the framework seems to contribute to its weak political weight and perceived credibility.

Thirdly, the framework does not pay much attention to the initial cyclical position of the economy. In their initial years, ceilings were based on assumptions of continued revenue growth that with hindsight did not correctly identify the temporary revenue gains of the boom years. The 2005 and 2006 revision of the ceilings for the outer years was a result of a belief that stronger revenue growth was of a structural nature. As pointed out in earlier *Surveys*, the framework does not specify procedures for assessing developments in revenue and spending to determine whether a structural or cyclical interpretation is appropriate (OECD, 2006, 2008). In fact, it seems that only a little analysis of the economy's cyclical position feeds into the setting of the ceilings. There is an element of cyclical assessment in the budgetary process, as under the Stability and Growth Pact the country should strive to achieve the medium-term structural deficit target of 1% of GDP. But so far, it has rarely been much of an anchor in budgetary discussions. For example, corporate and personal income cuts between 2006 and 2008 were not fully accounted for by revenue-increasing or expenditure-decreasing measures, particularly in the later years of the outlook, widening the gap with the medium-term structural deficit target (Ministry of Finance, 2007, 2008).

Further improvement of the framework is on the agenda…

A weak ability to reduce debt in good times suggests gains that could be achieved by improving the rules-based fiscal framework. The authorities have pledged to introduce "a fiscal constitution" and are currently discussing various proposals. The government manifesto foresees introducing a new fiscal rule into the constitution and the creation of a budgetary council. Both measures would be welcome, as they could help to address the shortcomings described above. A number of OECD countries are considering the introduction of a fiscal rule, while others like Germany and Switzerland, have already done so, entrenching them in their constitutions.

There is a growing literature on the pros and cons of various types of rules. Clearly, there is no one-size-fits all approach for fiscal rules given various types of fiscal problems faced by countries and nature of the economies (OECD, 2011a). Fiscal rules can set targets for budget balances, spending and less commonly taxation. Beyond their intended direct effect, rules also have a role to play in communicating with the public and as such should be relatively simple to perform this role. But in their simplest form, deficit rules can be pro-cyclical and typically require consolidation when an economy is already in a weak state (Guichard, 2007). Meanwhile, multi-year expenditure based rules, when based on accurate structural assumptions, can see through the cycle and avoid a boom and bust in government spending. Moreover, public expenditure is more directly under the control of authorities than revenues, which are more cyclically autonomous (Atkinson and van den Noord, 2001). Therefore, in principle the Czech Republic already has a good base in place. However, multiple rules are often used and past empirical analysis found that countries using a suite of rules have managed to sustain fiscal consolidation more successfully than others relying on a single rule (Guichard *et al.*, 2007; IMF, 2009). With a hindsight, had a target of decreasing public debt complemented introduction of expenditure ceilings back in 2004, fiscal policies would have been tighter in the period of strong upswing, leaving more fiscal space to deal with consequences of global financial crisis.

On-going discussions about a fiscal rule have not yet come to a final conclusion. One of the recent proposals from the National Economic Council of Government (NECG), an advisory body to the government, has involved a debt targeting rule. An explicit formula would set the annual primary balance target according to a desired debt level. The primary balance would be adjusted annually in line with developments in potential and actual growth rates and it would also reflect a correction to address past overruns and deviations from an appropriate fiscal policy path. Such a proposal has merit, though the complexity in the setting and monitoring of the debt-targeting rule is likely to present a challenge. Past experience with respect to the expenditure ceilings shows that low understanding and awareness, together with the complex adjustment mechanisms in place, have made public monitoring difficult. Even the most elaborate numerical formula will not foresee all possible economic developments and shocks. Economic circumstances can thus result in breaking such a rule, undermining its credibility. Also, there is a considerable degree of uncertainty involved in calculations of variables such as potential output. These concerns are particularly relevant since the Czech government plans to enshrine a fiscal rule into the constitution.

A more robust approach would be to refer in the constitution to a high-level principle, such as requiring the government to issue a debt-target for its period in office. The principle should then be translated into multi-annual expenditure ceilings and deficit targets. There are a number of approaches to setting a desirable debt level depending on overreaching policy goals, which can aim at convergence of debt to its initial (arbitrary) level, avoiding excessive debt accumulation or indeed a more ambitious approach of including funding of future government liabilities (Price, 2010). Once the fundamental approach is decided, the existing nominal expenditure ceilings should then serve as an operational commitment to budget prudence. The budget mechanism should hold spending ministers directly accountable for their actions by specifying clear spending envelopes and *ex post* accounting of performance. Moreover, such a framework needs to account for tax expenditures in order to avoid the temptation of pro-cyclical fiscal loosening during times of cyclical revenue upswings. It should also explicitly include sub-central levels of government in order to ensure that local fiscal policy is in line with the overall national goals (see below).

... and should include an independent fiscal institution

Efforts to strengthen fiscal frameworks across OECD countries often include setting up an independent fiscal institution (Box 1.1). A number of OECD countries have independent fiscal councils with an advisory function, either from a normative or positive perspective (Hageman, 2010). Such an institution has already been recommended to the Czech authorities as a complement to the existing fiscal framework, in order to address the identified weaknesses of the expenditure ceilings process (OECD, 2010a). By monitoring the application of the medium-term expenditure ceilings and regularly reporting to the parliament and the general public, such an independent body could increase transparency, establish a political cost for breaking the framework and reduce the perceived partisanship of the Czech budgetary process. It could also decisively strengthen the analysis of cyclical position of the economy that is crucial for setting appropriate structural assumptions underlying the medium-term framework. A budgetary council that is currently planned, would assess only fiscal costs of new legislation, and would be located in the prime minister's office. This body should help in ensuring the budgetary costs of new legislative proposals are appropriately reflected in budgets, even if the Ministry of Finance is already well placed to verify cost estimates from line ministries. However, another body with a more comprehensive mandate as described above would help to enhance the quality of fiscal policy making in the Czech Republic.

Box 1.1. **Recently established fiscal councils**

UK Office for Budget Responsibility – Set up in 2010 to "provide independent and authoritative analysis of UK's public finances" under the HM Treasury. It is led by a three-member board of economists and has a staff of 16 civil servants. There is also an Oversight Board and Advisory Panel in place. The Office produces short- and medium-term forecasts that are used for budget formulation, assesses progress towards the government's fiscal targets (both cyclical balance and debt target) and the long-term sustainability of public finances. It also scrutinises the Treasury's costing of Budget measures. There is a Memorandum of Understanding that sets out the working conditions and interactions with the rest of the administration and its analytical independence is set in law (Charter of Budgetary Responsibility). The Chancellor nominates members to the board of the Office, but they have to be approved by the Treasury Select Committee of the House of Commons.

Irish Fiscal Council – Established in June 2011, the institution has 5 independent members appointed by the Minister of Finance and a permanent secretariat of staff of 4. Two of the councillors are from Ireland and the rest are international experts, including from the OECD, which should help to broaden the range of independent perspectives. The Council will report three times a year, pre- and post-Budget and after issuance of the Stability programme, to the Minister of Finance, who is obliged to submit these reports to the parliament within 24 hours. The main focus of the reports will be to monitor compliance with fiscal rules and evaluate consistency and adequacy of the government's medium-term target with prudent fiscal and economic management. It will also assess the forecasts and assumptions underlying the medium term government plans. The council will provide normative judgements and recommendations about fiscal policy.

Source: OECD Economic Survey of Ireland (OECD, 2011b), UK Office for Budget Responsibility's website.

Budgetary management and control to promote efficiency

Improvements in budget management and control are essential to maintain spending efficiency. This section reviews a number of areas of possible improvement, including the increased transparency of budgetary documentation, the use of performance indicators, the monitoring of tax expenditures, ensuring the quality of public procurement, reforming sub-national fiscal relations and strengthening the governance of state owned enterprises. The authorities are already undertaking several initiatives in these areas.

Increased budgetary transparency but only limited progress in performance indicators

Greater transparency in budgetary procedures tends to be associated with lower deficit and debt levels (von Hagen and Harden, 1994; Alt and Lessen, 2006), but most importantly should make it easier to assess quality and effectiveness of spending. The budget is the government's key fiscal policy document, where policy objectives are reconciled and implemented in concrete terms. Therefore, it is essential that it is comprehensive, encompassing all government revenue and expenditure, so that trade-offs between different policy options can be assessed (*OECD Best Practices for Budget Transparency*, 2002). While a number of *OECD Best Practices* are already applied in the Czech budgetary process, scope for improvement remains.

There has been long-standing criticism that the budgetary documents are complex and lack comprehensiveness (Transparency International, 2006). Some progress has already been achieved in this area and renewed effort to increase the transparency of public expenditures has been launched under the *Competitiveness Strategy*, recently adopted by the government (Annex A2). One of the priorities of this strategy is to make the state budget and the overview of its individual spending programmes accessible on the internet. It is already possible to download the budget proposal from an electronic database of planned legislation at the Office of the Government and *ex post* overviews of the main individual chapters are available from the Ministry of Finance website. Moreover, a database of some state subsidies is accessible on the Ministry of Finance's website as well as indicators on municipal indebtedness (see further). A number of line ministries publish their budgets and/or end of year reports on their website and a recent court ruling clarified that remuneration of civil servants should also be made publically available information. IMF *Manual on Fiscal Transparency* (2007) calls for a publication of a citizens' guide to the budget, an easy-to-understand summary of main features of the annual budget. Although only a small number of countries currently publish such guides, it has been identified as a good practice in international fiscal transparency initiatives (OECD, 2010a). Further improvements in the available documentation and, potentially, the publication of an overall assessment of the budget by an independent fiscal institution, would be helpful in enhancing transparency and accountability.

The Czech budgetary process is one of the very few in the OECD not to use any performance indicators (OECD, 2011c). Such indicators offer an understanding of how the goals of various governmental policies and spending programmes are being achieved and could be used to assess spending effectiveness. Such information would also be an important input into the formation of new budget proposals, which for the moment are based mainly on incremental increases from the previous year. This inhibits expenditure prioritisation, which will be particularly important during a period of fiscal consolidation. There have been some efforts in the past to introduce performance-based budgeting, but

only on a voluntary basis and with limited impact. In reality, some performance indicators are being used at the individual ministerial level, but no systematic approach is in place. Information about performance indicators is not an explicit part of the budget documentation, nor is it used as evaluation criteria during the budget preparation phase.

The Czech authorities could draw on OECD countries' experience in constructing their own performance indicators (Boyle, 2009). Irish Departments (ministries) produce annual output statements, which set out information on expenditure and services on a programme basis. They also include output information alongside expenditure allocations in the state budget. Australia's Productivity Commission publishes an annual review of government programmes that is used in budgetary formation process. Similar, measurable performance indicators could be developed for individual spending programmes in the Czech budgetary process, complemented by wider use of *ex ante* and *ex post* cost benefit analysis.

A new treasury system has been under implementation for three years. The overall aim of is an upgrade of the current monitoring and budgetary management system and a streamlining of the state's cash management across levels of government. The project is reportedly occupying all available development capacities of the budgetary staff. Although these are no doubt useful measures *per se*, the treasury system does not include evaluation of individual spending programs. Once the technical implementation is over and human resources are freed, the authorities should focus on performance oriented indicators and budgeting.

Tax expenditures need to be disclosed regularly

Tax expenditures matter for the effectiveness of the fiscal framework and their regular reporting is necessary (Anderson and Minarik, 2006). Tax expenditures are the estimated lost-revenue costs of preferential treatment for specific activities and should be disclosed as supplementary information in the budget (OECD, 2002). They undermine the benefits of spending and affect the fiscal stance. For example, increases in tax deductible costs for the self-employed contributed to the economic boom prior to the downturn. Fortunately, a broadening of tax bases has received more attention under the current consolidation programme and a first overview of tax expenditures was prepared last year (Jareš, 2010). It identified some 57 tax expenditures at an estimated cost of CZK 120 bn in 2008, or 3.1% of GDP, addressing other public policy areas (Table 1.1). Tax expenditure reporting, possibly including an analysis of related distortions to the allocation of resources in the economy, should become a regular and integral part of the budget proposal. As experience from other OECD countries shows, such reporting can be delegated to an outside independent institution, especially when uncertainty about the size of tax expenditures is large. For example, in France the estimate of tax expenditures by the independent court of audit is almost three times as high as the estimate by the Ministry of Finance (OECD, 2011d).

Public procurement offers significant scope for improvements

Public procurement spending represents a large share of governmental spending and the authorities are hoping to achieve significant efficiency gains from improving current practices (Convergence Programme, 2011). The procurement of general government amounts to 17% of GDP and Czech public procurement ranks at the top of the OECD, only behind the Netherlands (Figure 1.2). The figure is even higher, when procurement by state-owned utilities is also included. Non-transparent procurement practices are vulnerable to waste, fraud and corruption, given their complexity and close interaction between the

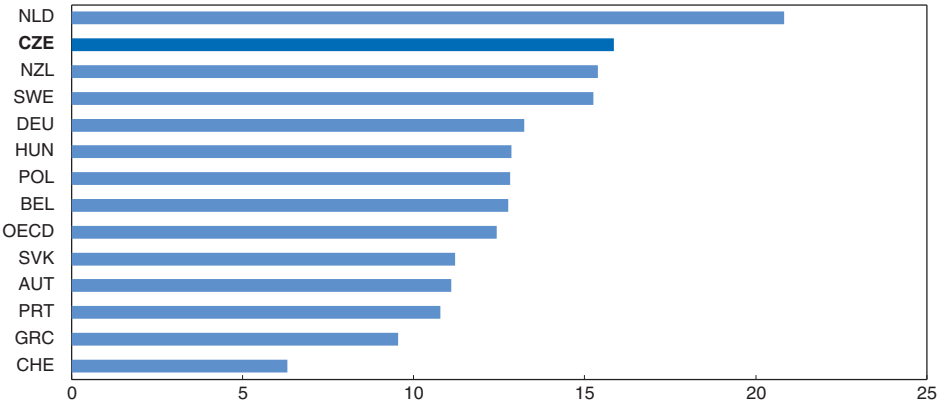
Table 1.1. **Estimates of main tax expenditure categories**

	Estimated cost (bn CZK)
Total, including	120
Preferential VAT rate	54
Tax exempt rent income	29
Tax exemptions on lotteries	8
Personal income tax exemption on employer-provided meals	6
Tax deductible mortgage interest	5
Personal income tax exemption on employer-provided public transport	2
Investment tax incentives within corporate income tax	2

Source: Jareš (2010).

Figure 1.2. **The importance of public procurement is high**

Government purchase as a % of GDP, 2008



Note: Procurement is the purchase by general government of goods, services and works. OECD is the average of available shares.

Source: OECD, *Government at a Glance*, 2011; and *National Accounts Database*.

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public and private sector (OECD, 2011c). Such risks are present in the Czech Republic and there has been a growing discontent with the public tendering procedures. According to Eurostat, only 20% of public tenders get advertised in the Official Journal of the EU, compared to 45% in Estonia, the EU top performer. Anecdotal evidence and comparative analysis of large infrastructure projects point to overpriced programmes (Palguta, 2010). Also, there has been a practice of breaking-up public tenders into smaller parts to avoid tighter requirements for public procurement projects (NECG, 2011a).

A major overhaul of tendering legislation is in the pipelines and the authorities expect to make significant savings as a result of improved procurement practices. They have estimated that some 15% of the current costs of general government procurement, amounting to around 2.5% of GDP, could be saved. The comprehensive *Anti-corruption Strategy* that has been adopted at the beginning of the year includes an ambitious amendment to the procurement bill, which is currently debated in the parliament. The amendment proposes a lowering of the limits for public tenders, obliges the publication of more *ex ante* and *ex post* information about procurements, including the final price paid, tightens conditions for using simplified procurement practices and introduces an economic analysis for significant public tenders (above CZK 100 and 200 million). At the

same time, the authorities are working on a national electronic system for public procurement, templates for tenders to be used across the public sector and centralizing government purchases of services. A report on the public procurement market in the Czech Republic will be published annually. All these steps are welcome, but enforcement is also important. Notably, there is room for more effective enforcement of corrective actions taken against entities in breach of the rules and regulations by the Anti-monopoly Office and Supreme Audit Office (Pavel, 2009).

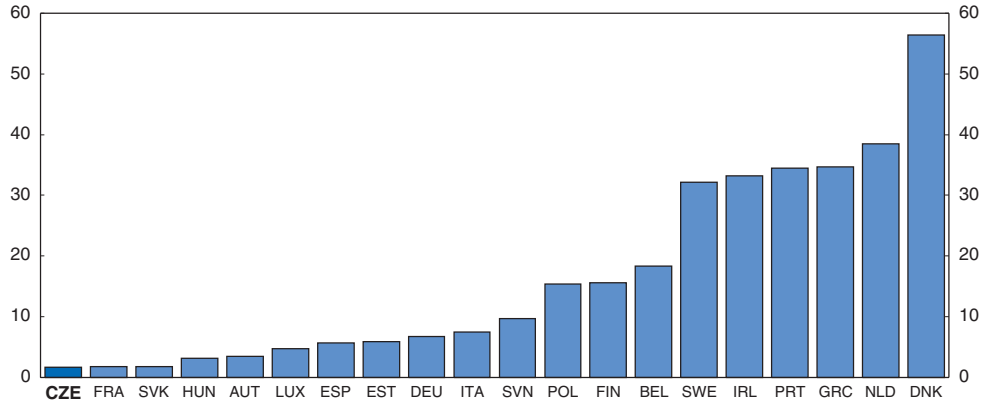
Reaping economies of scale among sub-central governments…

No indicators are available about the cost and quality of public service provision across municipalities and regions, although such indicators would contribute to enhancing the efficiency and effectiveness of sub-central service delivery, and a number of countries compile them for this purpose (Mizel, 2008). For instance, Norway and Australia regularly publish such information. Some municipalities in the Czech Republic have taken independent initiatives to benchmark their costs for the provision of certain services, but these data are not generally available. Compiling cost and efficiency indicators on sub-central governments at the central level would help to assess the municipal performance in providing public services and identify potential for efficiency improvements across the country.

Nevertheless, the Czech Republic stands out among OECD countries in terms of the number of sub-central governments, many of which are therefore likely too small for the efficient provision of public services. With a population of 10 million, the country has two sub-central levels with directly elected officials – 14 regions and 6 245 municipalities. While there is no conclusive evidence on the ideal size of a municipality, the average size of Czech local governments, at just over 1 600 inhabitants, is extremely small by international comparison (Figure 1.3). Among the OECD countries, only France has a similar set-up, but it is currently on course to mandate inter-municipal co-ordination by 2013. A number of other countries have undertaken reforms to increase the average size of municipalities over the past decades. Denmark, with average municipal population of 55 000 following such a reform, is at the other end of the scale.

Figure 1.3. **Municipality size is very small**

Average number of inhabitants per municipality, 2009-10, thousands



Source: CEMR (The Council of European Municipalities and Regions) – Dexia, *EU Subnational Governments*, 2010/2011 edition.

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Some public services are already concentrated at bigger municipal units (*obce s rozšířenou působností*) and a planned shift of social benefits administration to a network of newly centralised labour offices should further take advantage of economies of scale. While financial incentives for small municipalities to merge are limited (Box 1.2), there are numerous voluntary associations, in which some 40% of the municipalities are organised, which provide joint services. Mergers would be the first best solution, but given constitutional independence of the municipalities, further initiatives to foster inter-municipal co-operation and joint provision of services should be actively promoted.

Box 1.2. **Sub-central government expenditure and financing**

Just over a quarter of general government expenditure is spent at the sub-central levels in the Czech Republic. The regions, which came into effective existence in 2002, are in charge of general hospitals, upper secondary education, public roads and transport and some social policies for disadvantaged groups. Municipalities run pre-school, primary, and lower secondary education, social care services, local roads, water and energy supply and waste collection and treatment facilities.

Sub-central governments are financed from two basic sources: tax revenues (from tax sharing arrangement and assigned own taxes), and various forms of transfers from the state budget (transfers, grants and subsidies). Tax revenues are at the full discretion of sub-central governments, while transfers and grants that cover education spending, together with subsidies for selected health providers and for the provision of some public administration services, are fully earmarked. In the case of municipalities, about a third of their revenues come currently from earmarked transfers and two thirds from tax revenues and other incomes. Shared taxes include part of personal and corporate income tax as well as value added tax, while property tax revenues go fully to the municipalities. For regional administrations the ratio of earmarked transfers and shared tax revenues is inverse.

An earlier *Survey* (OECD, 2006) argued that incentives for small municipalities to merge were fairly limited. In the past, there was a progression in the shared-tax revenue per capita linked to the population size thresholds. However, this did not produce desired mergers and recent reforms have reduced the merging incentives further. Under the current financing arrangement, should municipalities merge and as a result of that fall into a bigger population category, their shared tax revenue will not actually increase that much. There is a modest bias in favour of the smallest municipalities and six cities above 100 000 inhabitants including the capital of Prague, which is also a region on its own. The current redistribution of shared tax revenues to local municipalities is based on centrally determined coefficients that have been set for various municipal sizes, primarily based on historical revenues and population. Another criterion, albeit with a very small weight for formula, is municipal surface area. The authorities are discussing a revision of the revenue sharing scheme this and next year, but it does not provide any significant incentives for the consolidation of the smallest municipalities. Planned changes would slightly flatten the distribution of shared revenues, mainly by withdrawing disproportionately higher revenues of larger municipalities in favour of the middle-sized ones. The formula will also include the number of pupils in schools and pre-school institutions, while an earmarked transfer from the Ministry of Finance will be eliminated.

Assigning greater tax raising powers and spending autonomy to the sub-central governments could make municipalities more accountable to their electorates and hence increase pressure for spending efficiency. Firstly, non-earmarked grants are usually more

efficient instruments and give incentives to economise on administration, so moving away from earmarked transfers is welcome. Secondly, a formula-based on coefficients is not a very transparent mean of redistributing public revenues. The tax potential of a particular local government and how much it receives as a result of national equalisation are not obvious. A number of countries, in particular the Nordics, use a model in which these two parts of the revenues are separated, opening the way for an analysis of cross-subsidisation and its underlying causes, including inefficiencies. Also, the existing tax-sharing arrangement provides only little incentives for broadening tax bases, since revenues from the shared taxes are redistributed.

One of the main sources of sub-central governments' autonomy is property taxation, which is already fully assigned to the municipalities in the Czech Republic. However, property taxation is currently differentiated only according to size of the municipality and the basis for it is set in monetary terms (*e.g.* CZK 2 per square meter for a residential building). The central government introduced brackets to allow the differentiation of the coefficients that determine the effective property tax rates further. Local governments have used this opportunity to increase the coefficients and thereby rates in 2009 and 2010. Moreover, there was a general increase in the property tax as a consolidation measure in 2010. However, property taxation still represents only a modest revenue source at 1.2% of total government tax revenues in 2007 and according to the latest Ministry of Finance estimates, real estate tax revenues represented over 6% of total municipal tax revenues. This suggests further scope for increase, for instance by reflecting the value of the property in the tax. The authorities foresee the introduction of so-called price maps, in which the value of real estate would be reflected in and serve as a basis for the real estate tax.

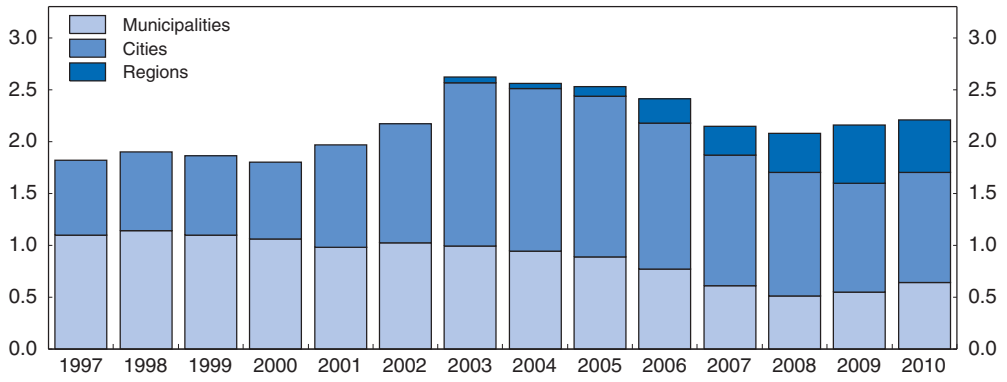
... and including them in the fiscal framework

Czech sub-central governments are covered by the existing budgetary rules and should aim for balanced budgets, but there is no effective restriction on borrowing. The overall budgetary position of the sub-central governments is generally sound, with debt at CZK 80 bn in 2009, *i.e.* 2.1% of GDP. As recommended in an earlier *Survey* (OECD, 2006), the Ministry of Finance has stepped up its monitoring of local budgets and is now compiling a number of indicators on the financial situation and indebtedness. According to these numbers, the four biggest cities have accumulated the most debt, some CZK 40 bn in 2010, *i.e.* half of the overall municipal indebtedness and almost 70% of their annual tax revenue. About a half of municipalities use some debt instruments and 62 have reached according to the authorities a higher rates of risk, involving among other criteria re-payment obligations above 25% of their total assets. Use of external financing has increased as a result of pre-financing needs for drawing of EU's structural funds (Ministry of Finance, 2010). The budgetary situation of the municipalities has recently stabilised, though regional governments experienced a 40% increase in debt in 2009, albeit from a very low level (Figure 1.4).

While providing more fiscal autonomy, a number of OECD countries also apply borrowing restrictions to sub-central governments. There has been a general move away from a micro-management based on a prior approval system on a case-by-case basis towards aggregate and numerical targets across the OECD (Sutherland *et al.*, 2006). The Czech authorities are discussing imposing a limit on sub-central borrowing or on deficit, with explicit requirements for municipalities in breach of the limit (such as to appoint financial advisor from the Ministry of Finance) and specific arrangements for insolvency (including a centrally appointed administrator, *správce)*. Balanced budget or debt rules risk

Figure 1.4. **Debt across sub-central governments is low but on the rise**

% of GDP



Note: Cities are the four largest.

Source: Ministry of Finance.

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becoming pro-cyclical the more stringent they are and the shorter their horizon. For example, Danish municipalities that are highly restricted in borrowing achieve consumption smoothing through adjustments in investment activity. Moreover, as local governments may own or control local enterprises (such as public transport companies), it is important that contingent liabilities are taken into account. Some progress is being made on this front as, according to legislative amendments currently in the parliament, the Supreme Audit Office will have new powers to review municipalities and regions. To strengthen the fiscal responsibility of sub-central governments further while respecting their constitutional independence, the authorities should introduce an internal stability pact' that sets borrowing limits on local budgets and ensures that local fiscal policy is in line with the overall national goals. Also, publishing indicators on the indebtedness of individual local governments can serve as a means for benchmarking and increasing their electorates' awareness of the local public finances.

Governance of public enterprises can be strengthened

There are still over 100 state-owned or controlled enterprises (SOE), including the post office, railways, airports, an airline, energy producer and national forestry manager. These companies employ over 160 000 employees, over 3% of total workforce (OECD, 2011e). As one indication of their importance for overall public spending, procurement of state owned utilities alone corresponds to 9% of GDP, more than half of public sector procurement. As SOEs are vulnerable to the risk of soft budget controls and inefficiencies, ensuring accountability and the quality of corporate governance among the remaining SOEs is crucial (OECD, 2011f). One way to achieve this goal is a partial privatisation and listing on the stock exchange, as recently suggested by the NECG. But also full privatisation, alongside with adequate regulation where necessary to protect consumers, needs to be considered. Careful consideration should also be given to the oversight of SOEs within the public sector. The National Property Fund, a main vehicle for privatisation and state ownership established at the beginning of the transition period in the 1990s, was finally dismantled in 2006 and its role was taken over by the Ministry of Finance. Currently a dual model of ownership is in place, whereby sectoral ministries nominate directors of SOEs and hold their shares, with the Ministry of Finance in charge of operational performance

(OECD, 2011f). Although such a dual model has long been prevalent in OECD countries, more recently there has been a trend towards a centralised ownership structure, either under one co-ordination ministry or a separate entity. For example, the UK's Shareholder Executive implements unified guidelines regarding disclosure, board nomination and executive nomination. Centralisation is also conducive to aggregate financial reporting on state ownership and unified implementation of the ownership policy. The authorities should thus consider consolidating all corporate state holdings and stakes under one roof with a professional management to improve their accountability and establish an arm's length principle relationship. Similar institutions have been in place in Finland, Germany, Austria and recently established in Slovenia.

The pension system is undergoing major reform

The Czech Republic spends some 8% of GDP on pensions, a little above the OECD average. The current retirement income provision is dominated by a universal and compulsory public defined benefit (DB) scheme, with only a minor role played by private provision. Currently, the retirement age is around 62 (the exact age depends on an individual's date of birth, women are able to retire earlier based on a number of children raised) and is to increase gradually to 65 by 2030. Moreover, it will be united for both genders by reaching 66 years and 8 months in 2041. The benefits from the public DB tier consists of a basic and an earnings-related component, with the basic flat part equivalent to approximately 9% of the average wage. The overall contribution rate is high: employees and employers together contribute 28% of gross earnings. Only a few countries (Hungary, Italy and Spain) have higher rates, while the OECD average was 19.6% in 2010.

The Czech population is ageing fast, which will strain on the public finances. Absent of any reform the pension spending is projected to rise by some 4 percentage points GDP by 2060 (EU, 2009).[2] Updated national projections show that the system is projected to post annual deficits above 4% of GDP starting from 2030 onwards. There is little effective retirement income diversification since, as noted earlier, current retirement income is dominated by the public tier. In response, the government continues to implement measures to improve the overall pension system performance and to prevent future increases in the contribution rates. In particular, important parametric changes to the existing scheme were recently legislated and a more fundamental reform is under parliamentary approval. The following section reviews the current, reformed, and newly proposed retirement income system against five basic criteria outlined in a previous *Survey* (OECD, 2006): the strength of the safety net, *i.e.* poverty prevention, the benefit/contributions link, diversification, fiscal sustainability and retirement incentives. The summary assessment is provided in Table 1.2.

Table 1.2. **Assessment of evolution of the pension provision system**

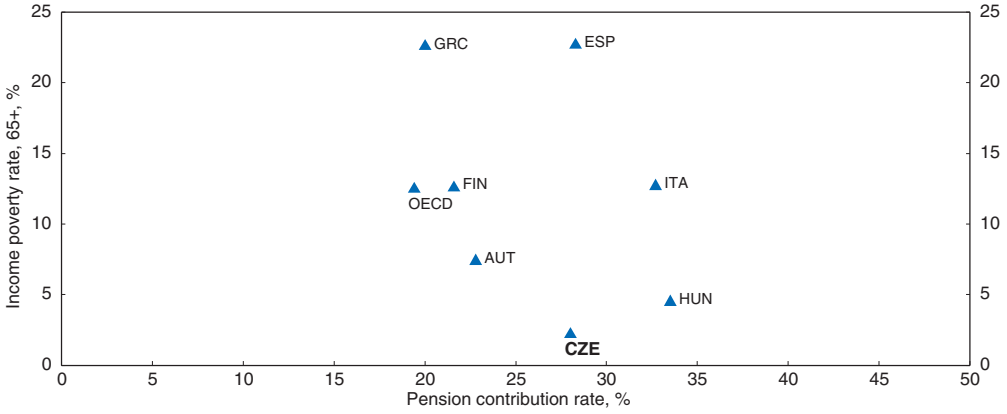
	Poverty prevention	Benefit/ contributions link	Retirement incentives	Retirement income diversification	Fiscal sustainability
Current public DB	xxx	x	xx	x	x
Parametric changes of the DB	xxx	xx	xx	x	xxx
DB with an added DC carve-out[1]	xxx	xxx	xxx	xx	xx

1. Note that fiscal sustainability assessment does not include extra revenues from VAT and other sources that have been identified to finance the immediate fall-out of social contributions.

The pension system is efficient in providing a safety net but less so in other areas

The public pension tier provides an adequate safety net and is therefore efficient in terms of preventing old age poverty. The Czech Republic has one of the lowest proportions of impoverished pensioners (Figure 1.5). Just over 2% of those aged 65 and more live with an income less than a half of the median household disposable income, while the average in the OECD is 13.5%. Also, a Gini coefficient of pension entitlements, which measures the inequality in pensions, is among the lowest in the OECD. This is ensured by a significant redistribution within the benefit formula: workers with a half of the average wage have a net replacement rate of over 90%, whereas those earning one and a half times the average get only a half of that. However, tension about the redistributive nature of the system has been growing, as earnings dispersion in the economy is widening. This tension had been highlighted by the Constitutional court ruling recently, which has decided that the public scheme does not provide adequate pensions for higher income earners given the size of their contributions.

Figure 1.5. **The pension system protects well against poverty**



Note: The income poverty rate, 65+ is the percentage of persons aged 65 and over with incomes less than 50% of the national median household disposable income in the mid-2000s. The pension contribution rate is pension contributions (by employer and employee) as a per cent of employee gross earnings in 2009. Selected countries have similar contribution rates to the Czech Republic. OECD is the average of the 21 members for which data is available.

Source: OECD, *Pensions at a Glance*, 2011.

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The current set-up offers good financial incentives for working longer, as described in previous *Surveys* (OECD, 2008, 2010). Currently, a worker can retire up to three years earlier if he has a required contributory history of 25 years and this will be extended to five years (together with an extension in the required contributory history) as the pensionable age reaches 65. The reduction in benefits for retiring early is achieved via a decrease in the accrual factor. In effect, this results in a reduction in the pension level of 5.6% per year of early retirement for a full-career worker, which is close to actuarial neutrality. At the same time the scheme offers substantial incentives for continuing to work beyond the statutory age of retirement and indeed there has been a gradual pick up in the participation rates of the older workers (OECD, 2011g). While employment rates in the Czech Republic are generally higher than the OECD average, they had been lower for older workers. In the age group of 60-64, employment has been increasing steadily, reaching a peak of 39% in 2008, but that was still some 10 percentage points below OECD average.

Parametric changes continue to improve long term sustainability

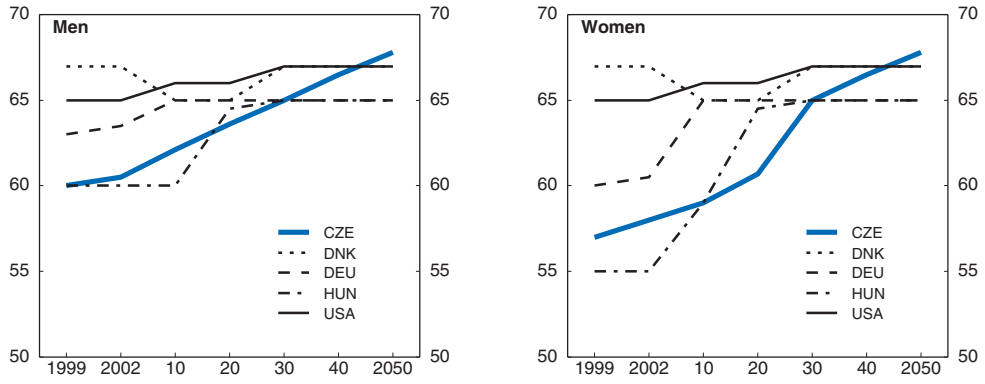
A set of parametric changes modifying the public DB part of the pension system has entered into force in September, addressing the following issues:

- *Increasing statutory retirement age*. Once the statutory retirement age reaches 65 in 2030 it will continue to increase by two months per year (Figure 1.6). Moreover, the differentiated and lower statutory pensionable age for women will be phased out by accelerating the on-going increases in the pensionable age for women will be accelerated. This will result in the age being unified for men and women by 2041 at over 66 years. The new legislation also smoothes the penalisation formula for early retirement.
- *Changes in the benefit formula*. To accommodate the Constitutional court ruling, the authorities have somewhat decreased the degree of redistribution. Effectively, there are now two thresholds for the calculation for the earning-related component of pension benefit. Up to 44% of the average wage, 100% of earnings are replaced; above that, earnings up to a ceiling of four times the average wage are replaced at 26%. This should result in the same replacement rate for the lowest income decile, a 25% increase for the top income decile and 3% decrease on average for the remainder. Furthermore, as opposed to the past practice of annual adjustment by the Ministry of Social and Labour Affairs, the thresholds are now set as a percentage of the average wage. Also, a cap on social security contributions, which includes pensions contributions, has been lowered from 6 times to 4 times the average wage. All this scales back the redistributive features of the system without reducing old-age poverty prevention.
- *Extension of earnings' covered by the benefit formula*. The minimum of 25 years' earnings coverage is being extended to 35 by 2018. Gradually, it will be extended to cover a pensioner's full earnings history. In principle, such a measure decreases somewhat the level of pension benefits, because earnings increase over working life. At the same time, it increases incentives for overall labour market attachment and contribution compliance.
- *Automatic indexation of pensions*. Currently, pensions are indexed yearly by inflation plus one-third of real wage growth, but the actual increases have been frequently higher. As of September 2011, indexation will be automatically carried out by a ministerial decree, based on the above-specified minimum, and will not require government approval. The authorities are hoping to limit the scope for higher-than-minimum indexation this way, thereby contributing to improved fiscal sustainability.

These changes go a long way towards improving the fiscal sustainability of the public scheme, especially the increases in the statutory retirement age. The authorities estimate that the long-term spending increase will be significantly reduced. The DB tier's annual deficits are projected in the magnitude of 0.5% of GDP, with a maximum of just over 2% between 2046 and 2066, when the impact of population ageing is projected to be the strongest. Moreover, given future demographic developments, the authorities estimate that the planned increases in the retirement age would also keep remaining life expectancy at the pensionable age broadly constant at around 20 years. It should be remembered, however, that the announced path might need adjustment if developments in life expectancy change. For instance, Denmark has linked its pensionable age to life-expectancy developments after it reaches threshold of 67 in 2020. Also, the Netherlands is on course to implement such feature. Around a half of OECD countries have mechanisms providing an automatic link between pension benefit and a change in life expectancy in their mandatory retirement income provision. At the same time, it is important to

Figure 1.6. **Statutory retirement age will increase fast**

Legislated pensionable age, years



Note: Pensionable age is defined as the age at which people can first draw full age-pension benefits (that is, without actuarial reduction for early retirement). The definition is designed to be comparable across countries and may be below the pension age set in national legislation. Refer to the source for more details. Selected countries have broadly similar life expectancy to the Czech Republic.

Source: OECD, *Pensions at a Glance*, 2011.

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supplement increasing retirement age with policies tackling barriers to working longer, such as high labour costs, ageist attitudes and seniority-pay schemes (OECD, 2011g).

Legislation introducing a new defined contribution (DC) second tier pension is currently before the parliament and should come into force in 2013. It would represent the most fundamental reform in the system since the mid-1990s. After the reform, people will have the option to divert 3 percentage points of the current 28% pension contribution rate into a funded pension plan that will be managed by a pension fund manager (*i.e.* pension company) of their own choosing (Box 1.3). The diversion will be conditional upon adding 2 percentage points on top of the existing contribution, bringing the contributions rate to the second tier to 5% and the overall contribution rate to 30%. Current employees over the age of 35 will have to decide during the first half of 2013. Employees below that age and new labour market entrants can decide on their participation before reaching the age of 35 or within 6 months of making their first social contribution. Under these conditions, such a decision will be open to all labour market participants at the time of the reform, but will be irrevocable in the future. For those participating in the second tier, the pension from the first DB tier will be lowered accordingly: the earnings-related component of the pension benefit will be calculated from a reduced contribution rate of 25%.

The proposed reform is welcome in principle…

The reform in its current design improves the prospects for pension provision in many aspects, but also raises some questions. The DC tier effectively raises contribution rates, which means that those participating in it will be saving more for their retirement. It strengthens the earnings-related link of future pensions and thereby improves expected replacement rates and pension adequacy across income profiles (Figure 1.7). Poverty prevention features should not be significantly affected, provided that revenue loss does not lead to a change in the benefit formula. Although the DB tier will still remain the dominant of retirement-income, the DC tier will introduce more diversification of pension provision. Based on model calculations, a 40 year contribution period with 5% of the wage

Box 1.3. **Design of a new defined-contribution tier**

Pension fund managers will be obliged to run four investment pension plans with the composition of the portfolio reflecting various degrees of risk. The four pension accumulation plans will have the following investment restrictions:

- *Sovereign bonds fund*. The majority of the portfolio must be invested in sovereign bonds, with 70% in the Czech bonds and the rest in OECD and EU countries' bonds with top ratings, and those issued by other international organisations (such as IMF, EFSF, etc.). The average weighted maturity of these must be below 5 years.
- *Conservative fund*. This is in principle a money-market fund that should serve a purpose for the pay-out phase. On top of the sovereign bonds, it can invest up to 30% in corporate bonds, money market instruments and shares of money market funds, all with the top five grades of ratings.
- *Balanced fund*. Up to 40% of the portfolio of this fund can be invested in stocks and shares. Bonds must have a rating of at least A–.
- *Dynamic fund*. Up to 80% of the portfolio can be invested in stocks and shares, bonds must have a rating of at least BBB–.

A participant can choose to diversify his assets into several pension accumulation plans or choose a life-cycle accumulation plan. An element of a life-cycle strategy is foreseen, as accumulated assets will by default be gradually transferred into a more conservative investment plan, starting 10 years prior to the statutory retirement age, leading to an increasing share of assets in the conservative fund. A choice between life-time annuity, an annuity with an option of a three years survivors' benefit or a programmed 20-year withdrawal permitting bequest will be possible.

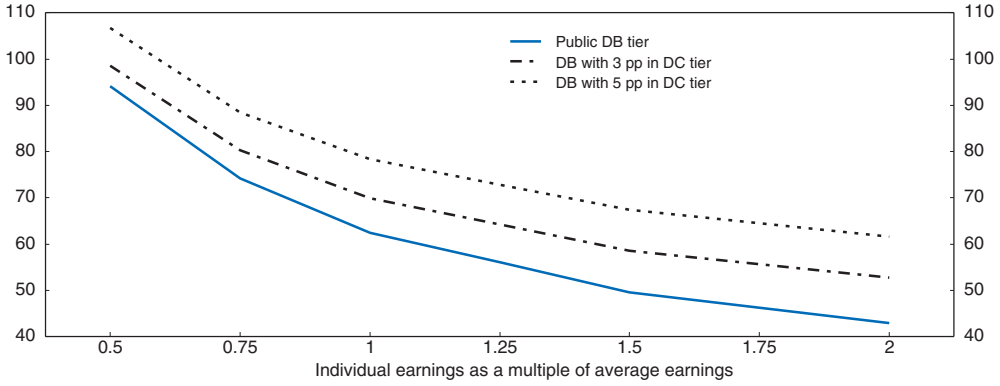
While the contributions will be collected by a public Single Collection Point (also a tax collection agency), there will be individual accounts and direct contracts between the participants and fund managers. Ceilings on fees have been set between 0.3% of average yearly assets for the most conservative fund to 0.6% for the dynamic fund. On top of that, all but the sovereign bond fund can charge a fee on returns of up to 10%. There will also be a limit on acquisition fees for attracting new clients at 3.5% of the average monthly wage, *i.e.* around CZK 840 (EUR 33).

being saved, as will be the case for the DC tier, can yield a 30% replacement rate (OECD, 2011f).[3] There are also macroeconomic benefits from generating more savings in the economy, such as a deepening of local capital markets.

The introduction of the DC tier requires generating additional revenues to cover transitional deficit of the DB tier. The lower contribution rates for the DB tier of those switching could also have an impact on ability to maintain the current redistributive features of the system. The size of the financing gap depends on the number of people who decide to join the DC tier but the authorities currently estimate it at 0.5% of GDP (CZK 20 bn) and plan offset it by dividends from state assets and increased VAT revenues. However, the switching incentives of the reform are not very clear. The authorities estimate that the internal rate of return for an average wage earner in the DB tier is currently around 5.5% and will be decreasing in future. Given the redistributive features of the system, anyone below that wage threshold has a higher return, while those above it face lower rates of return. The switching incentive therefore depends on the expected real rate of return from the DC pension plans. Should it be higher than 5.5%, switching would be favourable for those with earnings above the average wage and this is the assumption

Figure 1.7. **Model replacement rates of the pension systems**

Individual net pension entitlement as a % of net pre-retirement earnings



Note: DC refers to defined contributions; DB is defined benefits; pp is percentage points. Calculations used the average gross monthly nominal wage per full-time equivalent employee in 2010 multiplied by 12. Assumptions of the calculations are described in detail in *Pensions at a Glance*, 2011 and include notably 2% annual real earnings growth and annual real rate of return of the DC tier of 3.5%.

Source: OECD pension models calculations.

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adopted by the authorities. However, switching rates might prove higher than expected, as has been the case in several other countries.

The retirement income generated in DC plans is subject to uncertainty as a result of different market conditions throughout the saving phase and at the time of retirement. This is why policy-makers across the OECD area use various measures to decrease such risk, in particular appropriate default investment strategies, while a few also use minimum income guarantees. Minimum income guarantees ensure that the amount of accumulated savings at retirement does not fall below a certain value. They are most useful where DC plans provide a large part of the overall retirement income and where membership of such plans is mandatory. However, they tend to be relatively costly, both in terms of fees and their impact on investment strategies. The Czech third voluntary tier, where such a guarantee exists in the form of a non-negative annual results, has experienced low returns on investments, as pension fund managers have opted for very conservative investment strategies.

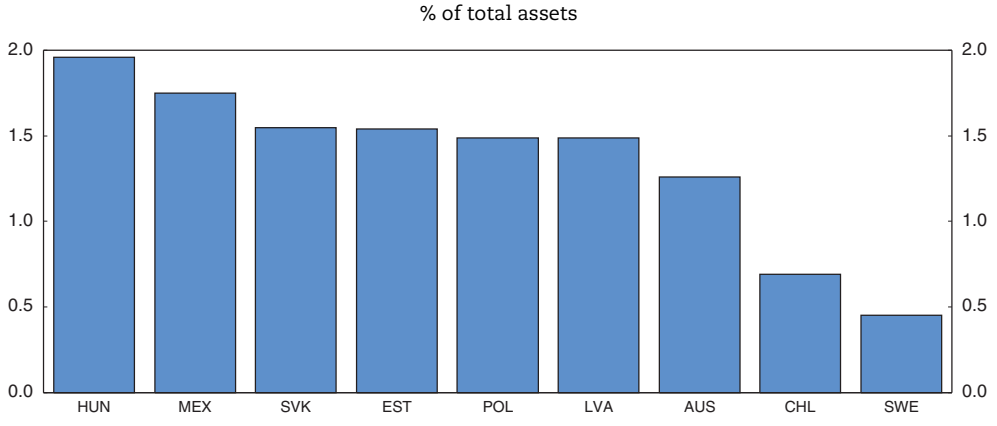
Life-cycle strategies are increasingly being used to reduce pension benefit volatility. According to such investment strategy savings are invested into riskier assets at the beginning of the plan and gradually one's portfolio shifts towards less risky assets with pay-out phase approaching and as people get closer to retirement. Recent OECD work illustrates that life-cycle investment strategies set as a default provide protection against negative equity market shocks (OECD, 2011h). In the newly established second tier, the pension fund managers will be obliged to offer life-cycle investment strategies and accumulated assets will be, by default, transferred gradually to more conservative fund 10 years prior to reaching retirement age. However, the design of the DC tier should maximize the likelihood that individuals make decisions consistent with their long-term interests. Therefore, investment in higher-return assets in the early pension saving phase should be encouraged by making the life-cycle strategies an explicit default option.

... but can be still improved to avoid excessive fees

High administrative costs of individual DC schemes can reduce retirement income significantly. Fees themselves are influenced by a number of factors such as the size and maturity of the system, market structure, competition, investment strategy and regulation. The authorities have decided to regulate the fees and disclosure requirements to ensure that plan members receive timely and comparable information on the fees they pay. Pricing regulations allow for a single charge structure and set ceilings on the fees. However, such an approach might not be the most effective. Pricing regulation does not necessarily lead to cost reduction and greater efficiency in the industry (OECD, 2011h). Although the ceilings currently proposed sound broadly appropriate (Box 1.3), there are risks that they could prove too low, resulting in difficulties for the pension companies in recovering costs, or too high, and therefore ineffective. In particular, fee ceilings can limit price competition in the short-term, inducing implicit collusion among market players. Moreover, survey evidence from Chile and Poland suggests that the majority of the population does not know what fees are paid to pension companies (Martinez and Sahm, 2005). Financial literacy in the Czech Republic is also low (CNB and Ministry of Finance, 2010), which suggests that a disclosure approach might have a limited impact.

International experience shows that there are clear cost advantages to centralised institutions as opposed to direct individual contracts between pension plan managers and participants (Figure 1.8). Such institutions can be in charge of either delivering various pension services and/or negotiating fees on behalf of individual plan members. Among OECD countries, the Swedish system, where there are no limits on fees but a centralised agency, has the lowest fees in the mandatory DC tier – under 0.5% of assets under management (Tapia and Yermo, 2008). The Swedish Pensions Agency acts as a single accounts administrator and as a reporting interface with plan members. Also, it negotiates rebates with the asset managers chosen by the plan members. The UK will introduce a system of a publicly managed default fund from 2012 (National Employment Savings Trust) to keep administrative costs down, while Mexico and New Zealand have similar projects in preparation. In the Czech DC scheme, a new revenue collection agency (Single Collection Point) will be created as of 2013 collecting also the DC contributions. The authorities should explore the possibility of using the Single Collection Point to administer and negotiate fees for DC plan holders, as in Sweden.

Figure 1.8. **Fees in mandatory DC pension systems**



Note: Data refer to administrative fees in private pension systems in 2007 or 2006.

Source: OECD, *Private Pensions Outlook*, 2008.

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One of the main pension provision goals is to protect people from outliving their own resources. In DB systems the longevity risk is borne by the public sector, while in DC schemes this is borne by individuals themselves, unless they use pension assets to purchase annuities. As mentioned above, in the Czech DC tier there will be a choice between a life-time annuity, an annuity with the possibility for a survivors' benefit in the following three years, and a programmed 20-year withdrawal which permits bequests. Life-annuities are generally not very popular as they involve "giving away" large sums of money for a future stream of small payments. However, this attitude is largely explained by widespread evidence that most people underestimate their life expectancy. Hence, if the main motivation for the reform is to diversification of old age income, the annuity option should be made a default for the pay-out phase.

The existing voluntary third tier is also undergoing changes

The existing third tier, where voluntary private pension savings are already possible, will be closed in its current format as part of the pension reform, reflecting its governance challenges (Box 1.4). Its functions will be taken over by pension fund managers, who can also operate the newly established second tier. They will be obliged to offer one conservative fund, while setting other funds is optional. Current plan-holders will be offered the choice of transferring to a new plan or maintaining the current conditions in a specific "transformation fund", which will be managed by reformed pension fund managers. The state will continue to offer public support both in terms of matching subsidies and tax expenditures, but it will target higher monthly contributions. As the support for the existing third tier was among the most generous in the OECD (Figure 1.9), the authorities should consider scaling it back. Moreover, tax incentives need a careful design to ensure that gains do not accrue mainly to middle and upper income earners (Yoo and de Serres, 2004).

Box 1.4. **Governance problems of the existing voluntary tier**

As a result of legal framework and regulation the third tier is currently a hybrid corporate structure with features of both banks and life-insurance companies that has been challenged elsewhere (World Bank, 2007). Most notably, there is no separation of shareholders assets from those of the plan holders and sales commissions have significantly escalated over time.* Another specific feature of the system is that the regulatory framework prevents negative returns from the pension funds on an annual basis. While on its own this might not be an undesirable feature, it has resulted in very conservative investment strategies, with 85% of assets invested in government bonds and thus low returns.

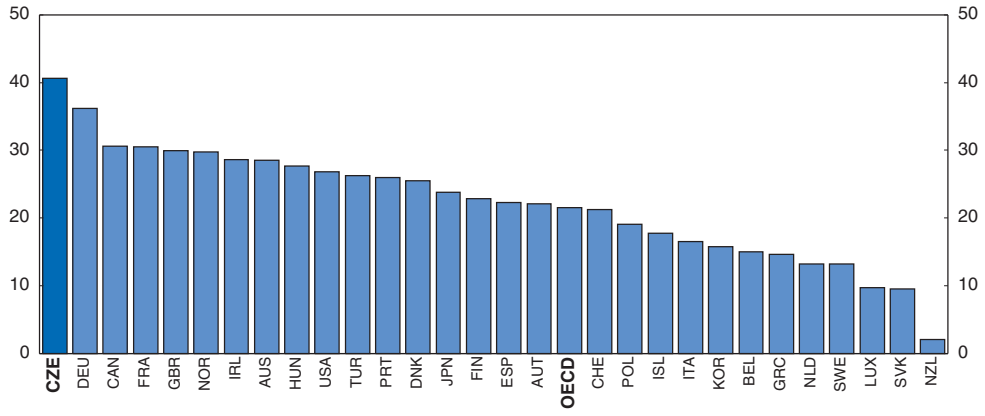
A diagnostic review by the World Bank along the lines of the *OECD Guidelines for Pension Fund Governance* has identified a number of governance weaknesses that leave this tier of pension provision vulnerable to problems of opacity, poor actuarial control, inadequate solvency and inequity among different generations of plan-holders. Although some improvements in the oversight of the sector, carried out by the Czech National Bank, have been achieved since the review, the existing tier was considered as inappropriate for taking on the increased role of the DC tier under the current set-up.

* In some cases, sales commissions have risen to 100% of first year contributions (World Bank, 2007) while Schneider and Hlavac (2011) calculated that acquisition costs have increased from 1% of total assets in 2000 to over 3% in 2009 in the system as a whole.

Source: World Bank, 2007.

Figure 1.9. **Public incentives for private pension voluntary savings**

2003 rules and parameters, tax incentive as % of contribution



Source: OECD, *Pensions at a Glance 2011*.

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Financial literacy is important for ensuring adequate savings for retirement income

Action to improve financial literacy and awareness among the population matters for adequate pension provision: the experience from several OECD countries shows that people tend to under-save with respect to their future retirement income expectations. A national strategy for financial literacy has been approved in 2010 and subsequently the authorities commissioned a financial literacy survey the same year. The results indeed demonstrated a low awareness of financial issues among the population, which is the case in many countries in fact, and the authorities are committed to improvement of financial literacy of the general public. They are addressing the issue with a systematic approach. While seminars for teachers have been organised since 2008, new curricula and textbooks for schools have been developed in co-ordination with the Ministry of Education, the Ministry of Finance and the central bank. The Czech Republic is participating in OECD/International Network for Financial Education financial literacy pilot project and also PISA 2012 financial literacy option. An appropriate public campaign explaining the DC tier to the public will also be crucial and related activities have already been started by the authorities. The authorities should ensure regular plain-language reporting of projected pension benefits for individual participants from the DC tier, based on their current contributions, as well as continue with actuarial reports on the public DB tier and its future developments.

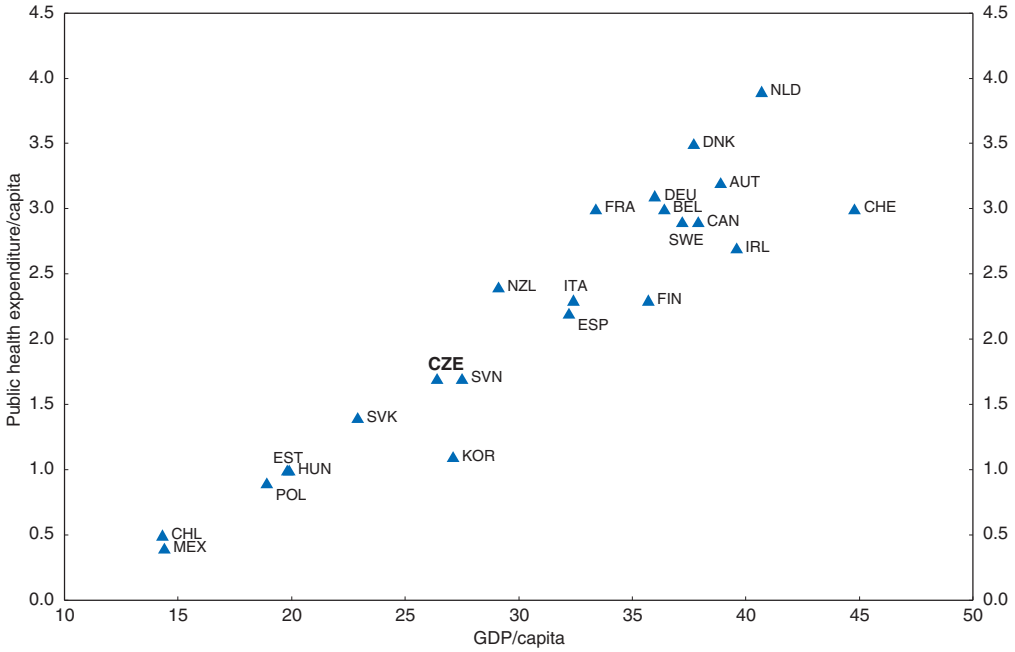
The efficiency of health spending

The Czech Republic, as most other OECD countries, is facing spending pressures in the healthcare sector, even thought the health expenditure is still relatively low on per capita basis (Figure 1.10). As a share of GDP, at just over 8% according to the OECD Health Data, total health care expenditures are still lower than the OECD average, but have been rising over the past 10 years. In the long term, ageing is expected to increase health spending by 2 percentage points of GDP by 2060 (EU projections, 2009).[4] In the shorter-to-medium term, pressures are associated with increasing demand for health care, linked to wage pressures, rising income levels, an upgrading of the health system and technological progress.

The Czech health care system is characterised by a mandatory universal coverage, under which health care is funded by a part of the social security contributions levied on

Figure 1.10. **Public health expenditure and GDP per capita, 2009**

Thousand USD at 2009 purchasing power parity



Note: Public healthcare expenditure is current expenditure by general government. Refer to source for details of concepts and comparability.

Source: OECD, *Health Database*.

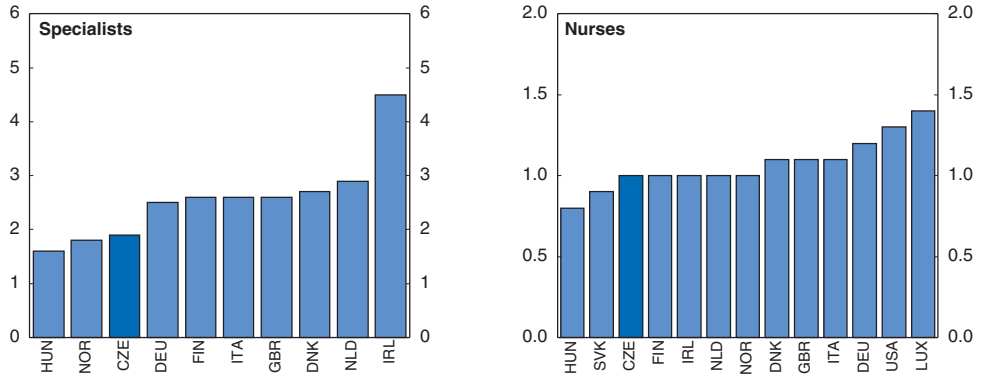
StatLink http://dx.doi.org/10.1787/888932531784

wages and state contributions for those insured but inactive such as children and pensioners. There is a wide consumer choice as patients are free to choose both provider and insurer (*OECD Survey*, 2003). There are currently ten insurance funds operating on a non-for-profit basis, financed from the social security contributions and redistributed according to their clients base and risk-sharing formula accounting for age and gender. The hospital network is by and large owned by the public sector, be it central authorities or local governments, while GPs have mostly individual practice. Specialists tend to be salaried or concentrated around health centres (so-called policlinics) in private practices. Potential deficits in the health insurance system are implicitly backed by the state, mainly through increased state payments for those insured but inactive, channelled primarily through the VZP, the incumbent and the biggest insurer.

Current arrangements have resulted in financial tensions over the years in the health care, which intensified recently due to disputes about the remuneration of salaried medical staff. Relatively low rates of remuneration (Figure 1.11) had helped to keep overall health spending below the OECD average. With the opening of the labour market in neighbouring Germany and Austria in the spring of 2011, which lifted the remaining restrictions on the free movement of labour, some 3 800 doctors threatened to walk out of the Czech hospitals in search of better wage opportunities. An agreement between the authorities and the doctors' association, signed at the beginning of the year, stipulates wage increases for salaried doctors and nurses through to 2013. This includes a particular 10% pay increase for doctors and an unspecified increase for all medical staff in 2012 and an agreement that by 2013 salaried doctors' pay will range between 1.5-3 times the average wage depending on qualification. This is conditional upon achieving efficiency gains in the healthcare system.

Figure 1.11. **Remuneration of health professionals is moderate**

Multiple of average income, 2009



Note: Data refers to salary for year indicated or an adjoining year except for Germany which is for 2006. Refer to source for details of concepts and comparability.

Source: OECD, *Health Database*.

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Achieving efficiency savings within the system to free up resources for increasing wages and to contain medium-term spending increases without sacrificing the quality of health services are key goals of the authorities. The opportunities for efficiency improvement are substantial. While the system scores well in comparison with many regional peers in terms of life expectancy, a recent OECD analysis points to significant potential gains, especially when measured by amenable mortality (*i.e.* premature deaths that should not occur in the presence of effective and timely care). If the Czech health system moved to the OECD efficiency frontier, life expectancy at birth could be increased by over 3 years and amenable mortality decreased by almost 40% without having to increase resources (Annex 1.A1). Exploiting potential efficiency gains would also help contain public spending and result in large savings, estimated for the Czech Republic at around 1.5% of GDP by 2017 (Joumard *et al.*, 2010).

Efficiency-seeking involves changes in providers' network, their pay system, steering patients' demand and managing care. As the Czech central authorities have less control over public health spending than in a single insurer system of healthcare, emphasis needs to be put also on getting the underlying incentives of the system right. The following section looks at possible improvements in these areas. It starts with a description of measures already in the legislative process and then discusses further steps that should be considered in the medium term.

Reform aims at incremental improvements of the existing system

The authorities are seeking to achieve incremental improvements within the existing multi-insurer model. Indeed, more fundamental reform does not seem warranted, as OECD countries employ various models of health care and efficiency analysis shows that no broad type performs systematically better than another in improving the population health status in a cost-effective manner (Joumard *et al.*, 2010). Meanwhile, a multi-insurer model is becoming more popular among OECD countries as competition features are being implemented in similar systems such as in the Netherlands, Germany or Switzerland, while preventing undesired side effects by regulatory oversight. The following incremental

changes that continue direction of the reform adopted by the Ministry of Health in 2007 are currently debated in the parliament and are planned to take effect in 2012:

- *Improving drugs price setting and re-imbursement* to contain the growth in pharmaceutical spending, which have been consistently outpacing the growth in total health expenditure in the last decade. A reference basket for new drugs price setting will be extended from 8 to 18 countries and the maximum ceiling will be calculated based on the three lowest ones. Re-calculation of the re-imbursement price of drugs will be due whenever the exchange rate or foreign reference price changes result in substantial savings, set at a threshold of CZK 30 million (EUR 1.2 million). Over-the-counter drugs will be excluded from the basic insurance package. Also, a faster 30-day procedure will be established for the introduction of generic drugs into the market. The authorities plan to introduce a positive list of reimbursed drugs for which electronic auctions will be organised.
- *Streamlining of private co-payments* that were introduced to control overconsumption of health services – the Czech health care system has the second highest doctor consultations per capita, at 12.6 compared to an OECD average of 6.8. The co-payment for a hospital stay will increase from EUR 2.4 to EUR 4 per day (CZK 60 to 100) while drug co-payments will be now applied per prescription, rather than per individual items. Private household expenditures for health care are still moderate, and as there are differentiated ceilings and exceptions in place, co-payments would not pose a significant social burden (see Box 1.5).
- *Explicit rules for mergers of the insurers* to help reap economies of scale in the sector. The insurance market has already been consolidating, as 27 insurers have been reduced to ten funds, with the three biggest covering some 80% of the population. Although the overall administrative costs of the healthcare system are below the OECD average, the scope for further reduction through economies of scale should be exploited. In particular, a merger of the health insurer for the army (*Vojenská zdravotní pojišťovna*) and for the Ministry of Interior (*Zdravotní pojišťovna ministerstva vnitra*), each with a rather small client base, seems warranted.
- *Refining a standard benefits package* to open way for its further streamlining. The first stage of reform introduces the terms "standard" and "above-standard" care into legislation.
- *Improving the legislative framework* to codify patients' and providers' rights and obligations. This guarantees patients free choice of care provider and includes sanctions when rules are broken. New legislation on rescue services and other specific healthcare services (such as *in vitro* fertilisation treatments, abortion, gender change, etc.) is in preparation.

Box 1.5. **Level of private participation and evolution of out-of-pocket payments**

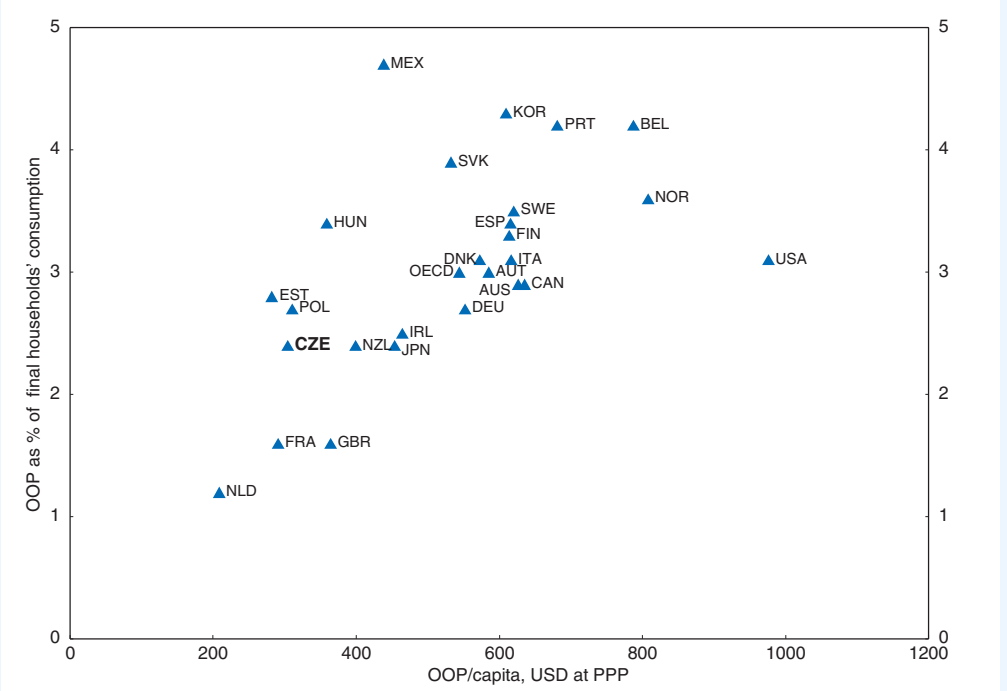
Private expenditures in the Czech health care remain relatively modest despite significant increases in recent years (Figure 1.12). Survey data by the Czech Statistical Office show that between 2000 and 2009, overall household expenditures on health care tripled with about a half of that increase being spent on pharmaceuticals. Private expenditures now represent some 16% of total health expenditures while the EU average is 23.5%. The biggest change was introduced in 2008, when out-of-pocket payments (OOP) were implemented with a considerable political cost. For some time they were reimbursed by certain regional administrations run by the opposition that claimed that OOPs were introduced in an unconstitutional way. By now the legal ambiguity has been cleared and there are no systematic reimbursements from regional authorities available.

Box 1.5. **Level of private participation and evolution of out-of-pocket payments** *(cont.)*

The underlying motivation in the Czech case was to introduce price signals, curb excessive consultations and thereby improve the system's efficiency (Bryndova *et al.*, 2009). An impact on healthcare demand was indeed observed, but mainly in the first year of introduction. The use of emergency services declined by 36%, the number of prescriptions by 23% and ambulatory care consultations by 17% year-on-year in 2008 when the OOPs were introduced. Also, the rate of decline in the number of hospitalisation days increased. However, the growth in demand for most health care services recovered in 2009, albeit at a somewhat slower pace than previously, which is consistent with experience from other countries. The authorities explain the pick-up in health demand by a low nominal level of the payments.

Out-of-pocket payments are usually regressive and thus the least equitable way to finance health care. However, the low level of co-payments (for example a standard co-payment for a consultation is CZK 30 or EUR 1.25), several exemptions and a ceiling reduce the burden. Persons receiving subsistence benefits, the institutionalised disabled and income-poor elderly in care-homes are exempt. Moreover, there are differentiated ceilings on OOPs. For children under 18 years and elderly above 65 years the ceiling is set at CZK 2 500 (EUR 104) annually. For the rest of the population the ceiling is CZK 5 000 (EUR 208), which corresponds to 5.2% of the minimum wage. In 2009, under 280 000 people reached the ceiling, rising to 415 thousand in 2010.

Figure 1.12. **Households' direct payments for health care in OECD countries, 2009**



Note: OOP refers to out-of-pocket and PPP to purchasing power parity. Data is for 2009 or latest available. Refer to the *OECD Health Database* for details of concepts and comparability.

Source: OECD Reviews of Health Systems: Switzerland 2011.

StatLink http://dx.doi.org/10.1787/888932531822

Other planned measures are aimed at increasing the transparency of the corporate governance of the health insurance funds and establishing a level playing field among the funds. Health insurance funds are currently governed according to a specific legal framework and report to the parliament both in terms of financial results and annual business plans. In case of the VZP, the incumbent insurer, the supervisory board composition usually reflects political situation: two-thirds of its members are appointed by the parliament and one-third by the central authorities; in case of other insurers, the board composition represents tripartite agreements. More standardised reporting, accounting principles and increased liability of board members are planned. Other measures include setting up an independent Office of Health Insurers that will serve as an administrator of the system, primarily being in charge of the redistribution of funds based on risk formula. For the moment this is done by the VZP.

While these measures bring desirable improvements of the system, they are insufficient neither to generate large immediate efficiency savings nor to decisively limit future health spending growth. There is a scope to look for more efficiency savings in the network, procurement and care management. Also, other core features of the system, such as risk-equalisation and providers' pay, need to be addressed to avoid that undesirable behaviour by various stakeholders.

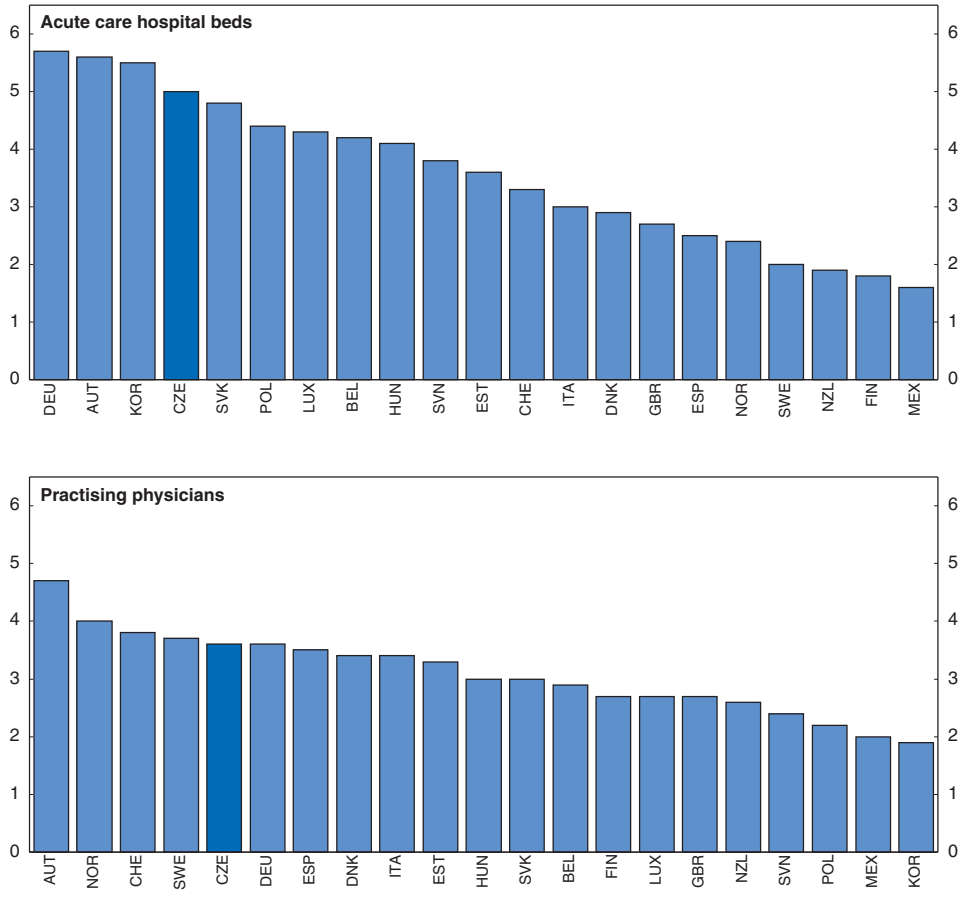
Potential for network streamlining should be seised

Substantial scope for efficiency exists in the providers' network. Although there has been a 15% decline in hospital beds since mid-1990s, the Czech Republic still stands out in terms of bed capacity, in particular for acute care (Figure 1.13). With an overall 7.3 beds per 1 000 population, it ranks well above the EU and OECD averages of 5.8 and 3.8 respectively. At the same time, the occupancy rate is lower than the OECD average, while the number and average length of stays are high. Moreover, hospital discharges, that measure the number of people who stay in a hospital each year, is high. Hospital discharge, together with average length of stay are important indicators of hospital activities and countries that have greater number of hospital beds also tend to have higher discharge rates (OECD, 2010e). Given that a large share of hospitals are owned by local governments, the reduction of capacity or closing down of wards is often a politically difficult issue. The structure of remuneration of providers also plays a role in maintaining an excessive healthcare network. Up to 1997, hospital services were remunerated via a points-based fee-for-service with *per diem*, which led to a considerable growth in services provided and longer hospital stays (Bryndova *et al.*, 2009). While hospitals are currently paid by a combination of mechanisms that include regressive *per diems*, case payments based on DRG, global budgets and capped fee-for-service for hospital out-patient care, historical volumes and medium-term framework contracts play a decisive role, slowing down adjustment in capacity.

The Ministry of Health can play a bigger role in co-ordinating and planning the network of providers, in particular in relation to the local authorities, who implicitly have large stakes in the network. The ministry should work closely with the insurers, who have data on quantity and quality of providers across the country. Part of the agreement for wage increases in the hospital sector includes the co-operation of stakeholders in reviewing the existing bed capacities at a national level. The authorities have launched a co-operation project with the region of South Moravia looking into bed capacity planning, with the aim of eventual reductions. With just over a million inhabitants, the region has almost 9 000 beds, a half of which are allocated in hospitals managed by the Ministry of

Figure 1.13. **The existing network offers scope for streamlining**

Number per 1 000 population, 2009



Note: Practising physicians are university graduates in medicine who provide services directly to patients. Data refers to year indicated or an adjacent year. Refer to source for details of concepts and comparability.

Source: OECD, *Health Database*.

StatLink http://dx.doi.org/10.1787/888932531841

Health and by the Ministry of Defence, and a half in hospitals owned and run by the regional administration and municipalities. The first results of the project revealed that over 6% of beds could be eliminated, most of them for acute care. This suggests that a comprehensive review of the national bed capacity would be very useful. Based on its results, the authorities should create a national capacity plan, in particular for the in-patient sector, in co-operation with other stakeholders. Such a plan would be very timely, as the medium-term framework contracts between providers and insurers expire next year and new contracts could be based on the new plan. Furthermore, to stimulate capacity adjustment, part of the remuneration of the hospitals could be linked to compliance with the plan.

One way forward that the authorities are hoping to explore is to turn spare capacity into long-term care. Cost efficiency of such change should be carefully examined, as part of preparation of a comprehensive strategy of long-term provision. The population is ageing and residential long-term care has been one bottleneck in the system, resulting in extensive informal home care provision (Ministry of Health, 2010). Moreover, because of

traditionally long waiting lists for residential long-term care facilities, hospitals offer expensive long-term in-patient care beyond medical necessity (Bryndova *et al.*, 2009). As a result, there are currently two, to some extent overlapping, types of long-term care in place with differing levels of private participation. There are user charges for every day of hospitalisation, while in the social sector the provider can charge up to 85% of the income, *e.g.* pension of the client. Responsibility for long-term care is split between health insurance and social welfare, each falling under a different ministry, and co-ordination between these ministries, sub-national governments, insurers and providers has been an issue. Therefore, a new concept of long-term care is currently under discussion and can draw on experience of other OECD countries (Box 1.6).

Box 1.6. **Long-term health provision in OECD countries**

Population ageing, combined with a trend towards reduced family care in high-income countries and increasing quality expectations, leads to a higher utilisation of long-term formal care in OECD countries. Although the formal sector is still relatively small as a share of GDP across the OECD, its costs are on the rise. In the past decade, long-term care costs have increased in per capita terms at an annual average of over 7% in real terms across 22 OECD countries, which is almost double that of average health spending (OECD, 2010).

Various models are applied, with three broad country clusters identified: a universal coverage model with a single programme; mixed systems and means-tested safety net schemes. As in health care as a whole, what matters is eligibility to coverage, type of benefits provided and the source of financing, as well as cost-sharing arrangements. For example, Germany set up long-term care insurance funds in 1995 that are financed from payroll and income-related contributions. Labour taxation, including social security contributions, is already high in the Czech Republic, so other means of financing would be preferable. Other countries finance long-term care from health insurance or general taxation. While some means-tested approaches have been called into question, in universal schemes, the range of services covered and the level of private participation have been subject to scrutiny. One common trend across the OECD is that countries are shifting in terms of coverage to universal systems, as well as increasing targeting benefits according to income levels and care-need assessments. At the same time, consumer choice and flexibility as to how the benefits are spent have become important policy goals in long-term care.

Source: Help Wanted? Providing and Paying for Long-Term Care, OECD, 2011i.

In response to anecdotal evidence of overpriced and unco-ordinated purchases of technical equipment in hospitals, the authorities plan to publish on the internet all purchases above CZK 50 000 (EUR 2 000) and require ministerial approval for purchases over a million CZK (EUR 40 000). This is welcome, but should not apply only to the providers owned by the ministry, which have a relatively small share of the hospitals sector. Such practice needs to be followed thoroughly and extended to the whole sector as a best practice, while providing benchmarks for purchasing managers. Moreover, new equipment needs and resources in the hospital sector could be pooled nationally and linked to the bed capacity plan, once it is agreed by the stakeholders. Efforts to improve the public procurement practices and their transparency, part of *Anti-corruption Strategy*, should have beneficial effects in the health care sector too.

Improving care management…

Another route for addressing efficiencies in the sector is to manage health care demand by introducing care co-ordination. The Czech system highly values freedom of choice. This has clear benefits but does not necessarily promote efficiency (Pearson, 2011). In the absence of any gate-keeping function the number of consultations in the Czech Republic is high: in 2007 only Japan had a higher number of doctors' consultations per person among the OECD countries (OECD, 2010e). While the Czech authorities see a potential for care-co-ordination by the insurers – once a legislative basis is established – OECD countries apply various forms of gate-keeping, mainly centred on the general physicians (GP), to encourage the appropriate use of health services and to guarantee a good follow-up of patients. Gate-keeping is used in single insurer health systems, but it exists also for instance in the Dutch multi-insurance system. Other countries, including Germany, France and Belgium, have introduced "soft" gate-keeping mechanisms, such as financial incentives for referrals, in which for example the re-imbursement rate for a doctor consultation without a referral is lower, thus effectively increasing the patient's co-payment. Special provisions can remove concerns about limiting access in certain situations. Care management does not need to apply to all specialists. For instance, in France certain specialties, such as ophthalmology and gynaecology, are excluded from the referral obligation (Dourgnon *et al*., 2009).

The current disease burden of the Czech population suggests potential gains can be made from improved care management with focus on prevention. A large share of the disease burden is a result of preventable causes and unhealthy life-styles. Circulatory system disease and malignant neoplasms are two main causes of death (Bryndova *et al.,* 2009). Better chronic disease management is one of recommendations of the NECG's working group on healthcare. Better care management and an increased role of GPs, both in terms of prevention and adequate follow-up, can help to alleviate the disease burden. In theory, prevention should be in the interest of insurers and to some extent this is the case, but it seems that the current risk equalisation in place might not be very conducive to prevention, since insurers receive additional reimbursement for above average cost cases. More broadly, returns on many prevention programmes materialise only in the long term and, since patients can switch insurers, this makes for weaker investment in keeping the insured population base healthy. A gate-keeping system can allow for better prevention programmes management if remuneration of GPs is adequately set, since they would be actively incentivised to keep their patients healthy. For instance, pay-for-performance programmes in the US and the UK indicate that payment policies linked to quality indicators can strongly influence delivery of healthcare (OECD, 2009).

Implementation of centralised ICT systems, including electronic record keeping and sharing, can significantly improve care management (OECD, 2010c). It has been on the agenda for some quite time now in the Czech Republic, but often becomes a victim of inappropriate tender and technical specifications. Recently, a working group on health care of the NECG proposed the wide ranging use of ICT technologies that should bring efficiency savings, for instance the sharing of patients' electronic documentation in an e-Health system as a condition for providers' pay. Such steps are welcome and could go a long way towards addressing existing inefficiencies, in particular duplicate and unnecessary examinations, provided that adequate security of such information sharing and appropriate resources for implementation are ensured.

... and lower pharmaceutical expenditures to bring further efficiency savings

While Czechs currently spend around 1.5% of GDP on pharmaceuticals, which is slightly below the EU average of 1.7% of GDP, average annual spending growth on pharmaceuticals outpaced the growth of total health expenditure in the period of 1998-2008 and in a number of OECD countries it has been the fastest growing item. The authorities are therefore rightly planning additional structural reforms to contain increases in pharmaceutical expenses:

- Prescription by international non-proprietary name (active substance) is an emerging best-practice in reducing pharmaceutical costs. Some countries, such as Spain go even further, making generic prescription mandatory. Generic substitution has been allowed in Czech pharmacies since 2008 and currently the authorities plan to introduce positive lists of pharmaceuticals (list of drugs eligible for reimbursement or public funding), determined by insurers' tenders for wholesale suppliers. Such measures should bring savings in the pharmaceuticals' expenditures. However, to contain also out-of-pocket expenditures of households, mandatory active substance prescription should be introduced, subject to tight medical justification in case of deviation.
- An electronic prescription system is planned to improve monitoring of consumed pharmaceuticals. Estonia implemented e-Prescription last year as part of an overall digitalisation of the health care sector. By obliging the pharmacies to dispense generic drugs, which can be easily verified in such system, the e-Prescription aims to decrease spending on costly pharmaceuticals. The electronic prescription system in Sweden contributed to a reduction in call backs and clarifications by the pharmacies to the physicians, a decrease in pharmacy waiting times and greater convenience for patients in terms of centralised overview of their drugs use. However, successful implementation requires a considerable stakeholder backing, technical and security expertise and needs to be clearly identified as a policy priority (OECD, 2010).

Improving insurance funds' incentives by better risk adjustment and payments system

Among ten European countries with a multi-insurer system, only Germany, the Netherlands, Slovakia and Switzerland have such a wide consumer choice as in the Czech Republic, *i.e.* that population can choose both the insurer and the provider of care. However, unlike in the other countries (except for Slovakia), there is no competition on the premiums and only limited competition in contracting among the providers, although the underlying assumption under a multi-insurer setup is that such competition will be conducive to increasing productivity, reducing costs and improving quality of care. The authorities are therefore striving, despite considerable resistance from various stakeholders, to gradually strengthen competition, while improving regulation aimed at protecting patients' rights.

The experience of other OECD countries shows that regulated competition among insurers does not necessarily promote spending efficiency and achieve cost control (Rosenau *et al.*, 2006). Moreover, Schut (2011) concludes from the reformed Dutch healthcare system that effectiveness of the purchaser competition depend crucially on the success of ongoing efforts to improve performance indicators, product classification and the risk equalisation scheme. Even in the current system, it is important to ensure that proper regulation prevents competition based on risk profile. A risk adjustment mechanism, according to which money is redistributed to the insurers to offset insurance risks, is therefore of crucial importance. The current formula, which covers all revenues

collected, is based on 36 age and gender categories. In addition, there is *ex ante* and partial *ex post* compensation for costly care, amounting to 85% of the costs above the average annual client expenditure. Various studies in other countries have shown that gender and age explain only a very small percentage of expenditure variation (Holly *et al.,* 2004; Beck, 2004) and this is also the case in the Czech Republic, where there have been some signs of risk selection (Chalupka, 2009). Hence, it may be highly profitable for insurers to engage in cream-skimming, *i.e.* competing for members with the best risk profile. The Czech authorities plan to improve the risk adjustment mechanism by introducing pharmaceutical cost groups, which is an indicator for out-patient morbidity based on prior use of prescribed drugs. Such a system is applied for example in the Netherlands, where it is complemented by a diagnosis cost group system. Together these two risk adjusters explain more than 20% of the overall variation in annual spending among individuals, although insurers still have a number of tools for risk selection (OECD, 2011j).

Another example of a more sophisticated risk-adjustment formula is to be found in Germany (see Box 1.7). A system of provider remuneration is important for ensuring cost-reducing competition in contracting health-care services, and in the German system, remuneration is based on morbidity, in order to channel financial resources in a patient-centred way. Diagnosis-related groups (DRGs) have been used since 2004 for in-patient care and standard service volumes are now used for out-patient treatment. The Czech authorities have been implementing DRG for some time now, but so far with limited success, as only 7% of the in-patient care has been contracted this way.

Box 1.7. **Risk-equalisation**

The risk equalisation transfer mechanism was reformed in Germany in 2009 by taking morbidities into account and switching to a prospective system (*i.e.* a payment system under which a provider receives a fixed payment to cover an episode of care during a period of time). In addition to 20 age and 2 gender categories as well as 6 levels of invalidity benefit payments, the burden of 80 diseases is considered, which translates into 106 so-called "hierarchical morbidity groups". Selection criteria for these were cost-intense chronic diseases or diseases with difficult progress causing above average costs. Doctors, rather than insurers, undertake the morbidity coding. Importantly, patient data with morbidity codes is made anonymous before being sent to a Health Fund, which pools the financial resources and from where risk-adjusted payments are made to the insurers.

An initial assessment of the impacts of the new risk equalisation mechanism is positive overall: incentives for risk selection are likely to have been reduced, as the transfer volume across sickness funds changed tremendously. The newly calculated transfer payments for the sick substantially reduce the financial gap in relation to the full costs. As a result, the sick are no longer only "bad risks". However, the healthy are still the most profitable members as standardised expenditure transfers are still above their expected health costs. Preventive health care activities pay off, as an insurance fund gains if a member is healthier than the year before.

Source: OECD Health Review of Switzerland, OECD (2011j) (forthcoming).

There is now a renewed effort to extend DRG use, shifting towards prospective payments. The main instrument the authorities have is a so-called reimbursement directive issued annually by the Ministry, which for 2012 will set DGR as the only form of payment for

acute care. At the same time, there will be a three-year transitional adjustment period to prevent too sudden changes in the level of resources, under which a provider can lose or gain a maximum of 20% compared with the previous year. The authorities see implementation of the DRG and emphasis on more competitive contracting by insurers as a cornerstone for reaping efficiency savings in the system. The DRG payment system should indeed be extended throughout the various forms of health care as it can improve incentives for more efficient care provision. However, efforts should be made to prevent up-coding that happens in DGR-based systems, especially in existing cases of vertical integration or alliances between providers and insurers. Maintaining global budgets will be also important since the experience from other OECD countries shows that introduction of DRG has lead to increase in volumes, as hospitals tried to recoup lower payments per case.

Setting the stage for streamlining the basic benefits package

The authorities plan to exclude some health care services and above-standard services from the basic insurance package as an important step towards clarifying entitlements and containing health-care expenditure increases. Benefits in the Czech system are currently rationed via a negative list of services, a positive list of approved pharmaceuticals and medical and dental aids, a fees schedule (known as list of health services) and an annual negotiation process between the providers and insurers (Bryndova *et al.*, 2009). However, the legislation contains a vague formula about patients having access to the best medical treatment available, so treatments excluded from the positive lists may still be reimbursed depending on individual need. As a result, if an expensive treatment is prescribed, it is covered in full by the public insurance. On the other hand, informal rationing of care and waiting lists are common.

Definition and implementation of the basic benefit package will require systematic analytical work. A recent OECD *Survey* of health care systems shows that most countries guarantee a high level of coverage for acute in-patient care and medical services, as well as for laboratory tests and diagnostic imaging (OECD, 2010d). Dental care and eye products are excluded from the basic benefit package in a number of OECD countries. However, for primary care services, four countries have a level of coverage below 75%: France, Ireland, Korea and New Zealand. In France, the typical share of costs covered for physicians' out-patient services is 60%, while a complementary health insurance, held by 92% of the population, covers virtually all of this cost-sharing. In the medium term, the introduction of partial coverage in the form of standard and above-standard benefits packages in the Czech Republic should also be accompanied by the development of a private health insurance market, to cover private costs for such expenses.

Eventually, since the Czech authorities have opted for a multi-insurer model, there is also a plan to introduce competition on nominal premiums, which has been recommended by the healthcare working group of the NECG. The premiums would consist of two components: a basic one (a percentage of salary) covering public benefits, and a variable one (a fixed nominal fee) covering above-standard services. However, this reform is rather longer term and beyond the horizon of the current government. Moreover, so far there is no clear empirical evidence that competition of this form brings significant and undisputable improvements in terms of patient benefits, efficiency improvements and healthcare cost containment (Roseanu *et al.*, 2006; Frank *et al.*, 2009).

Box 1.8. **Recommendations for improving public spending efficiency**

Strengthening fiscal framework

- Establish the responsibility for government to announce a debt target that should be translated into medium term expenditure ceilings and broken down to individual ministries' targets.
- Adopt an independent fiscal institution to increase the credibility of the existing framework. The institution should assess the budget in light of the cyclical position and medium-term fiscal objectives.

Promoting spending efficiency through budgetary management and control

- Improve transparency of budgetary documentation. Introduce performance oriented budgeting for the state budget, extending such an approach eventually also to sub-central governments. Promote wider use of *ex ante* and *ex post* cost benefit analysis. Include a regular tax expenditures report in the annual draft budget proposal in order to increase transparency and evaluation of public spending.
- Given constitutional independence of the municipalities, further initiatives to foster inter-municipal co-operation and joint provision of services should be actively promoted. Consider introduction of an "internal stability pact" that sets borrowing limits on local budgets. Publish cost and efficiency indicators on sub-central governments and benchmark their performance.
- Implement plans for substantial changes to the public procurement law and establish a central purchasing authority.
- Improve corporate standards and transparency of state owned enterprises, considering partial privatisation and listing, or consolidating all corporate state holdings under one roof with a professional management.

Reforming pension system

- The pace of retirement age increases should be kept in line with changes in life expectancy.
- Consider a centralised clearing house for pension plans to keep the administrative costs down of the proposed defined contribution tier. Make life-cycle investment strategy a default plan for participants. Offer annuities as the default in the pay-out phase. Consider scaling back support for the third pillar.
- Improve financial literacy and awareness of the population. Prepare regular reports on pension prospects to inform the public about their future retirement incomes.

Improving health spending efficiency

- Implement a diagnosis-related group payment system to strengthen cost-consciousness among providers.
- Conduct a national review of in-patient capacity and prepare a national capacity plan that would guide medium-term contracts with providers, as well investments and equipment purchases.
- Introduce compulsory active substances prescription as well as an electronic prescription system to reduce drug expenditures. Stimulate co-ordinated purchases and auctions of drugs and other supplies.
- Introduce soft gate-keeping to improve care management.
- Implement plans for e-Health while ensuring adequate security and resources for implementation.
- Improve risk-adjustment formula among insurers by implementing pharmaceutical drug groups.
- In the medium term, work towards a definition of the basic package of health care paid for by public system, while developing a private insurance market to cover expenditures outside the basic package.

Notes

1. The European Commission is currently updating long-term projections of member states' pension systems. Estimations including the newly legislated changes should be available during the first half of 2012.
2. *Ibid*.
3. OECD DAF model calculations for Insurance and Private Pensions Committee. Contribution and replacement rates when assets are invested in a portfolio comprising 60% equities and 40% fixed income, assuming a nominal rate of return of 7%, a nominal discount rate of 4.5%, and a life expectancy of 20 years at age 65.
4. The European Commission is currently updating long-term projections of member states' pension systems. Estimations including the newly legislated changes should be available during the first half of 2012.

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ANNEX 1.A1

Potential health outcome gains due to efficiency improvements

Amenable mortality		Life expectancy at birth		Life expectancy at 65	
Potential gains, %		Potential gains, years		Potential gains, years	
Hungary	49.5	United States	4.4	Slovak Republic	3.3
United States	39.3	Hungary	4.3	Denmark	2.9
Czech Republic	37.4	Slovak Republic	4.1	Greece	2.7
Slovak Republic	37.0	Denmark	4.1	Hungary	2.6
Denmark	36.3	Greece	3.5	Luxembourg	2.5
Ireland	33.8	Finland	3.5	Ireland	2.4
United Kingdom	33.3	United Kingdom	3.3	Czech Republic	2.4
Germany	30.5	Luxembourg	3.3	United Kingdom	2.4
Portugal	29.8	Ireland	3.1	Netherlands	2.3
Luxembourg	29.4	Belgium	2.8	Finland	2.2
Finland	25.8	Germany	2.7	United States	2.1
Netherlands	24.5	Czech Republic	2.7	Germany	2.0
Austria	23.9	Austria	2.6	Austria	2.0
Spain	21.6	Netherlands	2.6	Sweden	1.9
Poland	19.0	New Zealand	2.3	Norway	1.9
Mexico	18.9	Norway	2.1	Belgium	1.9
Norway	18.7	Canada	2.1	Portugal	1.7
Canada	18.3	Spain	1.9	Italy	1.7
Greece	18.0	Sweden	1.8	New Zealand	1.6
New Zealand	17.6	Poland	1.8	Spain	1.6
Sweden	15.8	Italy	1.8	Canada	1.4
Australia	12.2	Portugal	1.7	Iceland	1.4
Iceland	11.2	Turkey	1.7	Mexico	1.4
Korea	10.7	France	1.6	Poland	1.4
Italy	8.8	Mexico	1.4	Korea	1.2
France	8.6	Japan	1.0	Turkey	1.0
Japan	6.5	Iceland	1.0	France	1.0
Belgium	na	Korea	0.9	Japan	0.8
Switzerland	na	Switzerland	0.9	Switzerland	0.8
Turkey	na	Australia	0.7	Australia	0.8

Note: Potential gains are measured either by the number of years of life that could be saved or by the decrease in amenable mortality rates which could be achieved if efficiency in country i were to be raised to the level implied by the estimated efficiency frontier. Amenable mortality is defined as those deaths that are potentially preventable by timely and effective medical care. Estimates are based on 2007 data.

Source: Joumard I., C. André and C. Nicq (2010), "Health Care Systems: Efficiency and Institutions", *OECD Economics Department Working Papers*, No. 769.

Chapter 2

Improving energy system efficiency

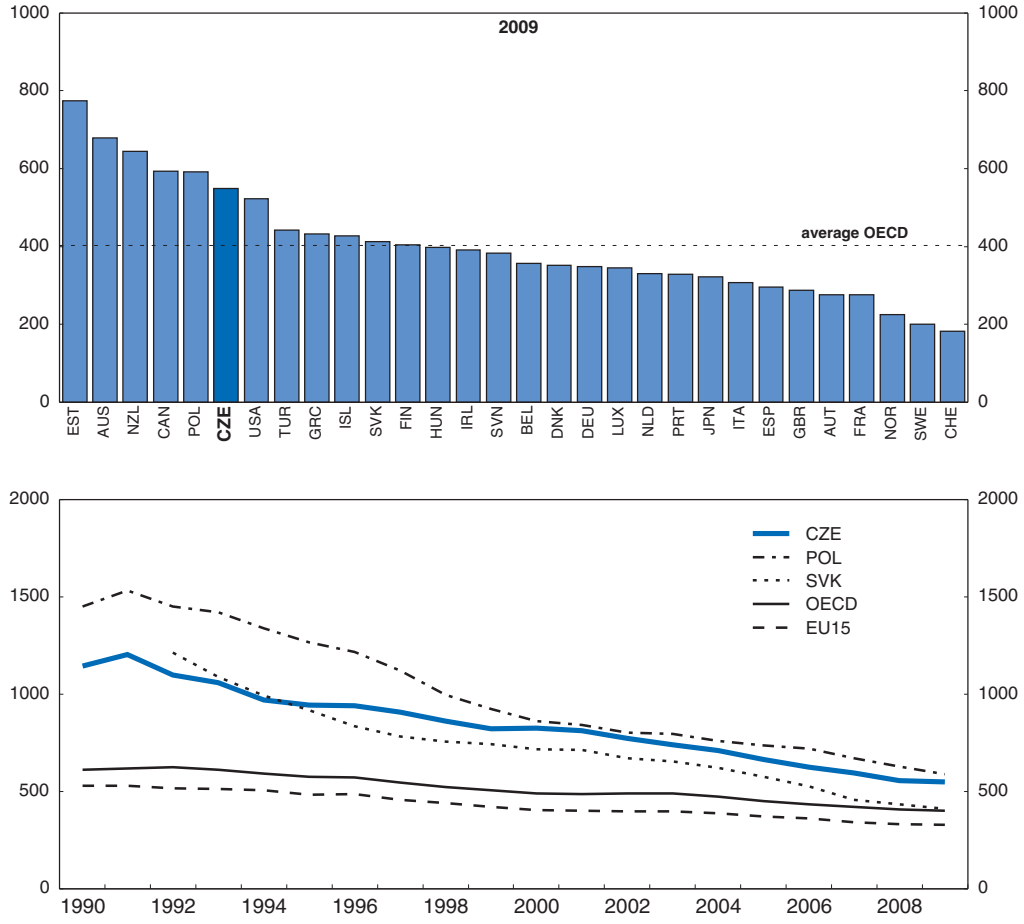
A carbon-intensive energy system in the Czech Republic contributes to one of the highest ratios of greenhouse gas (GHG) emissions in the OECD. While EU emission reduction commitments provide the most visible and binding motivation for changing the way in which the country produces and uses energy, action is also required to improve energy security and public health and to avoid an adverse impact of emission reduction on economic growth and living standards.

Energy system transformation requires ensuring a comprehensive, consistent and stable policy framework with stronger ex ante *and* ex post *evaluation. A single carbon price should be achieved through the Emission Trading System (ETS) and carbon taxation. Excise tax rates on all fossil energy sources and products should be realigned, based on their carbon content and other environmental externalities, notably by increasing the relative taxation of diesel. The authorities should support implementation of carbon taxation at the EU level. Sectoral policies that complement carbon pricing in promoting greener energy sources, energy efficiency and less fuel-intensive transport need to be strengthened. The most important measures include rebalancing support for renewable energy, streamlining energy efficiency support programmes, upgrading the transport infrastructure, increasing the attractiveness of public transport and stimulating the renewal of the road fleet.*

The Czech Republic has one of the highest ratios of greenhouse gas (GHG) emissions per unit of output in the OECD, despite substantial reductions achieved in the last two decades (Figure 2.1), leaving important energy and emission saving opportunities underutilised due to insufficient incentives. This poses a risk to public health and energy security, increases the burden of agreed emission targets and might also mean foregone opportunities for growth. This chapter analyses what policies can improve how the country produces and consumes energy.

Figure 2.1. **Emission intensity is high in the Czech Republic**

Tonnes of CO_2 equivalent per million USD of GDP



Note: Greenhouse gas emissions in physical units (such as tonnes) are converted to CO_2 equivalent by multiplying the number of physical units by the global warming potential conversion factor for a given emission and country. GDP used is in 2005 constant prices at purchasing power parity. OECD is the average of countries in the top panel.

Source: United Nations Framework Convention on Climate Change (UNFCCC); OECD, *National Accounts Database*.

StatLink http://dx.doi.org/10.1787/888932531860

The first section considers two key sources of high emission intensity of the Czech economy, namely an unfavourable fuel mix and high energy intensity. The second section analyses the motivation for policy action, which is not limited to EU emission reduction objectives, but also includes energy security and public health considerations, it argues that negative economic and social impacts seem manageable. The third section outlines the required comprehensive policy framework, based on carbon pricing achieved through the Emission Trading System (ETS) and carbon taxation. The fourth section discusses the sectoral policies to complement carbon pricing and further promote greener energy sources, energy efficiency and less fuel-intensive transport.

High emissions are due to high energy intensity and an unfavourable fuel mix

GHG emissions in the Czech Republic declined by more than 30% between 1990 and 2009, well above the 8% Kyoto emission reduction target. The largest absolute emission reductions took place in the early 1990s, but the whole period was characterised by profound changes in the energy system due to stricter environmental legislation and the post-transition restructuring of the economy, based on an increasing share of services in GDP, a switch to less emitting energy sources, the closure of many energy wasting and inefficient manufacturing units, the more efficient allocation of energy resources and the introduction of new production technologies. This transformation is however far from complete, as evidenced by still high emission intensity.

High GHG emissions in the Czech Republic result from both a high energy intensity of economic activity and an unfavourable energy mix – two fundamental characteristics of the Czech energy system (Table 2.1). Despite steady improvement, energy intensity, which declined by 2.5% on average between 1990 and 2008, remains higher than in Poland and Slovakia, and significantly above the OECD and the EU averages. This is explained by structural features, including high share of energy-intensive sectors (Figure 2.2), outdated power stations and heat supply units, road-based transport, and the large stock of relatively inefficient buildings. The unfavourable energy mix also contributes strongly to emission intensity (Figure 2.3). Emission-intensive coal accounted for more than 40% of total primary energy supply in 2009, oil for 21% and gas for 16%. While the share of nuclear energy was relatively high at 16%, renewable energy remained underdeveloped at 6%, although its share has recently increased. As a result, CO_2 emissions per kWh produced from different energy sources are substantially higher than OECD and EU averages, although lower than in nuclear-free Poland.

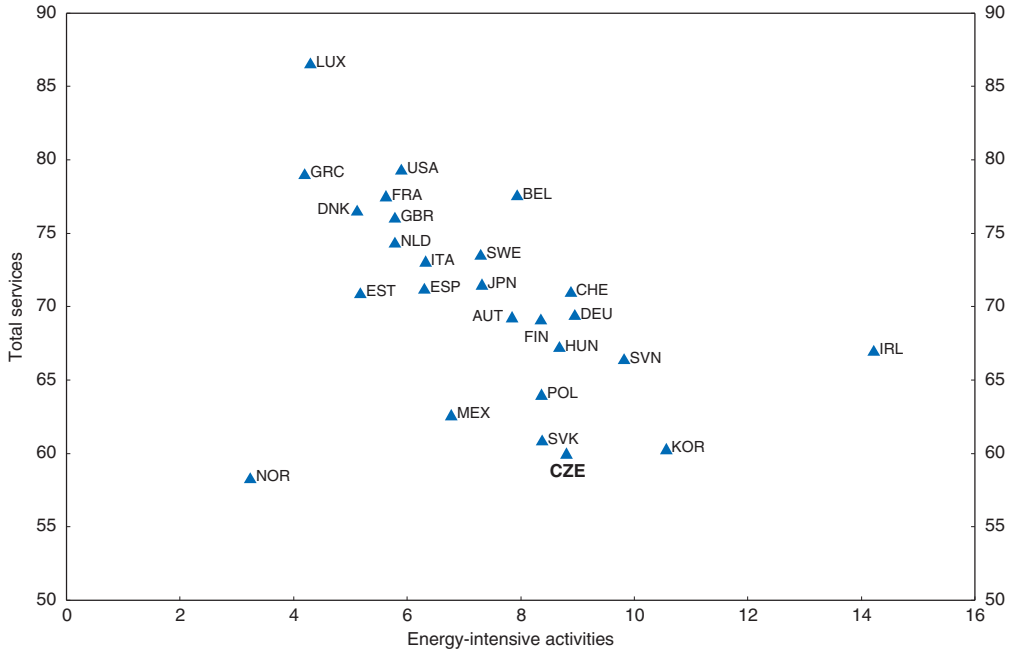
Table 2.1. **Decomposition of GHG emission levels in 2009**

	GHG/GDP	Energy consumption /GDP	GHG/energy consumption
Poland	590.9	100.8	5.9
Czech Republic	**549.3**	**106.4**	**5.2**
OECD average	424.1	99.7	4.3
Slovakia	412.5	102.9	4.0
Hungary	398.0	106.5	3.7
Germany	349.0	85.0	4.1
EU27 average	340.5	85.2	4.0
Austria	276.0	90.6	3.0

Note: GHG emissions/GDP = (GHG emissions/energy) × (Energy/GDP). GDP is in thousand 2005 USD using PPP exchange rates, GHG in Mt CO_2 equivalent and energy consumption in ktoe.
Source: IEA and OECD calculations.

Figure 2.2. **Energy-intensive activities play an important role**

% of total value-added, 2009 or latest available



Note: Energy-intensive activities refer to pulp/paper, chemicals, minerals and metals (ISIC Rev. 3, codes 21 to 28); services are codes 50 to 99.

Source: OECD, *STAN Database*.

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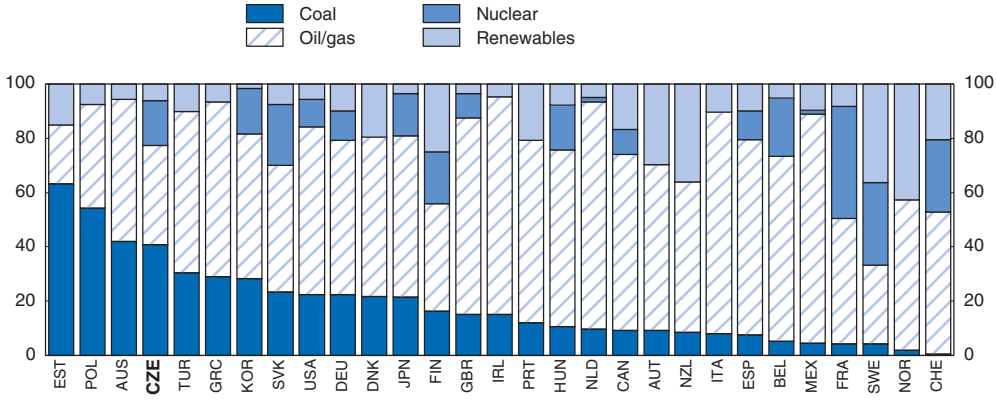
Figure 2.3. **Share of coal in energy supply is high**

Distribution of primary energy supply, 2009, %



Note: Renewables are hydro, geothermal, solar/wind/other and combustible renewables and waste.

Source: OECD/IEA, *Energy Balances of OECD Countries* (2011 edition) and *OECD Dotstat Database*.

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Energy system transformation is needed

While EU emission reduction commitments provide the most visible and binding motivation for changing the way in which the Czech Republic produces and uses energy, both energy security and public health considerations point to the need for a more efficient energy system. At the same time, improvements in energy efficiency should ensure that

the impact of emission reduction commitments do not have an adverse impact on economic growth and living standards.

Meeting EU emission objectives will be challenging

While the Kyoto targets will be met without additional measures, the EU Energy and Climate Package agreed in December 2008 sets more ambitious objectives to be achieved by 2020. Specifically, this legislation requires the Czech Republic to:

- implement the third phase of EU Emissions Trading Scheme (ETS), which covers large installations in power generation and other industries (while an EU-wide cap for ETS emissions corresponds to a 21% emission reduction; the size of reduction at Czech installations will be determined through the ETS market mechanism and is likely to be higher than EU-wide cap due to the relatively low cost of emission reduction – see below);
- limit increases in its GHG emissions to 9% in the sectors not covered by the ETS, including transport, buildings, waste management, agriculture and small industrial installations;
- increase the share of renewable energy in final energy consumption to 13%, including a specific 10% target in the transport sector;
- achieve a national indicative target consistent with the 20% improvement in energy efficiency at the EU level (the European Commission might propose binding national targets following a review planned for 2013/14).

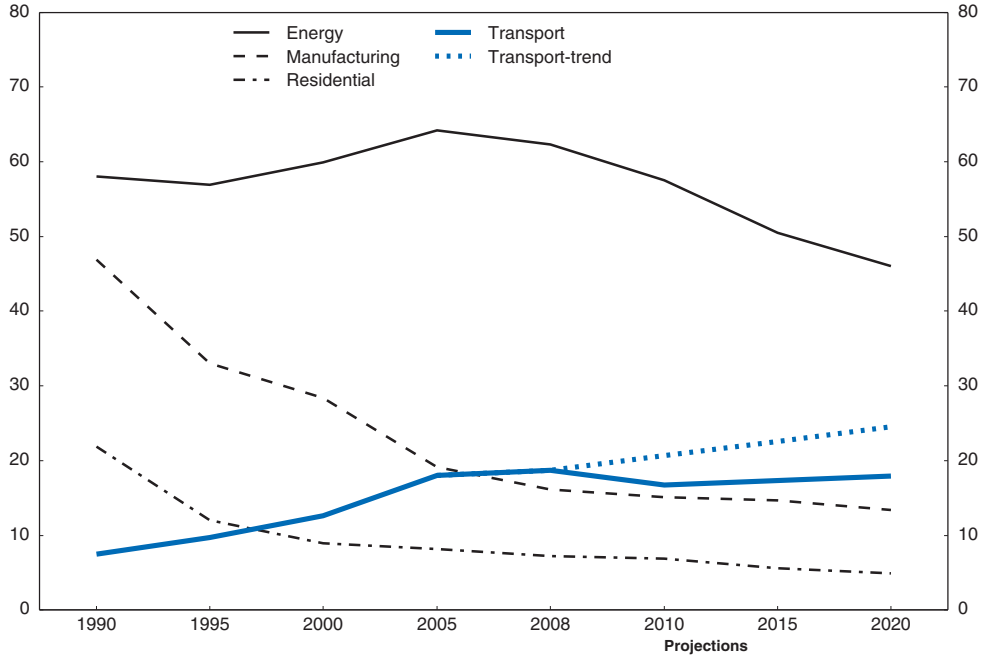
Meeting the EU objectives will be challenging. The largest emissions decline is required in large energy and industrial installations within the framework of the ETS (Figure 2.4). The decline requires a comprehensive transformation of the Czech energy system, embracing energy efficiency improvements across all sectors of the economy to reduce overall energy needs, and a substantial shift in the fuel mix towards greener energy sources and technologies. Neither of these changes will happen without further co-ordinated policy intervention, so that while the ETS cap will enforce compliance with the emission target for large installations, the design of national policy will determine its broader economic cost. Meeting the non-ETS emission objective might also prove challenging, as emissions in the transport sector continue to increase rapidly, when adjusted for cyclical variation.

At the same time, opportunities for economically profitable abatement in the currently inefficient energy system are abundant, diverse and spread over many sectors. The *National Energy Efficiency Action Plan* sets out a national energy savings target of 19.8 GWh or 9% in 2016 in relation to average energy consumption in 2000-06, with approximately 30% of expected savings in buildings and a quarter in the industrial and transport sectors. According to one study, of an estimated 16 Mt of economically profitable CO_2 abatement potential, buildings could account for roughly half and transport and industry for a quarter each (McKinsey and Co., 2008). Some of the most important items are insulating buildings, using more energy efficient lightening and driving more fuel-efficient cars. Establishing framework conditions which provide incentives to overcome obstacles to economically profitable abatement opportunities is crucial for minimising the economic cost of meeting environmental objectives.

Finally, meeting the objective of renewable energy sources and biofuels would be a costly element of energy system transformation, as the Czech Republic has only limited potential for growth of renewable energy generation, due to unfavourable sunshine, wind and hydropower conditions, while large-scale subsidised use of biomass and biogas for

Figure 2.4. **GHG emission from selected sectors: past trends and national projections**

Mt of CO_2 equivalent



Note: Greenhouse gas (GHG) emissions in physical units (such as grammes) are converted to CO_2 equivalent by multiplying the number of physical units by the global warming potential conversion factor for a given emission and country. One Mt = one million tonnes. Manufacturing includes construction.

Source: Czech government, *Reporting of Policies and Measures under Article 3(2) of Decision 280/2004/EC*, March 2011.

StatLink http://dx.doi.org/10.1787/888932531917

energy generation poses a risk to other sectors of the economy dependent on the same raw materials (IEA, 2010).

Energy security will require improvements in energy system efficiency

Energy security concerns are another important motivation for designing a transformation strategy towards a low-emission energy system, as reflected in the draft State Energy Policy. While coal is produced domestically, apart from its negative environmental effects, reserves are diminishing and production cannot cover demand in the long run. Decisions about the share of coal in domestic energy use, its export potential and the expansion of mining sites are long overdue, and making them now would remove existing uncertainty at affected municipalities and companies. At the same time, the average age of coal-fired power plants, which accounted for 61% of electricity generation in 2009, was 50 years in 2009, making them among the least energy-efficient in OECD countries, and 4.7 GW out of 10.7 GW total coal-fired power plant installed capacity will be decommissioned already before 2020 (IEA, 2010). This provides an opportunity for a strategic switch to low-emission sources and technologies. Several options being considered by the authorities would improve energy security and lead to emission reductions.

- An improvement in energy efficiency that reduces domestic demand for energy sources is the least expensive way to enhance energy security and cut emissions.

- Expanding nuclear capacity, while ensuring strict safety regulation and standards, is an important strategic option. Although the switch to nuclear energy is unlikely to contribute to 2020 abatement objectives given very long lead times, it would be essential in the view of the authorities for long-term energy security and low-cost transition to low-emission economy. However, full lifecycle costs should be considered, taking into account all externalities of this option.
- Continued diversification of gas supplies and a strengthening of the regional gas market by enhancing cross-border gas transmission infrastructure will be essential in order to enhance energy security, during the shift from coal to less emission-intensive gas.
- Integrating the electricity market with other EU countries, which is an important element of energy security by broadening potential sources of energy supplies, should be deepened further by stepping up the contribution of the Czech regulators and transmission system operator to market coupling and the harmonisation of guidelines and network codes.
- An increase in competition at the generation level (where CEZ has a more than 70% market share), coupled with higher and more stable ETS carbon prices, would help to minimise inefficiency and losses in existing plants, reducing overall fuel needs.
- A higher share of domestically produced renewable energy would increase energy security and reduce emissions, but would entail relatively high costs.

Reflecting these considerations, the authorities are targeting a substantial change in the fuel mix. According to the most recent available draft of the State Energy Policy, the share of coal in Total Primary Energy Supply (TPES) would fall from 40% in 2009 to 30-32% by 2030, oil and other liquid fuels would fall from 21% to 11-12%, while the share of nuclear energy would rise from 16% to 20-22% and renewable sources (RES) from 6% to 15-16%. The share of gas would remain relatively stable at 20-22 %. These targets are consistent with the indicative target for maximum dependence on energy imports of 50% in 2020 and 60% in 2030, compared with at 45% in 2010. At the same time, these targets would allow the necessary reduction of emissions from installations covered by ETS to be achieved.

Energy system transformation can improve public health

Energy system transformation would have a positive public health impact. Burning fossil fuels is not only a primary driver of GHG emissions, but is also linked to local air pollution, leading to problems such as smog, acid rain and indoor air pollution with a significant impact on human health, ecosystems, buildings and crops (Bollen *et al.*, 2009). Among local air pollutants, particulate matter (PM), which travels through the air suspended in a gaseous form, has the largest negative impact, and it is widely recognised that small PM can cause heart and lung diseases. A significant share of the Czech population, between 15 and 67% dependent on climatic conditions and emission level during a given year, live in areas where the concentration of small PM exceeds EU limits. The problem is particularly acute in the Moravia-Silesian, Central Bohemian and Ustecky regions. Furthermore, in the case of the transport sector, negative local externalities include health-damaging noise pollution and accidents (Persson and Song, 2010). GHG emission reduction thus has important co-benefits in terms of public health improvements.

Negative economic and social impacts can be controlled

Manufacturing plays an important role in the economy and contributes strongly to economic growth, exports, investment and employment. It is also relatively energy

intensive, and its competitiveness is thus sensitive to increases in energy prices which will be linked to emission abatement (Czech Industry and Transport Union, 2008). The risk of carbon leakage due to European abatement commitments is therefore among key concerns of the authorities. However, there are factors that mitigate the risk to the Czech economy. First, other EU countries face similar environmental challenges, including coal-dependent regional peers that are often viewed as direct competitors in terms of foreign direct investments, notably Poland. Second, leakage outside the EU is also likely to be limited for the EU on average, although pressure on individual companies could be significant. OECD model-based calculations suggest that the output losses in energy-intensive European industries (chemicals, non-ferrous metals, fabricated metal products, iron and steel, pulp and paper, and non-metallic mineral products) due to the EU unilateral carbon abatement would not exceed 1% by 2020, although estimates vary greatly (Burniaux *et al.*, 2010). Third, the provisions in current EU legislation should mitigate the risk for a relatively long list of industries that are most vulnerable to leakage. Nevertheless, the uncertainty about the size of leakage is large. To minimise the existing risk, the authorities need to concentrate on policies to reduce the sensitivity to energy prices through the more efficient use of energy and materials. Efficiency improvement is therefore not only essential for lowering emissions and energy security but also crucial for the growth and competitiveness of the Czech economy, as recognised by the 2011 *National Reform Programme*.

Environmental objectives can also affect social objectives. First, energy prices are likely to increase during the third phase of the ETS, and this may call for additional income transfers to low-income households. Second, the Czech Republic has the OECD's highest share of employment in polluting sectors (OECD, 2011b) and the issue of displaced workers is likely to be especially severe, calling for a set of labour market and training policies to promote re-employment prospects. Third, policy also needs to ensure that emission objectives do not translate into undue constraints on growth in living standards. For example, the higher emissions from road transport reflect increasing mobility and household energy consumption reflect an increasing number of domestic appliances. Promoting less emission-intensive transport modes or more energy efficient equipment can reduce emission growth linked to improving living standards.

A comprehensive policy framework needs to be based on carbon pricing

The policy framework should lead to a cost-efficient and growth-friendly energy system transformation aligned with EU environmental objectives. Market based instruments, such as carbon pricing should play a central role in the overall framework, while non-market based instruments should be used sparingly in case of well-identified market failures. Such a framework should be comprehensive, stable and consistent, and have carbon pricing at its core, providing appropriate incentives for emission reductions (de Serres *et al.*, 2010). It should be based on an efficiently implemented ETS and carbon taxation for non-ETS sectors. So far neither policy has played a sufficiently important role. In its first two phases of implementation, ETS did not provide a clear price signal because of high price volatility of allowances due to system design problems and an over-allocation of allowances (Lawson, 2010). Energy taxation in the Czech Republic is currently not consistent with a single carbon price (as discussed below). An important benefit of the policy framework based on carbon pricing would be that the revenues from ETS auctions and carbon taxation will generate additional fiscal revenues. The earmarking of revenues from the ETS and carbon taxation should be avoided, in order to allow the government

flexibility in financing policies with the highest marginal benefit across the full policy spectrum. However, according to EU legislation, 50% of revenues from ETS auctions must be used for measures related to climate change.

Consistency, stability and cost-effectiveness of the framework are essential

The shift towards a more efficient energy system will require large investments, so that a stable long-term policy outlook is essential (de Serres *et al.*, 2010). Uncertainties regarding the degree of commitment surrounding climate policy and the instruments that generate a long-term carbon price path might substantially increase the cost of transformation, making it difficult for the private sector to finance investments in clean technologies even if they generate net medium or long-term benefits. This would lead to increased demand pressures for government-run support programmes. Broad political consensus and commitment to long-term policy goals and instruments at the national level are therefore necessary. For similar reasons, full consistency is essential among key strategic policies (Box 2.1), including the forthcoming strategies on State Energy Policy and State Environmental Policy. The improving co-ordination among key ministries offers an opportunity for comprehensively addressing the interactions between environmental and other national priorities.

Box 2.1. **Consistency of strategic documents has improved**

The sheer number of strategic documents relating to emissions reduction might lead to consistency problems. These documents include the National Reform Programme, Competitiveness Strategy, National Action Plan on Energy Efficiency, State Energy Policy, National Programme on Energy Management and Use of Renewable Energy Sources, State Environmental Policy, National Programme to Abate the Climate Change Impacts, Climate Protection Policy, National Programme for the Reduction of Emissions, Strategic Framework for Sustainable Development, Programme of Support to Environmental Technologies, Framework of Programmes on Sustainable Consumption and Production, State Transport Policy, and several other sectoral strategies with a strong environmental dimension.

Until recently, ensuring consistency was difficult, as strategic documents were prepared on a sectoral basis and updated at different times, while inter-ministerial co-ordination has not always been adequate. In particular, the co-ordination between the Ministry of Environment and the Ministry of Industry of Trade reflected differences in the prioritisation of environmental issues. Fortunately, this co-ordination has improved significantly more recently, as reflected in the current work on a revised set of key strategic documents.

Interactions among different instruments that address the same environmental objective – such as those between the ETS and carbon taxation; other environmental taxes and subsidies; regulations and standards, investment support and feed-in tariffs – should be better addressed when designing the policy mix. While the ETS directly affects large energy and industry installation and carbon taxation is directed at non-ETS sectors, the impacts of these two key instruments overlap significantly. Most importantly, higher electricity and district heating prices due to ETS affect energy efficiency in non-ETS sectors. Interactions between ETS and the carbon taxation determine the attractiveness of local energy generation. Instruments beyond ETS and carbon taxation should be used to address specifically agreed objectives, such as the share of renewables in the total energy

mix, market failures, such as in buildings, and reflect the special role of public sector service provision, as in transport.

All policy instruments should be regularly evaluated so that differences in the marginal cost of emission abatement become visible and appropriate adjustments can be undertaken by policy makers, even though abetment costs are likely to be higher in some specific areas, notably renewable energy and transport. Increasing the use of cost-benefit analysis and strengthening the effectiveness of environmental impact assessments would be important steps in this direction. All environmentally oriented public spending should be subject to similar *ex ante*, on-going and *ex post* evaluations, based on a common methodology. Extending and publishing systematic *ex post* evaluations represent a means to improve *ex ante* assessments and may improve their credibility (Persson and Song, 2010). Avoiding overlaps and gaps between different support mechanisms can be achieved by merging instruments or clearly differentiating them, notwithstanding their source of financing, whether from EU funds, the national budget, the Environmental Fund or proceeds from sales of Kyoto allowances.

ETS will be at the centre of energy system transformation

The efficient implementation of the third phase of the ETS will provide an opportunity for energy system transformation which minimises the economic cost of emission abatement. Unlike in the first and the second ETS phases, when EU countries submitted national allocation plans that eventually determined the number of free allowances for each installation in their country, allowances will be increasingly allocated through auctioning in the third ETS period. Together with longer trading periods and an EU-wide emission cap, corresponding to a 21% reduction in 2020 compared to 2005, this should lead to a higher and more stable price of allowances, providing stronger incentives for abatement. The distribution of the annually declining amount of auctionable allowances to EU members will be based on emissions in the first ETS phase and the Czech Republic would also receive additional allowances as part of the redistributive mechanism for lower-income countries that reduce emissions by more than 20% compared with Kyoto reference year. The Czech Republic therefore has the possibility of receiving substantial fiscal revenues from the third phase of the ETS. Also, windfall gains linked to the remaining free allocation under the second phase of the ETS should be systematically taxed away.

The Czech Republic will be responsible for the technical implementation of auctions of allocated allowances. The incident of the theft of ETS allowance from the trading platform in January 2011 illustrated the potential risks of security breaches. Given the economies of scale in implementing infrastructure and platforms, it seems advantageous to develop auctioning facilities in co-operation with other countries, leading to either regional or EU-wide solutions, as it is currently planned by the authorities.

Free allocation of ETS permits should be carefully monitored and evaluated

The Czech Republic is among the countries that are allowed an optional and temporary derogation from the rule that no allowances are to be allocated free of charge to power plants after 2012. Under the derogation, the auctioning rate in 2013 is to be at least 30% of emissions in the first ETS period, and has to increase gradually to 100% by 2020. The authorities decided to use the derogation on the assumption that providing free permits constitutes an efficient mechanism for supporting energy system transformation. This is because the scale of investment in the energygeneration sector, a very long-term horizon

and the energy-security dimensions of fuel-mix decisions require, according to authorities, direct policy intervention. Free permits, which involve the use of companies' own funds for abatement projects, are seen by the authorities as more effective than funds drawn from the state budget and distributed through operational or state programmes. In 2010, companies wishing to take advantage of the derogation had to submit their investment plans and projects for reducing the negative environmental impact of equipment and technology. Czech installations have already submitted investment plans which could lead to abatement of about 15 million tonnes of CO_2 per year. Each plan was evaluated, and only firms with approved plans will be allowed free permits. The authorities are also considering using part of state revenues from permit auctioning to provide further support to industry. This support could be administered by a specialised fund and directed to projects aiming at effective energy resource management and environmental protection.

Granting free allowances would imply large costs for governments due to foregone fiscal revenues estimated at EUR 1.9 billion (or almost 1.2% of GDP in 2011) cumulatively between 2013 and 2020, according to the national authorities. The authorities should therefore carefully monitor and evaluate the implementation of the investment programmes. To inform future decisions, the efficiency of the free distribution of permits should be evaluated as most of the highly concentrated energy-generation sector in the Czech Republic enjoys high profitability and a good access to credit markets. Moreover, from the point of view of emission reductions, firms are likely to treat the opportunity cost of free allowances, which drives their economic decisions, in the same way as purchased allowances. The reduction of emissions would therefore be similar (this is determined by the number of allowances) and increases of energy prices – which in integrated EU electricity market would be increasingly determined at the European level – would still be passed on to final users.

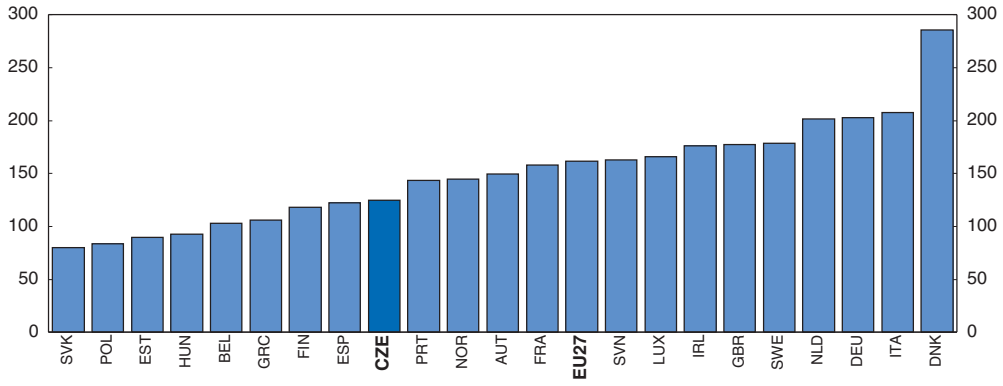
The case for investment support could be stronger in the case of the district heating sector. Large investments are needed because of the upcoming shortage of brown coal, while regulated heat prices limit the possibility to pass on higher costs to consumers. However, the profitability and financial capabilities of the district heating sector would be increased significantly if heating prices were increased, while the existing well-developed system of social assistance could be appropriately expanded to mitigate the poverty impact. Such a change would increase the overall efficiency of the system and prompt energy savings in buildings. The risk of consumers switching to less efficient local heat sources with worse environmental parameters would be mitigated if current exemptions in fossil fuel taxation were phased out, as argued below.

Carbon taxation needs to be harmonised

Energy taxation in the Czech Republic is currently not consistent with a single carbon price, so it cannot effectively complement ETS in providing adequate price incentives for energy system transformation. Carbon emission taxation should also minimise the difference in marginal cost of abatements between ETS and non-ETS sectors in order to level the playing field between large installations that are covered by the ETS and small installations that are exempted. This is particularly important in heating to avoid perverse incentives for switching from correctly priced district heating towards emission-intensive and incorrectly priced local heating sources. Again, energy taxation in its current form does not prevent such distortions. At the same time there is a potential in the Czech Republic to generate additional fiscal revenues from rationalising energy taxation (Figure 2.5), potentially replacing some more distortionary taxes.

Figure 2.5. **Implicit tax rate on energy is moderate**

EUR/tonnes of oil equivalent consumed, 2009 or latest available



Note: The implicit tax rate is measured as the ratio of energy tax revenues (thousand EUR) to final energy consumption (thousands tonnes of oil equivalent).

Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888932531936

Existing excise taxes implicitly provide a carbon price that varies considerably across different fossil fuels (Table 2.2). While taxation of energy products reflects considerations beyond environmental externalities, notably fiscal objectives that call for higher taxation of consumption of less price-sensitive products, some excise rate disparities might lead to perverse incentives. In particular, diesel is favoured compared to gasoline, as in several other EU countries (Egert, 2011). Taking non-GHG externalities into account (such as local air pollution noise, congestion and accidents) the implicit carbon price is negative in the case of diesel (and probably also for LPG – liquefied petroleum gas), even though uncertainty about the size of externalities is large (Persson and Song, 2010). An increase in diesel taxation is therefore justified. Other fossil energy sources in the Czech Republic are taxed at extremely low rates, meaning that many cheap abatement opportunities are potentially wasted as adequate price signals are not provided. Excise tax rates should be therefore realigned to provide a consistent carbon price. The adoption of the revised EU Energy Taxation Directive (Box 2.2) should limit leakage of fiscal revenues to neighbouring countries compared with a unilateral excise increase and the Czech government should therefore support the revised Directive.

Table 2.2. **Implicit taxes on fossil energy sources, EUR for kg of CO_2**

Petrol	Diesel	LPG	Natural gas (households)	Natural gas (industry)	Light fuel oil	Coal
Implicit taxes (EUR/[kg of CO_2])						
227	160	50	0	6	10	2
Implicit taxes if the costs of local negative externalities are taken into consideration (EUR/[kg of CO_2])						
49	–62	n.a.	n.a.	n.a.	n.a.	n.a.

Note: The implied carbon price is computed as the amount of the tax levied per litre times the amount (litres) of fuel that needs to be burnt to reach a CO_2 emission of one tonne. The external costs of local air pollution are based on CE DELFT (2008, *Handbook on Estimation of External Costs in the Transport Sector*), and the external costs of noise pollution, accidents and congestion are taken from Persson and Song (2010).

Source: Energy Regulatory Office and International Energy Agency; OECD calculations based on Egert (2011).

Box 2.2. **EU Energy Taxation Directive**

The Czech government should support the recently proposed amendment to EU Energy Taxation Directive. The proposed changes will not only contribute to improving the tax incentives in the Czech Republic, but will also minimise competitiveness risks related with meeting the binding EU non-ETS emission objective. The main elements of the European Commission's proposal include:

- Taxes on motor fuels, heating fuels and electricity will be based on the energy content of the product and the amount of CO_2 it emits. More polluting products will be taxed more heavily, and the use of "cleaner" energy will be promoted.
- The EU will set a minimum rate for taxes based on energy and CO_2 content. To ensure fair treatment, the minimum rate will be the same for competing products (*e.g.* for all heating fuels or all motor fuels). The size of minimum tax is also expected to follow the market price of CO_2. Moreover, actual tax rates – set by national governments – will have to be the same for competing products.
- CO_2-related taxes will only apply to industrial plants not covered by the EU emissions trading scheme – so that all economic sectors share the burden of reducing CO_2 emissions fairly, either via the carbon tax in the Energy Taxation Directive or the emissions trading scheme.

According to the European Commission's estimate, the amended energy taxation could cut non-ETS taxation by 4% at the EU level, representing more than one third of total reduction required in non-ETS sectors. Provided, that additional revenues are recycled through reduced labour taxation, the amendment should have a positive impact on real household incomes in the EU by 0.3% by 2020.

Source: European Commission (2011).

Several tax reliefs distort the existing energy taxation system and should be phased-out. Among them, gas used for heating by households is exempted from excises, providing a wrong price signal that encourages energy use. It also encourages the switching out of district heating, just as a very low tax rate on coal encourages the use of coal. The taxation of heating fuel should therefore be rationalised, with excise rates increased according to the environmental externality. While increased prices could lead to social hardship, this should be managed by existing social assistance system. The current general exemption in excise taxes for fuels used in the production of electricity is appropriate for large installations covered by the ETS, but not for small installations that are not. Removal of the exemption for small installations is necessary to ensure a level playing field between installations of various size. There are exceptions for fuels for industrial processes, notably metallurgical processes and mineralogical processes, and the rationale for these exceptions should be reviewed, even if they are permitted under EU directive. The exemption for fuel for water navigation is not the most efficient way of promoting this mode of transport, as it reduces incentives for efficiency gains and therefore should be better replaced by direct subsidies. The same is true for the exemption for electricity used by railway, trams and trolley-buses. For similar reasons, the exemption for fuel losses during transportation, distribution and storage might lead to insufficient incentive for preventing such losses, particularly beyond standard norms.

Addition sectoral policies should be strengthened

While ETS and carbon taxation will play the central role in the overall policy framework, incentives delivered through carbon pricing will not be sufficient to drive energy system transformation in all areas, so that complementary instruments are needed (de Serres *et al.*, 2010). For example, the agreed objective for the share of renewable energy will not be met through the implementation of the ETS alone, owing to the cost of renewable energy. Even when price incentives are correct, market failures tend to prevent efficiency gains being reaped in residential buildings, and to lesser degree the SME sector. The role of infrastructure and public sector service provision in transport, as well as local externalities, justify additional policies. The following section discusses how to strengthen sectoral policies that complement carbon pricing.

Rebalancing renewable energy support, grid improvements and more competition

Support for renewable sources is provided mainly to meet the EU renewable share objective, which would not be ensured by carbon pricing itself. The Czech Republic is legally obliged to reach the target of 13% for renewable energy in its total energy mix by 2020. The 2010 share of renewable electrical energy in total gross electricity production reached 8.4%, a doubling compared with 2004. However, one fifth of the increase was due to a solar panel boom which absorbed substantial resources that could have been used to promote more economical sources such as biomass, biogas and wind (IEA, 2010). The high rate of support, primarily through feed-in tariffs, for new solar panel installations was not adjusted quickly enough when investment prices fell rapidly. It resulted in excessive returns, an explosion of solar panel investment in 2009 and 2010 and high overall implicit subsidies. This generated a strong upward pressure on electricity prices because of poor regulatory design, which allowed electricity retailers to recover high feed-in prices from final customers. Consequently, while solar panel power plants will produce one quarter of renewable energy in 2011, they will be responsible for three quarters of the financial burden of renewable energy generation (Box 2.3). Although it is important to allow more flexibility in setting feed-in tariffs in the future for all types of renewable energy sources, uncertainty should be avoided by setting clear rules regarding future changes in feed-in prices and volume constraints. Germany provides a good example of a policy framework allowing tariffs to be adjusted on a regular basis: feed-in tariffs decline depending on the installed capacity, with digression rates adjusted twice a year to smooth adjustments.

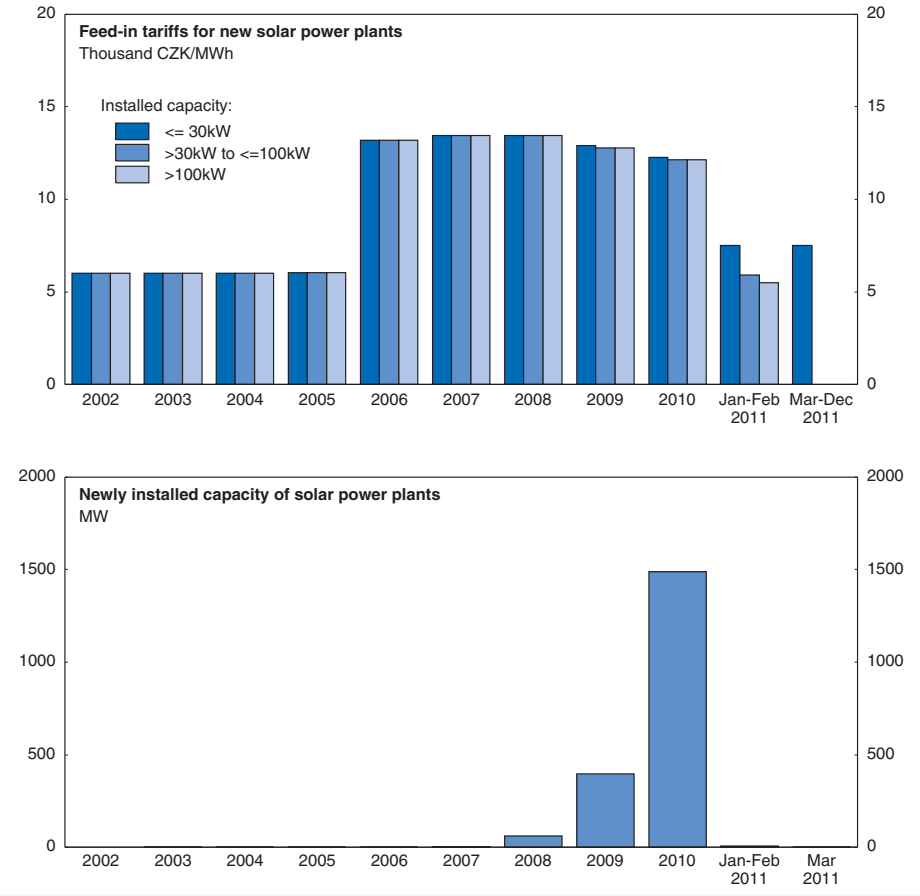
The structure of feed-in tariffs reveals highly differentiated GHG abatement costs linked to different technologies, and particularly high costs in case of solar panel energy (Table 2.3). The support should therefore be redesigned to provide support in a technologically neutral way by lowering the dispersion in feed-in tariffs, so as to equalise marginal abatement costs and thus promote the highest-potential and lowest-cost technologies. While subsidies for solar panel and other advanced technologies might lead to a learning curve effect and falling costs, the Czech Republic should not be so ambitious as to support expensive technologies before they become commercially viable. Setting targets for specific technologies should therefore be avoided. Moreover, tradable renewable certificates could be considered as a replacement for feed-in tariffs. Under such a scheme, electricity retailers would be required to purchase a minimum, rising proportion of their electricity from renewable generators in the form of tradable renewable energy certificates. The price of a certificate is then determined in the market and depends on the cost difference between renewable energy production and the average wholesale price of

Box 2.3. **The solar panel boom**

The grounds for the solar panel boom were laid by the Act on Promotion of Use of Renewable Sources by which EU Directive 2001/77/EC was transposed into Czech legislation. Under this act, producers of renewable energy were entitled to feed-in prices, *i.e.* fixed purchase prices for the 20 year lifetime of a power plant by the Energy Regulatory Office (ERO) so that a 15 year repayment period was achieved. Distributors were remunerated for additional costs due to purchase requirements by a fee for renewable energy sources reflected in electricity price and regulated by the ERO.

Fatally, the ERO was not allowed to lower feed-in tariffs for new power plants by more than 5 per cent a year, even as rapidly falling prices of solar panels made investments in solar power plants increasingly profitable, especially since feed-in tariff were doubled in 2006. As a result, the Czech Republic experienced a spectacular boom in investments in solar power plants in 2009 and especially 2010 (Figure 2.6). According to EPIA (2011) the Czech Republic was the third largest solar market worldwide in terms of newly installed capacity in 2010 and capacity is now the second largest in the world on per capita basis. As a consequence, a renewable fee and hence energy prices for consumers have started to rise considerably. In January 2011, the fee for renewable energy was expected to increase from 166 CZK/MWh to 578 CZK/MWh leading to increase of consumer prices of electricity by 11.2%.

Figure 2.6. **Feed-in tariffs drove the solar panel boom**



Note: Capacity of solar power points is 0 or close to, for years other than 2008 to 2010. Feed-in tariffs for Mar.-Dec. 2011 are zero for other capacities.

Source: Energy Regulatory Office, Czech Republic.

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Box 2.3. **The solar panel boom** *(cont.)*

To prevent a further explosion of investments and large increases in electricity prices that could pose a financial burden to consumers and undermine economic competitiveness, several emergency measures were adopted. The ERO was given the right to decrease feed-in tariffs by more than 5% a year when the expected investment repayment fell under 11 years. The eligibility of new solar installations for feed-in tariffs was restricted from March 2011 to power plants up to 30 kWh located on roof structures or the enclosure walls of buildings. These policies proved effective in stopping the boom.

In addition, to prevent the full pass-through of already credited higher fees into energy prices, the government introduced a partially offsetting subsidy for distributors of electrical energy in 2011 and possibly also in 2012. These subsidies are now financed by a 26% quasi-tax imposed for the years 2011 to 2013 on energy sales from larger solar power plants put into operation in 2009 and 2010. However, the last measure triggered threats of legal action from affected investors.

Table 2.3. **Feed-in tariffs and implied producer subsidies**

Solar	Wind	Biogas	Biomass	Geothermal	Hydro
The ratio of feed-in tariffs to average market price of electricity production					
10.5	1.9	3.2	3.1	3.9	2.6
Direct producer subsidies implied by feed-in tariffs (EUR million)					
268.6	14.1	51.8	144.4	0.0	n.a.
Abatement costs (EUR/tonne of CO_2 equivalent)					
436	42	102	96	132	36

Note: The amount of subsidy is calculated as an average feed-in tariff in excess of the market prices multiplied by electricity production from a given energy source. Abatement costs are computed feed-in tariff in excess of market prices and the amount of avoided CO_2 equivalent emissions.
Source: Energy Regulatory Office and Power Exchange Central Europe; OECD calculations based on Egert (2011).

electricity. By design such a scheme offers implicit subsidies to renewable energy in a technologically neutral and economically efficient way (Lawson, 2010).

Streamlining permit procedures for the construction of renewable energy projects in municipalities is an example of a policy area where the authorities could reduce non-economic barriers to renewable production and hence reduce the cost of meeting the EU renewable energy share target (IEA, 2010). Other incremental improvements in the existing policy framework could result from the stricter evaluation of existing investment support schemes and closer co-ordination between the programmes financed by the EU structural funds *(e.g.* the Eco-Energy programme) and the State Programme for Energy Saving and the Use of Renewable Energy sources.

Investment in the grid and competition need to be stimulated

Technical difficulties resulting from the solar panel boom have demonstrated that investments in improved management of the grid, quick-start peak power generation and energy storage are needed to increase room for decentralising renewable electricity production. Smart grids could ensure a more efficient use of electricity and energy savings in cities. For example, smart meters could provide accurate and real-time information on electricity prices and consumption at the customer level, providing incentives for reducing demand with a view to reducing electricity bills and switching suppliers to benefit from lower prices. Also, increasing currently low competition at the retail level (Box 2.4) could

Box 2.4. **Competition in the electricity market**

Czech electricity market performance is mixed. On the one hand, there have been major developments in liberalisation. Within less than a decade (liberalisation started in 2002), the Czech Republic has managed to achieve full liberalisation in terms of unbundling and third party access and has increased market coupling with its neighbours. In particular, intra-day trading is now operational with Austria, Germany and Slovakia, and co-ordinated auctions are happening across borders with Germany, Slovakia and Poland. There has also been the establishment of a trading platform in Prague (as of 2007), with its price now well correlated with that of the European Energy Exchange for deliveries in Germany and Austria (NRO, 2010).

On the other hand, the situation in the Czech electricity market has remained far from competitive. At the wholesale level, the situation is close to being a monopoly, with only one company (CEZ) responsible for 75% of the power generation in 2008. CEZ – a partially state owned company – is the only company with a share of generation capacity of more than 5% and also owns all nuclear power plants. At the retail level the situation is one of oligopoly with 3 companies controlling 99% of the market share. Among them, CEZ Distribution owns 62% of the market share. Additionally, despite switching rates being high at the industrial level (28.6% in 2008), those at the household level are low compared with other EU countries (less than 1% in 2008) even though they are on the rise (IEA, 2010).

increase the opportunities for energy service companies to enter the market and promote innovation at the customer level (Jamasb and Pollitt, 2008).

Policies to promote energy efficiency

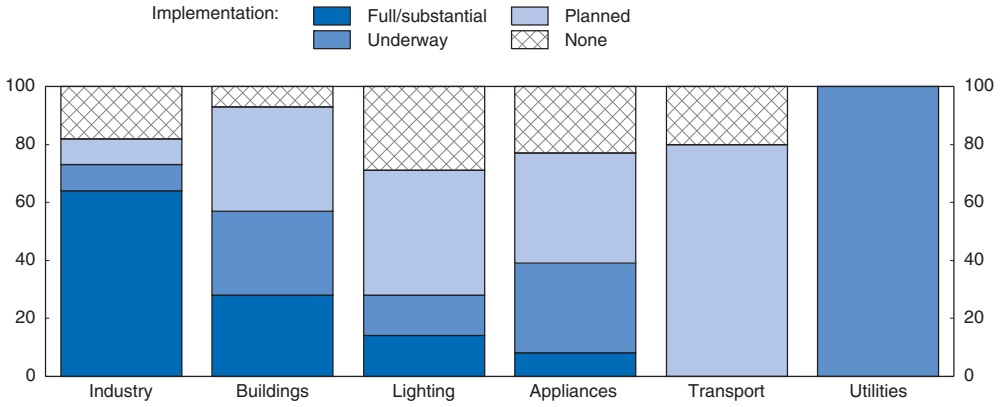
The Czech Republic successfully implemented several policies promoting energy efficiency and achieved an average annual reduction in energy intensity of 2.5% between 1990 and 2008. The *National Energy Efficiency Action Plan 2008-16* provides a non-binding target to achieve energy savings of 9% in 2016, the minimum level required by the EU Energy Service Directive. Another non-binding energy efficiency target will also be set in the longer run. Nevertheless, substantial room for policy improvement remains, as energy intensity remains among the highest in the OECD, and the unused potential for energy savings is substantial (McKinsey and Co., 2008). The IEA study on *Implementing Energy Efficiency Policies* (IEA, 2009) indentified several opportunities for improvement in the policy framework. At the time of evaluation, only one third of recommendations in buildings were fully or substantially implemented, two thirds in industrial sector and none in the transport sector, although there were plans to implement most of them (Figure 2.7). The implementation process should therefore be accelerated. Policy challenges in key sectors are discussed below, while the IEA cross-section recommendations, related to better co-ordination, public awareness, institutional capacity and monitoring are shown in Box 2.5.

Support for efficiency in buildings should be continued but more closely evaluated

Energy efficiency in buildings should be stimulated primarily by price signals linked to the ETS and carbon taxation. Nevertheless, some additional measures have to be used to overcome remaining obstacles, such as information and awareness barriers, split incentives between landlords and tenants and credit constraints (de Serres *et al.*, 2010). The importance of these problems is illustrated by the large size of economically profitable investments in energy savings that have not been undertaken in buildings so far (McKinsey and Co., 2008).

Figure 2.7. **Progress with implementing IEA energy efficiency recommendations is slow**

Distribution of implementation by sector, %



Note: Information is current up to 31 March 2009.

Source: IEA, *Implementing Energy Efficiency Policies*, 2009.

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Box 2.5. **IEA Cross-Sectoral Recommendations for energy efficiency in the Czech Republic**

- Develop an integrated energy efficiency strategy, addressing both primary and final energy use and improving the co-ordination of different energy efficiency schemes, so as to optimise their effectiveness.
- Identify specific policy measures to achieve particular energy saving targets, empower the responsible institutions, enable sufficient resource allocations and set time lines for implementation.
- Enhance public awareness of the benefits of energy efficiency as a means of improving energy security, saving money and reducing GHG emissions and local air pollution.
- Increase institutional capacity to improve implementation and monitoring of energy efficiency policies, and clearly define and better co-ordinate the respective roles and competencies of government institutions in implementing them.
- Improve data collection in energy efficiency policy, so that the interlinkages between policies and measures and expected savings in each sector can be examined and assess the costs and benefits of proposed measures, including through consultation and co-ordination with industry.

Source: IEA (2010).

The Czech Republic has implemented several measures dealing with these challenges, but certain aspects might require strengthening or modification, as discussed below.

Building standards are an important element in ensuring higher energy efficiency in new buildings. The Czech Republic has fully implemented the EU Directive on the Energy Performance of Buildings (EPBD, 2002/91/EC), which sets requirements for energy efficiency in building codes and includes provisions on mandatory energy performance certificates for both new and existing buildings. It has also implemented decrees on the Control of Heating Systems and the Control of Air Conditioning Systems, and Directives on Energy Labelling of Household Appliances and Eco design Requirements for Energy-Related

Products. Nevertheless certification of the existing building stock is lagging behind (IEA, 2010). All new buildings will have to meet high standards consistent with the requirements of Directive 2010/31/EU at the end of 2020, however a more frontloaded application could be considered, to accelerate the convergence to economically profitable low energy consumption patterns. A forthcoming new EU Energy Efficiency Directive should also provide additional impetus to energy efficiency with a number of binding measures.

Given the large existing stock of relatively energy inefficient buildings, the government should and does provide incentives for retrofitting. Although no systematic evidence about energy efficiency of existing buildings stock is available, the scope for low-cost emission abatement is believed to be substantial (McKinsey and Co., 2008). The current focus of policies is rightly on improvements in the thermal properties of buildings and the insulation of houses and apartment buildings (*National Reform Programme*). The government provided such support primarily through two large-scale programmes:

- *The Green Investment Scheme*. Overseen by the Ministry of Environment and implemented by State Environmental Fund, this programme was financed entirely from the revenues from sales of emission allowances under the Kyoto flexible mechanism and provided subsidies and grants for energy saving measures in buildings, to a total amount in excess of CZK 20 billion. While intended to last until 2012, new applications were stopped in 2010 due to a high number of applications and over-commitment of available funds. The programme provided households with grants for insulating their homes, for the construction of passive standard housing and for the installation of heating equipment using renewable energy sources. It is estimated that the programme provided support for 8.4% of the total living area in the country and delivered energy savings necessary to meet the national household energy saving goal for 2010 (State Audit Office).
- *The PANEL programme*. Financed by the national budget, monitored by the Ministry of Regional Development and implemented by the State Housing Development Fund and the Czech-Moravian Guarantee and Development Bank, this programme provided interest rate subsidies and guarantees for loans for retrofitting apartments (reconstruction, modernisation and insulation to improve energy parameters), primarily in prefabricated buildings, amounting to CZK 0.5-1 billion annually. More than 360 thousand flats have been retrofitted during the ten years the programme has been in operation; an estimated 30-50% of 2.2 million flats eventually require retrofitting, according to the Ministry.

While the government should continue providing support for improving energy efficiency in buildings, it is important that such programmes are rigorously and regularly evaluated and that cost-benefit analyses are conducted. This is particularly important in case of the PANEL programme, which was never systematically evaluated and the total energy saving of which was never rigorously estimated. The government has set aside funds to evaluate the impact of the Green Investment Scheme on energy consumption for heating. However, the audit of the Green Investment Scheme by the Supreme Audit Office provided evidence about systemic flaws linked to an insufficient attention to the evaluation of cost-effectiveness, information gaps, and the lack of adequate tools for interim monitoring. The key recommendations for improvement, which are likely to be relevant for other support programmes, included:

- Adopting the ratio of the amount of subsidies to the anticipated emission reductions as the project selection criteria. According to the audit, cost-effectiveness varied widely across the programme and its segments (Table 2.4).

Table 2.4. **Cost effectiveness of one-year CO_2 emission abatement**

Programme segment	Total investment CZK/1 t CO_2	Subsidy CZK/1 t CO_2	Share of subsidy %
Improved thermal isolation	56 087	35 263	63
Construction of a passive standard housing	756 211	103 176	14
Use of renewable energy sources for heating and hot water	14 903	7 485	50

Source: Supreme Audit Office (2011), based on *ex ante* evaluations. The figures shown in the table do not take into account financial value of energy saving.

- Creating a monitoring programme that would keep timely and complete information about the financed projects, to serve as a reliable basis for its management and evaluation.
- Monitoring and evaluating the other stated objectives of the programme, including reductions in the concentration of dust particles, emissions of other pollutants and household spending for heating.
- Improving rules for the administration of applications and project management to streamline the project implementation.

Decisions about the continuation of the Green Investment Scheme should be based on the initial insights from the *ex post* programme evaluation initially planned for 2013 but which can be accelerated given an earlier exhaustion of the programme funds. While no substantial future revenues from sales of Kyoto allowances are expected, the programme would need to be financed from general budgetary allocations under stricter cost benefit analysis. The use of EU structural funds for the support of energy efficiency under the next EU financial framework would also be justified. Loans and loan guarantees should be used more often than direct subsidies for supporting projects that are cost-effective, but require high upfront investments. While the evolution of the State Environment Fund towards an environmentally oriented bank is being considered, deepening its co-operation with the Czech-Moravian Guarantee and Development Bank might be more appropriate to build on existing capacities and experience.

Various support programmes, notably the Green Investment Scheme and the PANEL, should be better co-ordinated with different government institutions given clearly defined roles and competencies. While the division between the two programmes has recently been clarified and the most important overlaps removed, a merging of these two programmes should be considered given the fact that both are likely to be financed from the general budget and the Green Investment Scheme is likely to evolve towards indirect measures of support. At the very least, standardised methods are needed for processing and evaluating the effectiveness of the administration of grant programmes aimed at similar goals (Supreme Audit Office, 2011).

Energy providers should also play a more active role in promoting energy savings. While pilot initiatives undertaken by CEZ on smart metering and smart grids in the town of Vrchlabi are a good first step (CENIA 2010), the energy market incumbent should provide energy saving services more broadly. Indeed, the introduction of energy saving certificates should be considered (Box 2.6).

Promoting energy efficiency among SMEs

An increasing number of countries and companies now perceive environmental challenges not as a barrier to economic growth but as an opportunity for increasing

Box 2.6. **Energy saving certificates**

In order to accelerate energy efficiency gains, the government could define and mandate energy saving targets, at least in buildings, and introduce a tradable energy saving certificate scheme (white certificates) to ensure compliance. Under such a scheme, energy providers would be required to undertake energy efficiency measures for the final users achieving a pre-defined percentage of their annual energy deliverance. White certificates issued by an independent body would confirm the energy savings and the provider could use the certificate for their own target compliance or sell it to parties who cannot meet their targets (Capozza and Grattieri, 2006).

White certificates provide incentives to energy providers to promote energy-saving projects among its customers, correcting the basic incentive to sell more rather than to conserve energy. Energy providers have all the necessary knowledge, assets and tools to overcome typical barriers to energy saving investment, particularly in buildings, such as information, financial and co-ordination problems. Having close relationship with end-users, they are in a better position than the government to determine subsidy levels for end-users consistent with saving targets. As white certificates are tradable, energy providers can either achieve savings on their own or purchase certificates, encouraging the development of energy service companies and bringing down the effective cost of energy savings. In some countries, 80% of savings were in fact delivered by energy service companies (IEA, 2011).

Energy saving certificates have been implemented successfully in countries such as Australia, Denmark, France, Italy, the United Kingdom and the United States. For instance, in the United States, per capita residential electricity consumption is 31% lower in the half of states that have a history of such schemes (IEA, 2011). In France, energy savings during the first phase (2006-09) amounted to 60 TWh (compared to a goal of 54 TWh), *i.e.* 15% of the annual energy consumption of the housing sector, while 92% of white certificates were concerned with residential and commercial buildings (Egert, 2011). Similarly, the national energy saving target over 2005-09 was overachieved in Italy under the white certificate scheme (IEA, 2011).

competitiveness (OECD, 2011c). While the carbon emission price should provide Czech companies with incentives to reap competitiveness gains due to higher energy efficiency in the production process and more energy efficient products, some additional policy instruments can effectively be implemented. Industrial companies, particularly small- and medium-sized that are not covered by the ETS, frequently fail to undertake energy and process efficiency projects that typically have a rather long payback period, particularly given existing financing constraints and energy price volatility that increases the risk of such investments (McKinsey and Co., 2008).

A new legal framework promoting Energy Performance Contracting (EPC) would be particularly useful in diffusing best practices in energy efficiency using market based instruments. EPC is a method of contracting of a broad range of energy services, including designing, implementing and maintaining energy savings projects, based on in-depth analysis of a customer's energy system, to be provided by specialised Energy Service Companies (ESCOs). The projects are financed through expected energy cost savings, overcoming problems of credit constraints. ESCOs might be financially responsible for failures to achieve targets, substantially reducing the risk faced by the customer. The government intends to promote ESCOs among small- and medium-sized companies as part of the *Competiveness Strategy*.

The ECO-Energy operational programme, financed primarily from the EU structural funds and implemented by CzechInvest, promotes energy efficiency among small- and medium-sized companies as well as the utilisation of renewable and secondary energy sources by all companies. Supported activities include the modernisation of existing own-energy generation facilities, upgrading systems of measurement and regulation, reducing electricity and heat losses and improving the thermal-technical properties of buildings. It also promotes the utilisation of waste energy, the combined production of electricity and heat and the increased energy efficiency of production and technological processes. The total amount of annual emission saving expected due to approved applications and subsides of CZ 3.3 billion amounts to almost 0.5 MT CO_2 since the inception of the programme. A similar programme of support for energy efficiency should also be foreseen under the new EU financing period.

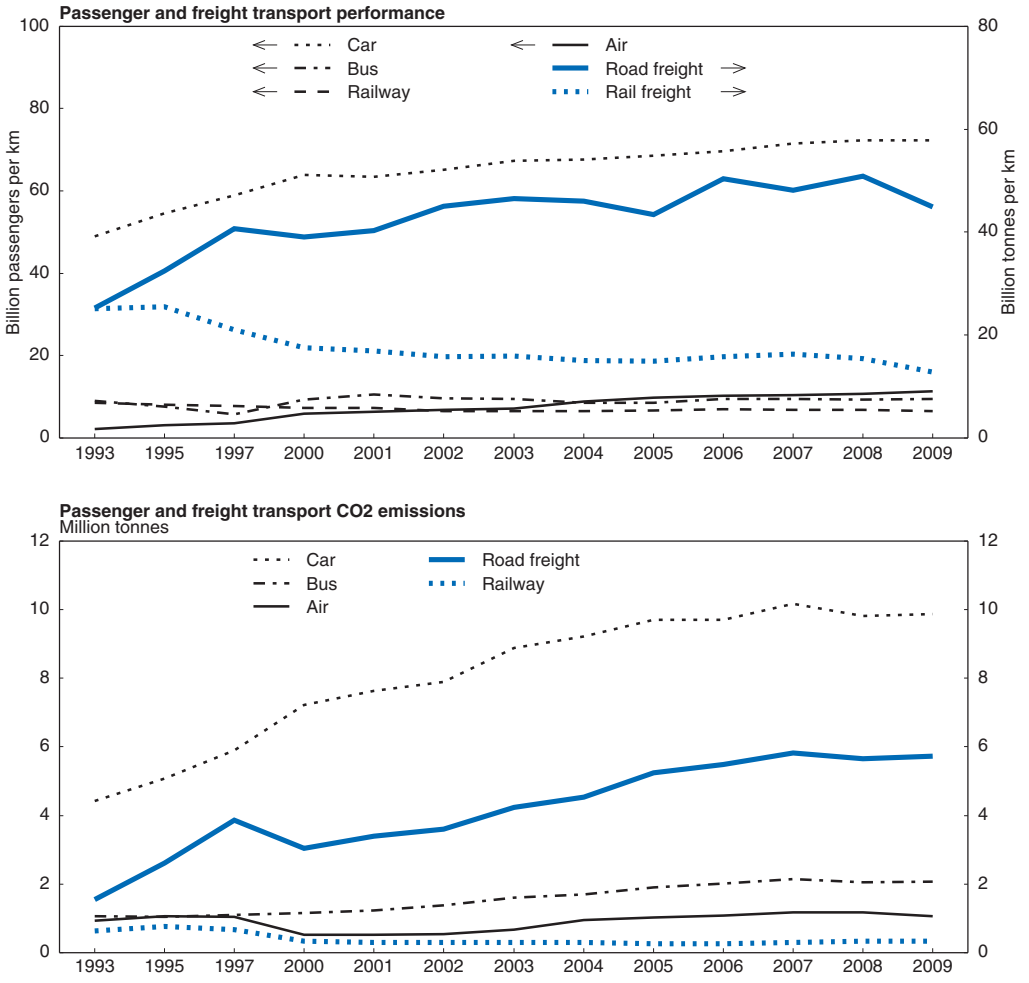
The public sector should provide a strong signal about the government's commitment to improve the efficiency of its own energy use, yet no measures relating to the exemplary role of public sector were included in the *National Energy Efficiency Action Plan*. Unclear legislation and rules, and perverse incentives among public sector managers are major obstacles to realising EPC within this sector (SEVEn, 2011). The government is now preparing an amendment facilitating the use of EPC, which is a step in the right direction. All public buildings should be retrofitted to modern efficiency standards, as long as long-term savings justify up-front expenses and high efficiency standards are used in all public procurement. Such demand instruments should be combined with supply instruments such as research funding, the creation of networks, platforms and partnerships, and technology demonstration (OECD, 2011c). These policies should stimulate a refocusing from end-of-pipe pollution control to product life cycles and integrated environmental strategies and management systems. They should also promote the full integration of Czech firms into the supply chains of multinational firms producing environmentally friendly machinery and equipment. Strong linkages with the German machinery industry, which plays a leading role globally in this segment, provide favourable starting conditions for such an ambition.

Preventing emission increases in transport will be challenging

While carbon taxation should provide a basic incentive for emission abatement, additional measures need to be implemented in the transport sector, whose share of total emissions increased from 6% in 1990 to 15% in 2008, and whose share in total final energy consumption increased from 7 to 22%. These increases were linked primarily to the rapid increase in passenger car and road freight transport (Figure 2.8). Passenger air transport has also grown rapidly, but the volume remained relatively small. Meanwhile, less emission-intensive modes of transport performed weakly: passenger railway transport outputs have stagnated since 2000 and the importance of long-distance bus transport and urban bus transportation has been falling. In freight transport, the shift from water and railways to roads was only partly explained by the shift from bulk material to finished product transportation. Rather it was mostly due to the declining competitiveness of these less-emission-intensive modes of transport and their inadequate integration into full logistics chains.

The Czech Republic is characterised by still low rates of motor vehicle ownership and low mileage. Road freight continues to be highly competitive, and emissions in transport are therefore expected to continue to grow rapidly once the impact of economic crisis on the trade and freight is overcome. This may threaten the achievement of EU environmental obligations (the non-ETS emission target) and pose a direct health hazard to the population

Figure 2.8. **Growth in road transport outputs and emissions is rapid**



Source: Transport Centre, *Study on transport trends from environmental viewpoints in the Czech Republic 2009*, Brno, August 2010.
StatLink http://dx.doi.org/10.1787/888932531993

due to local pollution, including dust, nitrogen oxides and polyaromatic hydrocarbons, as well as noise, congestion and accidents (Persson and Song, 2010). Several measures are currently being implemented or in preparation, which involve infrastructure development, incentives for public transport use, renewal of the car fleet and an increasing share of biofuels. The Ministry of Transport believes that these should allow a reduction in greenhouse gas emissions produced by transport of up to 5% by 2020. The in-depth review of the fifth national communication of the Czech Republic under the United Nations Framework Convention on Climate Change (UNFCC, 2010) noted, however, that Czech national transport emission projections were not in line with European Commission projections and were based on overly optimistic assumptions about energy efficiency improvements and the share of biofuels in 2020 above adopted targets. More broadly, estimates of emission growth in transport are subject to a large degree of uncertainty, with substantial upside risks. Emissions abatement in the transport sector tends to be difficult as it involves behavioural changes, such as a switch from private to public transport or

reduced commuting, which are often difficult to achieve given existing preferences and a relatively low sensitivity to price signals (World Bank, 2010).

Upgrading transport infrastructure and public transport

To limit emissions growth without constraining the mobility of citizens and the growth of freight, which are essential for economic growth, it is important to increase the consistency between transport infrastructure investment programmes and environmentally sustainable transport objectives, notably by strengthening environmental impact assessments. Higher priority should be given to road quality and to railways and other modes of public transport and combined transport rather than new road construction (Table 2.5). However, the basic network of Trans-European Transport Network (TEN-T) motorways and expressways needs to be completed. The *Competitiveness Strategy* and the *National Reform Programme* recognise these challenges and advocate a stronger focus on improvements in transport infrastructure quality management, repair and maintenance, particularly of lower class roads, and the more co-ordinated development of different transport modes. These goals need also to be reflected in the upcoming State Transport Policy up to year 2025. Private sector participation, notably through a wider use of public private partnerships (PPPs) would allow the acceleration of transport infrastructure projects, despite the reduced availability of public funds at a time of fiscal consolidation. However, the careful choice of first-round projects would be essential for the success of this mode of financing, as the Czech authorities have experienced problems in implementing PPPs so far (OECD, 2010a).

Table 2.5. **Quality of road and rail infrastructure**
Ranking among 30 OECD countries

	Road	Rail
Austria	4	9
Czech Republic	**29**	**19**
Germany	3	4
Hungary	27	24
Poland	30	26
Slovak Republic	28	17

Note: Relative ranking based on the following question: "How would you assess the quality of the rail and road infrastructure in your country?"
Source: World Economic Forum 2009-10 global competitiveness index.

Within road infrastructure development, investments directed at controlling road traffic within urban areas should be prioritised in line with the updated *Strategy for Sustainable Development*. This would mitigate a direct health hazard due to local pollution, noise and accidents, as well as reducing congestion in urban and suburban roads that further increases the economic and environmental costs of road transport (Persson and Song, 2010). An effective system of toll charges should reflect externalities related to road transport and provide a backbone for smart traffic engineering. Traffic management in urban areas should involve traffic restrictions in city centres, parking fees and incentives to commute by public transport. It should also include an expansion in the infrastructure for cycling, as well as the implementation of a congestion charge for Prague and, if appropriate, other cities.

Enhanced railway infrastructure, when combined with an adequate carbon price signal, could motivate a wider use of this means of transport. While the railroad infrastructure is

dense by international comparison, some of the main corridors for long-haul passenger and freight transport have not been completed. Also the infrastructure for combined systems, including public logistical centres and combined transport terminals lags behind countries with substantial freight transit transport, like Switzerland or Austria. The *National Reform Programme* rightly prioritises the completion of railway transit corridors, an upgrading of the TEN-T railway lines and junctions and commuter railway transport in densely populated areas. Two public logistical centres with a combined transport terminus are planned to enter service by 2015. Infrastructure improvement is, however, only a part of the solution as a sound competitive environment has not been created for the railways. Opening them further to competition, particularly in freight transport, could lead to lower prices and a better quality of services, shifting transport back to rail. The railway restructuring foreseen in 2011 is welcome in this respect, including the final step towards the separation of transport and infrastructure operations, which should ensure non-discriminatory access to the network for all operators within a fully transparent competitive environment.

Better integration of urban and suburban public transport is needed to improve the efficiency and attractiveness of public transport. The promotion of integrated transport systems is particularly important and requires a better co-ordination between national authorities, who are responsible for railway transport, and municipalities who are responsible for buses and other public transport elements. It should be also supported by strengthened territorial planning. According to the Ministry of Transport, there are currently 12 local integrated public transport systems in the Czech Republic, but they differ in terms of tariffs, timetables and organisational integration. In several cases, integration is presumably insufficient to decisively enhance the relative attractiveness of public transport.

Fuel performance of car fleet needs to be improved

The country has an old car fleet and its modernisation has been relatively slow. The Czech Republic was one of only two EU countries with a higher average emission of newly registered cars in 2008 than in 2004 (European Commission, 2009). The country continues to import a high number of used cars with weak emission performance, despite import duties on used cars and registration fees. Hence, enforcing vehicle inspection and maintenance obligations need to be strengthened, to better control emission from older vehicles and stimulate the renewal of cars, lorries and bus fleets. To make technical inspections for cars stricter and more objective, electronic records have been implemented for Technical Inspection Stations (CENIA, 2009). More recently, the Minister of Industry and Trade established a working group composed of representatives of various ministries as well as of the Automotive Industry Association and the Association of Car Importers to propose measures to improve the structure of the car fleet in the Czech Republic that should be submitted to the Government for approval during 2011. On the other hand, tax incentives for vehicle renewal should be used sparingly, especially if an adequate price signal is provided through carbon taxation.

Higher fuel quality standards of new vehicles are in line with the European regulation. The EU target is to lower emissions of newly manufactured cars to 130 grammes CO_2 per km in 2012, 120 grammes in 2015 and 95 grammes by 2020, compared to a current 170 grammes, through improvements in engines, reductions in the rolling resistance of tires, recuperative brakes, etc. Fines will be imposed in cases of non-compliance, beginning with EUR 20 per gramme in excess of the limit in 2012 up to EUR 95 per gramme in 2015 and later. Although, the impact of tighter environmental standards for new vehicles on total fleet

emissions will be slow to materialise, especially given high imports of used cars, it would be essential for longer-term emission containment.

The Czech Republic is facing the EU binding target of a 10% share of biofuels in all modes of transportation by 2020. Accordingly, producers, distributors and importers are obliged to include a gradually increasing percentage of biofuels in petrol and diesel, and face significant financial penalties in case of non-compliance. While there are no price subsidies, tax benefits applying to the use of pure biofuels and high-percentage blends in transport have been introduced. The Czech Republic is justified in not seeking to establish more ambitious national target for biofuels share in transport, given the disputes about the gains in net emission reduction from the use of biofuels due to their full life-cycle emissions (Lawson, 2011), as well as very high marginal cost, estimated sometimes at EUR 350 per tonne of CO_2 (Steenblik, 2007). While the current production of biofuels is sufficient to cover present needs and existing refining capacity would allow production to increase sufficiently to reach the 2020 target, it important to ensure this expansion is conducted in environmentally sustainable manner (IEA, 2010).

Box 2.7. **Recommendations on energy system efficiency**

Ensuring a comprehensive, consistent and stable policy framework

- Ensure full consistency among strategic policies, including currently prepared documents on Environmental, Energy and Transport Policies to anchor private sector expectations about future policies.
- Strengthen the use of cost-benefit analysis and the effectiveness of environmental impact assessment for all policy instruments, independent of their source of financing. Ensure proper *ex ante*, on-going and *ex post* evaluations.
- Systematically estimate abatement costs and adjust public intervention and subsidies to ensure equalised marginal abatement costs. Avoid overlaps and ensure common standards among instruments financed from different sources, such as the national budget, EU funds, and proceeds from sales of Kyoto allowances.

Providing incentives for abatement and raising revenues through the ETS and carbon emission taxation

- Tax away all windfall gains linked to the remaining free allocations of allowances under the second stage of the ETS, including heat producers. Monitor and evaluate the efficiency of free ETS permit allocations to inform future decisions.
- Support implementation of carbon taxation at the EU level. Realign the excise tax rate on all fossil energy sources and products, based on their carbon content and other environmental externalities, notably by increasing the relative taxation of diesel. Remove several excise tax reliefs on fuel use.

Rationalising sectoral policies

- Use the opportunity given by the natural retirement of the coal-fired power and heating plants to plan a strategic switch to low-emission sources and technologies. Rebalance support for renewables to promote the lowest cost sources in a technologically neutral way, while avoiding setting targets for specific technologies.
- Enhance competition in the energy sector to increase market entry, minimise inefficiency and losses and stimulate emission-reducing innovations, including work on smart grids and meters.

Box 2.7. **Recommendations on energy system efficiency** *(cont.)*

- Continue investing in building energy efficiency measures under the Green Investment Scheme but improve its efficiency and improve co-ordination with the PANEL programme. Use loan support instead of investment subsidies for projects that require high upfront investments although being highly cost-effective overall. Increase the role of energy providers in promoting energy savings.
- Apply best practices in support of energy efficiency among SMEs, promoting Energy Performance Contracting and the development of Energy Service Companies. Continue providing support for the energy efficiency improvements from EU structural funds under the next EU financial framework.
- Increase consistency between transport infrastructure investment programmes and environmentally sustainable transport objectives. Improve the institutional co-ordination of transport and land use plans among the state level, regions and municipalities. Complete the restructuring of the railways.
- Further develop traffic management in urban areas, including traffic restrictions in city centres, parking fees and incentives to commute by public transport. Strengthen vehicle inspection and maintenance obligations to better control emission from older vehicles and stimulate the renewal of cars, lorries and bus fleets primarily through adequate carbon pricing, while using other instruments only sparingly.

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