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The economic situation and policies of the Czech Republic were reviewed by the Committee on 6 April 2006. 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 24 April 2006.

The Secretariat's draft report was prepared for the Committee by Philip Hemmings and Alessandro Goglio under the supervision of Andreas Wörgötter. The drafting team was assisted by Lubomir Chaloupka (on secondment from the Czech Ministry of Finance) and Edward Whitehouse (OECD pensions specialist).

The previous Survey of the Czech Republic was issued in January 2005.

BASIC STATISTICS OF THE CZECH REPUBLIC, 2005

LAND

Area (1 000 km^2)	79
Agriculture, 2004 (%)	54
Forest, 2004 (%)	34

Major cities, 31.12.2005 (1 000 inhabitants)	
Prague	1 182
Brno	367
Ostrava	310

PEOPLE

Population (1 000)	10 251
Inhabitants per km^2	130
Natural increase in population (1 000)	–6
Net immigration (1 000)	36

Employment (1 000)	4 749
Agriculture (%)	4
Industry (%)	40
Services (%)	56

GOVERNMENT

Public consumption (% of GDP)	22
General government total revenue (% of GDP)	41
General government deficit (% of GDP)	3
Public debt, 2004, Maastricht definition (% of GDP)	37

Chamber of Deputies, as at April 2006	Seats
Social Democratic Party	70
Civic Democratic Party	57
Communist Party	41
Christian Democratic Union	21
Freedom Union	10
Independent	1
Total	200

PRODUCTION

GDP, current prices (billion CZK)	2 931
GDP per capita (USD, current prices)	11 960
Gross fixed investment (% GDP)	26

Origin of value added (%)	
Agriculture	3
Industry	38
Services	59

FOREIGN TRADE

Exports of goods and services (% GDP)	73
Main exports, 2004 (% of total merchandise)	
Machinery and transport equipment	51
Manufactures	34
Chemicals	6

Imports of goods and services (% GDP)	71
Main imports, 2004 (% of total merchandise)	
Machinery and transport equipment	42
Manufactures	32
Chemicals	11

CURRENCY

Monetary unit: Czech koruna	
Currency units per $, 2005	23.96

Currency units per euro	
Year 2005	29.78
Mar 2006	28.65

Executive summary

The Czech Republic's economic growth performance has improved and now compares favourably with other catch-up countries in the region. Low inflation and interest rates have been a strong point of the economy for some time and policy is well prepared to meet the monetary challenges of euro entry which is aimed for in 2010. However, the next government will have to face up to considerable challenges in achieving fiscal sustainability. In addition, it must push ahead in improving the labour market and enhancing the business environment.

Recent deficits have been encouragingly low but driven by revenue surprises and deferred expenditure, rather than by spending cuts. **Containing deficit and debt in the long-run will be impossible without widespread public-spending and budgeting reform,** *not least because of the need to co-finance EU funding opportunities and upcoming spending pressures due to ageing:*

- In tackling ageing-related spending pressures some broadly agreed principles from the five pensions proposals made in 2005 provide a good basis for a final decision on reform; this ought to be high on the agenda of the next government along with the long-awaited reform of the health care system.
- One area of concern is regional and municipal spending. Measures must be taken to increase efficiency among the many very small municipalities. In addition, benchmarking cost and output in services needs to become more widespread. These considerations, plus the need for structural reforms in spending areas, mean caution is required in giving more revenue flexibility to sub-national governments.

In the labour market, there is persistent long-term unemployment *and a general damping of employment from a large tax wedge that is difficult to cut back. While there is some progress with welcome initiatives to motivate job seekers and a better sick-pay system, the reform of the labour code has been more limited and efforts are required to improve paths to higher education. In-depth review of secondary and tertiary education reveals a need for more action to deal with the rapidly increasing demand for degree-level education:*

- The difficulties of the public universities in coping with rising student numbers would best be resolved by the introduction of tuition fees, complemented by publicly supported student loans.
- Secondary school education needs to be better geared towards tertiary education through increased access to programmes that give options for university entrance. In addition, the early streaming of a minority of students into elite publicly funded schools should be phased-out.

Business conditions are being improved *by new bankruptcy legislation and on-going efforts to reduce red tape and corruption but will require follow up. In-depth assessment of innovation policy reveals good intentions but much work remains:*

- Clearer responsibilities and some tidying up of financial arrangements in innovation policy is required, notably a reduction in the large number of budget lines providing R&D support.
- The recently introduced tax incentives for R&D and plans for additional incentives should be carefully considered given the mixed international evidence on their cost-effectiveness.

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Assessment and recommendations

Growth has strengthened

Between 2002 and 2005, annual growth in GDP per capita has risen from a little under 2% to 6%, and shifted above the average for other east-European OECD countries. Past reforms and accession to the European Union are contributing to further expansion of export-driven manufacturing, backed by foreign-direct investment. Indeed, the trade balance has become positive. Nevertheless, catch-up with more advanced economies is some way off and maintaining this performance will require continued reform. Entry to the euro area is aimed for in 2010 and this may provide an additional fillip to growth. In addition, the current government has published a blueprint for reform, the *Economic Growth Strategy*. It contains a large number of detailed proposals, many of which echo past and present OECD recommendations, and should be used as a catalyst for change. The most important measures have to be taken in fiscal policy; it is very important that the next government faces up to the considerable challenge of putting deficits on a sustainable track through public-spending reform. Policy will also have to push ahead in making improvements to the labour market, including the skills base, and with measures to enhance the business environment.

Inflation and interest rates remain low and a commendable annual assessment process is in place to guide the timing of euro entry

Real convergence in GDP per capita has been accompanied for several years by low and stable inflation. In the early 2000s growth in the consumer-price index actually undershot the target band of the Central Bank's inflation targeting regime. However, inflation has since recovered and, as of early 2006, was well within the 3 +/– 1% target band. Interest rates are correspondingly low and similar to those in the euro area.

Despite these favourable conditions, there are risks in reaching the inflation and exchange rate criteria for euro entry. To reduce these, and other risks of euro entry, a special annual assessment process on the preparedness of the economy for euro adoption has been set up. The assessments look not only at conditions in relation to the Maastricht criteria but also at the alignment of the economy with the euro area and the flexibility of domestic markets. This process and the inflation-targeting regime are providing a good framework for euro entry and neither warrants major reform.

Maintaining progress toward achieving fiscal sustainability through public spending reform remains the main policy challenge

The general-government deficit for 2005 is currently estimated at 2.6% of GDP on an accrual basis following 2.9% in 2004. These outcomes are a marked improvement on preceding years, even taking into account special factors in the accrual accounts. However, the outcomes partly reflect continued strong growth in revenues. In addition, spending was lower than budgeted because of the transfer of spending allocations into reserve funds. Nevertheless, there is no sign of a permanent downward shift in public spending when expressed as a percentage of GDP. Furthermore, the 2006 budget has seen relaxation in spending discipline on several fronts. In particular, the ceilings of the Medium Term Expenditure Framework have been raised, reflecting the expectation of structural revenue increases. There is some concern about the justification of these ceiling increases. *Indeed, additional rules are needed in the Framework to deal with revenue and expenditure windfalls*. Within the next few years, fiscal challenges lie in creating budgetary room for co-financing the much larger project funds that will become available in the EU's 2007-13 budget, many of which are important for infrastructure development. The co-financing needed to make full use of EU funds will rise from about a ¼ of a per cent of GDP currently to about ¾ of a per cent of GDP. *Generating room for these and other necessary infrastructure investment makes all the stronger the case for tighter spending controls elsewhere, so as not to put at risk a steady approach of the budget toward a balanced position, which is necessary to prepare for spending pressures due to population ageing that are set to accelerate*. In sum, improving on the deficit outcomes in the lead-up to euro entry, and beyond, will be impossible without permanent savings through public-spending reform and would be helped by better budgeting processes.

The five pensions proposals made in 2005 provide a good basis for a final decision on reform

A welcome effort to establish consensus on pension reform has been made. Five proposals (one by each of the main political parties) were developed by a special working group on pensions in 2005, a process which helped considerably in ensuring that the proposals were detailed on a comparable basis. Indeed, this transparent approach has much to recommend it for an issue as fundamental to society as a whole as pension reform. *A wide range of options is covered and the proposals should be used as a basis for the final decision on pension reform that ought to be high on the agenda of the next government*. One proposal introduces a system of notional accounts, a second keeps a pay-as-you-go pension but carves out a defined-contribution pillar from it, a third reform proposes only parametric changes to the current pay-as-you-go pension while a fourth proposes a flat-rate pension. The fifth proposal is similar to the third but adds a defined-contribution component to a pay-as-you-go pension.

Some aspects of the reform proposals could be improved without undermining the core approach embodied in each of them. In particular, in terms of financial stability the proposals could be strengthened by an automatic, rather than a discretionary, procedure for adjusting pensions in payment.

Other aspects of the proposed pension systems are however inherent to their design, most importantly the strength of the pensions-earnings link and the extent of public provision for

retirement. The proposal for a defined-contribution add-on and the notional-accounts scheme have the greatest emphasis on the pensions-earning link by ensuring a high pension replacement rate at all levels of previous earnings. The key issue in deciding on the appropriate strength of the link is the degree to which the state should require individuals to save for their retirement because they are myopic and, left to their own devices, would make inadequate provision. Proponents of a stronger link between pensions and earnings also argue that it increases incentives to work and to contribute to pension savings (because contributions are seen less as an implicit tax). These advantages however have to be weighed up against the fact that, as crafted, these proposals entail high contribution rates and a large government involvement, while not fully addressing social safety net issues.

The tax treatment of pensions and welfare payments were not covered by the 2005 working group. However, these issues needs to be addressed, particularly the system of subsidies and tax allowances on voluntary contributions to private pension funds, which currently generates little saving. *Reform needs to take into account the growing international evidence that tax incentives are often costly and ineffective in inducing more saving.*

Progress in other elements of public-sector reform has been uneven

Though plans for major health care reform have been drawn up by successive ministers, none have been implemented. As a result, little progress along the lines suggested in past OECD *Surveys* has been made. General economies in public spending have also been limited, notably a drive for staff cuts in government ministries has stalled.

Some progress has been made in improving the budgeting system. Various measures to tighten accountability are underway and cuts in the number of off-budget accounts have been made. New rules allowing ministries more freedom to carry over spending have reduced wasteful expenditure but are proving problematic in terms of overall spending control. *An adjustment to the rules should be sought that preserves the advantages of this provision, especially for capital spending and EU programmes, while allowing the Finance Ministry to retain control over spending. One avenue that should be exploited is to link carry-over spending with progress in output performance budgeting.* Use of public-private partnerships to help public finances remains limited, though legislation currently in the parliamentary process aims at paving the way to much greater use in the future. *Such partnerships can help financing but need expertise and careful structuring to avoid undesirable long-term liabilities.*

Review of financing and public spending in the regions and municipalities calls for changes to improve efficiency

Successful public-spending reform requires concerted efforts by central-government ministries and agencies but also by municipal and regional governments. Policy has to work on three fronts to ensure that sub-national government delivers efficiency improvements: economies of scale, financing systems and accountability.

- There are over 6 200 municipalities in the Czech Republic and international evidence on the minimum-efficient scale of local government suggests a large number of them are too small from an economic perspective. Therefore, opportunities to encourage greater

economies of scale have to be fully exploited. *One route is to strengthen financial incentives for mergers through further steepening of the tax allocation schedule, one-off compensation for the costs of mergers and the removal of biases in grant formulae that favour small-scale government operations. The authorities should also seek ways of encouraging more co-operation in the provision of services.* On this front, a proposal to alter tax allocation rules to benefit municipalities who sign comprehensive co-operation agreements looks promising. In addition, there is potential for rationalising the networks of offices providing central-government services.

- *In sub-national government financing, the broad thrust of policy should be towards giving more flexibility*, in particular by switching from earmarked grants to block grants or increased tax allocation. However, caution is needed because some spending areas are due to undergo system-wide reform and central-government leverage through earmarked grants may be important to successful implementation. In addition, cost and output indicators are not yet widely used, so the tools for the local population to oversee revenue use are not fully in place. At the same time, greater room for regions and municipalities in discretionary taxation is warranted, for example through widening of the statutory limits on real-estate taxation.
- *In the budgeting system some tightening of the debt rules is needed*: the sanctions are rather soft and the inclusion of debt repayment in "debt servicing" is problematic. *Various measures should also be taken to improve transparency.* In particular, there should be further development of the public database of regional and municipal accounts and wider powers for the Supreme Audit Office to audit municipalities.
- *In terms of accountability, additional incentives to participate in cost and output benchmarking projects are required if they are to become comprehensive nationwide systems*. Oversight and transparency in public procurement also need improvement. The lead taken by Prague's municipal authority in publishing details of all its procurement contracts on line should be followed. In e-government, the set-up cost for users of electronic signatures needs to be brought down and better co-ordination of public databases would reduce red tape for businesses.

A second broad policy challenge is improving labour-market efficiency and the skills base

While the most powerful long-term driver of catching-up has to be rising productivity, catch-up in GDP-per-capita can also be fostered through greater use of labour resources. Recent labour-market outcomes have been encouraging but fundamental problems remain, notably long-term unemployment. About half of the unemployed have been out of work for at least a year and they are strongly concentrated in certain regions of the country. Employment creation – in particular for groups with a low labour market attachment – is hampered by the high tax wedge and strict employment protection legislation on regular employment. As regards future productivity growth, the skills base is of crucial importance. Though the education system is performing reasonably well on some fronts, further reforms are needed to cater to the rapidly expanding demand for tertiary-level education. Secondary-school attainment has traditionally been high, but in the working-population as a whole the Czech Republic has one of the lowest shares of degree-level attainment in the OECD. However, change is underway due to a rapid rise in the tertiary

enrolment rate among school leavers. This is only partially offset by population decline in young cohorts and overall demand for tertiary education courses is expected to continue growing for some time.

Some positive steps have been made in welfare reform and labour legislation

Stepping up labour utilisation requires a range of measures raising both the supply and demand for labour aimed at improving incentives and encouraging greater flexibility in the labour market.

- A number of measures have been taken to make the welfare system more work-oriented. In particular, as of January 2007, a new job-search bonus will be introduced, in-work benefits strengthened and sick pay arrangements improved. In addition, agreement has finally been reached on a schedule for removing rent control in housing, which should help labour mobility. Some progress towards more flexible labour legislation and wage setting has been made. The new labour code, if approved, will bring wider contractual freedom through modernisation of the legislation. Among the specific provisions in the code, legislation on working time accounts in particular should help flexibility. *However, further lightening of rules on dismissal for those on permanent contracts is still required.*
- In wage setting, large increases in the minimum wage have been granted in the first half of this year, continuing an upward trend seen since the late 1990s that has already been detrimental to international competitiveness and job creation.
- *Reduction in the large tax wedge on labour needs to remain a broad policy priority as this is damping employment throughout the labour market.* The resources for doing this are, however, limited by the need for fiscal consolidation and by competing priorities on spending and revenue reduction. Cuts in the wedge may therefore have to focus on reducing non-wage labour costs at the low end of the labour market.

More resources are needed to deal with the expansion of tertiary education

The rapid expansion of tertiary education requires more resources and better incentives for both students and higher education institutions. The universities have been responding somewhat to the changing environment, notably new 3-year vocationally oriented degrees are being introduced. *The introduction of tuition fees for students in public universities that at least partially reflect the cost of tertiary courses would make for better decision making by students and faster reaction of universities to changing demands. If tuition fees are introduced they should be accompanied by publicly supported student loans in which repayments are conditional on graduate income.* This diversification of funding for tertiary education would also help universities cope with further rises in student numbers. *Any increase in funding has to be linked to output quality monitoring and evaluation.*

Secondary school reform needs to help increase tertiary-level enrolment, reduce streaming and increase efficiency

Secondary schools enjoy a good reputation and benefit from a well established institutional tradition. However, further changes in focus and flexibility in the system are required to better cope with changing skill requirements in the labour market.

- In secondary education, a new system of common national leaving exams in some subject areas is being gradually introduced, bringing welcome reduction in the diversity of final exam tests. The new system will make exam results more useful input for prospective employers. In addition, the system ought to play a bigger role in university entrance by cutting back the need for university-specific entrance exams that not only make the admission process cumbersome but also add to social segregation in tertiary education. *However, less reliance on entrance exams requires closer consultation with universities to ensure secondary school leaving exam results are a useful input for assessing prospective students.*
- Wider access is needed to the general courses in secondary schools that provide options for entering tertiary education. *This could be achieved by making these courses more widely available in the secondary technical schools and by equalising the quality standards with those of the four-year gymnasia. More generally, choices could be broadened if upper secondary school curricula were differentiated among broad subject-based streams and if students were allowed to transfer both between and within schools more easily. In addition, the streaming of a minority of students into elite publicly funded schools from age eleven should be phased out, as already outlined in strategic documents by the Ministry of Education.*
- Further decentralisation of responsibility for schooling since the early 2000s has raised the importance of output measurement and benchmarking. *A recently introduced assessment system has merits but its effectiveness needs to be raised, in particular by allowing the publication of results and by giving the inspectorate more scope in information gathering.The assessment and evaluation system should be expanded to cover schools, types of school, regions and the entire school system. This should in particular assess how graduates are prepared for employment and further education.*
- In the teaching profession, motivation is widely reported as low. Encouraging greater use of financial rewards for good performance is part of the solution. *In addition, more in-service training would ensure that teachers adapt to change in the secondary school system, particularly if students' access to general education is widened, and should also increase job satisfaction.*

Both tertiary and secondary education systems have to cater better for adult learners

It is necessary to boost the participation of middle and older age groups in education; in particular motivating those with low education and qualification is important. The education system is too rigidly geared towards standard pathways of learning. Access to education, notably for adults who want to take either secondary or tertiary level courses, needs to be increased and a greater range of programmes is needed. *This requires a more systematic approach to continuing education that establishes funding mechanisms, quality*

assurance, information and guidance as well as making changes to current arrangements in the framework of qualifications.

A third broad challenge is improving business conditions

The business sector has to play a key role in closing the gap in GDP per capita with other OECD countries. As discussed above, the financial environment for business is quite good with low inflation and borrowing costs. However, the slow progress in reforms to labour regulation is damping business development. On other policy fronts, challenges remain in improving administrative process, overcoming weakness in specific areas of business legislation and in dealing with corruption. In addition, there are challenges in ensuring that taxation and business support achieve policy objectives efficiently, particularly in the area of innovation policy.

New bankruptcy legislation has been introduced

Bankruptcy legislation has long been criticised as hampering the efficient use of capital in the Czech Republic. Following several previous attempts, new bankruptcy legislation passed in early 2006 aims to strengthen the position of creditors in various ways, including the introduction of a "re-organisation" option. Also welcome are legal changes that aim to reduce the administrative tasks of judges, lighten checking procedures in legal processes and shorten the maximum time allowed for registration of a file with the courts. Business registration forms have also been standardised. *However, both the new bankruptcy legislation and the steps to cut red tape are likely to need some follow-up action; hence careful monitoring of the impact of these new systems is required*. The reduced administrative burden for businesses should also discourage corruption arising from attempts to short-cut processes. The campaign against corruption is also being helped by an increasingly open recognition of the problem and by on-going efforts to introduce new measures to increase accountability, such as the recent proposed legislation that would increase financial disclosure requirements for politicians and public administrators. *However, the fight against corruption is by no means over and pressure through new measures to enhance accountability has to be maintained, along with further reductions in the opportunities for corruption through simpler administrative processes.*

Innovation policy reveals good intentions but much remains to be done

Research and development spending is equivalent to about 1% of GDP in the Czech Republic; this level is relatively low compared with the OECD average, but somewhat higher than in the other east-European OECD economies. As in a number of other OECD countries, Czech innovation policy broadly aims to encourage both more private-sector research and a more market-driven approach to research by public-sector research institutions and universities.

- Some tightening of responsibilities and tidying up of financial arrangements is needed in the innovation policy system. *It is important that plans reducing the large number of R&D-*

related budgetary lines are followed through.In addition, the responsibilities of the state administration in innovation need to be reformulated so as to orient innovation policy more clearly towards research that develops commercial applications or provides academic groundwork with potential for commercial application. In the case of the umbrella organisation for R&D, the Research and Development Council, this could be dealt with, for example, by greater business-sector representation. In addition, problems of overlap between the Council and the Ministry for Education and Sports need to be resolved and better co-ordination is required between the five ministries involved in R&D policy.

- The majority of public support for R&D is allocated on an institutional rather than a project-specific basis with a split of roughly 60-40% and one of the main policy goals is to change this split to 40-60%. *Changes to the assessment criteria used for awarding grants are also needed.* Less weight should be given to academically oriented indicators of the whole research institution (or department) and more to the characteristics of the team that will carry out the research. A system of periodic "research assessment exercises" should also be considered.
- As in many other countries, the authorities are trying to boost market-oriented research by encouraging stronger public-private links. *To make the labour market for researchers more integrated, more performance-related pay in public-sector research positions could be envisaged.* As well as strengthening industry-science ties, these measures could also help attract back Czech researchers from abroad. Public-private links could also be strengthened by raising the importance of joint work with business in evaluating research activities.
- Tax-based measures are also being used to encourage R&D. A 100% tax allowance on R&D expenditure was introduced in 2005. *While such allowances are in place in several other OECD countries, evidence on their effectiveness is mixed and so the focus should be on impact evaluation both in terms of research activity and cost.* There is also a proposal in a recent policy document to set up a scheme similar to the Hungarian Innovation Fund. The potential gains of this approach need to be evaluated against the downsides of increased complication of the business tax environment and additional administration costs. In addition, sunset clauses should be considered for such programmes.
- Access to finance is one of the key constraints for innovative SMEs in the Czech Republic, largely because the investment proposals are typically too small to attract venture capitalists. There are plans to address this with a government-sponsored risk capital fund. *This scheme should be carefully planned and monitored to ensure good targeting and cost effectiveness.* Indeed, there may be less costly ways of helping innovative SMEs access finance, for example, through changes to investment regulations on pension funds.
- Czech innovators often lack key skills and information needed to successfully launch an enterprise and more policy action is needed. One route is for universities to include more business training in courses for science and engineering, including coverage of patenting law and application processes. Improving the information and administrative systems for intellectual property rights would also help. In addition, innovative SMEs would benefit from the introduction of an information system on current and upcoming development projects in regions and municipalities so that they can more easily keep abreast, for example, of places available in technology parks.

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Chapter 1

Policy challenges in sustaining catch-up

Czech GDP growth picked up in recent years and future growth prospects look more favourable. This first chapter of the OECD's 2006 Economic Survey for the Czech Republic examines this improved performance and makes a broad overview of the structural reforms needed to maintain a healthy pace of catch-up with other OECD countries. While inflation and interest rates are low, big challenges remain in ensuring fiscal deficits and debt are on a sustainable path for euro-entry and beyond. The chapter reviews recent changes in budgeting procedures, general progress in public spending reform and introduces the chapters on pension reform (Chapter 2) and on municipal and regional government (Chapter 3). A second set of policy challenges lie in labour market and education policy. Recent labour market reforms are assessed and the issues tackled in the in-depth examination of education policy (Chapter 4) are introduced. A third set of challenges lie in the business environment. The ongoing efforts to improve legislation, cut back on red tape and reduce corruption are reviewed and there is an overview of the issues in innovation policy (Chapter 5).

The current government's term of office has seen a period of reasonably strong growth, further consolidation of stable monetary conditions and encouraging fiscal deficit outcomes. The two main political parties were in a close-run race in the run-up to the general elections in early June and as in the previous election, another coalition government is likely (Box 1.1). In broad terms, both parties take a market-oriented approach to economic policy. Support for reforms within the current centre-left government is exemplified by the publication of its *Economic Growth Strategy*. It has a strong focus on improving business conditions (see Box 1.2) and many of the detailed recommendations of the strategy are likely to find broad political support. This being said, there were some key differences across the election platforms on economic policy. In particular, the current government's approach of gradual adjustment in taxation contrasts with a proposal by the main opposition party for more radical reform along the lines of the "flat tax" system introduced in Slovakia.

Despite the improvement in growth, Czech living standards have some way to go before reaching those in more developed OECD countries. The latest *Eurostat* figures put Czech GDP per capita at about 75% of the EU-average on a purchasing-power-parity basis, so there is some way to go in real convergence before even this landmark is reached. Much more ground has to be covered for living standards to catch up with leading OECD countries, for instance GDP per capita in the United States is estimated to be roughly twice that of the Czech Republic.[1]

This chapter first looks at past developments and prospects in growth. This is followed by assessment of policy issues under four headings: monetary conditions; ensuring fiscal sustainability; improving the labour market; and, enhancing the business environment.

Box 1.1. **The political situation**

In April 2005, Jiri Paroubek took over as Prime Minister in the ruling centre-left coalition government, following the resignation of Stanislav Gross. The main coalition partner, the Czech Social Democratic Party (CSSD), has since made strong progress in opinion polls in relation to the main opposition party, the centre-right Civic Democratic Party (ODS). The regional council elections in 2004 marked a low point for the CSSD when the ODS gained ground (all but one of the fourteen regional councils are now headed by a member of the ODS). The turn-around in the opinion polls for the CSSD made the odds on which of the main parties will lead the next national government following the general election held in early June much more evenly balanced. The CSSD's current partners in government are the two sub-coalitions comprising the Christian Democratic Union – Czech People's Party (KDU-CSL) and the Freedom Union – Democratic Union (US-DEU). There is also the left-wing Communist Party of Bohemia and Moravia (KSCM) which currently has no official ties with either the CSSD or the ODS at the central-government level. The next regional elections are due in 2008 and municipal elections are likely to be held at the end of this year.

Box 1.2. **The Czech Government's *Economic Growth Strategy***

In 2005, the government published a roadmap for structural reform, *The Economic Growth Strategy*. The *Strategy* sets a motivational goal of Czech GDP per capita reaching the EU-average by 2013 (roughly speaking this implies a doubling of the current margin of growth on the EU-area from 2 to 4 percentage points). The many detailed recommendations of the strategy are grouped under five headings: institutional business environment, sources of financing, infrastructure, human resource development and research, development and innovation. In many respects, the *Strategy* echoes OECD thinking on what reforms are needed in the Czech Republic. The *Strategy* was discussed at a one-day EDRC Seminar in January 2006. Proceedings can be found on the OECD Web site (*www.oecd.org*).

Each section looks at the broad policy challenges, makes an overview of progress in policy (which is also summarised in Annex 1.A1) and introduces the key issues in the four subsequent chapters. A final section provides a brief update on environmental policy. This *Survey* takes an in-depth look at pension reform (Chapter 2), fiscal issues in regional and municipal government (Chapter 3), secondary and tertiary education (Chapter 4) and innovation policy (Chapter 5).

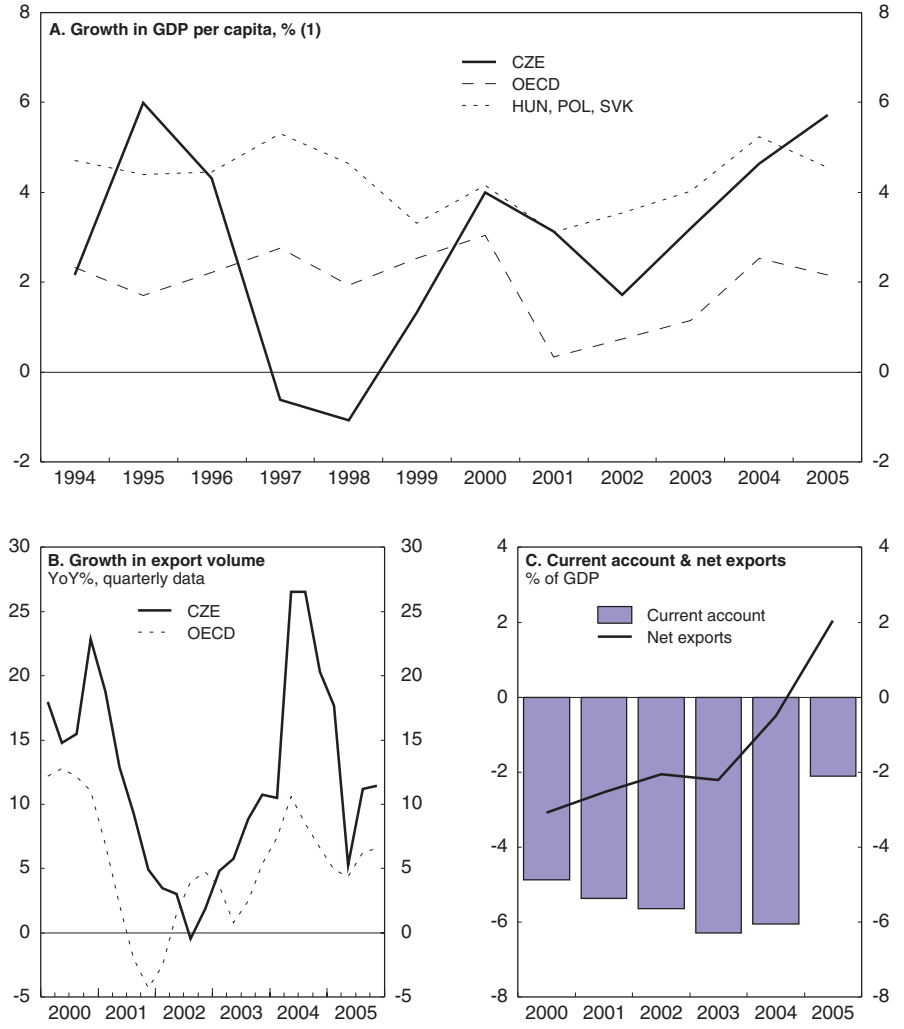
Economic growth: prospects have improved

The pace of catch-up has strengthened in recent years. Since 2002, growth in GDP per capita has risen from a little under 2% to 6% in 2005, the highest annual rate of growth for many years. This is encouraging news for Czech growth prospects (Figure 1.1) and has led to an upward revision of projections. Though growth is expected to fall off from the level reached in 2005, it will nevertheless be higher than previously projected. OECD projections now predict growth of 5.75 and 4.75% in 2006 and 2007 respectively. The 2006 figure is, for example, up by about 1¾ percentages point on projections made in 2004 (see Box 1.3).

Further expansion of export-driven manufacturing production, backed by foreign-direct investment, lies at the heart of the pick-up in growth. Exports increased substantially in 2004 and there has been further expansion since, though at a significantly reduced pace (Figure 1.1).[2] Indeed, the net trade balance in goods has become positive, implying that the value of exports now more than offsets the combined value of imports used in production and those absorbed in domestic consumption. Some very large new production facilities are playing a key role in the export figures. In particular, a Toyota-Peugeot-Citroen plant began production in 2005, accounting for a significant share of increased exports of transport equipment. Looking forward, the value of new FDI investment deals recorded by *CzechInvest* has recovered following a lull in the early 2000s.[3] For instance, in spring 2006 Hyundai decided to locate a large new production facility in the Czech Republic. Full production is expected in 2009 and the total investment will be equivalent to about 1% of current GDP. This being said, repetition of the extremely large export growth of 2004 is not expected and increases in household consumption are expected to play a more important role in growth for 2006 and 2007.

Though Czech growth has indeed improved substantially, it partly reflects external factors. 2005 apart, annual growth in GDP per capita across Hungary, Poland and Slovakia has, on average, also been strengthening in recent years and has been higher than in the Czech Republic (Figure 1.1). In particular, Slovakia has been growing strongly for some

Figure 1.1. **GDP, exports and the current account balance**



1. Growth in Hungary, Poland and Slovakia is a simple average.

Source: Czech National Bank; OECD, Annual and Quarterly National Accounts Databases .

time, and growth in Hungary has been increasing. The similarities in growth performance underscore the strong influence of external factors. Though domestic policy has played an important role in promoting economic growth, it could do even more to sustain high growth performance. Though the output gap has closed substantially, estimates point to rising growth in potential output, suggesting a positive outlook on the capacity for further growth.[4]

Box 1.3. **The OECD's spring 2006 projection for the Czech Republic**

Demand, output and prices

	2002	2003	2004	2005	2006	2007
	Current prices CZK billion	Percentage changes, volume (1995 prices)				
Private consumption	1 233.9	4.6	3.3	2.6	3.3	4.2
Government consumption	555.2	3.8	–2.7	0.8	1.0	0.5
Gross fixed capital formation	643.3	4.7	5.3	3.7	4.2	5.2
Final domestic demand	2 432.4	4.5	2.5	2.5	3.0	3.6
Stockbuilding[1]	29.8	–0.9	0.7	–1.0	0.3	0.0
Total domestic demand	2 462.2	3.5	3.1	1.5	3.3	3.6
Exports of goods and services	1 487.5	7.5	20.9	11.2	11.1	9.8
Imports of goods and services	1 535.5	7.9	18.1	4.9	7.9	8.5
Net exports[1]	- 48.0	–0.4	1.4	4.5	2.5	1.2
GDP at market prices	2 414.2	3.2	4.7	6.0	5.7	4.7
GDP deflator	_	2.6	3.4	0.0	1.3	3.4
Memorandum items						
Consumer price index	_	–0.1	2.8	1.9	2.9	3.7
Private consumption deflator	_	1.8	2.2	1.0	2.9	3.7
Unemployment rates	_	7.8	8.3	8.0	7.7	7.5
General government financial balance[2]	_	–6.7	–2.9	–2.6	–3.3	–3.5
Current account balance[2, 3]	_	–6.3	–6.0	–2.1	–1.7	–0.9

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, (*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. Following a decision by Eurostat in early 2006, the 2003 deficit was reduced significantly through the removal of a guarantee from the expenditure side of the account.

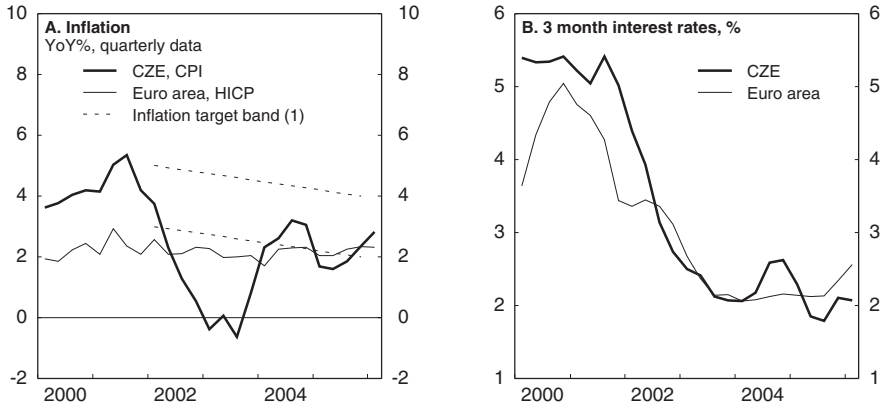
Source: OECD Economic Outlook 79 database.

Monetary conditions: inflation and interest rates remain low

Real convergence has been accompanied for some time by low and stable inflation. Indeed, the early 2000s saw inflation significantly undershoot the target band of the Czech National Bank's inflation targeting regime (Figure 1.2). Changes in regulated prices, exchange-rate appreciation and large domestic harvests largely accounted for this. However, in addition the Bank was overestimating the downward stickiness of prices and has since reflected this experience in its forecasting process. Inflation has since picked up, in part due to rising energy prices and is now close to the Central Bank's target of 3% (with a tolerance band +/– 1%).[5]

In financial markets, rapid growth of consumer credit is raising a degree of concern in an otherwise stable environment. This reflects a pick up in spending on consumer durables, which has been driven in particular by low prices, strong expansion in house construction and favourable interest rates.[6] An IMF Staff Report issued in November 2005 concludes that the credit growth largely reflects a process of financial deepening and that prudential risks associated with it appear to have been limited so far. Nonetheless, it makes a number of suggestions for improving supervision and response to financial risks

Figure 1.2. **Inflation and interest rates**



1. Prior to 2002, the target was not based on headline consumer price inflation.
Source: Eurostat.

including better data collection and analysis (IMF, 2005). Financial supervision in general looks set to improve through the placing of all supervision under the authority of the Czech National Bank earlier this year. One of the advantages of this move is that it will provide a better degree of separation between supervision and law-making. The Bank intends to initially maintain the current regulatory entities and processes but plans to later exploit common elements in regulation to streamline the system of supervision.

Despite these generally favourable conditions, there are some risks in meeting the exchange rate and inflation criteria for euro entry in 2010 (for further discussion, see the in-depth chapter on euro entry in the 2004 *Survey*). The greatest uncertainty lies in exchange-rate fluctuation during membership of ERMII because of the large influence of external factors. Though inflation is currently close to the target, future adverse shocks cannot be excluded, which adds a degree of risk to meeting the inflation criterion. This will partly be due to demand pressures, but also regulated price increases and excise duty, will continue to influence inflation (see, for example, CNB, 2006 for further detail).

There are also post-entry risks to joining the euro area. In broad terms, these depend on *i)* the risk of shocks that have a different impact on the Czech economy from that on the euro area as a whole ("asymmetric shocks") and *ii)* the economy's capacity for absorbing these shocks. If the risk of asymmetric shocks is large and markets are inflexible, then living without exchange-rate flexibility and being in a "one size fits all" monetary policy environment can be damaging.

In an effort to reduce these two areas of risk, the Czech authorities have set up an annual assessment process to examine the preparedness of the economy for entering the Exchange-Rate-Mechanism II (ERM II) and after this the euro-area. The assessments not only look at the situation with regard to the Maastricht entry criteria but also the risks of asymmetric shocks and absorption capacities, such as alignment of the economy with the euro-area economy and indicators of wage and price flexibility. The assessments are made by the CNB in conjunction with the Ministry of Finance and the Ministry of Trade and Industry and include an explicit recommendation on whether the government should attempt to enter to ERM II in the following calendar year. The reports for the next two years

could prove to be a test of whether the assessment process has influence. In particular, if the 2006 report recommends against joining ERM II during 2007, this would effectively mean that the assessment is advising against the planned euro entry date of 2010.

In sum, the annual assessment process and the inflation-targeting regime are providing a good framework for euro entry and neither warrants major reform. Though, of course, good monetary policy decisions and economic assessments within these frameworks will be crucial for successful entry to the euro area.

Box 1.4. **The Czech's assessment process for entry to the euro area**

The Czech authorities consider that ERMII membership should not extend much beyond the two-year minimum required, implying that ERMII should not be joined unless the chances of passing the Maastricht criteria are good and that alignment is satisfactory. The annual assessments look at a broad range of macroeconomic and structural indicators. The first report was made in autumn 2004.

The latest assessment, published in autumn 2005, recommended that the government should not attempt to join ERMII in 2006. Few expected the report to say otherwise as a recommendation to join ERMII in 2006 would imply joining the euro area in 2009, before the current target date of 2010. The assessment stressed that change in the recommendation depends primarily on progress in public-finance reform and increasing flexibility in the economy, particularly the labour market. In other respects the conditions for euro entry are generally considered favourable. For instance, the analysis concludes that alignment of the Czech economy and the euro area is increasing, though the trend is not very robust.

Ensuring fiscal sustainability: much work is needed in public-spending reform

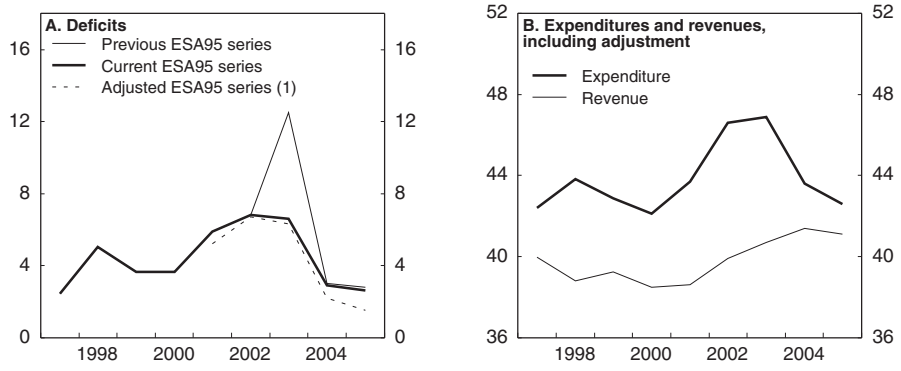
Public expenditure, deficit and debt influence the pace of catch-up in GDP per capita in several important ways. In the Czech context, public expenditure on infrastructure development is the most obvious influence as this is important for attracting investment and for avoiding congestion problems from increasing economic activity. The efficiency of delivery systems in all areas of public spending also matters for long-term growth. If these do not work well, economy-wide productivity is lower than it could be and resources, particularly human capital, are wastefully tied up in the public sector. In addition, the aggregate level of public spending influences both the burden of taxation and, *via* debt servicing, borrowing costs.

Recent fiscal outcomes present a mixed picture

Deficit outcomes based on accrual accounts for 2004 and 2005 suggest substantial progress in fiscal consolidation. For 2004, the ESA95 deficit was 2.9% and the most recent estimates put the 2005 deficit at 2.6%. This represents a substantial reduction on previous deficits, despite that the 2003 deficit has been revised downwards substantially following a decision by Eurostat to remove a guarantee from the spending side of the account (Figure 1.3). Both the 2004 and 2005 outcomes exceeded expectations. For instance, the latest Convergence Programme, published in November 2005, estimated that the deficit outcome for 2005 would be 4.8%.

However, the positive surprises on deficits largely reflect unexpectedly high revenues and transfers to reserve funds. Indeed, expressed as a share of GDP, there is no sign of a permanent downward shift in aggregate spending and revenues have been rising steadily (Figure 1.3).[7] Strong economic growth partly accounts for the growth in revenues. In 2005, for instance, particularly large corporate-tax revenues reflected export growth of the previous year and revenues from excise duty on diesel fuel were unexpectedly high.[8] Spending in 2005 was somewhat lower than expected given budget allocations but this reflected transfers to reserve funds (themselves a cause for concern, see below).

Figure 1.3. **Progress in fiscal consolidation according to ESA95 accounts**
Per cent of GDP



1. For details on the adjustments to the ESA95 accounts see Annex 1.A2. Note that in the previous series, the 2003 deficit included a large guarantee which was removed in early 2006 following a decision by Eurostat.

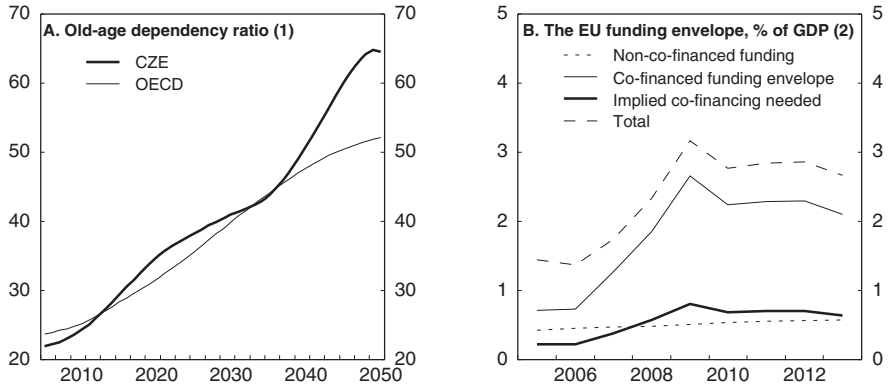
Source: Ministry of Finance, with adjustment made by OECD Secretariat.

The strong GDP and revenue growth, combined with election-year politics, have reduced spending discipline in the 2006 budget. Indeed, the budget approved by parliament exceeds the spending ceiling originally laid down for 2006 in the government's 2004-06 Medium Term Expenditure Framework by CZK 20 billion (equivalent to about 0.7% of GDP). The subsequent Frameworks (covering 2005-07 and 2006-08) have included additional spending items, the main justification being that GDP and revenue growth have come in much higher than assumed in calculating the original ceilings, and furthermore that these reflect structural rather than cyclical shifts.[9] The 2006 budget includes some significant cuts at the low end of the personal income-tax schedule, higher increases in public-sector wages than first proposed by the Ministry of Finance, pension increases above the minimum-required amount and several other measures that will boost household incomes (see Annex 1.A3 for more detail). The run up to the election also saw proposals for some spending increases in 2007, in particular a large increase in the parental allowance.

Upcoming spending pressures from EU co-financing opportunities and ageing

Challenges lie ahead in ensuring a good absorption capacity for EU funding, particularly given the much larger funds that will become available in the EU 2007-13 budget. The co-financing needed to make full use of EU funds will have to rise from current levels of about ¼ of a per cent of GDP to about ¾ of a per cent in the coming years (Figure 1.4).

Figure 1.4. **Spending pressures from ageing and EU co-financing opportunities**



1. The old-age dependency ratio is calculated as 100 x (population 65+)/(population 20-64).
2. Secretariat estimates based on assumptions about the average co-financing requirement in different structural funds and figures for the provisional funding allocations for 2007-13.

Source: Ministry of Finance; Secretariat estimates based on budgeted EU-funding and on United Nations, *World Population Prospects 1950-2050* (2002 revision).

Looking further ahead, the Czech Republic faces one of the most powerful demographic challenges in the OECD. The old-age dependency ratio is already rising and the rate of growth will accelerate between 2010 to 2020 and even more so from around 2035 (Figure 1.4). By 2050, the ratio is projected to be one of the highest in the OECD area. This underscores the importance of ensuring health care and pension systems are in good shape. Recent OECD work, for example, suggests that, without reform, expenditures on health and long-term care could rise from 7 to 14% of GDP by 2050 (OECD, 2006). The latest Convergence Programme estimates that outlays on state pensions will increase from about 8 to 13% of GDP by 2050. Putting these figures together suggests age-related spending pressures could average as much as 0.25% of GDP per year without measures on cost containment.[10]

Recent policy progress in budgeting

Various measures to tighten accountability in spending are underway. Mandatory impact evaluation and requirements for detailed reports on spending by budget managers were introduced in 2005 and the introduction programme budgeting began this year with the aim of having a fully operating system by 2009.

In addition, there has been further progress in reducing the number of off-budget accounts. Most notably, a large fund that processes privatisation revenues (the National Property Fund) was incorporated under Ministry of Finance accounts this year.[11] Nevertheless, some significant off-budget funds will continue to operate that finance infrastructure, agricultural support and housing. As previous recommendations have underscored, the funds cause problems for fiscal discipline because they run on a separate budgetary process from the main budget, and are often a source of over-budgeting.

New rules on carry over spending are reducing end-of-year spending sprees, but have weakened overall budgetary control. Legislation passed in 2004 gives ministries much more leeway to transfer budget allocations into their reserve funds – current as well as

investment allocations can now be transferred. The line ministries indeed appear to be using these new options. The total value of reserve funds end-2005 was CZK 58 billion (equivalent to about 2% of GDP), up from CZK 32 billion end-2004. The net increase comprised about CZK 22 billion of withdrawals and CZK 48 billion of transfers into funds. The new rules aim to cut back on inefficient end-of-year spending sprees. While they has achieved this, they are also overly weakening control and predictability on budget outcomes for the Ministry of Finance. Reflecting these concerns, the government issued a decree in 2005 to regulate the use of reserve funds but this has not been extended into 2006.[12] While such stop-gap measures are useful, a permanent change in the rules is required. An adjustment that will preserve the advantages of new rules on carrying over spending should be sought that preserves the advantages, especially for capital spending and EU programmes, while allowing the Finance Ministry to retain control over spending. One avenue that should be exploited is to link carry-over spending with progress in output performance budgeting.

While the Medium Term Expenditure Framework is widely considered to have been helping fiscal consolidation since its introduction in 2004, the raising of the spending ceilings suggests additional rules are needed to better deal with revenue and expenditure windfalls. At present the Framework does not specify procedures for assessing developments in revenues and spending to determine whether a structural or cyclical interpretation is appropriate. Sanctions and tighter rules on the use of sub-clauses may also be needed, such as the clause on exceptional circumstances. However, the way in which the ceilings are calculated may be too rigid and this might weaken governments' commitment to them. Various ideas have been floated on how to improve the ceiling calculation, including use of different baseline spending statistics, greater oversight of line ministries' estimates of spending needs, exclusion (or different treatment) of volatile spending items in the ceilings and reformulation of the ceilings as shares of GDP instead of cash amounts.

Limited progress in general economies in public spending

General economies in public spending to ensure fiscal sustainability have been limited. A drive for staff cuts in government ministries has stalled. In 2003, plans were laid for 2% cuts in staffing levels per year between 2004 and 2006 but these have only been partially executed. Indeed, the Ministry of Finance is the only central government employer to have made significant job cuts.[13] There are hopes that financing *via* public-private partnerships (PPPs) will get underway again following poor initial experiences on this front.[14] Several pilot projects are operating and new legislation is in the parliamentary process that aims for better contractual frameworks. Such partnerships can help financing but need expertise and careful structuring to avoid undesirable long-term liabilities.

In tackling the specific spending pressures from ageing, progress in health care reform has been limited. Though plans for major reform have been drawn up by successive health ministers none have been implemented. As a result, little progress has been made along the lines suggested in the 2003 *Survey's* in-depth review of the health care system (see Annex 1.A1). For instance, there has been some discussion about the scope of universal medical care and drug lists; however, there has been resistance to giving more scope for co-payments.

However, there has been some positive development on pension reform. Chapter 2 looks at five proposals (one by each of the main political parties) developed in 2005 by a

special working group to reform the current pay-as-you-go pension system. The proposals cover a wide range of options: only parametric change of the current pay-as-you-go (PAYG) system, systems combining a PAYG pension with a second-pillar (defined-contribution) pension, a flat-rate pension and a system of notional accounts. The chapter principally uses OECD micro-simulation models to look at the properties of the proposals.

As part of a series of OECD country reviews, Chapter 3 looks at the options for improving financing and spending efficiency in sub-national government. Decentralisation in the early 2000s, means some key areas of spending are now the responsibility of a newly formed system of regional governments. In addition, municipalities are playing a bigger role in state administration following the dissolution of a network of administrative districts. Given that there are over 6 200 municipalities, policy has to ensure that economies of scale are fully exploited in service delivery. Policy also has to work on making sure the financing system provides the right balance between central-government steerage and freedom in resource allocation by sub-national governments. Finally, work is also needed in ensuring accountability of services and investment decisions of sub-national government services through benchmarking and the public procurement system.

Improving the labour market: room for greater efficiency and a deeper skills base

Catch-up in GDP-per-capita can partly be made through greater use of labour resources. OECD calculations suggest that in the Czech Republic there is room to raise the employment rate by about 10 percentage points through reduction in unemployment and increases in labour participation rates.[15] In terms of catch-up, achieving this would close about 40% of the present gap with average per capita in the EU.[16]

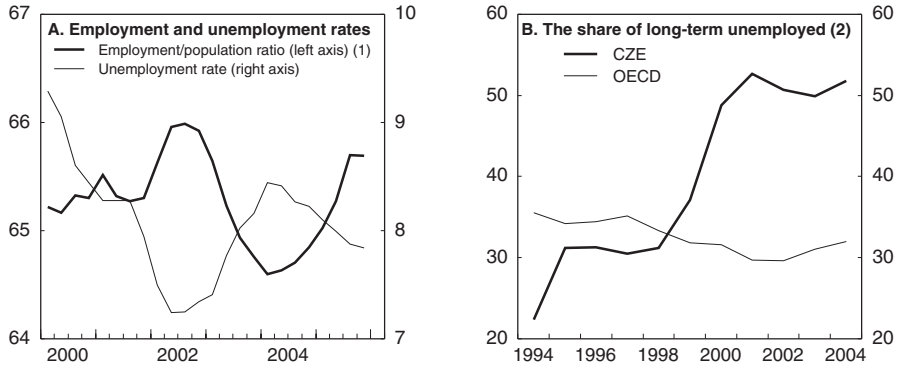
However, the majority of catch-up has to come from increases in labour productivity and the skills-base matters tremendously in this regard. Further productivity gains can be made through further growth in capital-intensive activities, such as car production, but the labour market has to contain the right skills base – at the right price – for this to happen. In the service sector, the importance of skills is self-evident as most of the value added is generated by human capital.

Labour market efficiency

Recent labour-market outcomes have been encouraging but a fundamental problem of long-term unemployment remains. Labour demand has picked up since mid-2004; the employment rate has risen by about 1 percentage point and the unemployment rate has fallen by about ½ a percentage point to around 8% (Figure 1.5). The relatively small reaction of the unemployment rate to increasing labour demand is partly because many of the unemployed are, in effect, not in the labour market. About half of the unemployed have been out of work for at least a year while in other OECD countries, only about one third are typically long-term unemployed (Figure 1.5). This problem originates from economic decline in mining and heavy manufacturing industries. Skill mismatch between those laid-off and the jobs created in growing sectors of the economy is aggravated by geographic mismatch between declining activities and new growth industries, raising an issue of labour mobility.

Policy has not always been well designed towards reducing unemployment and some aspects of it impede the overall efficiency of the labour market. Reduction in the large tax wedge on labour needs to remain a broad policy priority as this is damping employment

Figure 1.5. **Labour market developments**
Per cent



1. Total employment divided by working-age population, quarterly data.
2. Unemployed for one year or more as a percentage of unemployed, annual data.

Source: OECD Economic Outlook and *OECD Employment Outlook*.

throughout the labour market. Personal income tax plus, most importantly, employer and employee contributions are equivalent to at least 40% of wages. Indeed, only a handful of other OECD countries have higher tax wedges than those in the Czech Republic.[17] Unfortunately, room for across-the-board reductions in the wedge is limited by the need for fiscal consolidation and by competing priorities on spending and revenue-reduction and cuts have to be focused at the low end of the labour market. However, there is opportunity for more immediate progress on other fronts. Tax and benefit systems have some poor incentive structures and labour regulation on employment and wage setting processes are in some respects too inflexible and intrusive. In addition, problems in the rental market for housing have also contributed to weak labour mobility.

The authorities have recently made some positive progress in making the welfare system more work-oriented. In particular:

- A new job-search bonus scheme is to be introduced and in-work benefits strengthened as part of the Czech system of "assistance in material need". As of January 2007, welfare recipients who pass certain job search criteria will be eligible for a bonus. In addition, the low paid will have only a share of their income counted in means testing for living allowances. There has also been some tightening of eligibility criteria for benefits. As of October 2004, those unemployed for more than one year must, under certain conditions, accept temporary job offers or perform work of public benefit.
- New sick pay arrangements make the employer responsible for paying the first two weeks of sick pay in exchange for a reduction in employers' social contribution. This new system should reduce abuse of sick pay – previously employers had little incentive to keep abuse in check as the government paid wages throughout the period of sickness. There is however concern that the cut in social security contributions is larger than that needed to cover the employers' new responsibilities and that the reform will add to pressure on the public deficit.

In addition, a schedule for removing rent protection has been agreed that should help improve labour mobility. About 20% of the rental market is protected from rent increases

and this has inflated prices and reduced turnover on the open market, thus contributing to the challenges for job seekers. In 2006, legislation was passed scheduling annual increases of 14.2% in protected rents between 2007 and 2010, followed by removal of protection altogether.

Progress towards more flexible labour legislation and wage setting has been mixed. In particular:

- A new labour code (passed by the lower chamber of parliament in early 2006) has brought modernisation of the legislation. A switch from a "Napoleonic" to an "anglo-saxon" approach in legislation should bring wider contractual freedom.[18] Among the specific provisions in the code, legislation on working time accounts should in particular help flexibility. However, expectations of more radical reform, especially by employers, were not fulfilled. In particular, on the key issue of employment protection, there was discussion on whether to allow dismissal-without-reason compensated by statutory severance pay. However, agreement on this was not reached. As a result, lighter rules on dismissal for those on permanent contracts are still required to reduce incentives to abuse alternative work contracts and, more generally, to increase labour efficiency.
- Large increases in the minimum wage are being implemented in 2006. The minimum wage was increased by 5.4% in January and a further rise of 5.1% is scheduled for July. The hikes continues an upward trend seen since the late 1990s. This being said, even with the recent increases, the ratio of the minumum wage to median earnings is not expected to reach the level seen in some other OECD countries.[19]

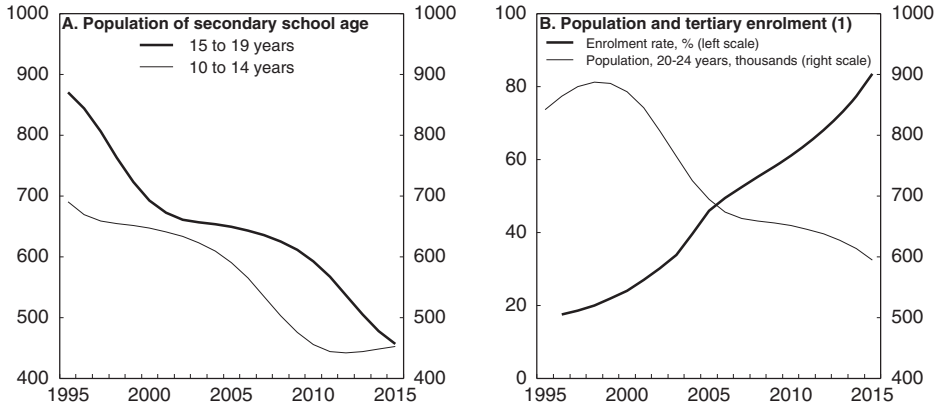
The skills base

Deepening of the skills base will require improvements across the education system. Chapter 4 of this *Survey* looks at ways of moving ahead in secondary and tertiary education reform. In some respects, the education system performs well. Attainment rates in secondary-school education are among the highest in the OECD for all age groups. The OECD's PISA tests of 15-year-olds are also encouraging, showing Czech students to be among the best in mathematics and science.[20]

The main policy challenge is coping with rising demand for tertiary-level education. Though the population base of typical tertiary-level entrants is set to fall, the enrolment rate is expected to more than offset this, increasing from 50 to over 80% (Figure 1.6). As a result the number of tertiary enrolments is expected to increase from the currently level of 325 000 to 380 000 by 2013. The rapid rise in enrolment rates reflects catch-up in tertiary education with other countries. Czech tertiary attainment is indeed building from a low base; less than 15% of the working-age population have attained a tertiary-level qualification while many OECD countries have tertiary attainment rates of at least 30%.[21]

The secondary education system also faces challenges from the rising demand for tertiary education because it implies changes to the Czech Republic's highly segregated system of schooling to cope with wider demand for programmes geared to university entrance. The education system also faces challenges from demographic decline. A steep fall in the population of basic school age is currently under way and will be echoed in the upper-secondary system in the next few years (Figure 1.6). This is going to mean continuing pressure for school closures and adds further questions about segregation in secondary schooling.

Figure 1.6. **Demand and supply developments in education**



1. The enrolment rate is calculated as the ratio of students enrolled in bachelors, master and doctoral programmes divided by the population of those aged 20-24 years.

Source: Secretariat estimations and projections based on data from the Ministry of Education, Youth and Sports and United Nations, *World Population Prospects 1950-2050* (2002 Revision).

Enhancing the business environment: further progress needed in several areas

Most of the catch-up in Czech GDP per capita with other OECD countries has to take place *via* business-sector growth. Around 80% of GDP is generated by the private sector and so even substantial productivity gains in public-sector services are likely to be outweighed by those of the private sector. Furthermore, fiscal priorities mean efficiency gains in public-sector services should generally be linked to downsizing inputs rather than increased output. Of course, many areas of policy affect the business environment. As described above, monetary conditions are supportive, with inflation and borrowing costs low, while there has been some disappointment from a business perspective in progress on labour market flexibility. The other main policy issues lie in three broad areas: the legal and administrative environment; competition policy and in business taxation and support.

Legal procedures and administrative processes

Legal procedures and administrative processes, such as business registration, have long been criticised by the business community as too cumbersome.[22] Furthermore, the desire to speed-up or short-cut procedures has encouraged corruption. Recent steps to deal with these problems include amendment to the civil and commercial codes in 2005. This has resulted in a transfer of some administrative tasks from judges to court officials, standardisation of business registration forms, lighter checking procedures and shortening of the maximum time allowed for registration of a file with the courts.[23] On other fronts, a system of regulatory impact assessment has completed its pilot phase and assessments are now obligatory for all legislation submitted to the government. In addition, several further measures to reduce the administrative burden to businesses were proposed to the government in April 2006.

Progress has also finally been made towards improving the long-criticised system of bankruptcy with new legislation entering the parliamentary process in early 2006. The new legislation aims to strengthen the position of creditors in various ways, including the

introduction of a "re-organisation" option. Re-organisation will enable a judge (following evidence presented by creditors and debtors) to impose a schedule for the partial repayment of debt which, if successfully completed, will mean the remainder of debt is written off. This should help debtors' incentives to file for bankruptcy rather than engage in asset stripping.

While the recent measures to cut red tape and the new bankruptcy legislation mark welcome progress they are likely to need some follow-up action. The effectiveness of measures to cut administrative loads for business can only be gauged after new regulations are fully operational and assessment is likely to reveal a need for further adjustment. The same applies for bankruptcy legislation where careful monitoring of the effectiveness of new features, such as re-organisation, is needed.

In the campaign against corruption, recent measures include the tabling of legislation that would increase financial disclosure requirements for politicians and public administrators. The legislation could be particularly effective in dissuading high-level corruption, which inevitably shapes outside perceptions, notably those of the international investors. The new bankruptcy law is also helpful because it lowers opportunities for corrupt arrangements between judges and bankruptcy administrators. However, the fight against corruption is by no means over. Though survey-based corruption indicators suggest that the Czech Republic does not rank badly on a worldwide comparison, or with the other east-European OECD countries, it does rank poorly compared within the OECD area as a whole.[24] Furthermore, there is only a small sign of improvement in indicators over time. Pressure through new measures to enhance accountability has to be maintained along with continued reduction in the opportunities for corruption through simpler administrative processes.

Competition policy

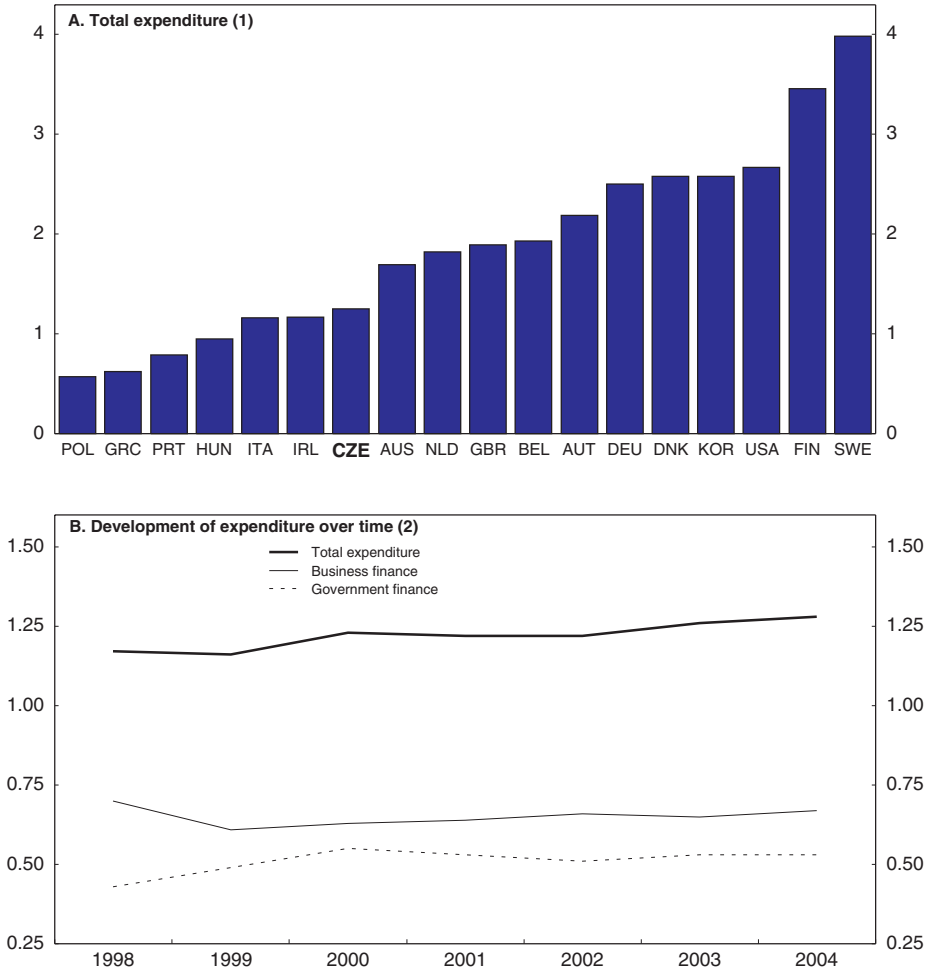
In competition policy, the legal and administrative frameworks are generally judged as sound, and EU membership has brought the additional backing of EU-competition legislation and the European Commission's competition authority. Nevertheless, the national competition authority (the Office for the Protection of Competition) and other regulatory bodies face an ongoing challenge in ensuring a healthy level of competition in the network industries where privatised, or semi-privatised incumbents, wield significant influence in some markets. For instance, in 2005 the competition authority fined *Cesky Telecom* in two important cases of abuse-of-dominance.

Business taxation and targeted support: challenges in improving innovation policy

In terms of business taxation and targeted support, Czech policymakers face broad challenges similar to many other OECD economies. In business taxation, there are tricky trade-offs between competitiveness in an international context with concerns about revenue and the balance of taxation between labour and capital. Though targeted support can play a useful role in some areas, by definition it runs against the principle of providing even playing fields. In addition, the effectiveness of schemes is difficult to gauge and it can be difficult to resist political pressures to widen concessions beyond the sectors or activities for which support was originally intended.

The challenges in improving innovation policy, an issue that has received considerable attention in many OECD countries, are considered in Chapter 5. A little over 1% of GDP is recorded as R&D activity in the Czech Republic (Figure 1.7), far short of the target of 3%

Figure 1.7. **Gross domestic expenditure on R&D**
Per cent of GDP



1. Average expenditure, 2002-04.
2. Business finance means financed by private and public enterprises and institutes serving such enterprises.

Source: OECD, Main Science and Technology Indicators Database.

target in the EU's Lisbon Agenda. Although the level of R&D activity is low compared with many other OECD countries and there is little sign of increase, it compares favourably with countries at a similar stage of development, such as Hungary, Poland and Slovakia. However, levels of aggregate R&D activity are, at best, only a crude guide as to whether the right policy approach is being taken to innovation. As in other countries, Czech innovation policy broadly aims to encourage more private-sector research, particularly among small-and-medium enterprises, and to promote a more market-driven approach to research by public-sector research institutions and universities. Making progress on these fronts

requires assessment of institutional frameworks and difficult decisions on how far spending on targeted support should go, and where it is most effective.

Update on environmental policy

This section looks at recent developments on climate change and air pollution, following on from an in-depth study on sustainable development in the previous *Survey*. The update also draws on a recent OECD *Environmental Performance Review* 2005 (see Box 1.5).

Box 1.5. **The OECD *Environmental Performance Review* of the Czech Republic**

In autumn 2005, the OECD published its second *Environmental Performance Review* of the Czech Republic, covering developments between 1999 and early 2005 (OECD, 2005d). The *Review* underscores that reduction in pollution and energy intensity has slowed in recent years. It also concludes that expenditure for pollution abatement and control need to be increased and that improved cost effectiveness of environmental policy is required through wider use of economic instruments.

The *Review* looks at several environmental issues in addition to air pollution and greenhouse gas (GHG) emissions. Progress in *water quality* and related policies are judged as being broadly sound, though in flood protection policy, a re-balancing of the mix between active and passive protection is recommended. The report is however critical of progress in *waste prevention*. In particular, fees for depositing landfill waste are identified as being too low and the level of public awareness on waste prevention inadequate. Though the report judges legal and institutional progress in *nature and biodiversity* policy as good, it concludes that ecosystems are nevertheless disappearing at an unacceptable rate. The *Review* blames this on inadequate monitoring and a failure to take into account biodiversity issues in policy areas such as flood protection, public recreation and tourism.

Climate change

The Czech Republic looks set to easily fulfil its Kyoto commitment on GHG emissions.[25] Nevertheless, emissions (both per capita and per unit of GDP) remain among the highest in the OECD area, emission-reduction is lagging behind that of neighbouring countries and there has been little reduction in energy intensity in recent years (International Energy Authority, 2005). The relatively high GHG emissions are partly because a high share of lignite and brown coal (which are particularly carbon-rich relative to energy content) is used for electricity production. Relatively inefficient processes in some industries and weak heating insulation in households are also contributory factors. Policy objectives on energy use and renewable energy production to 2009 include a goal of annual 2.6% increases in energy efficiency and achievement of a 5.6% share of renewable energy in primary energy sources.[26]

The most significant recent policy action is a new act on renewable energy production. The act, passed in 2005, aims to provide substantial impetus for the expansion of renewable energy. It sets up a 15-year subsidy programme in which producers can choose between fixed feed-in tariffs and a "green bonus" system.[27] The expected increases in renewable energy production are very large. For example, wind-farm capacity is expected to increase from the current level of about 20 GWh to 930 GWh by the end of the decade.

Experience in other countries suggests care is needed in setting and monitoring the fixed feed-in tariffs to prevent renewable energy production in which the additional cost over traditional energy production exceeds estimates of the combined benefits in terms of GHG emission reduction and air pollution externalities.

In addition, a draft reform of ecological tax looks set to bring more coherent taxation of energy, albeit slowly. Previous OECD assessments have been critical of the uneven approach to energy taxation, in particular the protective stance on brown-coal mining. One of the draft's goals is to increase taxation of electricity produced from brown coal, black coal and coke. To minimise negative social consequences, the tax increases will be introduced gradually (renewable energy will remain exempt).

Air pollution

Air quality in the Czech Republic has improved significantly over the past ten years or so, though as with GHGs some types of emissions are still relatively high. Notably, sulphur dioxide and nitrogen oxide emissions intensities (*i.e.* emissions per unit of GDP) are about twice the EU average. In contrast, emission intensities of volatile organic compounds per unit of GDP were close to the EU average already in 1990. In 2005, strategic goals were updated in the *Integrated National Programme for Emission Reduction* and this includes new targets for air pollutant emissions for the year 2010.

Notes

1. Czech GDP per capita on a purchasing-power-parity basis is estimated to be 74.4% of that in the EU-25 in 2006, according to figures available on Eurostat's website in March 2006. US GDP per capita is projected to be 153% of that in the EU-25 in 2006. See, *http://epp.eurostat.cec.eu.int*.
2. In 2004 Eurostat's "intrastat" system of recording trade was introduced. This is thought to have had some influence on the development of trade figures but not so large as to affect the overall picture. The rapid growth in exports in 2004 is thought to have been in part because paperwork at border crossings was substantially reduced on entry to the EU in May that year.
3. *CzechInvest* records the total investment and number of jobs that investment deals are expected to deliver (*CzechInvest* is the government's central agency for promoting investment). Cash FDI figures are recorded in the balance of payments statistics, which are maintained by the Czech National Bank. Subtracting the foreign investment attributable to privatisation sales in the Bank's figures shows a similar lull in activity in the early 2000s with sign of pick up in the 2004 figure.
4. According to the Central Bank's estimate of January 2006 (*i.e.* before the full-year 2005 GDP figures were released), the output gap was negative but close to zero by the end of 2005 (CNB, 2006). This is echoed by OECD estimates of the gap. Ministry of Finance estimates suggest that the output gap had already moved into positive territory in early 2005, though only marginally (Ministry of Finance, 2006). The Ministry of Finance estimates that potential output growth has risen substantially since the early 2000s from around 1.5% to over 4% in 2005.
5. The Central Bank's target band had a shallow downward slope until the beginning of this year when it became a flat point target at 3% inflation with a ±1% tolerance band.
6. Construction activity has been boosted by households wanting to get house renovation and extension work completed before scheduled increases in VAT.
7. The continued upward trend in general-government spending seen in ESA95 accounts is also seen in the Ministry of Finance's adjusted-cash accounts which are commonly used to assess fiscal performance, see Annex 1.A2.
8. It is thought that the large gains in excise duty on diesel fuel in 2005 were due to a large increase in the use of Czech filling stations by international truck transporters following entry to the EU.
9. The Medium-Term Expenditure Framework (MTEF) was set up in 2004. Under this Framework the government makes annual submissions to parliament outlining three-year deficit targets and spending ceilings covering the state budget and seven extra-budgetary funds. The submission is

treated similarly to the state budget. Notably, if the document is not approved by parliament it is returned for revision. The aggregate spending ceilings are legally binding.

10. The upside estimate of health care pressures in OECD work suggests a rise in spending equivalent to 7 percentage points of GDP. Combining this with the increase in pensions outlays estimated in the Convergence Programme implies a total increase of 12 percentage points. Dividing this across 45 years suggests an average annual increase in spending pressure of about 0.25% of GDP to 2050. Spending pressures are of course likely to vary considerably over the period because of variation in the speed of ageing.

11. Another fund dealing with privatisation revenue (the Land Fund) will also be closed in 2009. Also, the Czech Consolidation Agency is to be wound up in 2007. This fund notably has been used to manage bad assets from the banking crisis of the late 1990s. The most important remaining state funds will be the state transportation fund (SFDI), state agriculture intervention fund (SZIF) and the state housing fund (SFRB). The wind up of the National property fund will notably involve the transfer of many of the environmental guarantees to the Ministry of Finance. These guarantees were typically made in privatisation deals involving heavy industry and mining and give enterprises the right to call on state support for environmental clean up.

12. The 2005 decree stipulated that reserve funds could only be used for investment spending registered before the end of 2004, half of reserves withdrawn over the year had to be returned to the reserve by the end of the year (though with some important exemptions) and quarterly reporting of reserve funds was required. However, no similar decree applies for 2006.

13. By the end of 2006, the number of staff in the Ministry of Finance will have been cut by 17% since the beginning of 2005.

14. Notably, a PPP project providing internet services to schools set up in 2002 was not successful and an attempt to finance construction of a section of the D47 motorway (between Lipnik nad Becvou and Poland) with a PPP failed in 2003.

15. The OECD calculations of potential labour resources assume unemployment rates can be brought down to 5% and that labour-force participation rates in each age-cohort can be raised to the third highest in the OECD (OECD, 2003).

16. *Ceteris paribus* a 10-percentage point increase in the employment rate will increase GDP per capita by the same amount. Given Czech GDP per capita is about 75% of the EU average, this implies about 40% of the gap could be covered by increases in the employment rate. It should be underscored however that this is an upper estimate of how far employment rates could go in narrowing the gap. Furthermore, increase would probably be spread over a prolonged period because it would take time to get policy right for maximising the employment rate and take time for labour markets to react to new incentive structures.

17. The large tax-wedge on labour has also led to pseudo self-employment in which people are hired under contracts for work as self-employed individuals rather than under standard employee contracts. The authorities have been attempting to limit this by stringent conditions on the use of self-employment contracts. The statistic on tax wedges is based on the latest OECD estimates of tax wedges across OECD countries (OECD, 2005a, Table II.5). For families with children, child-benefits and family tax breaks lowers the tax wedge. For instance for married couples with two children the tax wedge ranges between 30 and 40% depending on income.

18. An "anglo-saxon" approach to legislation means basing law on the principle of "what is not forbidden is allowed". The "Napoleonic" approach is based on the principle that "what is not allowed is forbidden".

19. Following the January increase, the monthly minimum wage is currently CZK 7 570 and will rise to CZK 7 955 in July. This will bring the minimum wage to about 40% of the average wage. According to OECD data, the minimum wage was only about 22% of the median wage in the late 1990s but this had already risen to 37% by 2004.

20. Comparisons of the latest PISA results can be found in OECD (2005b).

21. These figures can be found in OECD (2005b). The international comparisons made in OECD statistics exaggerate the low level of tertiary-level attainment in the Czech Republic because some types of below-degree-level courses are relatively common in the Czech system but are not counted in the international comparison. However, it is widely accepted that Czech tertiary attainment is nevertheless relatively low compared with other OECD countries.

22. For example a British firm, *Control Risks* in its 2006 report on investment conditions across countries concludes that corruption and bureaucracy remain problematic in the Czech Republic.

23. The amendments to the Commercial and Civil procedure codes of July 2005 notably include the following:
– introduction of standardised forms for petitions.
– reduction of the turnaround time in court decisions on registration to 10 days and to 5 days in July 2006.
– if the court misses the deadline, the business registration is presumed to be approved.
– judicial supervision requirements have been limited in favour of registration.
– in January 2007 the Commercial Registry will be officially available on the Web.

24. *Transparency International's* corruption perception index is the most widely reported measure. It is based on annual surveys of business executives in a large number of both developed and less-developed countries. Clearly the responses to such surveys are influenced not only by personal experience by also by media attention to corruption.

25. The Czech Kyoto commitment is for an 8% reduction in greenhouse gas emission from its 1990 level by 2008-2012. Already by 2003 GHG emissions had been reduced by 25% and government projections show that in ten years time GHG emissions will be within Kyoto limits, even assuming a fast pace of economic growth scenario and unchanged policies (Ministry of Environment, 2005).

26. The medium-term policy objectives are laid out in the *National Programme for Energy Effective Management and the Utilisation of Renewable and Secondary Sources of Energy* which was published in mid-2005. This document is derived from framework strategies on energy and environmental policy adopted by the government in 2004.

27. The new act on renewable energy sources was effective from August 2005 and implements EU Directive 2001/77/EC. In the green bonus system producers sell electricity on the open market but receive a top-up *via* a bonus payment, set annually by the Energy Regulatory Office. The bonus will be related to the market price and the intention is to take account not only of environmental issues but also the additional risk of this scheme over the fixed fee-in tariff. In addition to a revision of the subsidy system the act introduces compulsory certification/confirmation of the origin of electricity. The new act also changes the prices of "green" energy: price of solar energy will double; on the other hand, the price of the wind energy will decrease.

Bibliography

CNB (2006), *Inflation Report, January 2006*.

Czech Government (2005), *Convergence Programme of the Czech Republic*, November.

Czech Government (2005), *Economic Growth Strategy*, Prague.

International Energy Agency (IEA) (2005), *Energy Policies of IEA Countries, Czech Republic, 2005*, OECD, Paris.

International Monetary Fund (IMF) (2005), *Article IV Consultation with the Czech Republic,* Washington DC.

Ministry of Environment (2005), *The National Programme on Reduction of Impacts of Climate Change in the Czech Republic*, OECD, Paris.

Ministry of Finance (2006), *Macroeconomic Forecast, Czech Republic,* January 2006, Prague.

OECD (2003), *OECD Economic Surveys: Czech Republic*, OECD, Paris.

OECD (2004), *OECD Economic Surveys: Czech Republic*, OECD, Paris.

OECD (2005a), *Taxing Wages,* OECD, Paris.

OECD (2005b), *Education at a Glance*, OECD, Paris.

OECD (2005c), *Annual Report on Competition Policy Developments in the Czech Republic – 2004*, internal OECD document.

OECD (2005d), *OECD Economic Outlook*, No. 78, OECD, Paris.

OECD (2005e), *OECD Environmental Performance Review: Czech Republic*, OECD, Paris.

OECD (2006), "Projecting OECD Health and Long-term Care Expenditures: What are the Main Drivers?", *Economics Department Working Papers*, No. 477, OECD, Paris.

World Bank (2005), *Fiscal Reform in the EU 8*, Washington, DC.

ANNEX 1.A1

Progress in structural reform

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

Past recommendations	Actions taken and current assessment
Ensuring fiscal sustainability	
Budgeting practices	
In the Medium-Term Expenditure Framework, be vigilant against dilution of the impact of spending ceilings, abuse of rules on cyclical spending and inappropriate use of windfall revenues.	The budget ceilings have been raised since the framework was first introduced for *ad hoc* reasons.
Bring more extra-budgetary funds into mainstream budgeting procedures.	Following privatisation of Cesky Telecom in spring 2005, the National Property Fund has been wound up and some other extra-budgetary funds are due to close. Some important off-budget accounts will nevertheless remain.
Other measures not linked to recommendations:	
	In 2005, the government decreed special restrictions following the introduction of much wider opportunities to carry over reserve funds in 2004. However, the decree has not been extended to 2006.
Public expenditure reform: pensions (in-depth review in the 2004 Survey and in this Survey)	
Ensure pension reform delivers budgetary savings.	In 2005, five proposals (one by each of the main political parties) to reform the pay-as-you-go system were developed by a special working group on pensions.
***Public expenditure reform: health care* (in-depth review in the 2003 *Survey*)**	
Begin the intended process of health care reform, time is running out if health care reform is to help deal with accelerated demand due to ageing. The general goals of reform should be to: • Clarify and more narrowly define universal health services and allow private markets for complementary services to develop. • Make user fees play a greater role throughout the health system. • Step up monitoring of the output and quality of health care services. • Seek efficiency gains through more horizontal and vertical co-operation among health care providers. • Put more focus on preventative measures, such as public awareness programmes on lifestyle and health issues.	Though plans for major health care reform have been drawn up by successive health ministers over the past few years, none has been followed through.
Public expenditure reform: other measures not linked to recommendations	
	Economies through staff cuts in ministries have been made but far fewer than originally intended. A new legislative framework on public-private partnerships was introduced in 2006 with the aim of expanding this form of financing. Significant increases in family support (see below) scheduled for 2007 are set to aggravate problems in meeting deficit targets.

Past recommendations	Actions taken and current assessment
The Labour market: improving efficiency and the skills base	
Labour taxation	
Focus on cutting non-wage labour costs, particularly at the lower end of the labour market.	In January 2006, the bottom two rates of income tax were cut to 12 and 19% and the thresholds were widened (see Annex 1.A3).
Take further steps towards levelling the tax treatment between dependent and self-employment in order to reduce tax evasion.	Pseudo self-employment continues to be tackled by bans on the use of self-employment contracts. The cuts in personal-income taxation (see above) should help.
Welfare schemes and other transfers	
The plans to strengthen incentives for job search in the welfare system are welcome and the authorities should not hesitate to implement them.	The planned job-search bonus scheme will be introduced and in-work benefits strengthened as of January 2007.
Improve the system of sick pay.	New and improved sick-pay arrangements make the employer responsible for paying the first two weeks of sick pay in exchange for a reduction in the employer's social contribution.
Active labour market policy	
More systematic evaluation of programmes and a broad shift towards more activation schemes is needed.	Evaluation of active labour market policy has been made as part of monitoring under the EU-related Human Resource Development Operational Programme.
Consider introducing private placement systems.	No action.
Employment protection legislation	
Lighten the rules on redundancy for those on permanent contracts to reduce incentives to abuse alternative work contracts and more generally to increase labour market efficiency.	A new labour code was passed by the lower chamber of the parliament in early 2006. The code, if implemented, will allow a wider scope of employment contracts because it takes an "anglo-saxon" rather than "Napoleonic" legal form (see main text). Specific provisions in the code notably include provisions for working time accounts. Nevertheless, lighter rules on dismissal for those on permanent contracts are still required.
Education (in-depth review in this Survey)	
Increase output measurement and benchmarking in primary and secondary education.	No action.
Consider introducing fees into higher education system.	No action.
Immigration(in-depth review in the 2004 Survey)	
Take a longer-run approach to immigration, for example by widening the avenues to permanent residence and citizenship to increase integration.	In 2005, the time foreigners need to be resident before applying for permanent residency was reduced from 10 to 5 years, which is now the norm for European countries.
Monitor and adjust the pilot project for points based immigration ("Selection of Qualified Foreign Workers") with a view to expanding the scheme.	There has been welcome expansion of the scheme and as of January 2006 on-line application can be made. In July 2005, two new target countries were added to Pilot Project (Serbia and Montenegro, and Canada) and in January 2006 the Ukraine was also included. The number of entrants has now increased to 386.
Make work permit policy less restrictive, for example through less narrowly defined job descriptions and more relaxed rules for foreign residents to get permits.	In February 2006 revisions to the "Concept of Integration of Foreigners" were approved by the government (but have yet to pass through the parliamentary process) that alter the rules on extensions of work permits and introduce a "protective period" for immigrants.
Extend integration support (particularly for language courses) to cover "economic" migrants.	The revised "Concept of Integration of Foreigners" also lays the basis for the establishment of introductory courses for immigrants and systematic language training for foreigners. Details of the new system will be discussed within the following two years. Sufficient language knowledge (approved by a test) will be a precondition for a permanent residence permit.
Continue efforts to increase statistical information on immigration.	No action.
	Other measures not linked to recommendations:
	Significant cuts in spending on asylum facilities are underway in response to a dramatic fall in the number of applicants.
Roma issues	
Increase access to early childhood education for the Roma to complement the 2004 school act that eliminates the streaming of Roma into "special schools".	No action.
Extend the use of specially trained teaching assistants.	No action.

Past recommendations	Actions taken and current assessment
Consider introducing scholarships for socially disadvantaged students in tertiary education, as a complement to the programme providing support to secondary school students.	Additional financial support for students from families with income lower than 110% of the subsistence minimum has been introduced.
Explore ways of getting more information on the Roma to help policymaking, taking into account sensitivities on data collection.	In July 2005, the Ministry of Labour and Social Affairs commissioned an analysis of Roma localities and communities and the capacities of organisations working in this field. This analysis will be finished in July 2006. The main aim is to improve information on Roma problems, particularly the level of poverty. The output of the analysis will be used to develop programmes that make use of funds available in the 2007-2013 EU budget allocation.
Improving the Business Environment	
The legal environment for business	
Priority should be given to reforming bankruptcy legislation.	New bankruptcy legislation was passed in early 2006.
Further progress to ease business registration is needed.	Changes to legislation were introduced in 2005 that should speed up business registration. A project setting up central registration offices has been underway since late 2004 and a new information system for trade licences has been implemented.
General taxation and targeted support for business	
Make larger cuts in the corporation tax than those scheduled, rather other forms of tax-expenditure on firms.	In 2006, the last of a scheduled series of corporate tax-rate cuts reduced the rate from 26 to 24%. This still leaves the corporate tax rate relatively high compared with some neighbouring countries. However, effective tax rates have been reduced by a number of measures, in particular higher depreciation rates on assets.
A critical look at the cost-effectiveness of targeted financial support should be made.	No action.
Competition issues	
In telecommunications markets the regulator needs to be more committed to creating stronger competition. In particular, local-loop unbundling has to become more widespread.	The competition authority has been closely tracking competition levels in the network industries. Notably, the telecoms incumbent *Cesky Telecom* has been fined in two cases of abuse of dominance.
Vigilance has to be maintained towards monopoly tendencies in electricity markets.	
In the gas sector the impact of the 2004 Energy Act should be monitored with view to further steps if the level of competition continues to be weak.	
Environment (in-depth review in 2004 Survey)	
Climate change	
Use market signals in evaluating domestic abatement programmes, in particular the EU's emission permit trading price (when it becomes established).	A new act on renewable energy was passed in 2005 that sets up a 15-year programme in which producers can choose between fixed feed-in tariffs and a "green bonus" system. Some care is needed in setting and monitoring the fixed feed-in tariffs to avoid an uneconomic level of subsidy.
Introduce an excise duty on coal and other fossil fuels in the sectors that are not covered by the EU's emissions trading system.	A draft reform ecological taxation, if passed, will bring a more coherent taxation of energy, including increased taxation of electricity produced from brown coal, black coal and coke.
Scale back programmes to promote renewable resources so that the extra costs (relative to investment in new less-polluting power stations) are in line with value of reduced air pollution externalities and reduced greenhouse gas emissions. One option would be through a reverse auction.	The renewable energy act implies a significant scaling up of the promotion of renewable resources.
Air pollution	
Make more use of emission charges in reducing air pollution.	No action.
Extend annual emission-based vehicle tax to non-commercial as well as commercial users.	No action.
Exploit data collected in in-vehicle truck monitoring systems to base taxation on vehicle use as well as type.	No action.
Consider introducing road pricing in the major cities.	No action.

ANNEX 1.A2

Past fiscal outcomes

As shown in Figure 1.3, adjustments can be made to the ESA95 general-government deficit easier to interpret. The unadjusted and adjusted data are shown in the table below. The largest items in the adjustment are for state guarantees. The Czech government and private-sector analysts often use an adjusted version of the IMF's "GFS 1986" accounts assessing fiscal outcomes (see the final section in the table below). The broad picture on fiscal outcomes is the same as that in ESA95 accounts: deficits in 2004 and 2005 represent a marked improvement, but spending as a share of GDP continues to have a broadly upward trend.

Table 1.A2.1. **Fiscal outcomes according to different general-government accounting approaches**

	2001	2002	2003	2004	2005
			ESA95		
Government deficit (-)/surplus (+) (million CZK)	–137 036	–166 787	–170 558	–79 869	–76 695
(% GDP)	*–5.9*	*–6.8*	*–6.6*	*–2.9*	*–2.6*
Government expenditure (% GDP)	45	46.7	47.3	44.3	43.7
Government revenue (% GDP)	38.7	39.9	40.7	41.4	41.1
			Adjusted ESA 95		
Government deficit (-)/surplus (+) (million CZK)	–121 136	–163 545	–162 186	–60 434	–44 131
(% GDP)	*–5.2*	*–6.7*	*–6.3*	*–2.2*	*–1.5*
Government expenditure (% GDP)	43.7	46.8	46.9	43.6	42.6
Government revenue (% GDP)	38.6	39.9	40.7	41.4	41.1
			GFS 1986		
Government deficit (-)/surplus (+) (million CZK)	–48 783	–11 471	–127 673	–90 743	754 805
(% GDP)	*–2.1*	*–0.5*	*–4.9*	*–3.3*	*0.0*
Government expenditure incl. gross lending (% GDP)	41.5	43.7	44.3	42.3	43.3
Government revenue incl. repayments (% GDP)	39.4	43.3	39.3	39.0	43.3
			GFS 1986 (adjusted)		
Government deficit (-)/surplus (+) excl. net lending (million CZK)	–107 628	–153 082	–128 728	–97 740	–97 856
(% GDP)	*–4.6*	*–6.3*	*–5.0*	*–3.6*	*–3.3*
Government expenditure excl. gross lending (% GDP)	41.4	43.3	43.1	42.2	42.7
Government revenue excl. repayments (% GDP)	36.8	37.0	38.1	38.6	39.4
GDP incl. FISIM	2 337 541	2 442 172	2 581 258	2 790 326	2 956 125

Notes: The latest ESA 95 government accounts data (general government deficits, revenues and expenditures and GDP) were published by Eurostat in April 2006.
The most important alterations to make the "adjusted ESA95" series involve (Eurostat budget line code in parentheses): state guarantees (D.99), interest from imputed debt (see guarantees – D.99), financial leasing relating to Grippen aircraft (P.21), interest relating to Grippen aircraft (D.41) and remission of the debt (D.99).
The GFS 1986 data were provided by the Ministry of Finance in April 2006 and are preliminary figures.

ANNEX 1.A3

The 2006 State Budget

The 2006 state budget approves expenditure of CZK 958.8 billion, an increase of 3.8% on spending in 2005. The estimated deficit is CZK 74.4 billion, or 2.4% of GDP. For 2005 the current estimated state deficit outcome is CZK 56.4 billion, or 1.9% of GDP. However, special settlement payments for losses of the off-budget CKA account and net transfers to reserve-funds have to be taken into account to make a proper comparison is to be made.[1]

Tax measures affecting revenues in 2006

Personal-income taxation. As of January 2006 the two lowest income-tax brackets were cut from 15% to 12% and from 20% to 19% and the brackets were widened. All tax allowances have been replaced by tax credits (see table below). In addition, the percentage of revenue that small businesses and the self employed can automatically deduct as costs was increased.[2] The Ministry of Finance estimates the total cost of these measures in lost revenue will be 0.7% of GDP in 2006. Many of these changes were introduced as part of an amendment of the income tax act (entering into force in the beginning of 2006). This amendment also means new measures for 2007.

Table 1.A3.1. **Replacement of tax allowances for tax credits**

CZK thousands

	Tax allowance (year 2005)	Tax credit
Taxpayer	38.0	7.2
Child	Already converted to a tax credit	6.0
Disabled child	Already converted to a tax credit	12.0
For spouse (*dependant*)	21.7	4.2
Disabled spouse	43.4	8.4
Partial disability pension	7.1	1.5
Full disability pension	14.3	3.0
Disability	50.0	9.6
Student	11.4	2.4

Corporate taxation. A cut in the corporate tax rate from 26% to 24% in 2006 marks the final reduction in a legislated series cuts that began in 2004. However 2006 revenues will be affected by the previous year's cut (from 28 to 26%) because of lags between actual profit and the taxation of profit.

Indirect taxation. Increases in excise duty on tobacco as part of scheduled increases conforming to EU directives are scheduled for April 2006 and January 2007. In 2005 and in

early 2006, some services were shifted from the basic VAT rate to the reduced rate (*e.g.* services connected with recreation and sport) and some were made free of VAT (*e.g.* language schools). The estimated revenue cost of these VAT changes is CZK 1 billion for 2006.

Measures affecting spending in 2006

Public-sector wage increases and pension increases above the rate of inflation. The Ministry of Finance first proposed a public-sector wage increase of 2.5% but an increase of 5% was finally agreed. The government also decided to increase pensions by 4.9%, as part of a political promise that pensions should be 40% of the average wage. The minimum-required pension increase for 2006 was 3% (*i.e.* the previous year's consumer prices growth (1.7%) plus one third of the previous year's real wage growth (1.2%).

Increases in welfare payouts. The subsistence minimum increased in January 2006 by 2.2% and this has affects a wide range of social benefits (*e.g.* child allowances, parental allowance, social allowance, housing allowance). In April 2006 a one-off grant on the birth of each child was doubled to CZK 17 500 (for twins CZK 52 500 and for triplets CZK 78 750) – the estimated cost of this is about CZK 1 billion. A new one-off allowance for families with children going to the first year of primary school will be introduced in June 2006.

Increased payouts to the state-guaranteed VZP health insurance company. In February 2006 changes to the basis of assessment for state budget payments for those whose health insurance is paid by the state (roughly 5.8 million people) to health insurance companies were made. This move is estimated to increase state budget expenditure by CZK 2.3 billion per year (since 1 February 2006).

Spending in 2007 is set to increase due to scheduled increases in social insurance and welfare payouts, often aimed at benefiting families. In particular a doubling of the parental allowance (benefit for parent of child between 1 and 4 year of age) from January 2007 has been approved by parliament. For example, the allowance for a one-child household will be CZK 7 300 per month (equivalent to around 40% of the average wage). This move is estimated to add CZK 12 billion to spending in 2007 (roughly ½ a percentage point of GDP).

Notes

1. The scheduled settlement of past CKA losses by a special state bonds programme means CZK 30 billion should be added to expenditure in 2005 and CZK 10 billion in 2006. Transfers into reserve funds in 2005 totalled CZK 48.5 billion and withdrawals totalled CZK 22.6 billion, decreasing the state budget by CZK 25.9 billion. Comparison of expenditures and revenues (but not the deficit) is also affected by transfers between state budget chapters from the creation of a state guarantee fund. In 2005, adjustment for this lowers both expenditure and revenues by CZK 21.9 billion.
2. In 2005, the percentage of revenue that can be deducted from revenue as costs was increased to 80% for farmers, 60% for artisans and to between 40 to 50% for other businesses. Previously farmers could only deduct 50% and all other categories of self-employment could deduct either 25 or 30%.

ANNEX 1.A4

Topics covered in previous Surveys

2004

Chapter 1: *Economic conditions and policy challenges*
Chapter 2: *Fiscal policy and public-expenditure reform*
Chapter 3: *Policy for a smooth entry to the euro area*
Chapter 4: *Improving policy towards business*
Chapter 5: *Improving the reallocation of labour*
Chapter 6: *Immigration policy: addressing the needs of an ageing labour force*
Chapter 7: *Environmental issues for sustainable development*

2003

Chapter 1: *Recent economic developments*
Chapter 2: *Macroeconomic policy*
Chapter 3: *Making high quality health care fiscally sustainable*
Chapter 4: *Structural policies for a robust economic performance*

2001

Chapter 1: *Recent economic events*
Chapter 2: *Macroeconomic policy*
Chapter 3: *Improvingthe efficiency and sustainability of public expenditure*
Chapter 4: *Progress in structural reforms*

2000

Chapter 1: *Recent economic trends and prospects*
Chapter 2: *Macroeconomic management*
Chapter 3: *Progress in structural reform*
Chapter 4: *The tax system*

1998

Chapter 1: *Recent trends and prospects*
Chapter 2: *Macroeconomic policies*
Chapter 3: *Pursuing the transition effort*
Chapter 4: *Implementing the OECD Jobs Strategy*

Note: Only the five most recent Surveys are listed; the first Survey for the Czech Republic was published in 1996.

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Chapter 2

Ensuring fiscal sustainability: assessing recent proposals for pension reform

The Czech Republic faces one of the largest demographic challenges in the OECD area and making sure the public pension system is able to cope with rapid growth in older cohorts is important for long-term fiscal stability and social welfare. This chapter assesses five proposals for pension reform made in 2005 with a view to helping progress towards a final decision on reform. The proposals cover a wide range of options: only parametric change of the current pay-as-you-go (PAYG) system, systems combining a PAYG pension with a second-pillar (defined-contribution), a flat-rate pension and a system of notional accounts. The analysis uses OECD simulation models to compare the proposals in terms of fiscal sustainability, safety nets, early retirement incentives, diversification into private provision, simplicity and the pensions-earnings link.

In 2005, five proposals for pension reform were developed by experts from the main political parties in a special working group.[1] The proposals differ radically, covering all the main types of pension systems and reforms seen in OECD countries. They therefore provide a full range of options for policymakers to work with in making a final decision. Co-ordination and technical expertise was provided by an executive team, including economists from the Central Bank and government ministries. This process helped considerably in ensuring that the proposals were detailed on a comparable basis under agreed assumptions, for instance about future economic and demographic developments. The executive team published a report on the current system and the five proposals in June 2005.[2] Soon after, there was an attempt to reach agreement on reform among the political parties but this failed, effectively postponing the final decision until after the June election.

This chapter assesses the five proposals with a view to helping progress towards a final decision on pension reform. The focus of the analysis is on the pension systems that will be in place once the reform processes in the proposals are complete. It therefore abstracts from some important issues, notably the fiscal implications of the proposals during the transition period and the inter-generational distribution of income. These issues are, however, amply covered in the executive team's report. The assessment begins with a broad comparison of the current pension system with systems in other countries. This is followed by sections comparing various dimensions of the reform proposals. A final section sums up the strengths and weaknesses of the proposals and recommends a number of avenues for improvement (these are summed up in Box 2.1).

Key features of the current pension system

The public pension system is currently financed on a pay-as-you-go (PAYG) basis, meaning that today's workers' contributions pay for today's pensions. Pension contributions currently total 28% of earnings, of which 6.5 percentage points are paid by employees and 21.5 points by employers (see Annex 2.A1). These are among the highest in the OECD countries: only Hungary, Italy and Slovakia levied a higher contribution for pensions in 2004 (OECD, 2005a).

The retirement age is gradually being increased from 60 to 63 years for men and from a range of 53 to 57 years to a range of 59 to 63 years for women with the retirement age depending on the number of children they have had. These scheduled increases in pension-eligibility age will be completed by 2013. Given that people should have advance notice of pension-age increases, so that that they can plan for retirement, a decision on policy after 2013 is needed soon. Indeed this is one of the main factors prompting the recent pension-reform debate.

Public retirement-income provision has a number of components. The most important is the earnings-related scheme. This has a redistributive formula, because the assessment base for the pension is 100% of earnings on the first slice of pay, then 30% on

Box 2.1. **Policy recommendations on the latest pension proposals**

Compared with most OECD countries that have embarked on fundamental pension reforms, the Czech Republic starts from a relatively strong position. Moreover, it would be easy to improve the performance of most of the reform proposals relative to objective criteria. Indeed, the required fixes would not undermine the core approach of the different proposals.

In terms of **fiscal sustainability** the proposals could be strengthened by:

- The introduction of an automatic procedure for adjusting pensions in payment ("indexation"), rather than continuation of the current discretionary approach which all the proposals currently suggest.
- Indexation to price inflation only, as proposed in the defined-contribution (DC) carve-out reform, could also be adopted in other proposals. This being said, given the expected catch-up in GDP per capita by the Czech economy, a transitional phase of indexing based on inflation and wage growth may be warranted to avoid pressures for adjustments to the pension system part way through the reform process.
- In the proposal for parametric reform, the delayed start to retirement-age increases should be reconsidered because of the cost during the transitional phase of reform.
- Permanent cross-subsidies from other taxes to finance the pension system that feature in some of the proposals should be avoided.

The flat-rate proposal does not deal adequately with the **safety net** issue. A higher basic pension of around 35% of average earnings would still offer fiscal improvement relative to the current system but substantially improve the safety net for people with low incomes or interrupted careers.

The relatively poor **retirement incentives** in the parametric reform and the proposal for carve-out DC accounts could be fixed with changes to the adjustments for early and late retirement. The DC carve-out scheme would also be improved if, as in the other proposals, differential retirement ages for women were phased out.

Some aspects of the proposed pension systems are however inherent to their design: notably the degree of **diversification in pension provision,** level of **simplicity** and, most importantly the strength of the **pensions-earnings link.**

The tax treatment of pensions was not covered by the 2005 working group. However, this issue needs to be addressed, particularly the system of subsidies and tax allowances on voluntary contributions to private pension funds. Reform needs to take account of the growing international evidence that tax incentives are often costly and ineffective in inducing more saving. The final decision on pension reform also needs to consider the implications for the welfare system and the coherence of benefit schemes with pensions.

the next slice and finally 10% (see Annex 2.A1). There is also a modest basic pension, paying a flat-rate amount to all eligible, which is worth around 8% of economy-wide average earnings. The social-assistance system provides a safety-net through mean-tested benefits (the "minimum living allowance").

Pensions in payment are adjusted annually to reflect changes in costs and standards of living but with some discretion over the rate of increase. Total pension entitlement (basic plus earnings-related) must be increased by at least price inflation plus one-third of average real earnings growth. However, increases have tended to exceed the required minimum.

The personal income tax provides indirect support for older people through a large tax allowance on pension income: about four times larger than the standard tax-free allowance (Annex 2.A1). Indeed, pensioners with incomes of less than 80% of average earnings do not pay any income tax. This effectively exempts older people from tax unless they have substantial income from voluntary pensions or other sources. Moreover, even pensioners who are liable to tax, pay at a lower rate than that levied on earnings. The result is that pensioners pay substantially less in taxes than workers even when they have the same income.

There is support for voluntary, private or "third-pillar" pensions through a combination of matching state contributions and tax relief on employee and employer contributions. The system is quite complex but essentially means there is state support for the first CZK 18 000 of voluntary contributions (this is equivalent to about 8% of current average earnings). The net tax cost of voluntary pension savings is 40% of the contribution, the highest in the OECD and around double the average; the matching subsidy makes an important contribution to this cost (Yoo and de Serres, 2004, Figure 2). However, employees do not take full advantage of this concession. Although coverage is broad, the average contribution is small: a World Bank report shows the average contribution rate to be 2.5% of individual gross earnings.

The current system in international comparison

Figure 2.1 shows how the pension promise in the Czech Republic compares with a range of OECD countries. The left-hand charts show the gross replacement rate: this is simply the value of the pension entitlement relative to individual earnings. (The underlying calculations are described briefly in Box 2.2 and at length in OECD, 2005b.) The upper panel of charts show the position of an individual who earns the economy-wide average each year.

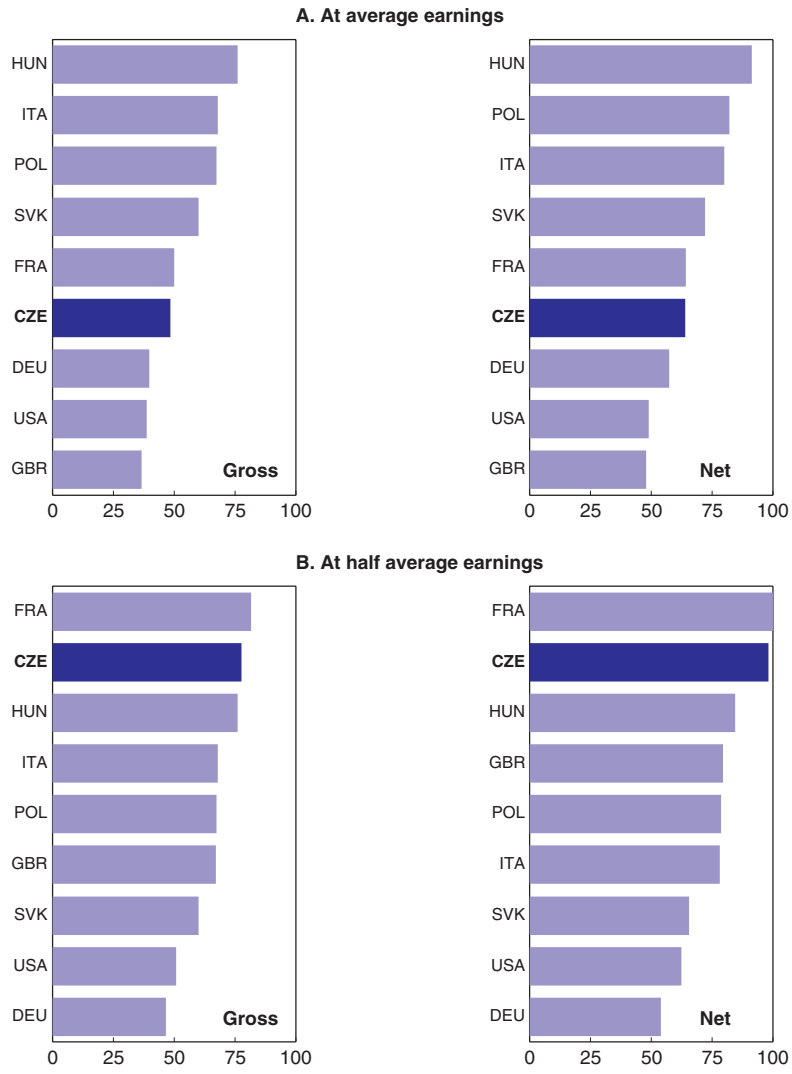
The gross replacement rate for an average earner under current pension parameters and rules is just under 50% in the Czech Republic. This is below the average for all 30 OECD countries of 58%; it is around the same level as in France. But it is below the replacement rate promised in the other three Visegrad countries, which varies from 60% in Slovakia to 75% in Hungary.

Turning to the position of low earners – defined here as individuals who earn half of economy-wide average earnings each year – the Czech Republic promises a replacement rate of 78%. Although this is higher than in the other countries shown, this is not much more than the OECD average replacement rate for a low earner of 74%. Particularly striking here are the very low entitlements in Germany and the United States.

Net replacement rates, shown in the right-hand part of Figure 2.1 take account of taxes and contributions paid both when working and when drawing the pension. They are the ratio of pension entitlement, net of taxes, to earnings, net of taxes and contributions. Net replacement rates are nearly always higher than gross, because of specific concessions to older people in the personal income tax, the general progressivity of income taxes and because pensioners typically do not pay social-security contributions or do so only at a low rate.

The net replacement rate for an average earner is 64% in the Czech Republic, compared with 72% for the 30 OECD countries on average. For a low earner, the net

Figure 2.1. **International comparison of pension replacement rates**[1]
Per cent



1. A gross/net pension replacement rate is the ratio of an individual's gross/net pension to gross/net earnings. Average earnings are those of the average full-time production worker.

Source: OECD, Pension models.

replacement rate in the Czech Republic approaches 100%, compared with a little less than 90% for the OECD as a whole.

A comparison of replacement rates at different levels of earnings reveals fundamental differences between countries in the core philosophy of their pension systems. There are two central objectives of retirement-income regimes. The first is "adequacy": guaranteeing that all older people meet a minimum standard of living. The second, more ambitious objective, is "insurance": guaranteeing that retirees have a certain standard of living relative to when working, that is a particular replacement rate. Figure 2.2 shows how

Box 2.2. **What do the OECD pension models calculate?**

The OECD pension models are "microeconomic": they work out, hypothetically, how much pension a person would get, given the various parameters and rules of the pension system and projections in life expectancy.

It is important to underscore that the model describes the *long-run* economics of the pension system. Parametric reforms (such as, increasing the pension-eligibility age) are typically incremental and new systems are introduced slowly (those above a certain age are given a choice to remain in the old system or switch to the new system). These simulations abstract from these transition processes and so from the inter-generational redistributive impact of change. One way of thinking about them is that they describe the pension deal facing the current generation of young people who are just about to enter the labour market, and the generations that follow.

The main assumptions are:

- An individual is assumed to begin work at age 20 and remain employed until the normal pension age, assumed to be 65 in reforms and 63 (for men) in the baseline.
- Real earnings growth: 2% per year.
- Individual earnings growth in line with the economy-wide average.
- Real wage bill growth: 1.6% per year.
- Price inflation: 2.5% per year.
- Real return on DC schemes, net of administrative charges: 3.5% per year.
- Discount rate: 2% per year.
- Mortality rates: 2040 projections.

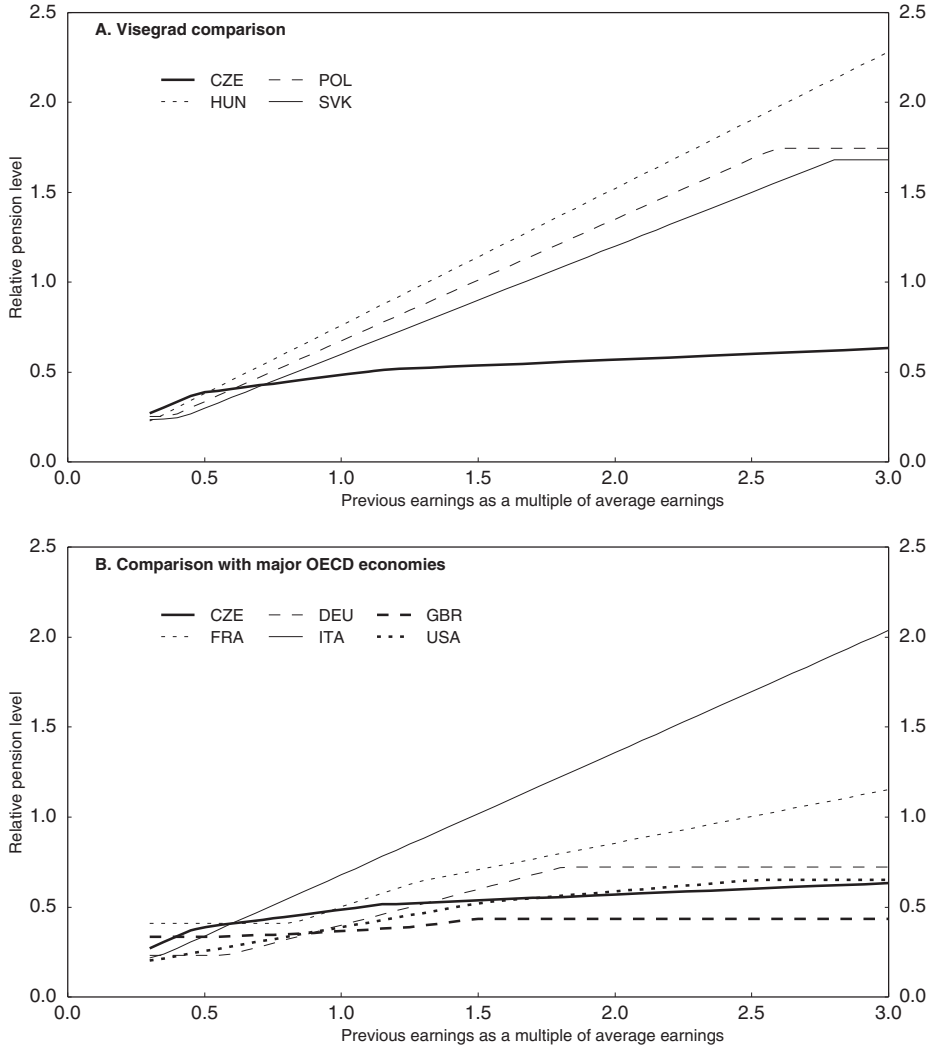
Finally, the simulations do not cover voluntary pension contributions and therefore there is no account taken of public support for "third pillar" pensions through tax breaks.

different OECD countries place different emphasis on these two objectives of pension systems. The vertical axis shows the relative pension level, that is, the pension entitlement compared with economy-wide average earnings. The horizontal axis shows people at different levels of earnings relative to the economy-wide average.

The pattern of pension entitlements against earnings is very different in the Czech Republic from that in the other Visegrad countries. In Hungary, Poland and Slovakia, there is a very strong relationship between how much people earn when working and how much their retirement income will be. The combination of a basic pension and a progressive benefit formula in the earnings-related scheme means that there is much less of a connection between earnings and pension entitlements in the Czech Republic.

With its emphasis on adequacy rather than insurance, the Czech Republic's pension system implies a pattern of benefits against earnings that is similar to the United Kingdom and the United States, for example. The stronger insurance element is more marked in Italy and the other Visegrad countries as evident in the scale and pattern of pension promises. France is an intermediate case while the results for Germany are fairly close to the Czech Republic.

Figure 2.2. **International comparison of relative pension levels**[1]



1. Individual pension divided by economy-wide average production-worker earnings.

Source: OECD, Pension models.

Key features of the five reform proposals

The five proposals made by the main political parties cover a wide range of reform options, which include all the essential types of pension system seen in the OECD (Table 2.1). They are:

- Notional accounts (Czech Social Democratic Party, CSSD). Pensions remain publicly provided and financed on a PAYG basis. But entitlements are calculated differently from the "traditional" defined-benefit (DB) model. Under notional accounts, contributions are recorded and then earn a notional interest rate, which is linked to macroeconomic variables. At retirement, the accumulated notional capital in each account is converted

Table 2.1. **Key features of the five proposals for pension reform**

System	Contribution and additional financing	Retirement age	Calculation of benefits	Revaluation	Indexation	Early and late retirement provisions
0 Current system	Contribution of 28% of earnings	Increases to 63 years for men and 59-63 years for women are scheduled by 2013	Basic pension plus DB with progressive formula	Average earnings	Prices plus at least one-third of real average earnings growth	3.6% reduction in pensionable earnings per year of early retirement; 6% increment per year of late retirement
1 Notional accounts	Contribution of 29.6%, the extra 1.6% from a diversion of unemployment fund contributions	Further increase to 65 years for all	Notional accounts	Wage-bill growth	Prices plus at least half of real average earnings growth	Retirement up to 3 years early. Pension calculated on actuarial basis
2 Carve-out DC	Contribution of 28% of earnings and plus 2% extra from transition generations choosing DC. Additional financing from VAT revenues.	Further increase to 65 years, except for women who have had children	Change in DB benefits. 8% of earnings to DC	Average earnings on DB part	Prices	As in the current system for the DB component
3 Parametric reform	Contribution of 29.6% (as in notional accounts proposal). A 3% contribution increase from 2040 and further 0.9% increase from 2060 Additional financing from earmarking of 10% of excise taxes	Further increase starting in 2030 up to 65 years for all	Basic pension plus DB with progressive formula	Average earnings	Prices plus at least one-third of average real earnings growth	As current system
4 Flat rate	20% of earnings	Continuous increase up to and beyond 65 (finally reaching 71)	20% of gross average earnings	Average earnings	Average earnings	No provisions for early retirement
5 Add-on DC	28% of earnings, plus 6% extra contribution for those choosing DC	Increase for all up to 67 years	Change in DB benefits. 9% of earnings to DC	Average earnings on DB part	Average earnings for DC. Current system for DB	As current system, except reduction for early retirement increased to 6% per year

Source: Czech Government (2005).

to a stream of pension payments using a formula based on life expectancy at the time of retirement.

- Defined contribution (DC) "carve-out" (coalition of the Christian Democratic Union and the Czechoslovak Peoples Party, KDU-CSL). The DB pension system is retained but individuals can transfer 8 percentage points of the pension contribution into a private DC pension, subject to a reduction in public benefits. In DC pensions, the value of the benefit depends on contributions paid in and investment returns earned. Individuals' accumulated capital from contributions and investment returns is then converted into a stream of pension payments during retirement through buying an annuity.
- Parametric reform (Communist Party of Bohemia and Moravia, KSCM). This proposal involves modest and gradual changes to the parameters and rules of the current system.
- Flat-rate pension (Civic Democratic Party, ODS). A flat rate pension equal to 20% of previous earnings with no provisions for early or late retirement.
- Defined contribution (DC) "add-on" (coalition of the Freedom Union and Democratic Union, US-DEU). The defined benefit pension is maintained (with some parametric

reform) but there is an option in which 3 percentage points of the standard 28% contribution can be transferred to a DC pension fund if the individual makes an additional 6% contribution to the fund (making the total contribution 34%).

For **contributions** to the pension system, three proposals aim to keep the same standard contribution rate as the current system (28% of earnings) or a slightly higher one through a diversion of contributions to unemployment insurance funds (Table 2.1, column 2). Only the parametric reform details further increase in the contribution rate in the long run while the flat-rate proposal exceptionally involves a reduction of the contribution rate to 20%. Two proposals include using additional revenue sources to help fund pensions. The carve-out scheme proposes earmarking some VAT revenue while the parametric reform proposes tapping into excise taxes. Additional contributions are required in the two proposals with a DC component from individuals choosing the DC option.

All the proposals involve increases in the **retirement age**, but at substantially different rates. There are also some differences in the long-run retirement age (Table 2.2). The DC carve-out and add-on schemes have the fastest increases with, for instance, the retirement age for men being brought to 65 by 2024. In the notional accounts and flat-rate proposals, retirement ages for men reach 65 by 2030. The parametric reform has the slowest rate of increase, retirement age increases (beyond those already scheduled) do not begin until 2030 and the retirement age for men is not brought to 65 years until 2040. The DC add-on and flat-rate reforms take the retirement age beyond 65 years; in the DC add-on case to 67 years and in the flat-rate case continuous increase in the retirement age is proposed.

Table 2.2. **Retirement age increases beyond 2013 under the five proposals**[1]

	Year in which retirement age will reach 65						
	Men	Women (no children)	Women (1 child)	Women (2 children)	Women (3 or 4 children)	Women (5 and more children)	Further increase beyond 65?
Notional accounts	2030	2033	2034	2035	2039	2043	No
DC carve-out	2024	2027	*Never*	*Never*	*Never*	*Never*	No
Parametric reform	2040	2043	2047	2051	2055	2059	No
Flat rate	2030	2030	2031	2035	2039	2043	Yes, up to 71 years in 2100
DC add-on	2024	2027	2031	2035	2039	2043	Yes, up to 67 years

Source: Czech Government (2005), *Final Report of the Executive Team on Pension Reform*.

Four of the five reform proposals include phasing out of the "family-policy" dimension of the pension system by removing differences in retirement age for women depending on the number of children they have had. The DC carve out scheme, however, maintains different retirement ages for women and has lower contributions rates to the defined-benefit component depending on the number of children.

Average-wage growth is used as the basis for **revaluation** of past contributions in the calculation of pensions in all three of the reforms that maintain DB pensions (as in the current system). In the notional-accounts proposal, revaluation is effectively equal to growth in the aggregate wage bill. This provides a subtle economy in the reform, because the projected decline in the working-age population means that the wage bill is likely to increase at a slower pace than economy-wide average earnings. (The modelling assumes

that the decline in the size of the workforce means that the wage bill will grow 0.4 percentage point slower than average earnings.)

The current policy for **indexation** of public pensions in payment is maintained under two proposals: parametric reform and DC add-on. The notional-accounts reform involves more generous indexation, whereas the DC carve-out scheme makes economies by indexing only to price inflation. The DC add-on option proposes that the DC element be indexed to average earnings while the public DB component would be indexed using current procedures. Both reforms with a DC element would calculate DC pension benefits using sex-specific annuity rates. There is some doubt, however, whether this is permitted under EU equal-treatment rules.

The flat-rate pension contains no provisions for early or late retirement. However, the other four proposals would allow **early retirement** with a permanent reduction in the pension. Under the DC add-on the penalty for early retirement would be increased. Otherwise, no change is proposed compared with the current system.

Simulation results for the five proposals

Implicit target replacement rates differ widely

The implicit target replacement rate is very different under the five proposals. Three of the reform proposals would significantly increase mandatory pension benefits for average earners, one would leave the target benefit broadly unchanged while the other would involve a substantial cut. Table 2.3 shows replacement rates for low, average and high earners under the five options.

- The gross replacement rate for average earners would remain around 50% with parametric reform. The notional accounts proposal and the two options with a DC element would increase the target replacement rate to 65 to 70%. This would be substantially higher than the average for the 30 OECD countries of 58%.
- For low earners, with pay of half the economy-wide average, the replacement rate is the same or higher than under current rules with parametric reform or either of the proposals with a DC element. But it would be lower under notional-accounts or flat-rate pensions, indeed, less than the OECD average of 74%.
- With pay of twice economy-wide average earnings – "high earners" – replacement rates would be significantly greater than the current system under three proposals: notional accounts and the two with a DC element. The proposed levels of 55-65% are higher than the OECD average of a little under 50%.

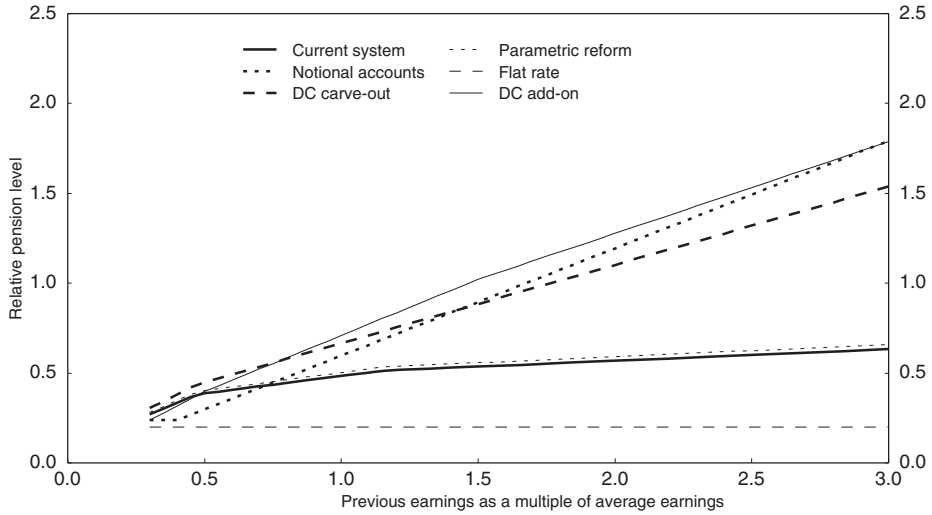
Table 2.3. **Gross and net replacement rates**

	Gross replacement rates (%) at multiple of average earnings:			Net replacement rates (%) at multiple of average earnings:		
	0.5	**1**	**2**	**0.5**	**1**	**2**
Current	78	49	29	98	64	40
Notional accounts	65	65	65	82	86	85
DC carve out	90	67	55	113	88	73
Parametric reform	81	50	30	101	66	41
Flat-rate	40	20	10	50	26	14
DC add-on	80	71	64	100	93	85

Source: OECD pension models.

Parametric reform apart, the proposals imply a significant departure from the relationship between pension and earnings inherent in the current pension system. This is illustrated more clearly in Figure 2.3, which shows relative pension levels against earnings. Notional accounts would result in a very strong relationship between pension and earnings, as in Italy and Poland, for example (Figure 2.2). Both DC proposals would also reduce the progressivity of benefits relative to the current system. The flat-rate system would move in the opposite direction.

Figure 2.3. **The relative pension level for the five pension proposals**[1]



1. Individual pension divided by economy-wide average production-worker earnings.

Source: OECD, Pension models.

Gauging the "size" of the five proposed pension systems

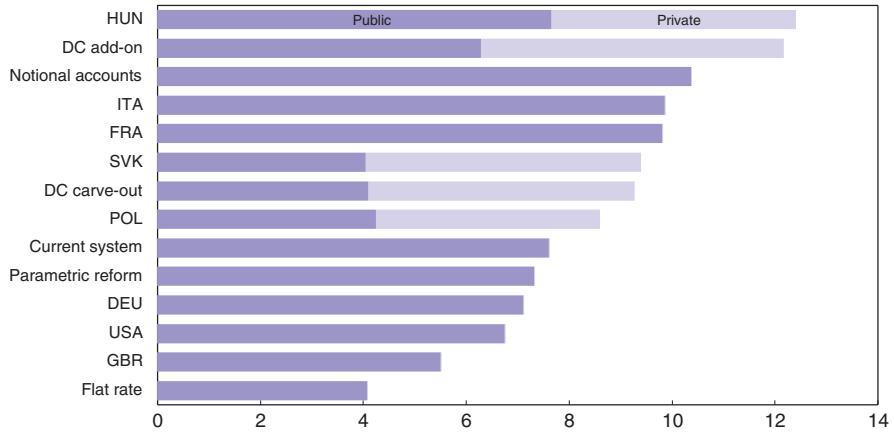
There will be significant differences in the "size" of mandatory pension systems that would emerge in the long-term from the five proposals for reform, as is obvious from the pattern of entitlements shown in Figure 2.3. The reforms introducing stronger connections between contributions and earnings would produce much larger mandatory pension systems, with larger pension promises.

A microeconomic measure of the size of pension systems is "average pension wealth". This is a more comprehensive indicator than the replacement rates and relative pension levels presented above. The reason is that the pension-wealth indicator takes account of life expectancy, retirement ages and the indexation of pension benefits. These factors determine for how long the pension benefit must be paid and how its value evolves over time. Formally, pension wealth is calculated as follows. The flow of pension entitlements during retirement is converted into a present value (measured at the time of retirement), which is the stock of pension "wealth". The calculation uses standard actuarial techniques. Pension wealth is computed for people at different levels of earnings, from 30 to 300% of the economy-wide average. Then, using the OECD's earnings-distribution database, these results are converted into the aggregate average pension wealth, which is weighted by the proportion of the labour force at different levels of earnings. Average pension wealth is expressed as a multiple of economy-wide average earnings. Overall, average pension

wealth shows the size of the resource transfer necessary from the working-age population to retirees. Average *public* pension wealth shows the scale of the fiscal transfer.

Comparisons of average pension wealth indeed show wide differences across the five proposed pension systems (Figure 2.4). The DC add-on pension system would be the largest, with average pension wealth per person equivalent to 12 times economy-wide average earnings. However, about half of this would be in the hands of private-sector funds.

Figure 2.4. **Average mandated pension wealth per person as a multiple of economy-wide earnings**[1]



1. Average for men and women. Because the calculations only include mandated pension wealth, voluntary contributions to private pensions are not included. Private pension wealth is included, for example, where there is a compulsory "second pillar" component.

Source: OECD, Pension models.

In terms of public pensions, the notional-accounts scheme would be by far the largest, with average pension wealth per person equivalent to about 10 times economy-wide average earnings. This is similar to the size of public pension systems in France and Italy. In comparison, pension wealth under the parametric-reform proposal would be about 7 times average earnings. This is similar to the results for Germany and the United States. The public pension promises in the defined-benefit component of the DC carve-out scheme and the flat-rate pension would be relatively low in international comparison.

Early retirement incentives

It is widely accepted that financial incentives to retire at particular ages built into pension systems have an effect on retirement behaviour (Gruber and Wise, 1999 and 2004). Reversing the trend towards earlier retirement, even as life expectancy has generally been increasing, would do much to limit the burden of population ageing. Increasing effective age of retirement is therefore a policy priority in most OECD countries (OECD, 2006). Even if one is sceptical about the effects of incentives on behaviour, there is an inherent inequity if, for example, early retirees do better out of the pension system than those who stay in work longer. For these reasons, the effect on pension entitlement of retiring early or retiring at the normal age is important in designing pension systems.

The financial incentive to retire depends on two variables. The first is the relationship between income out of work (retirement pension) and income in work (earnings). This is, of course, simply the replacement rate. However, unlike analysis of work incentives with unemployment benefits, for example, account must also be taken of the linkage between earnings and contributions on the one hand and pension entitlements on the other. This is captured in a second measure: the change in pension wealth from remaining in work. Pension wealth – the present value or the stock related to the flow of pension payments – was defined above. The change in pension wealth from remaining in work can be thought of as an implicit tax or subsidy on work.

Table 2.4 shows calculations of these indicators of retirement incentives. The first two columns of the Table give the gross replacement for people who retire at age 62 and age 65 respectively. The flat-rate proposal does not allow for early retirement. Under parametric reform, the replacement rate would be just over 40% at age 62. In the other three proposals – notional accounts and defined contribution – the replacement rate at the early pension age is 50-55%. At the "normal" pension age of 65, the replacement rate varies from over two-thirds in the two DC proposals to just 20% in the flat-rate option.

Table 2.4. **Indicators of incentives to take up early retirement**

	Gross replacement rate by retirement age (%)		Change in pension wealth (%)
	Age 62	*Age 65*	*from 62-65*
Notional accounts	50.0	59.8	–39.9
DC carve out	55.0	66.7	–29.1
Parametric reform	40.8	50.4	–9.0
Flat-rate	0.0	20.0	0.0
DC add-on	51.9	71.1	+69.1

Note: gross replacement rate is gross pension relative to gross earnings. Change in pension wealth is shown relative to one year's earnings.
Source: OECD, Pension models.

The final column shows how the replacement rates at different ages affect pension wealth. Take the notional-accounts proposal as a first example. Working from age 62 to 65 would increase the replacement rate from 50 to nearly 60%. However, pension wealth would still in fact fall, because to get the 60% replacement rate from age 65, the individual has to forego benefits worth 50% of earnings per year between 62 and 65. The loss in pension wealth from remaining in work over the three-year period is calculated to be 40% of a single year's earnings, implying an additional implicit tax on workers aged 62 to 65 of 13% per year. The fact that the notional accounts pension proposal has the weakest incentives to continue working is counterintuitive. Notional accounts pensions are actuarily fair in the sense that the present value of lifetime contributions equals the present value of lifetime benefits provided that the notional interest rate and the discount rate used in calculating pension entitlements are equal to the long-term government bond interest rate.[3] However, this means that they are not actuarily neutral, *i.e.* the accrued pension wealth is not the same whether one retires today or in the future. This is because the actuarial calculation naturally assumes that the individual has survived until the age of retirement. But, say a 62 year old choosing between retiring now and at age 63, to achieve actuarial neutrality, requires additional actuarial compensation for the probability of dying within the year.[4] The reason people find the result counterintuitive is because it is easy to confuse these distinct actuarial concepts.

Under the parametric reform, the replacement rate is also 10 percentage points higher at age 65 than at 62, but the gain is on a lower base. Therefore, the loss in pension wealth from retiring at the earliest opportunity is smaller than under the notional-accounts proposal. However, there is still a marginal disincentive to work between 62 and 65. This is because the adjustment to pension benefits for early retirement is a little below the actuarially equivalent level, which the OECD pension models calculate to be around 7.5% (see Queisser and Whitehouse, 2006 for an explanation).

The flat-rate scheme is neutral between retirement at different ages because the benefit is unaffected. Finally, incentives to stay in work – as measured by the change in pension wealth – are most powerful under the DC add-on scheme. This is due both to the DC component and to the larger reduction in public pension benefits for early retirement. However, it is important to bear in mind that this proposal has one of the highest replacement rates, which will tend to discourage people from working.

Assessment

The five parties' proposals would take the Czech pension system in very different directions. There are clear precedents in other OECD countries for all of the proposals and so useful lessons can be learned from international experience. Table 2.5 summarises an objective, albeit qualitative, assessment of the five proposals on six criteria.

Table 2.5. **The five pension proposals measured against six criteria**

	Fiscal sustainability	Safety nets	Early retirement incentives	Diversification public/private	Simplicity	Benefit/ contribution link
Notional accounts	■	■■	■	■	■■	■■■
DC carve-out	■■■	■■■	■	■■■	■■	■■■
Parametric reform	■■	■■■	■■	■■	■■	■■
Flat-rate	■■■	■	■■■	■■■	■■■	■
DC add-on	■■	■■■	■■■	■■■	■	■■■

Fiscal sustainability

The first and most important of these criteria is fiscal sustainability. Fiscal sustainability depends on both the expenditures and the revenues of the pension system. But a smaller public pension promise is more easily afforded than a larger one because, even if extra contributions or other sources of revenues are raised, there is still an opportunity cost in diverting these resources to pension provision. Sustainability is therefore assessed against average public pension spending per person (see Figure 2.4).

- The notional accounts proposal involves the largest fiscal outlay, more than 50% larger than the current system.
- Both the flat-rate scheme and the DC carve-out involve public pension spending nearly 50% lower than the baseline and so are the most fiscally sustainable.
- The parametric reform and DC add-on lie in between in terms of their affordability.

Fiscal sustainability would be strengthened by an automatic procedure for adjusting pensions in payment ("indexation"), rather than continuation of the current discretionary approach, which most of the proposals suggest. International experience is littered with examples of how discretionary adjustment of pensions in payment leads to instability in

the purchasing power of retirement incomes and conflict in setting the rate of pension increase.

Furthermore, indexation to price inflation only, as proposed in the DC carve-out reform, could also be adopted in other proposals. Most OECD countries now index pensions in payment to prices, having moved from earnings indexation in the 1980s and 1990s. The cost savings in the Czech system could be large, thereby allowing a higher starting replacement rate, other things being equal. By way of example, the OECD pension models show that lifetime pension expenditures per person would be about 15% lower with indexation only to prices compared with indexing at price inflation plus one-third real wage growth. Moreover, this is a lower-bound estimate of the savings, because the government often decides to increase pensions by more than the required minimum. Under a policy of price indexation, the real purchasing power of pensions during retirement would still be preserved. This being said, given the relatively rapid growth expected due to catch-up in GDP per capita in the Czech economy, inflation-only indexing can mean pensioners slip unacceptably far down the income distribution. This could create pressures for adjustments to the pension system part way through the reform process – something that should be avoided to contain the risks households face in long-term financial planning. For this reason, a transitional phase of indexing based on inflation and wage growth may be warranted.[5]

While the long-run fiscal sustainability of the parametric reform is not a cause for great concern, the delayed start to retirement-age increases should be reconsidered because of cost issues in the transitional phase of reform.

This delayed start to retirement age increases in the parametric reform has probably contributed to the rather *ad hoc* proposals for extra financing in this proposal. For this and other proposals, permanent cross-subsidies from other taxes should be avoided. Earmarking additional revenue sources on top of contributions clouds the issue of who is paying for what in the pension system and should be used sparingly and only to help get through a limited period of financial strain. There is an opportunity cost involved in diverting tax revenues to the pension system that should not be ignored. However, the Czech Republic has one of the highest burden of direct taxes on labour and so broader financing of the costs of social protection might be worth sacrifice of transparency in the public finances.

Strength of safety nets

The second criterion is the strength of the safety nets to protect low-income workers or those with interrupted careers. Poor safety nets risk a resurgence of old-age poverty or involve a shift of retirement-income expenditure onto the social-assistance budget.

The current system has quite a strong safety net due to the combination of a 100% replacement rate on the first slice of pensionable earnings, the basic and minimum pensions and support through the social-assistance system. This is reflected in the fact that only 1.3% of 66-75 year olds are classified as poor by the OECD (Forster and Mira d'Ercole, 2005). This is the second lowest old-age poverty rate out of 27 OECD countries and way below the average rate for these countries of 11.5%.

As regards the proposals, the DC carve-out and add-on schemes would broadly maintain the safety net of the current system, as would, of course, the parametric reform.

However, there are risks of inadequate safety net provision in the flat-rate and notional accounts proposals:

- The risk of inadequate safety net provision in the flat-rate proposal is very high. The flat-rate benefit of 20% of average earnings is very low and would offer little protection to vulnerable groups without the resources to save their own money for retirement. The current social-assistance target minimum income level is rather higher than this: around 24% of average earnings. Social-assistance spending would therefore probably substitute for pension spending under this proposal. Indeed, the proposed level is substantially below that in other countries with pure basic pensions. In Ireland, the basic pension is worth 32.5% of average earnings. The ratio of basic pension to earnings is 37.5% in New Zealand. A higher basic pension of around 35% of average earnings would still offer fiscal improvement relative to the current system but substantially improve the safety net for people with low incomes or interrupted careers.
- The notional-accounts scheme, which ties benefits more closely to individual earnings, would also weaken current safety nets, though not as much as the flat-rate proposal. Replacement rates for low-income workers would fall while average and high earners would have larger pensions.

Retirement incentives

The third measure used to assess the five proposals relates to retirement incentives. The current system has a very small incentive to retire early. But it is not far from being neutral with respect to the age of retirement.

- The DC add-on improves retirement incentives compared with the current system. First, this is because the reduction in benefits for early retirement is raised. Secondly, the DC element improves incentives to stay in work.
- A flat-rate benefit would also improve work incentives, because early retirement would not be possible and the low benefit rate would discourage retirement.
- Despite the "actuarial" basis of pension calculations, notional accounts do not provide strong incentives to stay on work beyond the minimum pension eligibility. Although the replacement rate increases from 50 to 60% for people who work from 62 to 65. This increment is insufficient to compensate for giving up pension payments between 62 and 65.

The relatively poor retirement incentives in the parametric reform and the proposal for carve-out DC accounts could be fixed with changes to the adjustments for early and late retirement. OECD calculations suggest that an adjustment of around 7.5%, based on normal retirement age of 65 and 2040 projected mortality rates, would be actuarially equivalent. This adjustment compares with an effective reduction for early retirement of 5.6% per year and an increase for late retirement of 6% per year in the current public pension. The DC carve-out scheme would also be improved if, as in the other proposals, differential retirement ages for women were phased out. The prospect of earlier retirement is almost certainly a less effective instrument in family support compared with more immediate policies affecting families, such as support for childcare.

Diversification of pension provision

A fourth issue is diversification of pension provision. The OECD (1998, 2001, for example) has long argued that a diversified pension system bolsters retirement-income

security. This can be achieved through balance between public and private provision and between pay-as-you-go and pre-funding as sources of finance.

- The DC carve-out and add-on proposals have an explicit role for private pension providers in the mandatory pension system.
- A low, flat-rate pension would mean that all but the lowest paid would need to make additional, voluntary, private provision for retirement. Again, the balance between public, pay-as-you-go and private, pre-funded pensions would shift.
- In contrast, the notional accounts scheme would undermine the role of voluntary, private provision relative even to the current system. This is because replacement rates in the public scheme for middle and high earners would increase. The public pension would substitute for private retirement saving by these groups.

Simplicity

Pensions are an inherently complex issue and retirement planning is made difficult by this complexity. There is a strong case for keeping pension systems as simple and transparent as possible (OECD, 2005c).

- Flat-rate schemes are very easy to understand and individual responsibilities for retirement provision (as well as their rights) are clear.
- The DC add-on proposal is scored the lowest on this measure because of its very complex set of parameters and rules.

The pensions-earnings link

The final question is the link between pensions during retirement and earnings and contributions paid when working. Because of the redistributive features of the current system, such as the basic pension and the progressive formula for earnings-related benefits, there is only a weak link between contributions and benefits.

- Notional accounts would introduce the strongest link between contributions and benefits of the five proposals.
- Both options with a DC element would also strengthen the pension/earnings connection compared with the current system.
- A pure flat-rate pension would, of course, entirely remove any links between pension entitlements and earnings when working.

The relative merits of strong pensions-earnings links have occupied academics, policymakers and the public for many years. These issues will probably never be resolved. The appropriate way forward is therefore a matter of political judgement. The pension-earnings link raises two closely inter-related issues.

The first is the degree to which the state should require individuals to save for their retirement because they are myopic and, left to their own devices, would make inadequate provision. This could leave them vulnerable to poverty in old age, reliant on state safety-net hand-outs and regretting their earlier savings decisions. Optimists argue that individuals can and do make informed decisions about how much they want to consume in retirement relative to when working. A limited mandate for providing for retirement through the pension system also allows people to prepare for retirement in more diverse ways (by saving through housing, for example). The DC add-on and notional-accounts

implicitly have the greatest emphasis on counteracting individual myopia, because they have a very large mandate to provide for retirement.

A second core issue is the degree to which pension entitlements should be related to earnings when in work. Italy, Poland and Slovakia have all moved to strengthen the pensions-earnings link in recent reforms. In contrast, France and the United Kingdom, for example, have moved towards greater targeting of public pension benefits on lower earners thereby weakening the link between retirement incomes and earnings when in work.

Proponents of a stronger link between pension and earnings argue that this increases incentives to work (because contributions are seen less as an implicit tax) and to contribute to the pension system. However, these advantages must be weighed against the costs in weaker retirement incentives and, notably in the case of notional accounts, a much greater role for the public sector in providing retirement incomes and, so, reduced fiscal sustainability. Moreover, it is unclear that the improved incentives to work and to contribute for those who lose from the redistribution in the current system would offset the reduced incentives for those who would lose from the reform.

One way of reducing the risk of myopia in redistributive pensions is through (additional) tax support for "third-pillar" (*i.e.* voluntary, private) pensions. The Czech Republic, however already has the highest degree of tax support for voluntary pensions with a seemingly modest response. There is also growing international evidence of the high costs and ineffectiveness of tax incentives for retirement saving. There can be heavy "deadweight losses" in lost income-tax revenue as people simply shift their portfolios to take advantage of tax concession but do not save any more. Also, tax incentives need careful design to ensure that gains do not accrue mainly to middle and upper income earners (Yoo and de Serres, 2004).

While the tax treatment of mandatory pensions whilst in payment was not in the remit of the commission assessing pension-reform options, this issue needs to be reviewed. This is particularly true in reforms that strengthen pensions-earnings links and so give larger benefits to high earners. Currently, the concessions to pensioners and pension incomes in the personal tax system are very generous by international standards. Issues relating to the welfare system should also be addressed in the final decision on pension reform. Incentives created by, for example, means-tested benefits have to be coherent with those in the pension system. In addition, where pension reform is likely to affect the number of people claiming welfare benefit or create pressures for changes to the welfare system, this should be taken into account in assessing the overall cost of pension reform.

Conclusion

It would be relatively easy to improve the performance of most of the reform proposals relative to a number of objective criteria. Indeed, the required fixes are typically rather minor and they do not undermine the core approach of the proposals. Beyond this, making the final decision on pension reform requires decisions on some fundamental issues, most notably how far the state needs to go in making households save for pensions and, linked to this, the usefulness of "political economy" gains in having mandatory pensions contributions linked to previous earnings. The technical approach to pension reform in the Czech Republic – with consistent comparisons of a range of detailed proposals – should serve as a model for other countries.

Notes

1. It should be noted that the proposals represent the intentions of the individual parties – there was no common proposal of the parties forming the government and none of the proposals reflect the official position of the Czech authorities.
2. An English translation of the report on the pensions proposals has been available since September 2005 and is available, along with additional information on the pensions proposals on the Ministry of Labour and Social Affairs website at *www.mpsv.cz/en/1606*.
3. This specific definition of actuarial fairness described here is often described as "pay-as-you-go" actuarial fairness, see Queisser and Whitehouse (2006).
4. Such compensation has in fact been proposed under national accounts variant in the Czech Republic. The pension rights of the decedents would be distributed among the survivors of the same generation, thus increasing the pension wealth (this effect has not been reflected in the calculations).
5. Note that indexation of private annuities to average earnings – as suggested in the DC add-on proposal – would not be possible for insurance companies unless the government were to issue wage-indexed bonds.

Bibliography

Forster, M. and M. Mira d'Ercole (2005), "Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s", *Social, Employment and Migration Working Paper No. 22*, OECD, Paris.

Gruber, J. and D. Wise (eds.) (1999), *Social Security Programs and Retirement around the World*, University of Chicago Press for National Bureau of Economic Research.

Gruber, J. and D. Wise (eds.) (2004), *Social Security Programs and Retirement around the World: Micro-Estimation,* University of Chicago Press for National Bureau of Economic Research.

Keenay, G. and E. Whitehouse (2003), "The Role of the Personal Tax System in Old-age Support: a Survey of 15 Countries", *Fiscal Studies*, Vol. 24, No. 1, pp. 1-21.

Mattil, B. and E. Whitehouse (2006), "Individual Decisions to Switch Between Public and Private Pension Schemes", *Social, Employment and Migration Working Paper*, OECD, Paris, forthcoming.

OECD (1998), *Maintaining Prosperity in an Ageing Society*, OECD, Paris.

OECD (2001), *Ageing and Income: Financial Resources and Retirement in 9 OECD Countries*, OECD, Paris.

OECD (2005a), *Taxing Wages*, OECD, Paris.

OECD (2005b), *Pensions at a Glance: Public Policies across OECD Countries*, OECD, Paris.

OECD (2005c), *Improving Financial Literacy: Analysis of Issues and Policies*, OECD, Paris.

OECD (2006), *Live Longer, Work Longer*, OECD, Paris.

Queisser, M. and E. Whitehouse (2006), "Neutral, Fair or Something Else? Actuarial Issues in Pension-System Design", *Social, Employment and Migration Working Paper*, OECD, Paris, forthcoming.

Yoo, K.Y. and A. de Serres (2004), "Tax Treatment of Private Pension Savings in OECD Countries and the Net Tax Cost Per Unit of Contribution to Tax-favoured Schemes", *Economics Department Working Paper,* No. 406, OECD, Paris.

ANNEX 2.A1

The current pension system

Note: all values in this annex, unless otherwise indicated, refer to 2005.

Qualifying conditions

A phased increase in the standard retirement age will take it to 63 for men born in 1953 and later. The pension eligibility age will be 59-62 for women with children born in 1957 – 1960 and later (depending on the number of children that they raised) and 63 for women without children born in 1956 and later. 25 years' coverage is required as a minimum but people with 15 years' contributions can receive a pension from 65.

Benefit calculation

Basic

The value of the basic pension is CZK 1 470 per month, equivalent to nearly 8% of average earnings. There is no statutory indexation requirement for the value of the basic benefit alone but there are regulations on the minimum amount the pension must be increased (see below).

Earnings-related

The earnings-related pension gives 1.5% of earnings for each year of contributions. The earnings measure currently averages across all years since 1985, but it will gradually reach 30 years (in 2015). Earlier years' earnings are valorised by the growth of economy-wide average earnings.

There is a progressive benefit formula, with the first CZK 8 400 per month replaced at 100%, the slice of pensionable earnings between this limit and CZK 20 500 at 30% with 10% replacement above this level. The first threshold, below which there is 100% replacement, is equivalent to nearly 50% of average earnings, while the second threshold is 115% of average earnings. There is no statutory indexation requirement for these thresholds, but both have changed annually.

There is no specific statutory indexation requirement for the earnings-related pension component in payment. However, there are regulations on the minimum amount the pension must be increased. There is a regular increase in pensions every January. The combined total pension benefit (flat-rate and earnings-related components) must be increased by at least one third CPI growth of real wage growth, except when this amounts to less than 2% in which case there is no obligation to increase the pension. Increases

during the year must also be made if monthly inflation accumulates to more than 10%. These intra-year increases are sometimes incorporated into the annual increase and this needs to be taken into account in assessing past data on pension increases, particularly in the 1990s when inflation was relatively high.

Minimum

The total value of the minimum pension benefit is CZK 2 170, which is made up of a minimum earnings-related pension of CZK 770 plus the basic component of CZK 1 400. This combined minimum pension is indexed in the same way as described above. It is worth just over 12% of average earnings. Less than 1% of pensioners are only eligible for the minimum pension, *i.e.* the vast majority have made sufficient contributions to bring their pension above the minimum.

Social assistance

Older people are covered by the general social-assistance scheme and related benefits in kind. The target safety-net income for a single-person household is CZK 4 300 or nearly a quarter of average earnings. This is made up of a personal needs amount of CZK 2 360 plus a household needs amount of CZK 1 940.

Non-standard careers

Childcare

Women are entitled to retire earlier depending on the number of children they have had:

Number of children	1	2	3-4	5+
Number of years of early retirement	1	2	3	4

In addition, there are credits for labour-market absences during periods caring for children up to four years old (or older in case of severe disability). These years are then ignored in the calculation of earnings for pension purposes so that these absences do not reduce the assessment base. (This approach is used for all non-contributory periods.)

Unemployment

Periods on earnings-related unemployment insurance are fully credited in the pension system. The duration of unemployment insurance entitlement varies with age: six months up to age 50, nine months from 50 to 55 and 12 months for over 55s. Up to three years spent unemployed without entitlement to unemployment insurance can also be credited. The unemployment period used for the pension calculation is reduced to 80%, meaning that if an individual had 5 years' unemployment over the career, this would count as 4 years for pension purposes.

Early retirement

It is possible to retire three years before the normal ages (which gradually increase up to 63 for men and 59-63 for women) subject to 25 years' contributions. The total accrual factor (*i.e.*, number of years of contributions multiplied by the accrual rate) is permanently reduced by 0.9% for each 90 days of early retirement (3.6% per year). For a full-career

worker, this is equivalent to a decrement in the pension level (rather than the replacement rate) for early retirement of 3.6/64.5 = 5.6%. (This is the way in which most other countries calculate these adjustments.)

Until 2004, unemployed people could retire with a temporarily reduced pension up to 2 years before the normal pension age. The reduction was 1.3% for each 90 days (5.2% per year) of early retirement. An unreduced pension was paid on reaching the normal pension age. This was subject to 25 years' contributions and six months of unemployment.

Late retirement

It is possible to defer claiming the pension beyond the normal pension age. The total accrual factor (see section on early retirement above) is increased by 1.5% for each 90-day period of deferral (6% per year). There is no additional pension accrual for deferred retirement. It is also possible to combine pension receipt while continuing to work.

Social security contributions for workers

Contributions for pensions currently total 28% of gross earnings. Most of this (21.5 percentage points) is paid by employers, with the remaining 6.5 percentage points paid by employees. Employers must also contribute to funds for active labour-market policy and for sickness benefits. In 2005, the pension contribution was raised by 2 percentage points, but this increase was offset by a reduction in contributions to active labour-market policy funds. There are no ceilings on earnings subject to pension or other social contributions.

Personal income tax for pensioners

Old-age pensions are not taxed up to a value of CZK 162 000 per year. The standard tax-free allowance is CZK 38 040, giving pensioners an effective allowance four times higher than workers have.

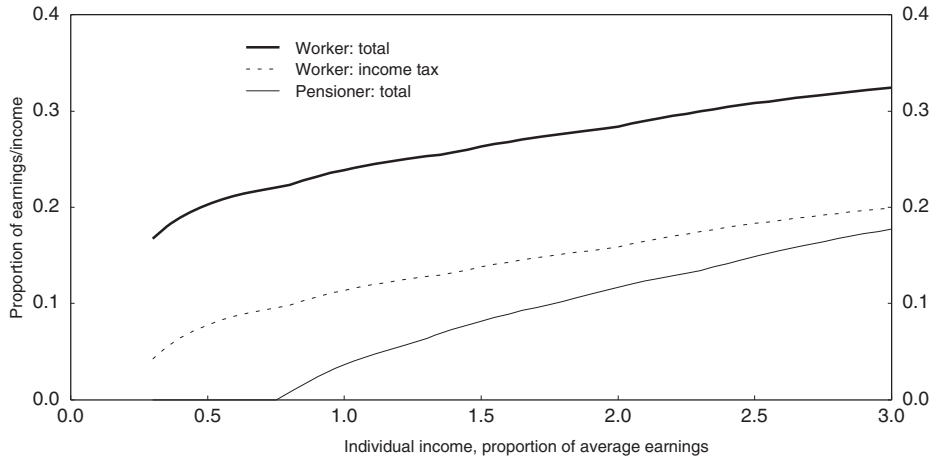
Only part of the pension above the tax-free allowance is taxed by the rules for income from work. The tax rates vary from 15 to 32 %. Recipients of pensions do not pay social security contributions from their pensions, but they pay social security contributions for income from work.

The impact of these aspects of tax and social-security for pensions are illustrated in the figure below. For example, a worker on average earnings is liable for 11.4% of earnings in income tax and 12.5% in social security contributions. A retiree with pension income at the same level would pay just 3.6% in income tax and northing in social security contributions.

Tax support for third-pillar pensions

Voluntary contributions to private pensions are supported by a combination of matching subsidies and tax exemption. The matching subsidy ranges from CZK 600 per year for a contribution of CZK 1 200 to a maximum of CZK 1 800 for contributions of CZK 6 000 and above. Contributions above CZK 6 000 are deductible under the personal income tax, subject to a maximum deduction of CZK 12 000. In combination, contribution matches and tax exemption mean that the state supports the first CZK 18 000 of private-pension savings, which is equivalent to about 8% of average earnings.

Figure 2.A1.1. **Taxes paid by pensioners and workers by income**



Source: OECD, Pension models.

Voluntary contributions paid by the employer are exempt from income tax up to 5% of gross earnings. Employers can count these contributions as expenses up to a limit of 3% of the employee's gross pay.

Pension payments are taxed differently depending on whether they derive from employee's contributions, matching state contributions, investment returns or employer's contributions. Interest income is taxed at of 15% while the employer contribution is subject to standard income tax.

In private-sector pension products which allow lump-sum withdrawals, returns are taxed as in pensions. In addition, also the share of the withdrawal attributable to employer contributions is subject to 15% tax.

In the case of surrenders, the state subsidy is returned to the state, returns of investments and contributions of employers are taxed at 25%.

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Chapter 3

Ensuring fiscal sustainability: motivating regional and municipal governments

This chapter looks at ways of ensuring that Czech regions and municipalities are fully motivated to make efficiency improvements in public service provision and so help achieve countrywide fiscal sustainability. The very large number of small municipalities in the Czech Republic means that scale economies are difficult to exploit and the policy options for overcoming this problem are discussed. In the financing system there are issues of transparency and of balance between autonomy for the regions and municipalities and central-government power to direct resources. In terms of accountability, questions of oversight and transparency arise in the public-procurement system and benchmarking in cost and output in public services is not yet widely used.

Achieving fiscal sustainability in public spending requires concerted reform efforts, not only by central government ministries and agencies but also by municipal and regional governments. In many key areas of spending, central government initiatives for improved service delivery can only be effective if sub-national governments are willing participants in the reform process. In addition, regions and municipalities have to be motivated to initiate spending reforms of their own because many potential improvements in service provision can only be seen by those working directly with providers.

This chapter first looks at the structure and responsibilities of Czech sub-national government. This is followed by detailed analysis under three headings: economies of scale; regional and municipal financing; and, accountability. The policy recommendations are summarised in Box 3.1.

Key features of Czech sub-national government

Municipal self-governments were established in the early 1990s with boundaries typically following those of previous local administrative units. In 2000 there was further decentralisation of government with the establishment of 14 regional governments and the termination of a network of 76 administrative districts (*okresy*), which had no directly elected representatives.[1] In terms of the share of total public spending, Czech sub-national government is not exceptional. The regions and municipalities together account for about 30% of general government spending, a similar level to Austria, Poland Norway and Italy (Figure 3.1). However, the system is exceptional in terms of the number of sub-national governments. There are 6 243 municipalities (*obce*) and their populations vary in size enormously, raising questions as to whether economies-of-scale are fully exploited (see below). The regions (*kraje*) range in population from 300 000 to 1.3 million. This level of government is also relatively small-scale in the sense that most of the regions are not big enough to qualify as "NUTS2" regions for EU-regional funding purposes.

A fundamental distinction is made in the Czech system between "independent competencies" and "delegated powers". For independent competencies, sub-national governments have strong legal rights of self-determination. Indeed, the independent competencies are a key *raison d'être* for regional and municipal government as these responsibilities are where, at least in theory, local democracy has its say on policy. For municipalities the most important independent competencies in terms of spending are primary health care, primary school education, public housing and local roads (Table 3.1). The decentralisation process notably involved passing responsibility for general hospitals and secondary-school education from central government to the regions.

For delegated powers, the municipalities and regions are in a legal sense the executors of central-government policy and therefore, in principle, have much less influence on policy. In the decentralisation of the early 2000s delegated powers were increased. About 80% of the tasks carried out by the administrative districts (*okresy*) were passed on to municipalities, mostly to a specially formed group of 205 "municipalities of extended

Box 3.1. **Policy recommendations on sub-national government**

Opportunities to encourage greater economies of scale in service provision have to be fully exploited:

- Further strengthening of incentives for municipalities to merge should be explored. In particular: further steepening of the tax allocation schedule, one-off compensation to cover the costs of mergers and the removal of biases in grant formulae that favour support small-scale operations.
- The authorities should also explore ways of encouraging more co-operation in the provision of independent competencies. In particular, the proposal to alter tax allocation rules to benefit municipalities who sign co-operation agreements looks promising and should be developed further.
- Exploit the potential for rationalising the networks of offices providing central-government services ("delegated powers"). Particular attention needs to be paid to the municipalities of extended scope.
- While the fact that most regions are below NUTS2 level certainly does not warrant an immediate re-consideration of regional boundaries, this should be taken into account if debate on the regional structure is re-opened.

Adjustment of sub-national government financing to further increase transparency and provide the right balance between autonomy for the regions and municipalities and central-government power is needed:

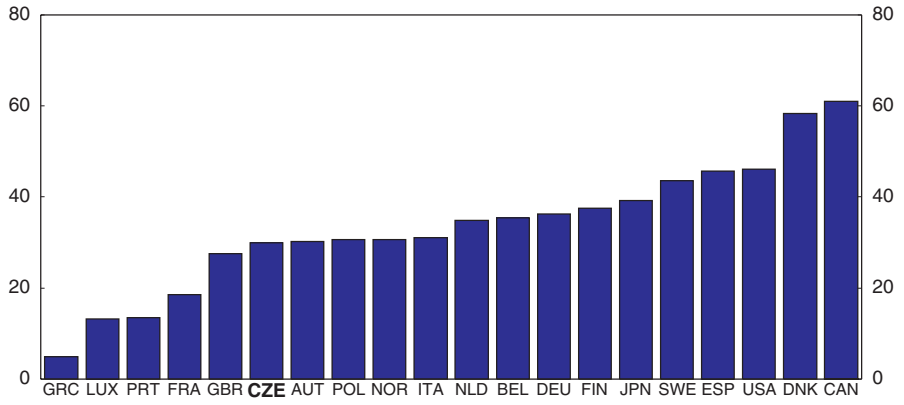
- Some tightening of the debt rules is required: the sanctions are rather soft and the inclusion of debt repayment in "debt servicing" is problematic.
- Various measures should be taken to improve transparency, notably: further development of the Ministry of Finance's on-line "ARIS" database of regional and municipal accounts and widening the legal powers of the Supreme Audit Office to allow full audits of municipalities.
- A close eye should be kept on the use of private-sector audits by the municipalities.
- The broad thrust of policy should be towards more flexibility in the use of grant revenue. However caution is needed because some spending areas are due for major system-wide reform and cost and output indicators have yet to reach a satisfactory stage of development.
- At the same time, some more room for regions and municipalities in discretionary taxation is warranted. One solution, for example, would be to widen the scope for setting real-estate taxation.

Improvements in accountability are needed along the following lines:

- Oversight and transparency in public procurement need to be strengthened. Prague has taken a welcome lead in going beyond legal requirements by publishing details of all its procurement contracts on line; other jurisdictions should be encourage to follow this example.
- In cost and output benchmarking, additional incentives to encourage participation are needed if benchmarking projects are to mature into comprehensive nationwide systems.
- In e-government, the set-up cost for users of electronic signatures needs to be brought down. Better co-ordination between some government databases is needed to cut back on red tape, particularly for businesses.

Figure 3.1. **Sub-national governments' shares in general government expenditure**

Per cent



Source: Secretariat estimates based on the latest available national accounts figures (2003 for most countries). For the Czech Republic, regional and municipal accounts for 2004 have been used.

Table 3.1. **The assignment of "independent competencies" and "delegated powers"**[1]

	System before 2000		System after 2000	
	Districts	Municipalities	Regions	Municipalities
Health				
General Hospitals	D		I	
Primary health care		I		I
Education				
Upper-secondary education	D		I	
Primary and lower-secondary education		I		I
Welfare, policing and emergency services				
Social benefits	D			D
Social care services, care for the elderly and disabled				I
Public housing, public rented housing and supported flats for disadvantaged persons	I		I	
Law enforcement and emergency services		I		I
Roads				
Secondary roads	D		I	
Local roads		I		I
Public road transport services, regional level	D		I	I
Public road services, local level	D			I
Water and energy				
Water supply and waste water treatment	D			I
Gas supply and heating	D			I

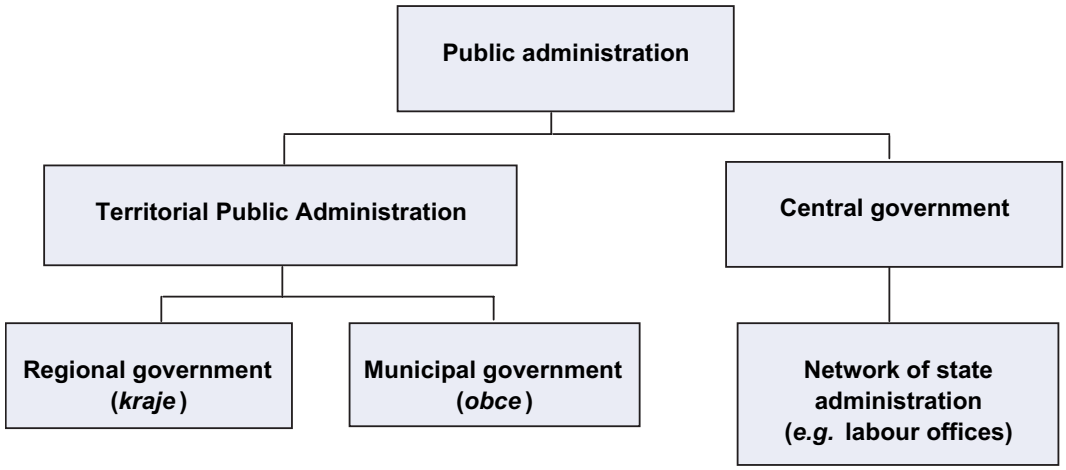
Note: I: Activities classified as "independent competencies" in municipalities and regions. The Districts only had delegated powers. D: Activities classified as "delegated powers" in municipalities, regional government and (previously) districts.

1. Only the most important activities (in terms of spending) are listed in the table. Other independent responsibilities and delegated powers include culture and recreation and various administrative services such as issuing identity papers and driving licences.

Source: OECD, based on information from the Ministry of Interior.

scope". The remaining tasks were allocated mainly to the regions.[2] However, some important networks of local offices remain directly managed by ministries and other central government bodies (Figure 3.2). Indeed the labour offices, which are run by the Ministry of Labour and Social Affairs, have been given increased responsibilities. In 2004, the administration of state social support (including the means-tested "minimum living allowance") was transferred from municipal offices to the labour offices. It should also be noted that the municipalities of extended scope are only one layer in a rather complex structure of municipality networks, this is discussed further below.

Figure 3.2. **The structure of public administration in the Czech Republic**



Source: OECD Secretariat.

Czech sub-national government initiates a lot of public investment. Some arises from obligations in independent competencies, in particular local roads, water services and energy supply. Other investment activity is of a more voluntary nature (*i.e.* it is not related to legally assigned responsibilities). Development projects, such as technology parks, are common among the regions and larger municipalities. Indeed, most investment projects of this kind are initiated by sub-national government and this decentralised process is important when, for instance, assessing R&D policy (see Chapter 4). The projects often involve co-operation and close ties between the local authority, the business community and local institutions, such as universities. For example, a municipality might set up a subsidised company to build a technology park, get further financial backing from investors and involve the local university to help raise the attractiveness of the park to high-tech companies. The municipalities often co-operate in such projects.

The balance of power between sub-national and central government in policymaking is of course affected by other factors besides legal distinctions between responsibilities. These are summarised for different areas of public spending in Table 3.2. The freedom in policymaking that independent competency implies is contained in several ways. Service standards and earmarked grants define minimum standards and minimum levels of spending. Also for both administration and public services, employees must typically be paid according to nationally negotiated pay agreements. For delegated powers, key features of the services are set but there is freedom in how systems are administered – the grants provided are not earmarked.

Table 3.2. **Discretionary powers of municipalities and regions**

Public service	Key aspects of the service set by central government	Key areas of discretionary power
Regional government		
Administration	Pay scales of administrators and of elected representatives.	Staffing levels.
Regional hospitals	Detailed specification of treatment covered by the public system. Influence on funding *via* role in setting amount that insurance funds must pay for hospital care (see main text). Also influence through grants for large investment projects (*e.g.* new hospitals). Influence *via* role in setting nation-wide pay increases for a large share of health care workers.	Discretion on staffing levels and on the opening and closing down of facilities. Hospitals that have been converted to regionally-owned enterprises have more discretion on pay.
Upper secondary education	Regions must submit education development plans consistent with national strategy. Influence *via* per capita financing for current expenditures and grants for buildings Direct setting of some parts of the curriculum and final examination. Conditions of teacher service (qualification, duties and pay scales).	Discretion on staffing levels and opening and closing down facilities. Human resources management (largely delegated to school heads). Discretion on some parts of the curriculum and in setting some parts of the final exam.
Secondary roads	Technical standards.	Full discretion, though approval and co-ordination with other levels of government is important.
Municipal government		
General administration	Pay scales of administrators and of elected representatives.	Staffing levels.
Primary health care	Similar to regional hospital services.	Similar to regional hospital services.
"Basic" education (*i.e.* primary + lower secondary)	Municipalities must submit education development plans consistent with national strategy. Influence *via* per capita financing for current expenditure and grants for building. Sets the standardised tests taken at the end of primary and secondary education. Conditions of teacher service (qualification, duties and pay scheme).	Education Development Plans for the region (to comply to the national plan). Establishing, maintaining and steering basic schools, modifications in their network (of their number, site and location). Human resources management (largely delegated to school heads).
Public housing Refuse collection and processing Local public transport Water supply and waste water Gas supply and heating Local public transport	Technical standards (and sometimes approval requirements, *e.g.* when constructing a water or gas pipeline).	Full discretion on level and quality of service (subject to standards and, where applicable, approval). Co-ordination and joint provision is common among small municipalities.
Social benefits, social care services, care for the elderly and disabled (*administered by municipalities of extended scope)*	All aspects of the benefit systems are set by central government.	Complete freedom how policies are administered (number of offices, staffing levels, etc.). Transfers from central government to cover administration costs are not earmarked.
"Municipal offices", building permits, and registry offices	All legal and technical issues are set by central government.	As above.

1. The provision of public housing is only one aspect of housing policy. Municipalities also administer support for rentals provided in the social welfare system, however they are not involved in mortgage support schemes.

Source: OECD assessment based on various information from the Czech authorities.

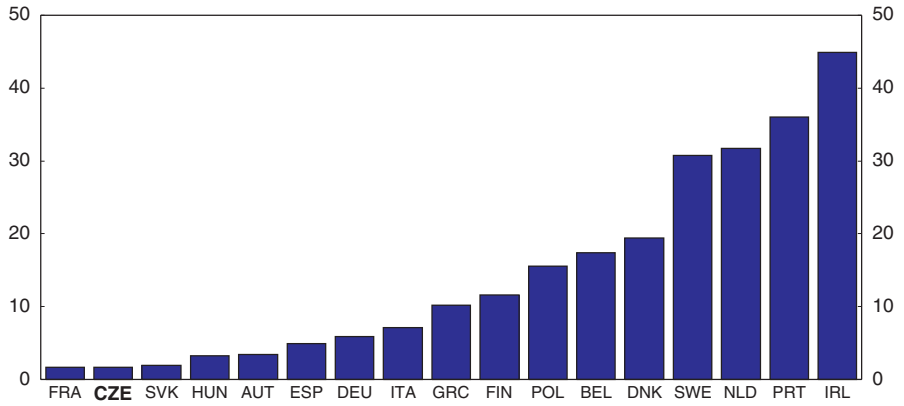
Economies of scale

Small municipalities: what are the options for scaling up service provision?

Reducing the risk of high costs and compromised service quality in small municipalities needs to be a key focus of efforts to improve the efficiency of the sub-national government. The average size of Czech municipalities is one of the lowest in the EU (Figure 3.3) reflecting numerous very small units. For instance, around 2 500 municipalities have populations of

Figure 3.3. **International comparison of the average number of inhabitants per municipality**

Thousands



Source: Dexia Bank.

less than 300 (Table 3.3). This being said, there is a fair amount of combined service provision. Most delegated powers are typically assigned to sub-networks of municipalities (in particular the municipalities of extended scope). Also many municipalities co-operate in providing independent competencies. About 40% of all municipalities are members of one of 470 official voluntary associations of municipalities (*dobrovolné svazky obcí*), these are recognised legal entities and can be a vehicle for providing a wide range of public services. Despite these considerations, many of the very small municipalities are likely to struggle with the basic administrational overheads in running local government and in organising even a simple range of public services. Indeed, research on scale economies in Swiss local government (a system often held up as a case where small-scale government works well) suggests that a large share of Czech municipalities are below a critical minimum size in terms of efficiency (See Box 3.2).

Table 3.3. **The size-distribution of municipalities**

Population range	Number of municipalities	Number of municipalities (cumulative)	% of total population	% of total population (cumulative)
0-100	557	557	0.4	0.4
101-200	1 086	1 643	1.6	2.0
201-300	890	2 533	2.1	4.1
301-1 500	2 850	5 383	18.4	22.5
1 501-5 000	592	5 975	14.8	37.3
5 001-10 000	137	6 112	9.1	46.4
10 001-20 000	68	6 180	9.3	55.8
20 001-30 000	28	6 208	6.8	62.6
30 001-40 000	9	6 217	3.1	65.7
40 001-50 000	5	6 222	2.3	68.0
50 001-100 000	16	6 238	11.3	79.3
100 001-150 000	1	6 239	1.0	80.3
150 000+ (excl. Prague)	3	6 242	8.2	88.5
Prague	1	6 243	11.5	100.0

Source: Ministry of Finance.

Box 3.2. **Research on the optimal size of local government**

It is difficult to draw many general conclusions about the optimal size of local government from the available evidence. This is largely because context matters tremendously. The optimal size of units depends a lot on which services local governments provide and the incentives for (and the efficiency of) co-operative provision. It is self evident, for instance, that if local government is responsible for hospital services, it should be on a bigger scale than if it is only responsible for ensuring general practitioners' services. However, there is reasonably broad agreement among experts that there is some point at which the small size of the municipality means higher costs (or compromised service quality) for virtually all public services. Research of small local governments in Swiss Cantons suggests that costs and quality are severely compromised below a population of 500. Indeed, recent jurisdictional reforms in some areas of Switzerland have focused on municipalities below 500 and some cantons are aiming at a threshold of at least 3 000 (Ladner *et al*. 2003). Well over half of Czech municipalities' populations are below 500.

The most obvious solution to the Czech problems of economies of scale is for the small municipalities to merge. However, this is easier said than done. For fundamental constitutional reasons, central government cannot unilaterally decree the merger of municipalities and policy has to work more indirectly through mechanisms altering financial incentives.

Changes to the municipalities' tax allocation formula in 2001 introduced some incentives to merge, though more by consequence than design. The revised formula was based on the existing tax allocation and this implied giving progressively larger per-capita payments with increasing municipality size. Per capita tax allocations in other countries are typically either flat or U-shaped in relation to the size of local government, so the Czech system is indeed somewhat unique in providing incentives to merge among small units. However, so far, no mergers have taken place following the change in formula.[3] Municipalities are perhaps taking time to respond to the incentives, but it is also likely that the potential gains are not sufficiently attractive. *prima facie* it appears that some municipalities have a lot to gain from merging; indeed it is possible to construct scenarios where municipalities could get as much as 40% higher tax revenue. However, the potential number of such scenarios is quite limited and tax revenues anyway typically only account for about one-quarter of total revenue, so even in the most advantageous merger scenarios municipalities would only gain about 10% more revenue (see Annex 3.A1 for further discussion).

Further strengthening of incentives for municipalities to merge should be explored. In particular:

- *Steepening of the tax allocation schedule for the smallest municipalities*. However, a weather eye would have to be kept on the cost implications, as agreement between central and sub-national governments on such a move would probably involve increasing the overall level of tax allowances.[4]
- *One-off compensation to cover the costs of mergers*. The Finns, for instance, have had some success in inducing local-government mergers through one-off compensation (see Box 3.3). Arguably, a one-off payment is preferable to schemes that manipulate the tax allocation because the cost of encouraging the mergers is clearer.

- *Removal of biases in grant formulae that favour small-scale operations*. Measures of this sort have had some success in Switzerland where the removal of biases in funding has motivated some municipality mergers. However, once again agreement on this is unlikely without at least some additional short-term costs for central government.

However, incentives for municipalities to merge cannot be counted on. First, it may prove politically impossible to introduce them. The difficulty of making reforms in local-government finance is illustrated by on-going efforts to reach agreement on changing the tax-allocation formula from a stepped schedule to a smooth function.[5] Political constraints are common elsewhere; the examples of successful measures in Box 3.3 are encouraging, but they are also rare. Second, international evidence suggests that the returns to mergers go mainly to the local population in the form of better quality public services and that fiscal savings are at best only realised in the long term (see Box 3.6).

Box 3.3. **OECD experiences in mergers of municipal government**

The Czech Republic is not alone in having small municipalities that are strongly resistant to measures imposing or encouraging mergers. For instance, expert assessment of Norwegian and French local government also often concludes that the system would work better if it had larger municipalities, but there are seemingly few practical ways of making headway in policy.

However, in one or two countries central government has succeeded in persuading mergers. In Finland, where similar to the Czech Republic municipalities are protected by strong constitutional rights, a system of grants has provoked some mergers.* In Denmark central government also offered one-off transfers designated as covering the costs of merging but this was also combined with a threat to re-draw municipal borders unless the municipalities themselves organized mergers. In Japan, the removal of favourable biases in grants was combined with rules allowing expanded municipal councils if municipalities merged. Some mergers in Switzerland have also been prompted by the removal of biases in grant funding.

Research on the impact of mergers often finds evidence of improved service quality but rarely finds evidence of significant cost savings. For example, case study evidence suggests that efficiency gains are used to increase service quality rather than to reduce expenditure. In part this is because measures used to encourage mergers typically involve giving local authorities more resources and the incentives for cost-cutting can therefore be low. In addition, savings in costs can take a long time to implement. Staffing cuts are a sensitive issue in mergers and might only happen over the long run through non-replacement of staff who retire.

* Three types of grant are available in Finland to encourage municipalities to merge: grants based on population size, grants to compensate any losses in equalisation payments from merging and special investment and development grants. The system was introduced in the late 1990s.

Avenues for encouraging more co-operation in the provision of independent competencies should be explored. Again, tax allocation could be a useful instrument. Indeed, a proposal along these lines has already been developed by the Ministry of Interior. In this proposal, municipalities would make explicit agreements to co-operate in the provision across an agreed range of services and the tax allocation (based on the current stepped system) would be calculated on the combined population of the municipalities

involved.[6] The scheme looks promising, though some aspects of it need careful consideration. First, there will be some deadweight loss because municipalities that already co-operate will benefit. Second, it might prove tricky to ensure the co-operation agreements result in concrete economies in service provision and not just superficial organisational changes. Finally, as with schemes to promote mergers, the returns from a fiscal perspective may be limited because the efficiency gains are more likely to emerge in improved service quality rather than cost savings.

Another route would be to exploit the potential for rationalising the networks of offices providing state administration (*i.e.* delegated powers). The administrative structure of delegated powers has evolved into a quite complex system. In addition to the municipalities of extended scope (*obecní úřady s rozšírenou působností*) there is a network of 388 "municipalities of the second type" (*pověřene obecní úřady*) (see Table 3.4 and Annex 3.A2). There are also more extensive networks of offices that run population and building registers. The piecemeal development of the system almost certainly means it is overly complex. It is also likely that rationalisation in the networks of offices has not fully kept pace with increases in mobility and developments in communication, such as e-government (see below). Some adjustment of the subsidies given to municipalities for carrying out state administration was made recently following investigation of costs in service provision.[7] However, the reform focussed on ironing out inequalities in allocation and not on the efficiency of structures as a whole. A broader examination of efficiency should be conducted with a view to rationalisation of the networks of offices. Particular attention needs to be paid to the municipalities of extended scope. The allocation of many of the services provided by the 76 former districts to these 205 municipalities was in broad terms a backwards step in terms of scale economies. Indeed some of these municipalities are reportedly struggling to fulfil their service obligations.

Table 3.4. **The different levels of delegated powers in municipalities**

Type of municipality	Number of municipalities
Basic delegated powers (*e.g.* emergency management)	6 243
Municipalities running population registration[1]	1 226
Municipalities providing building permits[1]	617
Municipalities of the "second type" (*pověřené obecní úřady*, see Annex 3.A2)	388
Municipalities of extended scope or "third type" (*obecní úřady s rozšířenou působností* or *malé okresy*). These were formed after the break up of the districts. Roughly 80% of the former district services were passed on to these municipalities, the remainder to the regions. See Annex 3.A2.	205

1. There is no definitive structure for the more minor delegated powers and no strict hierarchy. For example some municipalities with building permit offices do not run the population register. The geographic boundaries of the networks of smaller services do not necessarily line up with those of the municipalities of second type and municipalities of extended scope.

Source: Ministry of Interior.

The regions: most are too small to administer EU funding

The establishment of the regions was partly motivated by the need for an interface for EU structural funds.[8] The EU regional funding system requires regional units with populations between 0.8 and 3 million (the NUTS2 level of regional disaggregation). However, several of the 14 regions do not fulfil these criteria and combinations of regions have been formed for EU funding purposes.[9] Indeed, only three regions are stand-alone EU-funding units. To some extent this only has statistical implications but it also complicates

regional administration and policymaking. While this issue does not warrant urgent re-consideration of regional boundaries, it should be taken into account if debate on the regional structure is re-opened in the future, particularly if co-operation between regions on EU issues proves difficult.

Regional and municipal financing

As in other countries, the system of financing regions and municipalities has a strong influence on the *de facto* level of self-determination in the regions and municipalities. In this respect, the key features of the Czech system are as follows:

- Most of the tax revenue is via a formula-based allocation of personal income tax, corporate income tax and value-added tax (Tables 3.5 and 3.6). As described above, for municipalities, the allocation is a per-capita payment based on population size. The allocation is 20.59% of the base. When the regions were first established the tax allocation was initially 3.1% of the tax base but was raised to 8.92% in 2005 (with offsetting cuts in grants). The regional funding formula combines population size with several other criteria including land area, size of road network and the number of school pupils. In municipalities, a small share of the total tax allocation is based on local incomes of the self employed and the employed. In addition, there is some leeway for local revenue through real-estate taxes (though within statutory limits) and fees. In contrast, the regions have no revenue linked to their tax base, nor any revenues from local fees.
- Grants are generally earmarked (*i.e.* provided for a specific purpose and accompanied by monitoring systems) and require matching funding. Grants for current expenditures are formula-based while capital grants are allocated using a more case-by-case approach. A grant is provided to cover the cost of providing central-government services (including those transferred to the regions and municipalities following the dissolution of the districts) but unlike most other grants it is not earmarked. Since 2005, the central government grant for teachers' wages and some other education grants no longer passes through the municipalities books.[10] As a result by far the largest grants to municipalities are for providing the various forms of municipal social assistance.

Table 3.5. **Municipal and regional revenues**

	Municipalities	Regions
Tax revenue and fees for services	21% of aggregate PIT (simplified), CIT and VAT is distributed according to a population-based formula (the per capita amount increases with size).	9% of aggregate PIT (simplified), CIT and VAT, distributed according to a multi-criteria formula (including population area, size of road network, number of school pupils).
	30% of incomes from personal income tax from business paid by people with their permanent address in the municipality.	
	An additional 1.5% of PIT is distributed according to the number of employees in the municipality.	Regions have no local-tax revenue or fee income.
	Municipalities can set the rate of property tax with specified limits and have discretion on various fees for services (*e.g.* waste disposal).	
Grants	Earmarked grants for current spending. Most of the require matching funding. Teachers' wages are a notable exception.	*Similar to municipalities.*
	Non-earmarked grants to cover the cost of providing delegated powers).	*Similar to municipalities.*
	One-off grants for investment items, such as buildings and roads.	*Similar to municipalities.*

Source: Ministry of Finance.

Table 3.6. **Revenues and expenditures of municipalities and regions (2005)**

	Regions	Municipalities
Revenues (% of total revenue)		
Tax and capital revenues	**37.7**	**73.0**
Tax revenues	34.9	57.1
Non-tax revenues	2.5	10.0
Capital revenues	0.3	5.9
Grant revenue (mainly earmarked)	**62.3**	**27.0**
Non-investment subsidies	60.5	19.8
Investment subsidies	1.8	7.2
Expenditures (% of total expenditure)		
Current expenditure	**89.4**	**68.1**
Capital expenditure	**10.6**	**31.9**

Note: Estimates of total revenues of regions and municipalities are CZK 113.5 billion and CZK 225.6 billion, respectively. Total expenditure of regions amount to CZK 112.6 billion and of municipalities to CZK 218.6 billion.
Source: Ministry of Finance and OECD calculations.

- Municipalities and regions otherwise have a reasonably free hand in financing, but there are rules and possible sanctions. Annual budgets submitted to the authorities have to balance and there is some regulation on debt (more on this below). Private-sector bank credit is used by many municipalities, some large municipalities issue bonds and institutional lending, notably by the European Investment Bank, is becoming more important (particularly for regions). Funding opportunities via EU co-financed projects is also set to become more important. Money is also raised through sales of assets and flows from off-budget accounts also play a role.

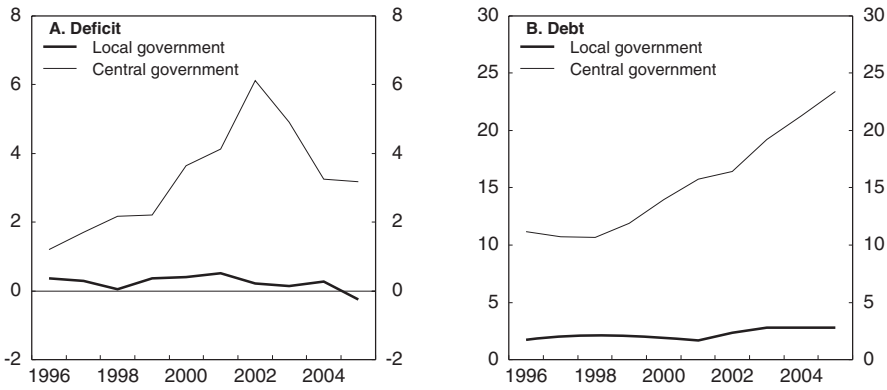
Municipalities typically have much more discretion over spending than regions. Untied municipal revenue in the form of tax and capital revenue accounts for over 70% of revenue, with earmarked grants accounting for the remainder according to 2005 accounts (Table 3.6). In contrast, a little under 40% of regional revenues are untied, though this higher than before following the change in the tax allocation from 3.1 to 8.92%. However these figures only give a rough guide to the level of discretion in revenue use. In particular some tax and capital is effectively committed because it is used to provide matching funding for central-government earmarked grants.

Sub-national deficit and debt: a good track record so far

The combined deficit of sub-national government has never been equivalent to more than half a per cent of GDP and regions and municipalities have accumulated only a small share of general-government debt (Figure 3.4). Hence, neither the municipalities nor regions have, to date, collectively accounted for a disturbingly large share of general government deficit and debt. Furthermore, there have been only a handful of cases when municipalities have reached a point of financial crisis. In sum, it appears that the balanced-budget rule in combination with market discipline have been sufficient to keep sub-national government deficit well within reasonable bounds.

However, the greater opportunities for co-financed funding in the 2007-13 EU budget will be a financing challenge and may tempt some regions and municipalities into more risky revenue-raising projects. In addition, options for raising money through asset sales have already dwindled significantly.[11] In response to these and other concerns, the

Figure 3.4. **Sub-national and central government deficit and debt**[1]
Per cent of GDP



1. Data for 2005 is preliminary. Deficit data is compiled according to GFS 1986. Central government comprises state budget (including National fund), seven state funds and two privatization funds; the data cover both regions and municipalities.

Source: Secretariat calculations based on Ministry of Finance data.

Ministry of Finance took a number of steps in 2004 to limit the indebtedness of municipal government. In particular:

- Application for debt issues to the Securities Commission must now also be vetted by the Ministry of Finance (this was part of a new act on debentures).
- A soft capping of debt through a debt-service limit has been introduced. Regions and municipalities whose debt servicing exceeds 30% of revenue receive a formal letter from the Ministry asking for an explanation.[12] At the end of 2003, a total of 211 municipalities did not fulfil the criteria and the total in 2004 was 194. However, at least in 2004, many of these cases are known to be due to increased loan repayments (and consequently reduced indebtedness).

Debt rules: a need for fine-tuning

It is difficult at this stage to fully assess the effectiveness of the debt rules because the current system has only been operating a short time. However, *ex ante* the system appears to have the following problems:

- The sanctions are rather soft. The strongest sanction comprises putting a municipality on a blacklist circulated to ministries and funding bodies. However, the blacklist may not have much influence on ministries' funding decisions. If this proves to be the case, the sanction should be strengthened (*e.g.* with explicit rules for ministries and other funding bodies on funding blacklisted municipalities) or bolstered by additional sanctions.
- Including debt repayment in "debt servicing" is problematic. The debt-servicing indicator includes debt-reducing measures such as the repayment of principal on loans. While this has the advantage of recording all payments connected with financing, it means municipalities can receive notification for good policy, such as accelerated loan repayment. The inclusion of repayment items also pushes municipalities to long-term borrowing which may not be optimal for long-term sustainability. If debt repayment were excluded this should be accompanied by a reduction in the debt-service limit

because pure interest payments amounting to 30% of current revenue implies very large debt accumulation.

Accounting transparency: some room for improvement

Many ingredients to a healthy level of transparency in regional and municipal accounts are already in place. Both the regions and municipalities are legally bound to make their accounts available to the public, regular accounting updates are sent to the Ministry of Finance and annual audits are conducted. The auditing system was revamped in 2004 bringing stronger requirements for auditors to report on the contingent liabilities of municipalities and regions.

This being said, municipalities and regions are sometimes worryingly resistant to the disclosure of information, particularly deficit and debt figures. Indeed, the Ministry of Finance and other authorities typically avoid independently publishing data on individual regions or municipalities for fear of legal action by the regions and municipalities. In addition, though certain items must now be publicly available on the web it is not all that easy for a non-expert citizen to use this information to make cost comparisons. Only the most recent two years of accounts have to be shown and there are no requirements on presentation.[13] The defensive attitude of sub-national government on transparency sends bad signals to both the central authorities and the electorate. But, perhaps more importantly, it compromises local democracy by making it difficult for the local press and citizens to have a comprehensive view on the accounts. Various measures could be taken to tackle this issue, in particular:

- Further development of the Ministry of Finance's on-line "ARIS" database of regional and municipal accounts. For instance, the introduction of facilities to make comparisons and non-technical nomenclature of accounting items readily available would help accessibility. The database could also be used to develop various basic cost indicators that would be of interest to local citizens (*e.g.* per-capita spending calculations on specific items).
- Widening the legal powers of the Supreme Audit Office to allow full audits of municipalities. This could usefully bolster the surveillance provided by the regular auditing system. At present, the Supreme Audit Office can only investigate financial flows connected with grants and transfers for administrative tasks from central government.[14]

The use of private-sector auditing of sub-national government accounts should also be reviewed. Under the auditing rules introduced in 2004, municipalities have the option of paying for a private-company to perform their annual audit instead of having the audit carried out free-of-charge by their regional administration.[15] Some research suggests that the municipalities who choose this option are often in financial difficulty. While this might in part reflect a genuine desire of local officials for expert opinion, it might also reflect a belief among municipalities that private-sector auditors are more likely to use leeway in accounting regulation to present a favourable picture of a municipality's financial position compared with government auditors. A close eye should therefore be kept on the use of private-sector audits by the municipalities and regions.

Should the regions and municipalities have more flexibility in financing?

The division between tied and untied revenue is sometimes hotly debated between central and sub-national government in the Czech Republic. For instance there are ongoing debates about grants for teachers' salaries and the corporatisation of regional hospitals. In the case of teachers' salaries, the regions claim that the current system of direct grants for teachers' wages and nationally negotiated wage increases do not give enough flexibility and that non-earmarked funding and regionally-based pay negotiation would be preferable. Those defending the current system argue that there is already sufficient leeway in salaries – around 12% of wages can be allocated at the discretion of school directors – and that there is anyway strong ground-level support for national wage scales (see Chapter 4 of this *Survey*). The debate about the corporatisation of hospitals is also partly about wage flexibility (see Box 3.4). However there are other issues, for instance in theory the corporatised hospitals also have greater freedom in developing fee-paying services. Opponents of corporatisation claim that this will encourage cream skimming and undesirable diversion of attention from core health care services towards fee-based services.

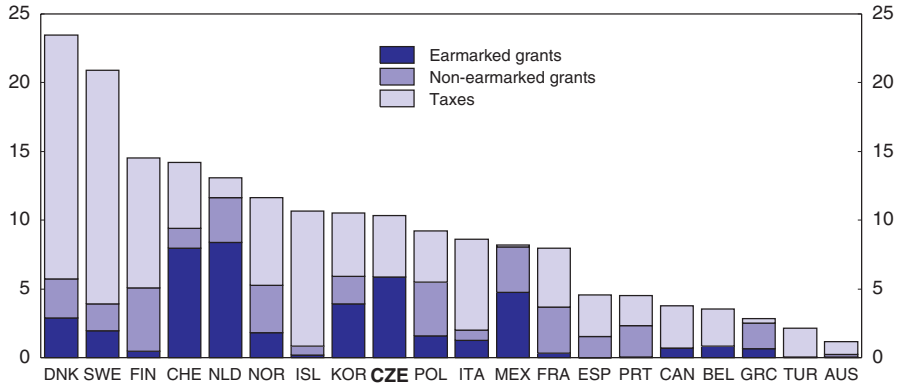
Box 3.4. **Regional financing of hospitals: the debate on corporatisation**

Some regions have converted the hospitals under their jurisdiction from government enterprise (*příspěvková organizace*) into standard business enterprises.* One of the main points of contention over this move relates to wage setting. As standard business enterprises, the corporatised hospitals have more freedom in wage setting as there is no obligation to follow the centralised health care wage agreements that normally apply to the sector. This is regarded as a key advantage by the regions but health-worker unions and the current Ministry of Health say it threatens centralised bargaining which they argue already provides sufficient discretion in wage setting. Critics of the move to corporatisation say it threatens universal provision, and that the profit motive will lead to cream skimming and a damaging diversion of managerial focus and resources into fee-based auxiliary services. Parenthetically, in terms of financial oversight there are arguably advantages from corporatisation because it means that the hospitals are subject to standard company accounting rules which provide more transparency compared with those applied to *příspěvková organizace*.

* The *příspěvková organizace* is a special form of government enterprise that is part way between a government agency and normal business enterprise. The enterprise is registered as a business and has separate accounts from government. However the accounting rules are not the same as for normal business enterprises and the owners (*e.g.* municipalities) have special powers in how the enterprise is run. The main activity of the enterprise is typically "non-profit" but some "for profit" activities are also carried out.

Abstracting from the politics of these debates, assessment suggests that although the broad thrust of policy should be towards giving more flexibility in revenue-use to the Czech regions and municipalities, some important caveats apply. Many international experts on sub-national government finance think that, in general, block grants should be used for financing and that there are only certain circumstances where earmarked grants are suitable (see, for example OECD, 2005a).[16] The chief arguments are that earmarked grants give little incentive for sub-national government to make services efficient and involve considerable administrative burdens compared with non-earmarked grants. The share of sub-national government financing through earmarked grants in the Czech Republic indeed appears to be high in relation to other countries (Figure 3.5), suggesting that the

Figure 3.5. **Sub-national government revenue from grants and taxes**[1]
Per cent of GDP



1. The calculations use preliminary 2003 data, except for the Czech Republic which has been updated to 2005.
Source: OECD.

financing system is out of line with the norm in this respect. However, there are two important reasons for caution in moving towards non-earmarked grants (or similar alternatives such as increased tax allocation):

- In spending areas where there are significant upcoming challenges and a need for major system-wide reform, removing links between grants and spending is risky because central government may lose too much leverage and reform can be uneven and uncoordinated.
- Granting more flexibility in the use of revenues would place more reliance on local democracy and more reliance on *ex post* rather than *ex ante* monitoring of resource allocation by central government. Therefore, it is important that cost and output measurement systems enabling comparison across jurisdictions have reached a satisfactory stage of development. As discussed above, comparisons using regional and municipal accounts are not yet that easy to make. In addition, though benchmarking is underway, none of the initiatives has yet developed into a comprehensive nation-wide system (see discussion below).

At the same time, some more room for regions and municipalities in discretionary taxation is warranted. At present only a very small share of municipal revenue is raised by local taxes and fees and regional government has no instruments for local revenue raising. One solution would be to widen the scope using real-estate taxation. Under the current system, municipalities can only alter the rate on some types of building and only within a limited range.

Accountability

Public procurement: how to clamp down on abuse?

Municipalities and regions tender out about two-thirds of the total value of public procurement contracts in the Czech Republic and therefore having a procurement system that works well at levels of government is important.[17] Unfortunately, the procurement system has been vulnerable to abuse and much of this at the sub-national government

level. For instance, reports by *Transparency International* paint a dismal picture of widespread collusion between bidders or favouritism in offering tenders (Transparency International, 2005a and 2005b). A common strategy is to split contracts so that they fall below the threshold requiring stringent procurement rules (see Box 3.5 for further examples).[18]

Box 3.5. **Examples of abuses and violations of Czech public procurement rules**

Contract splitting. Segmentation of contracts so that the value of each contract falls below the cut-off point for a strict public tender process.

Abuse of procurement rules for network industries. Municipalities sometimes classify contracts as network services because of lighter procurement rules.

Use of contract extensions to manipulate the system. For instance, there is sometimes collusion between officials and companies in which the firm makes a low (possibly loss-making) bid but, by prior agreement, it is later awarded profitable contract extensions.

Rigging of tender terms of reference and invitations to tender to favour certain bidders, for example through use of subjective criteria in selecting the bidder.

Fixing of the bidding process by firms. For instance, either firms collude (*e.g.* agreeing to take it in turns to win contracts) or separate bids are made by firms that have strong ownership and management connections.

Abuse of positive discrimination rules. Czech procurement legislation contains provisions allowing contracting authorities to favour bidding firms which employ disabled persons. Reportedly, small firms (with the required criteria) are sometimes used as fronts for getting contracts.

Abuse of complaints procedures. For example failed bidders reportedly threaten to lodge a complaint (which, at the very least postpones the execution of the contract) as a means of putting pressure on the contracting authority to grant other contracts.

Source: Transparency International (2005a).

Legislative changes made in 2004 and 2006 have aimed to clamp down on abuse and violation of procurement regulation. The 2004 Public Procurement Act introduced new rules regarding contract extensions, tenders involving firms employing disabled people and central records of procurement activity.[19] It also established a "white list", comprising firms with good track-records in procurement. However, for technical reasons relating to EU entry, the 2004 Act was rushed through parliament and in some respects was not an adequate piece of legislation. A new act has been passed this year that deals with these shortfalls and endeavours to make further improvement to the system. In particular, the 2006 Procurement Act should make procurement easier for small municipalities. Facilities for joint procurement have been introduced. And, the Act allows for a "tender dialogue" in which the tender is initially specified in general terms and the details then fleshed out following exchanges with potential providers.[20] Though the new Act clearly marks some improvement, further refinement will undoubtedly be needed. For instance, there are concerns that it will not solve problems in the abuse of subjective criteria.

More fundamental structural changes to improve oversight and transparency also need to be considered. Oversight of public procurement is rather limited. Two bodies have

legal powers to oversee procurement, the competition authority (the Office for the Protection of Competition) and the Supreme Audit Office. The competition authority can take action if there is transgression of procurement legislation, but this is reportedly often inadequate for catching many forms of abuse. The Supreme Audit Office can undertake more in-depth investigation, but only *ex post* and it does not have any concrete powers, for instance to enforce a new tendering process (however the influence of its reports *via* parliament and the media may prompt such action). The Supreme Audit Office is also limited to investigating procurement involving state funds. In addition, transparency of the procurement process is patchy. Parts of the procurement process and related information are subject to specific requirements for public notice (notably the advertising of bids) but some other information is difficult to access. Prague has taken a welcome lead in going beyond legal requirements by publishing details of all its procurement contracts on line, other jurisdictions should be encouraged to follow this example.

Output and cost indicators and benchmarking: only a minority of municipalities are involved

Reasonable progress is being made in developing indicators of municipal activities. Out of the various pilot projects so far set up, the most comprehensive involves the voluntary participation of municipalities of extended scope.[21] The project began in 2004 and is funded by the participants and a small subsidy from the Ministry of Interior. Initially the project focussed on state-administration (*i.e.* delegated powers) but it has since been extended to also cover all the key aspects of own responsibilities as well; around 60 specific areas of municipality activity are now covered and there are well over 1 000 indicators. The indicators focus on not only public-service providers but also the core administration involved in managing provision. Cost and output in core administration is captured, not only by indicators based on employment and wage costs in municipal offices, but also by data on activities, such as auditing and caseloads. For the public services themselves, the indicators are inevitably more diverse. For instance, the indicators on schooling measure spending per pupil while indicators on road development look at construction and servicing costs per kilometre. So far, the indicator database has not been made public – indeed it can only be accessed by participants of the network.

Another important benchmarking project was launched last year that aims to develop cost and output indicators in number of key public services as a complement to other benchmarking exercises. At present the project involves service providers in five regions. The Ministry of Interior has so far provided all the funding for the project, though the aim is for regions and municipalities to contribute in the future. The project has to date developed indicators of social services for the elderly (*e.g.* housing, quality of care, costs and disability levels) but there are plans for it to extend into health care, public transport and cultural activities.[22]

However, participation in these benchmarking projects is limited. In the general benchmarking exercise, only about 50 (*i.e.* about one quarter) of the municipalities of extended scope have so far joined the network. In the project launched more recently, about 85 service providers are participating. Interest in these benchmarking projects is reportedly widening, but not very quickly and additional incentives to encourage participation are needed if these, and other, benchmarking projects are to mature into comprehensive nationwide systems. EU funding opportunities may provide one way of

encouraging participation. However, central government should also consider stepping up its support, for instance with subsidies to cover the cost of participation.

E-government: making use of potential

Internet-based information and contact services can improve sub-national government's communication with its electorate and enhance democratic oversight, though of course much depends on the diffusion of Internet access in households and businesses as well as on the availability of the services themselves.[23] Internet systems can also be used to improve the efficiency of communication between levels of government. Indeed, in the Czech context, the returns to improvements in communication and administrative systems given the very large number of municipalities are potentially large.

Reasonable progress is being made on these fronts. Most sub-national governments now have websites and these can be accessed *via* the central-government portal (*www.portal.gov.cz*).[24] Various information databases relevant to municipal and regional government (*e.g.* land registration) and some disclosure requirements (*e.g.* on public procurement) have been on line for some time. In addition, legislation introduced this year requires that all mandatory public notices are available on the web and that, whenever feasible, administrative services must be available online. Municipalities were given free electronic signatures on a temporary basis in 2005 in an effort to encourage them to use Internet options in formal communication with other levels of government and citizens.

This being said, the Czech government's *Economic Growth Strategy* (Czech Government, 2005) suggests that the set-up cost for users of electronic signatures needs to be brought down. While the subscription costs for the signatures are not high, there are relatively expensive up-front software costs. Some progress is already being made on this front; the Ministry of Informatics aims to develop alternative software with the intention of providing it free of charge to sub-national governments and households. The *Strategy* also suggests introducing financial incentives for using government services online. Some caution is needed on this issue as services such as online tax returns can save households time and effort as well as government administration, so adding financial incentives may not be necessary to encourage use. Finally, the *Strategy* suggests that better co-ordination between some government databases would cut back on red tape, businesses in particular report they often have to submit the same information more than once to the authorities.

Ensuring co-ordinated reform: the case of family policy

The distribution of responsibilities across different layers of government can pose problems for policy co-ordination. Family policy is a case in point. International experience underscores the importance of strong policy co-ordination between the various policies that affect how long, and when, parents take time out of the workforce to care for their children. There is mounting evidence that the costs (in terms of damaged job and career prospects) of taking prolonged breaks from work for childcare are high. Good practice therefore means ensuring contiguous support for working families. For instance, tax-breaks and allowances for children should not be biased in favour of staying at home, child-care facilities need to pick up when statutory parental leave ends and services for older children are needed to make the working day feasible for those with children at primary and secondary school.

In the Czech case, a key challenge is ensuring co-ordination between financial support (tax relief and cash benefits) and childcare services. Family tax relief is centrally

administered and the majority of family benefit is state-run (administered by Labour Offices). In contrast, decisions on child-care facilities are essentially in the hands of municipalities, though with some regulation and financial assistance by state government. A strategic document on family policy in 2005 (Ministry of Labour and Social Affairs, 2005**)** puts forward an ambitious range of reforms including: provisions for spreading parental leave across the first few years of childcare, support of home working and part-time work, and adjustments to kindergarten opening hours. Clearly moving forward on some of these fronts will require considerable co-ordination between central and sub-national government.

Notes

1. Legislation creating the regions was passed in 1997 but they were not set up until 2000. The regions did not effectively begin operating until 2001 after the first regional elections were held. The former districts did not have directly elected representatives but there were district assemblies comprising of representative from municipalities. The city of Prague (which has over 10% of the population) has a special status in the system, being both a municipality and a region. Useful description of local-government structures can be found in Ministry of Interior (2004) and OECD (2004). Interesting comparisons in systems of intergovernmental relations across the EU-8 countries can be found in World Bank (2005).
2. Some relatively minor tasks carried out by the former districts were allocated to the central government.
3. The new tax allocation system for municipalities used the distribution of revenues in 1999 (that was based on the previous multi-dimensional formula) as a starting point for setting the per-capita allocations. The new formula resulted in about three-quarters of municipalities getting more revenue and about one quarter less.
4. It is unlikely the municipalities would agree a reform of the tax allocation schedule that involved reducing the tax allocation for any significant number of municipalities. Therefore, any steepening of the schedule would probably involve a larger overall tax allocation.
5. The tax allocation formula for municipalities gives different per capita amounts according to different *ranges* of population. This stepped schedule has the advantage of simplicity but it also has weaknesses. For a start, there are issues of fairness. For instance, a municipality whose population falls slightly short of the next size category is in a sense getting a bad deal out of the system. In addition, the formula has prompted some undesirable schemes to push municipality populations into higher population brackets. For example, one municipality has targeted transient households with cash offers to register as residents. Alternatives to the stepped schedule have been sought for some time, in particular a smooth schedule in which per-capita allocation increases incrementally with population size. However, agreement between the various stakeholders is not easy. It is very difficult to find a smooth schedule that does not reduce the tax allocation for at least some municipalities (something that they understandably resist) without increasing the overall tax allocation.
6. The proposal in its current form also includes some delegated competencies in the list of services that could be included in the scheme.
7. The municipalities were initially compensated in two ways for taking over administrative services of the former districts. Special additional per-capita payments were made for providing services. Municipalities of extended scope were also compensated for each employee transferred from district to municipal offices. The system however was criticised having extremely uneven rates of compensation, particularly between the municipalities of extended scope and other municipalities and, following investigation by a working group into the costs of services, a new compensation system began operating in 2006. The employee compensation has been scrapped and compensation is based on a per capita approach, though with some complications. Notably those municipalities who stand to loose more than 2% of subsidy under the new system are eligible for additional subsidy and Prague's compensation continues to operate on a slightly different basis.

8. Commitment to forming the regions has been long standing. The Czech constitution that came into force in 1993 contained a clause that another layer of government would be introduced, though with no specification of terms or on when this would happen.

9. The EU regional funding system is based on geographical units according to Eurostat's "NUTS" system which comprises several levels of geographic disaggregation. NUTS2 is the main basis of the funding system with economic conditions in NUTS2 regions determining whether the region is eligible for support from regional funds. The fourteen regions are combined into eight NUTS2 units for EU-funding purposes as follows: Plzeňský and Jihočeský form the Southwest unit, Karlovarský and Ústecký form the Northwest unit, Liberecký, Královéhradecký and Pardubický regions form the Northeast unit, Vysočina and Jihomoravský form the Southeast unit, Olomoucký and Zlínský constitute form the Central Moravia unit. Prague, Central Bohemia and the Moravian Silesian regions are stand-alone units. Prague is the only NUTS2 not to be eligible for funding.

10. In 2005, a new method of administering the central government grant for teachers' wages and some other education grants made a significant difference to municipal accounts. These grants no longer pass through the municipalities' books, thus reducing revenue and expenditure; the funds now pass from central government to regions and then to the schools (previously the funds also went *via* the municipalities before going to the schools). The move therefore reduced revenues and expenditures booked by municipalities and also altered the mix between grant and other revenue sources. For instance the share of tax or capital revenue and grant revenue shown in Table 3.6 for municipalities was lower prior to 2005. The estimated central government grants for 2006 illustrate the new distribution of grants to municipalities. The total value of grants is estimated to be CZK 66.6 billion; of which CZK 16 billion will be for social assistance and CZK 7 billion for state administration. Education-related grants going *via* municipality accounts are now relatively small at about CZK 1 billion. The change is in many respects cosmetic because the grants involved are earmarked without matching funding requirements and the municipalities' only role was to pass the money on to the schools.

11. In the privatisation process the municipalities became owners of local network industries, such as water services and electricity distribution. These shares were often sold off in the late 1990s to pay for investment in these network industries. Note that Figure 3.4 does not include the privatisation revenues and so for some years the total municipal deficit on a pure cash basis would be even lower.

12. The debt service comprises paid interest, instalments of bonds, repayments of principals on loans and instalments on hire purchase agreements. The denominator in the debt-service calculation comprises tax revenues plus grants from the state budget.

13. Examination of a small sample of municipal websites by the Secretariat revealed that some municipalities go further than minimum requirements in the level of detail and number of years of accounts. However, none of the websites made assessment of the evolution of spending over time particularly easy. The annual accounts were presented on separate pages and would require spreadsheet skills to cut and paste the accounts into a comparable format. There was also no development of comparisons with costs in other municipalities.

14. The Supreme Audit Office does not have direct powers to initiate legal proceedings based on its reports. However, cabinet regularly discusses the reports and a special committee in the chamber of deputies passes on recommendations to the main budget committee. Publication of the reports also means pressure for reform can come *via* the media.

15. The auditing system has undergone a number of changes in recent years. Prior to 2003, municipal audits were carried out by the Districts. When the Districts were dissolved in 2002, a temporary system involving widespread private-sector auditing was introduced. However, as part of conditions for EU entry the Czech authorities agreed to introduce a system with stronger state involvement in the auditing process.

16. Earmarked grants are recognised as preferable in some specific circumstances, for example when there are positive spill-over effects in services across municipalities. Under block grants, or other untied funding provision is likely to be sub-optimal in this instance.

17. According to the latest available figures (for 2003), public procurement is equivalent to 18% of GDP and municipalities and regions are responsible for about two-thirds of this.

18. For a general overview of issues public procurement see OECD (2002).

19. The 2004 procurement legislation introduced a rule that to benefit from positive discrimination in the employment of disabled persons, firms must have at least 25 employees (with at least half of them classified as disabled).

20. Other measures in the 2006 procurement act that should help regions and municipalities are provisions allowing common platforms for tenders ("tender frameworks") which should reduce the administration in setting up tenders with similar characteristics. In addition, an electronic auction system has been established and a new system for the procurement of regular supplies (*e.g.* office supplies) has been set up.

21. The project described is one of several benchmarking projects set up over the past few years. For example one began in the early 2000s looking at measuring cost efficiency in waste treatment. For a general discussion on issues in benchmarking, see OECD, 2005b.

22. Municipalities play a key role in Czech housing policy as they have wide discretion in responsibility to meet local housing needs. Central financial support comes from the State budget and from the budget of the State Housing Development Fund. Regions only play a minor role in this policy area.

23. Recent analysis of implementation issues in e-government can be found in OECD (2005d).

24. The central-government internet portal gives access to all state legislation in its original form and many sites in the portal contain practical advice and application forms for households and businesses. In terms of transaction services, on-line registration of sickness insurance by employers has proved very popular. Several taxes, including income-tax, VAT and excise duty can now be filed on line and some taxes and fees can be paid directly (*e.g.* the television licence).

Bibliography

Czech Government (2005), *Economic Growth Strategy*.

Ladner, A. and R. Steiner (2003): "Die Schweizer Gemeinden im Wandel: Konvergenz oder Divergenz?", *Swiss Political Science Review* 9(1), 233-259.

Ministry of Interior (2004), *Public Administration in the Czech Republic*, Prague.

Ministry of Labour and Social Affairs, *National Strategy for Family Policy*, Prague.

OECD (2002), *Government Procurement: A Synthesis Report*, OECD, Paris.

OECD (2003), *OECD Territorial Reviews: Moravska Trebova-Jevicko, Czech Republic*, OECD, Paris.

OECD (2004), *OECD Territorial Reviews: Czech Republic*, OECD, Paris.

OECD (2005a), "Intergovernmental Transfers and Decentralised Public Spending", COM/CTPA/ECO/COV(2005)4, September.

OECD (2005b), *Modernising Government: the Way Forward*, OECD, Paris.

OECD (2005c), *OECD Economic Surveys: Czech Republic,* OECD, Paris.

OECD (2005d), *e-Government for Better Government*, OECD, Paris.

Transparency International (2005a), *Public Procurement in the Czech Republic: Corruption or Transparency?*, Prague.

Transparency International (2005b), "*Clientelistic Map*" – *Monitoring of Construction Public Contracts in Municipalities*, Prague.

World Bank (2005), *Intergovernmental Fiscal Relations in the New EU Countries*, Washington, D.C.

ANNEX 3.A1

Incentives for municipalities to merge in the tax-allocation system

There are incentives for municipalities to merge embedded in the tax-sharing system because the per-capita allocation increases with population size. For instance, municipalities with a population of less than 100 get a per capita allocation based on a coefficient of 0.4213, while the coefficient for municipalities with populations between 101 and 200 persons is 27% higher at 0.537 (see table below).

At first glance the lack of response by municipalities to this incentive is perhaps puzzling. For instance, the table below shows an example where a merger could bring a nearly 40% increase in per-capita tax allocation revenue. However, a number of factors have to be considered:

- For small and medium-sized municipalities there are only two points in the schedule where there is a significant increase in the coefficient, at population sizes 100 and 10 000. This consideration, along with geographic factors, limits the possibilities for particularly advantageous mergers among groups of smaller municipalities.
- The tax-share allocation is only about one quarter of total revenue among small municipalities. Therefore, in terms of total revenue the merger incentive is considerably weaker. Indeed, the sums of money involved in mergers would likely be quite small. Based on 2004 accounts, municipalities with population of 70 inhabitants each received about CZK 250 000 and municipalities with populations of 140 got CZK 645 000 – implying that a merger of two municipalities of 70 would yield only CZK 145 000, less than € 5 000.
- There can be a political resistance to merge. The population of a very small municipality may feel they will completely lose collective representation following a merger.

Two hypothetical examples of mergers:

1) Merger of five municipalities each with a population of 70

Co-efficients before the merger	0.4213
Co-efficient after the merger	0.5881
Increase per-capita tax allocation (%)	39.6
Implied increase in revenue (assuming taxes roughly ¼ of revenue) (%)	9.9

Table 3.A1.1. **Merger incentives in the tax-allocation formula**

Population

From	To	Coefficient	Number of municipalities (as of January 2005)	Total population	Average size	% increase in coefficient	Population x coefficient	Share of tax per capita (%)	Share of tax for each size class
0	100	0.4213	557	39 781	71		16 760	0.0000042	0.2
101	200	0.537	1 086	163 101	150	27	87 585	0.0000053	0.9
201	300	0.563	890	219 090	246	5	1 2 3 348	0.0000056	1.2
301	1 500	0.5881	2 850	1 879 116	659	4	1 105 108	0.0000058	10.9
1 501	5 000	0.5977	592	1 508 730	2 549	2	901 768	0.0000059	8.9
5 001	10 000	0.615	137	932 726	6 808	3	573 626	0.0000061	5.7
10 001	20 000	0.7016	68	955 227	14 047	14	670 187	0.0000069	6.6
20 001	30 000	0.7102	28	698 025	24 929	1	495 737	0.0000070	4.9
30 001	40 000	0.7449	9	320 827	35 647	5	238 984	0.0000074	2.4
40 001	50 000	0.8142	5	231 511	46 302	9	188 496	0.0000080	1.9
50 001	100 000	0.8487	16	1 157 242	72 328	4	982 151	0.0000084	9.7
100 001	150 000	1.0393	1	100 752	100 752	22	104 712	0.0000103	1.0
	150 000+	1.6715	3	841 758	280 586	61	1 406 998	0.0000165	13.9
	Prague	2.7611	1	1 170 571	1 170 571	65	3 232 064	0.0000273	31.9
Total			6 243	10 218 457			**10 127 525**		**100**

2) A municipality with a population of 9 700 merges with five municipalities each having a population of 70

Average coefficient before the merger:	0.6083
Co-efficient after the merger	0.7016
Increase %	15.3
Implied increase in revenue (assuming taxes roughly ¼ of revenue) (%)	3.8

Source : Ministry of Finance; OECD calculations.

ANNEX 3.A2

The structure of municipalities' delegated powers

The majority of delegated powers are designated to the 205 "municipalities of extended scope" (or municipalities of the "third type") and the subsidiary layer of 388 of municipalities of the "second type" (see main text). Together these two types of municipalities have responsibilities in the following broad areas of state administration: population registration and identity cards, management of school budgets, building regulation and land planning, roads, vehicle registration and traffic offences, state social welfare and environmental issues.

The system works as follows. Territorially, a particular group of municipalities is divided up under, say, one municipality of extended scope and several municipalities of the second type.

- Within the group of municipalities, some responsibilities are assigned only to the relevant municipality of extended scope. Examples of these are administration relating to school budgets, identity cards, trade licensing offices, vehicle registration and traffic violations.
- Other responsibilities are divided between the municipalities of extended scope and municipalities of the second type. The most notable of these is administration of social welfare. For instance, within the particular group of municipalities some have their welfare offices run by a municipality of extended scope, while others are be run by municipalities of the second type.
- In a number of activities assignment is split between the municipality of extended scope and the municipalities of second type, depending on the specific service. For instance, municipalities of the second type are responsible for administration relating to local roads only while the municipalities of extended scope are also responsible for administration relating to second and third-level roads.

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Chapter 4

Improving the labour market: getting education right for long-term growth

Widening the skills base and improving labour-market efficiency requires the support of good education. This chapter describes the structure of the education system, identifies weaknesses and considers ways to improve performance in light of the ongoing rapidly expanding demand for tertiary level education. The chapter discusses ways to modernise the public universities, including the introduction of tuition fees and strengthening co-operation between universities and enterprises. It also suggests mechanisms to widen access to secondary general education and to help the creation of a secondary school system better geared towards increasing tertiary-level enrolment. The chapter also considers ways for improving lifelong learning opportunities, for example through better frameworks for qualifications. The challenges in finding room in education budgets for co-financing the allocations of the 2007-13 European Union budget are also discussed.

The Czech education system is performing reasonably well. Secondary-school participation and completion rates have traditionally been high, and continue to be so. PISA results are above average, with Czech students performing among the best in the OECD in problem-solving abilities, particularly for mathematics and science. Though tertiary attainment is low in the population as a whole, the enrolment rate is increasing rapidly. At just a little below 5% of GDP, total education spending is low compared with other OECD countries.

Many reforms have been introduced to improve the Czech education system since the end of the 1980s. These reforms have often endeavoured to meet the educational needs of a changing labour market and the broader work aspirations of young generations. Nevertheless, there is agreement that further improvements are required, particularly in tertiary-education. Furthermore, secondary education and adult education have considerably more potential than is being realised at present. Improving the education system is a high priority of the government's *Economic Growth Strategy*.

Starting with an examination of the organisational structure and performance of Czech education this chapter looks at the main problems with the system and draws recommendations for further reform. The policy recommendations are summarised in Box 4.1.

Box 4.1. **Policy recommendations for education reform**

Providing better signals for tertiary students and providers

The rapid expansion of tertiary education requires more resources and better incentives for both students and higher education institutions.

- The introduction of tuition fees for students in public universities that at least partially reflect the cost of tertiary courses would make for better decision making by students and faster reaction of universities to changing demands. This diversification of funding for tertiary education would also help universities cope with further rises in student numbers.
- If tuition fees are introduced they should be accompanied by publicly supported student loans in which repayments are conditional on graduate income. This would help reduce the risk that up-front payments limit access to university education.
- Any increase in funding has to be linked to output quality monitoring and evaluation. In addition, it should be complemented by strengthened co-operation between universities and enterprises. This would encourage providers to introduce programmes that are more in tune with the labour market.

Increasing the effectiveness and relevance of secondary education

Secondary schools enjoy a good reputation and benefit from a well established institutional tradition. However, further changes in focus and flexibility in the system are required to better cope with changing skill requirements in the labour market.

- In further developing the new school leaving exams (*maturitní zkouška*), closer consultation with universities should be considered. This would help university faculties to increase their reliance on *maturitní*

Box 4.1. **Policy recommendations for education reform** *(cont.)*

zkouška results for admissions. In addition, the experience so far with the *maturitní zkouška* reform suggests that a high degree of co-ordination with curriculum reform is needed because of the close interdependence between curricula and final exams.

- Access to the general courses in secondary schools that provide options for entering tertiary education should be widened. This could be achieved by making these courses more widely available in the secondary technical schools and by equalising the quality standards with those of the four-year gymnasia. More generally, choices could be broadened if upper secondary school curricula were differentiated among broad subject-based streams and if students were allowed to transfer both between and within schools more easily.
- The streaming of a minority of students into elite publicly funded schools from age eleven should be phased out, as already outlined in strategic documents by the Ministry of Education, Youth and Sports. This should be complemented by actions that raise the quality of the basic schools and make the transfer of students and teachers between schools easier.
- Decentralisation of responsibility for secondary schooling has raised the importance of output measurement and benchmarking. A recently introduced assessment system has merits but its effectiveness needs to be strengthened, in particular by allowing the publication of assessment results and by giving the *School Inspectorate* more scope in information gathering. The assessment and evaluation system should be expanded to cover schools, types of schools, regions and the entire school system. This should in particular assess how graduates are prepared for employment and further education.
- The currently low motivation of teachers would be increased by encouraging greater use of financial rewards for good performance. There should also be more in-service training to ensure that teachers adapt to change in secondary school system, particularly if access to general education is widened. By increasing job satisfaction, these measures could be important in making the teaching profession more attractive to qualified teachers.

Aspects of improving lifelong learning

The Czech education system is too rigidly geared towards a set of standard pathways through the education system.

- Access to the education system for adults who want to take either secondary or tertiary level courses needs to be increased and a greater range of programmes is needed.
- There is also a need for establishing a more systematic approach to funding mechanisms, quality assurance, information and guidance.

Management of EU funding in a period of rapid demographic transition

The EU funding system presents considerable opportunities for financing education policy but it also presents challenges, in particular finding room in education budgets for co-financing the much larger allocations of the 2007-13 EU budget.

- One way for ensuring that EU-funds are spent without negative effects on other important non-mandatory expenditures would be to put priority on using the savings from demographic changes to reduce the potential drain of co-financing. It is important, however, to elaborate carefully priorities and mechanisms for their realisation.
- Regular assessments of resource allocation are needed to ensure that upcoming demographic changes are coped with efficiently. On this front, the central authorities should request more detailed projections about future school needs from regions and municipalities.
- Ensuring good co-ordination within the government will be important for making the best use of EU funds, particularly where there is a natural overlap in policymaking, as in R&D and tertiary education.

The difficult task of modernising the education system

The broad structure of the Czech education system is similar to many other OECD countries, namely it involves various layers of governance. While the central administration of the state plays a steering role – *i.e.* it finances key education activities and sets out strategic priorities –, many administrative and organisational responsibilities are delegated to sub-national bodies and institutions. The government's basic goal on education is to increase the productivity of human resources – so as to enable more valuable output of work, and thus allow higher wages and profits in the economy as a whole. This objective is closely linked with a number of non-economic goals, such as the promotion of culture, equity and social cohesion. Given these priorities, policymakers in the Czech Republic face exactly the same broad challenge in implementing education policies as elsewhere: it is difficult to find the optimal mix of economic and social goals.

Transition has brought important changes

Following the reforms brought by transition, the education system differs from that in place at the beginning of the 1990s (Box 4.2). In terms of upper secondary teaching programmes, reforms have been geared to provide more work-oriented skills and to reinforce the general education component of the system. Helped by the falling populations of young cohorts, this has led the proportion of students attending general secondary courses to increase over the past few years. Tertiary enrolments have also started to grow, a trend driven principally by the effect of high and rising private benefits from university education, both in terms of higher income and lower rates of unemployment.[1] In addition, the expansion of three-year bachelor degrees has brought a welcome widening of options for secondary-school leavers (Table 4.1).[2] These changes have been accompanied by more sharing of educational tasks and responsibilities between layers of government with the result that the system is less centralised than at the beginning of the 1990s.

Nevertheless the system does not deliver equity and tertiary education achievements are low

Similar to many other OECD countries, school attendance is compulsory between ages of 6 and 15, with secondary upper education being divided into several categories, some of which are general, while others have an explicit vocational and job-oriented character. There are three different tracks of secondary education schools. The *gymnázium* has a general character, whereas the secondary vocational schools (*střední odborná učiliště*) are geared towards providing skills for "blue collar" professions. The third track comprises the secondary technical schools (*střední odborné školy*) which have a more balanced split between general and vocational education programmes. The secondary technical schools aim to prepare students for "white collar" professions. While the *gymnázium* and the secondary technical schools are completed by a school leaving examination (*maturitní zkouška*), only a minority of vocational schools provide programmes that lead to such an examination. Possessing a school leaving certificate is among the two requirements to access tertiary education, the other being the successful fulfilment of the specific admission requirements of the tertiary institution.

However, secondary education is structured in a way that the above mentioned general outcomes are difficult to deliver, particularly on equity. The most striking feature regards the general education track, which comprises, besides a four-year programme, an

Box 4.2. **Past and recent reforms in education**

1990: Democratisation of education system launched, including:

First reform of the governance and organisation of Czech education, assigning responsibilities for the central management of education to the Ministry of Education, Youth and Sports and transfer of responsibilities for pre-primary and primary education to municipalities.

Introduction of private schools.

Introduction of 6- and 8-year general secondary schools, so called multi-year gymnázia.

Academic freedom of higher education institutions restored.

Bachelor degree programmes introduced.

1992: First education programmes involving the support of the European Commission launched.

Introduction of per-capita funding (normative financing).

1994: Strategy on Vocational Education and Training adopted. It sets out the basis for curriculum reform and new requirements for teacher training.

Compulsory schooling brought to 9 years.

1995: Introduction of tertiary professional schools as independent entities.

School autonomy reinforced**.**

1996: Length of basic school programmes expanded by one year to match the duration of compulsory schooling**.**

1997: Constitutional Act on the creation of the higher territorial autonomous units. The Act (in force since 2000) establishes the creation of the regions.

1998: New Higher Education Act introduced.

Breaking of state monopoly on higher education institutions.

The public universities acquire status of public legal entities.

Greater involvement of higher education institution in lifelong learning.

1999: Establishment of a new education body responsible for reforming the secondary school leaving exam.

"Strategy for the development of higher education 2000-2005".

2000: Measures enacted to simplify admission requirements to upper secondary education.

Responsibility for upper secondary education transferred to the regional authorities.

2001: National Programme for the Development of Education in the Czech Republic (White Paper) approved involving six strategic guidelines, among which adaptation of programmes to the needs of the knowledge society, more effective monitoring of the quality of education, enhanced participation of social partners and civic society in decision-making.

Public higher education institutions allowed to collect "incentive fees" and tuition fees for lifelong learning courses.

2002: Further changes in distribution of responsibilities between the central government, the regions and the municipalities approved, in connection with state administration reform (effective from 2003).

"Strategy for the development of pre-primary, basic secondary and tertiary technical education" (An updated version of this document was published in 2005).

Box 4.2. **Past and recent reforms in education** *(cont.)*

2004: New Education Act approved (No.561/2004). The most important feature of the Act is the curriculum reform. Conditional upon meeting the broader guidelines of the national framework of education, schools are given wider scope for adjusting courses to local needs and conditions. The Act also involves reinforcing the effectiveness of the evaluation system.

Reform of the school leaving exam started (maturitní zkouška).

Act on Educational Staff approved (No. 536/2004, effective from 2005). It defines the basic qualification standards of teachers and sets out guidelines for their continuing training.

Uniform exam at the end of the 5th and 9th year of compulsory education approved (effective from 2007).

2005: "Strategy for the Development of Higher Education 2006 – 2010" which takes into accounts the main messages of the Economic Growth Strategy.

2006: Act on Verification and Recognition of Continuing Education Results approved. It opens opportunities for obtaining qualifications and recognises non-formal and informal learning.

Table 4.1. **Developments in the tertiary education system**

	2000/1995	2005/2000
Growth rate in the overall number of tertiary students (per cent)	50.8	443.1
	1995	**2005**
Distribution of tertiary education students (per cent)		
Tertiary professional schools	4.2	98.7
Universities	95.8	991.3
Distribution of university students by programmes (per cent)		
Bachelor	23.7	552.3
Master	70.6	739.8

Source: Ministry of Education, Youth and Sports.

extended six- or eight-year *gymnázium* that runs parallel to the basic school. Such a parallel long-term *gymnázium* competes with the basic school for bright pupils, thus implying early streaming (when children are 11-years old).[3]

Tertiary education is organised according to a two-track model, an approach similar to that seen in other countries. First there is a university system which comprises the more academically-oriented higher education institutions (*vysoké školy*) which provide PhD as well as bachelor and masters programmes.[4] The second track comprises the tertiary professional schools (*vyšší odborné školy*), in which the programmes typically include work experience (Box 4.3). The diplomas provided by these schools are usually inferior, in terms of academic value, to a bachelor degree. However, the university and tertiary-professional-school courses have converged somewhat overtime, a trend consistent with the Bologna process. Annex 4.A1 sketches out the basic organisational structure of the Czech education system.

As noted above, the level of secondary educational attainment of the population is high by international standards. The Czech Republic ranks among the best OECD

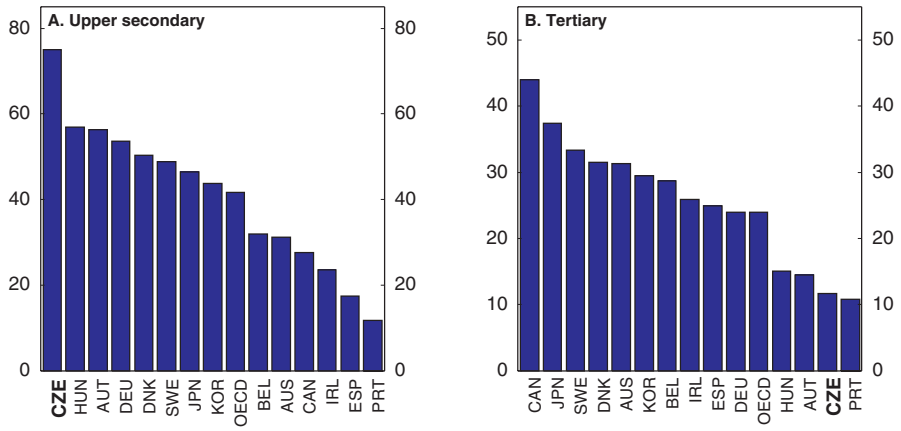
Box 4.3. **The role of tertiary professional schools**

Although the tertiary professional schools still enrol a limited number of students, their importance has grown over time. When they were introduced in 1995, the tertiary professional schools basically provided further education to students from secondary technical schools. As a result, they were widely seen as a second-best option for those who had failed to access the standard university system. The scope and level of courses has widened since then, reflecting responses to labour market needs. Currently a little under 10% of students in tertiary education are in the professional schools, more than twice the share in 1995. There are some 170 of these schools, of which about a third are private or quasi-private. This is far higher than the overall number of public universities, of which there are 25 in the Czech Republic, the oldest and most important located in Prague and Brno (8 and 5 universities, respectively).

The tertiary professional schools focus on providing courses in areas such as business and accounting, healthcare-related services and nursery, engineering, agriculture, forestry and environmental protection. They have some advantages over universities in terms of flexibility; for example, they are subject to relatively simple entry procedures. Another advantage is the emphasis on vocational skills. Finally, the tertiary professional schools are often located in relatively small cities and urban areas and in this sense complement the standard university system. Even so, it is difficult to gauge their future. The attractiveness to students of the tertiary professional schools is likely to fall the closer the university system will get to offering a full range of vocational bachelor programmes.

performers based on the duration of school attendance. This reflects considerable attention to ensuring the successful completion of compulsory education.[5] As a result, the share of adult population whose highest attainment is upper-secondary education degree is 75%, 33 percentage points above the OECD average (Figure 4.1). In stark contrast, however, tertiary educational attainments are very low by international comparison, although increasing enrolment rates imply the situation is gradually improving.

Figure 4.1. **Educational outcomes in the Czech Republic, 2003**
% of the 25-to-64-year-old population, by highest level of education attained



Source: OECD, *Education at a Glance*.

Absorbing EU funds and demographic changes are new sources of pressure

As discussed in Chapter 1, European Union (EU) funds will significantly challenge both the nature of public expenditure and the capacity to finance it in the coming years. The Ministry of Education, Youth and Sports (henceforth the MEYS) will be running two of the 15 operational programmes: *Educationand Competitiveness* and *Research and Development for Innovation*. These programmes will absorb EUR 3 365 million, corresponding to about 13% (7% and 6%, respectively) of the total amount available in the 2007-2013 EU budget allocation. As in other areas of policy, the annual allocation will be many times bigger than at present, thus implying that the scope for developing new programmes will be significantly widened by the upcoming EU funds. While the *Educationand Competitiveness* programme will likely target primary and secondary education, there are also plans to increase the resources allocated to adult education. At the same time, however, there are constraints because of the statutory co-payment requirement (15-25%, depending on the type of funding). Making room for co-financing may require major reductions or even cancellations of activities that cannot be backed by EU funds and dealing with this issue is a central concern of policy discussions at the current time.

The most room for increasing educational attainment in the Czech Republic is at the tertiary level and in adult education. Indeed, catch up with other OECD countries in school expectancy – conventionally defined as the number of years a 5-year old can be expected to spend at school – represents an important challenge.[6] The government expects that the tertiary education population will increase by some 55 000 students even though the population age-group typically doing tertiary courses (19-25 year olds) will be broadly stable or even declining.[7] While this population is projected to peak by 2010, strong demand is in sight at least until 2013, after which year some easing should begin (reflecting the countering effects of demographic developments). However, the current scenario does not take into account the full picture. By focussing on purely age-specific developments, it omits the potentially important pressure stemming from a backlog of demand for tertiary degrees from older cohorts.[8] The debate about how to ensure that the tertiary education system copes well with the ongoing rising trend in demand from both students in tertiary education age and adult population is very topical in the Czech Republic at present.

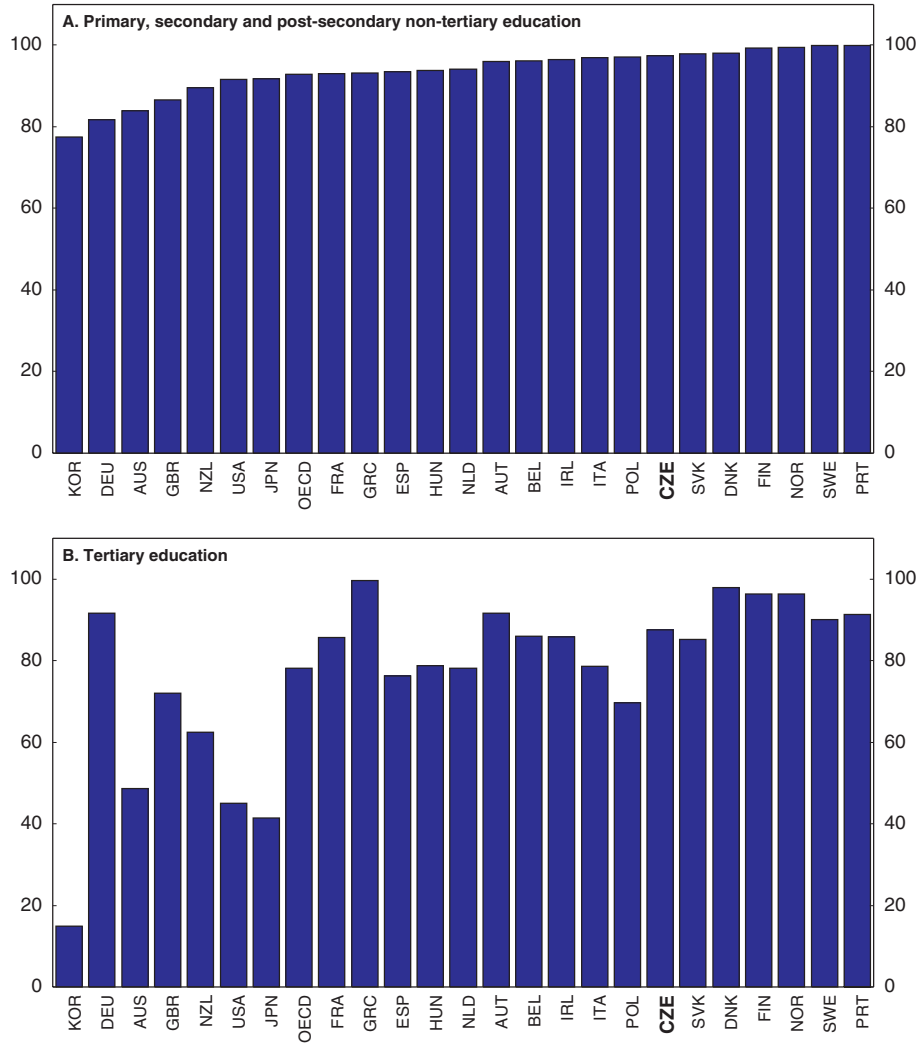
In contrast the demand for secondary education is set to fall quite rapidly, reflecting demographic decline. While this outflow represents a substantial opportunity to restructure secondary educational services by closing down many secondary schools, overcoming opposition to service reduction will not be easy.[9] Population ageing also implies that considerable attention will have to be given to improving the framework and the opportunities for lifelong learning.

Key features of the centrally-steered system

The public sector provides the majority of services

Education in the Czech Republic continues to be dominated by the public sector, though private providers have been in operation for several years now (Figure 4.2). Most notably, because access to public tertiary education is normally free of charge (Box 4.4), the share of public expenditure is almost as high in tertiary education as it is in the lower levels of the system. In many other OECD countries, regulatory measures have been introduced over the years to finance public tertiary education through tuition fees paid by the students

Figure 4.2. **Public expenditure on educational institutions, 2002**
Per cent of total expenditure (public and private) on educational institutions



Source: OECD, *Education at a Glance*.

and their families. These changes have led the private financing component to increase.[10] There are however no limitations for Czech private schools and universities to charge fees.

Nevertheless, the actual amount of public funding to education is relatively low. Across OECD countries, the Czech Republic ranks among the lowest in terms of the amount of public resources devoted to education, just below 5% of GDP and less than 10% of total public spending (Figure 4.3). In fact, it appears that even the countries with very small overall public sector budgets are more strongly committed to support education than the Czech Republic.[11] However some caution is required in drawing a conclusion that this implies that a big increase in public spending is needed. Even though a stable base level of

Box 4.4. **Who pays tuition fees in tertiary education and to which institutions?**

The use of tuition fees by the university sector is limited. Enrolment in public universities is conditional to the payment of a fee when the student exceeds the standard length of study by more than one year, or attends more than one programme at the same time. Universities also collect fees for programmes taught in a foreign language (this is not common though). Apart from these particular instances, there is no use of tuition fees as a signalling tool to students or providers. Students however have to pay for accommodation services and some administrative fees.

However, fees are charged by the tertiary professional schools. The fees vary depending on the course taken but also depend on whether the school is run by regional governments, religious organisation or a private provider. The fees currently range between 100 and 1 000 euros per year (roughly between 1 and 10% of the level of per capita income). However, in the public tertiary professional schools they generally do not exceed 200 euros per year.

funding is required in order for the education sector to be able to satisfy long-term educational commitments, the scope for service quality improvements remains significant.

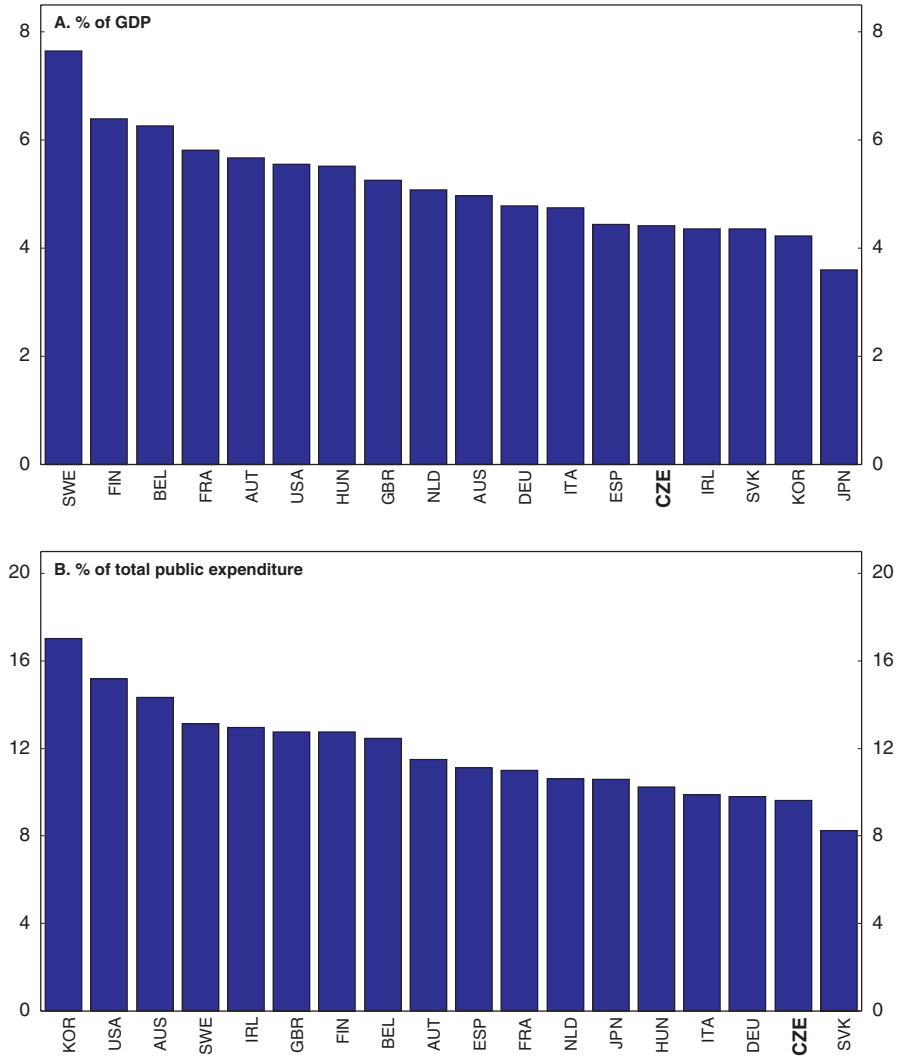
Budgetary arrangements move towards more output oriented financing

The budget of the MEYS plays a central role in the financing of education. The budget covers most of the costs of public schools (including staff salaries) and provides substantial subsidies to private schools. It also covers most of the public component of research and development costs incurred by the universities.[12] Support for education also comes through other channels via subsidies and tax deductions on a wide range of education-related goods and services (*e.g.* school meals). Furthermore, the state supports the living costs of students *via* the system of minimum living allowances and the recently introduced social scholarships run by the Ministry for Labour and Social Affairs.

Grants to the regions and municipalities for basic and secondary education from the MEYS budget are strongly earmarked (Box 4.5). This is seen as facilitating cost containment because any extra-expenses have to be fully financed by region or municipal own revenues. The funding of tertiary education has been changed recently to take into account not just the number of students but also the number of graduates. This has introduced an element of output orientation in funding. In addition, public finding of universities combines traditional formula financing with a new element of grant-based financing (Box 4.5). The hope is that this will encourage the public universities to become more specialised into either research or teaching.

Maintenance costs, infrastructure investment and the purchase of teaching materials – computers and multimedia resources for training, for example – are funded directly by the owning institutions, supported by central government grants on a case-by-case base. Accordingly, the MEYS covers most capital expenses of the public universities, as well as the institutions and establishments that it uses for in-service training of educational staff. The regions have been responsible for secondary-school buildings since 2000 and the infrastructure for basic schools and the kindergartens fall under the competence of the municipalities. The costs of these schools are financed from the general tax allocation to regions and the municipalities and grants for capital investment are available from central

Figure 4.3. **Public expenditure on education, 2002**



Source: OECD, *Education at a Glance*.

government (see Chapter 3). Figure 4.4 summarises the financial flows characterising the Czech Republic's education system.

The MEYS performs a number of policy co-ordination and regulation roles on top of budget formulation. Specifically, it designs the underlying evaluation schemes used to maintain educational standards. Implementation of these schemes is binding upon the regions and the municipalities and is overseen by the Czech School Inspectorate (*Česká školní inspekce*).

Box 4.5. **How is education financed in the Czech Republic?**

Public funding of education expenditure is predominantly based on institutional financing. Grants are generally determined following a formula-based approach, although mechanisms differ within the system. Note that the Czech authorities use the term *normative financing* for grants that are based on a per-pupil (per-student) formula and the term *normative* for the actual level of per-capita payment.

The framework for lower levels of education

Funding of lower levels of education (primary and secondary) comprises of four *normatives*. One covers pre-primary education (applicable between ages of 3 and 6); the other three cover compulsory (6 to 15 years), upper secondary (15 to 19 years) and finally tertiary professional education (19 to 21 years). Per student amounts are set each year by the MEYS on the basis of the funding of the previous year and apply an index to reflect special circumstances. For example, there is a higher allowance for pupils with disabilities and a small "local condition" correction that includes account for population density. The MEYS sets the normatives each year following interaction with the regional authorities.

The system was set up fourteen years ago and has been modified several times. In particular since 2003 there has been reduction in exemptions from rules on the minimum numbers of children for a municipal to run a school. The general consensus is that the system now behaves more fairly and transparently than in the past, albeit somewhat more rigidly. In practice, with the stricter capping now in place, each of the 14 regional authorities determines its own allocation criterion, with exceptions being assessed following discussions with the municipalities. The municipalities continue to support small schools strongly but as any extra expenditures have to be met using their own tax-based revenue, pressures for school closures has strengthened considerably.

In 2005 the administration of some grants for basic schools (run by municipalities) was changed. Instead of passing from central-government to the regions, then the municipalities and then the schools, some grants (for teachers' salaries, for example) now pass directly from the regions to the schools. This has altered the revenue and spending of municipalities but has not changed municipalities' powers as regards basic education.

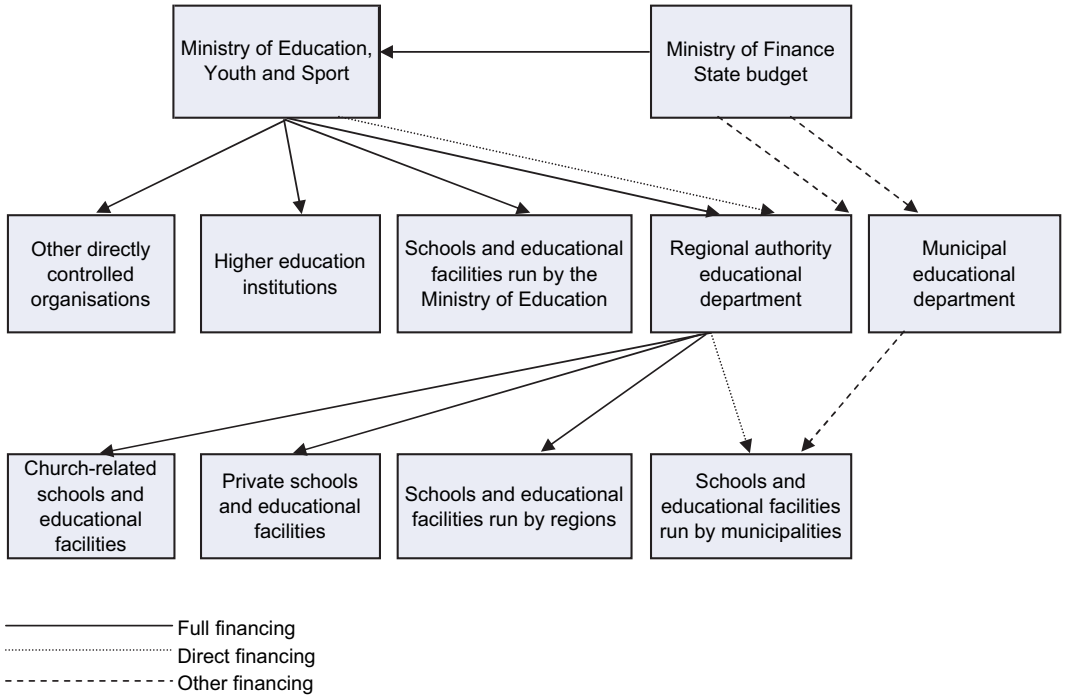
The framework for higher education

In higher education, about 80% of total universities' revenues are from the public sector – the reminder 20% being from the universities' own sources (including leasing of their building properties and tuition fees, see Box 4.4). Public funding of universities is earmarked separately for teaching and R&D activities. Teaching financing comprises, *normative financing* and so-called *grant-based financing*. Although *normative financing* still accounts for about three quarters of total public allocations to public university teaching, the importance of *grant-based financing* is set to increase.

- *Normative financing*. *Normatives* are mainly based on the number of students per programme and the respective cost of study. However, in an attempt to promote more performance oriented financing of teaching activities, new *normatives* were introduced in 2005 that also factor in the number of graduates. There are seven categories of *normatives* each grouping several cost compatible programmes – for example, chemistry and medicine belong to the same group roughly reflecting similar costs of study. The *normatives* are revised annually. In addition to this, system grants are provided for several areas, including scholarships for students in doctoral programmes.
- *Grant-based financing*. Since 2005 the universities have been requested to submit long-term education plans to the MEYS, after which grant entitlements are evaluated on a case by case basis. The key qualifying criterion is adherence of a particular plan with the broad long-term teaching guidelines defined by the Ministry. The importance of grant-based financing is set to expand under current plans.
- *Other recent regulatory changes*. Regulatory changes in force from 2006 enable the public higher education institutions to carry over part of the financing from public support to the following year. They also eliminate the distinction in financing allocations between current and capital spending.

University allocations are defined following negotiations with the Representative Commission, a formal body consisting of various representatives, including from the Czech Rectors Conference and the Higher Education Council.

Figure 4.4. **Financial flows of the education system**



Legend:

Full financing – Financing from the state budget of schools and educational facilities run directly by the Ministry of Education, Youth and Sports, as well as of the higher education institutions and other directly controlled organisations. Full financing encompasses three sources of costs: current (mainly salaries of teachers and other staffs), operational (for example, water and heating) and capital investment costs, including infrastructure. In addition, this aggregate includes the subsidies paid from the state budget to private and church schools for salaries, compulsory employer contributions and some operational expenditure.

Direct financing – Direct financing from the state budget of current expenditures of regional and municipal schools, *i.e.* the salaries of teachers and other school staffs, as well as learning materials (for example, books). These resources are allocated to the schools through the regional budgets on the basis of the number of pupils enrolled.

Other financing – Financing of most operational costs and capital investment costs that are met by the regional or municipal bodies that run the schools. This spending is financed from the general tax allocation to the regions and the municipalities with some grants for infrastructure from central government.

Source: OECD and Ministry of Education, Youth and Sports (2001), *National Programme for the Development of Education in the Czech Republic-White Paper*, Institute for Information on Education, Prague.

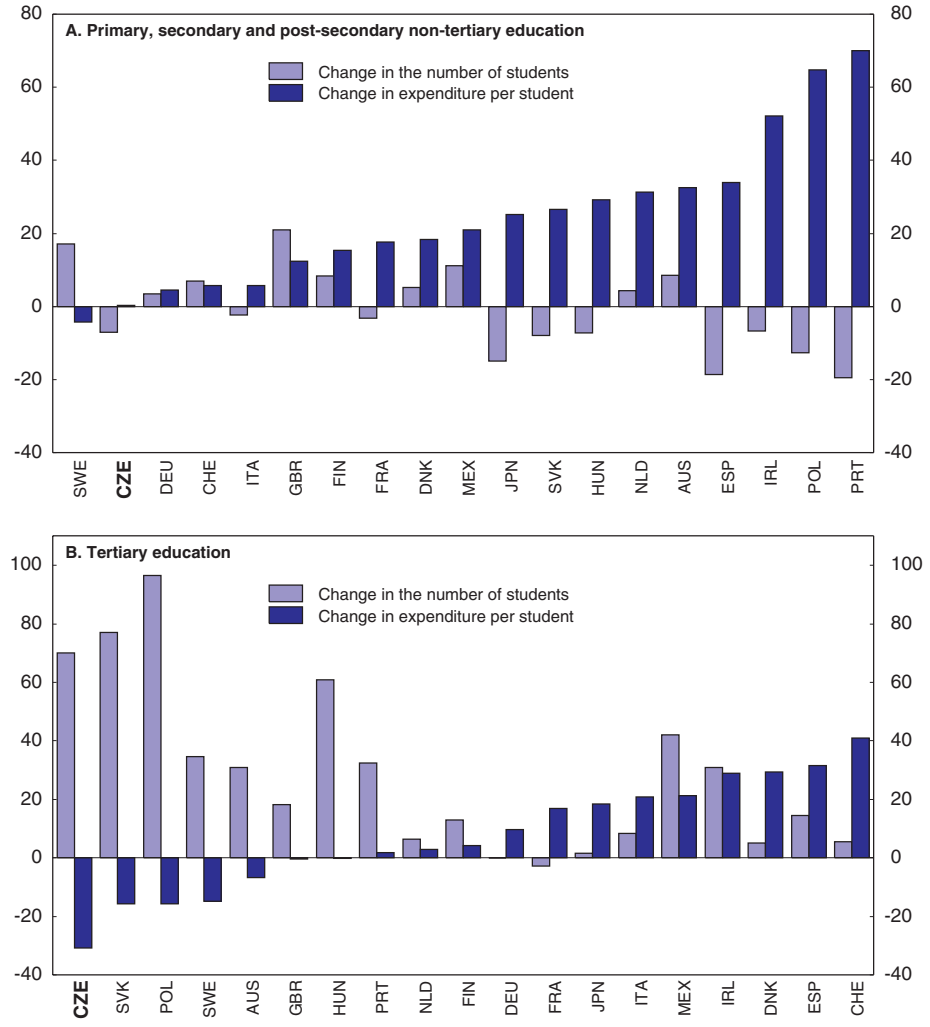
More regulatory progress is needed to keep pace with demography and catch-up pressures

Tertiary education is where problems are most urgent

Even though measures have been taken recently to improve public subsidy mechanisms (Box 4.5), the centrally-funded system may be too weak to ensure the long-term financial sustainability of public tertiary education. The public universities have experienced a sharp decline in the level of funding per student over the past years because growth in student numbers has outstripped growth in public funding by a large margin (Figure 4.5). Declines in per-student funding are also seen in other countries in the region, the Slovak Republic and Poland, for instance, but are less marked. In these countries per-student funding fell by about 15% between 1995 and 2002, compared with a fall of 30% in the Czech Republic.[13]

The funding of public higher education institutions was boosted significantly in 2005 and further increase is planned for 2006.[14] However, these increases are not enough to offset the long-term trend decrease in the level of public support per student and a recent

Figure 4.5. **Per student expenditure in education, 1995-2002**[1]
Total change, per cent



1. At constant prices, 2002 base year.

Source: OECD, *Education at a Glance*.

report to the OECD by the MEYS recognises this as a problem.[15] The report mentions that the more liberal rules on carrying over spending between budget years through the use of reserve funds provide useful leeway in financing higher education. However this advantage has to be weighed against the problems these rules are creating for fiscal policy (see Chapter 1). In addition, there is only limited room for additional government funding for tertiary education because of fiscal constraints and so additional reforms are required to put the tertiary education system on a more stable financial track.[16]

Problems of inadequate educational services are often reported – itself a situation closely linked to the lack of financial flexibility and the resulting weakened attention of

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providers to programme quality and the returns to education for the students.[17] For example, signals from the labour market on which skills are in greater demand are not all that strongly taken into account in programme development, even though administrative autonomy means that the universities have the freedom to adjust curricula and expand the courses they offer.[18] In addition, co-operation between universities and enterprises on curricula remains limited.

Too many students withdraw from university education without completing a degree. An inadequate supply of shorter and more practically oriented programmes is partly to blame – this limits choices and increases the likelihood of dissatisfaction, particularly among first year students. The problem of university drop-outs also reflects – yet again – the lack of properly designed signalling mechanisms, which reduces students' attention to the investment they make. Finally, the problem is increased by limited scope for switching from one programme to another.

Problems in tertiary education are amplified by weak progress in widening the student-support system, even though there has been work done on this front recently. In particular, new support measures have been introduced targeting students with a family income lower than 110% of the level of the subsistence minimum. Support is going to be granted over a 10-month period, corresponding to the standard length of the academic year, with some 14% of the total tertiary student population being expected to qualify. The government also has plans to remove income from scholarships from the calculation of the subsistence minimum to further improve access to tertiary education by students from low-income families.

Taken together, the lack of financing flexibility and the short supply of educational services, plus the impact of various system-wide regulatory rigidities, mean that public universities are severely limited in the number of places they can offer. Universities have their own admission rules, including entrance exams.[19] However, such procedures are costly to administer and lack of transparency in their application is often reported.[20] Furthermore, as the influence of social class on access to university is very strong in the Czech Republic, tough competition to get into the universities reinforces the bias against the students from disadvantaged families. The problem is exacerbated even further because the alternative options for tertiary education, the tertiary professional schools, are fee-paying (Box 4.4).[21] All in all, these factors keep the modernisation of the public university system on hold.

An accessible and accountable secondary education system has yet to develop

Despite the good attainment rate in secondary education, there are nevertheless policy challenges. In particular, the percentage of secondary school students enrolling in technical and vocational programmes is relatively high in the Czech Republic (Table 4.2). The supply of general secondary programmes is insufficient to satisfy the demand for general education. Indeed, the number of new students who each year can access the general secondary track has to be fixed.[22] As a result, a large number of students have to unwillingly enrol in vocational courses.[23] Unemployment among vocational-school graduates is especially high and possession of a vocational qualification often acts as a handicap – compared with general secondary education – for university admission. This supply-demand mismatch, among other effects, clearly makes for inefficient development of human capital by wasting talent. Indeed, recent empirical analysis shows that many students in vocational programmes would qualify for a more demanding secondary

Table 4.2. **Distribution of upper secondary students by type of schools**
ISCED level 3, as of 2004

	Percentage distribution	Percentage distribution according to curricular content			
		General	Vocational	Optional	Total
Secondary schools leading to a vocational certificate only[1]					
Secondary vocational schools	32	31	65	4	100
Secondary schools providing access to tertiary education[1]					
Secondary Vocational Schools	7	44	51	5	100
Secondary Technical Schools	38	51	39	10	100
Lycea	3	66	18	16	100
Gymnázia	20	75	0	25	100
Total	100				

1. The secondary vocational schools (*střední odborná učiliště*) and secondary technical schools (*stšední odborné školy*) offer two-, three- and four-year courses. Only the students who have successfully completed the four-year course have the possibility to apply for tertiary education. While virtually all students in the secondary technical schools attend the longer courses, most students in the secondary vocational schools attend the 3-year courses which only give a worker qualification.

Source: Education Policy Centre, Faculty of Education, Charles University, Prague.

education programme (Table 4.3).[24] Moreover, the Czech secondary education system suffers from wide geographical gaps in the supply capacity of *gymnázia*. Notably in Prague and Brno there are proportionally more *gymnázia* although this is not enough to satisfy demand.

Problems in secondary education are magnified by strong social selectivity. There is substantial variation in student performance between schools and less variation between students within schools, compared with other countries (Figure 4.6).[25] Recent analysis shows that the system of long-term *gymnázium* schools plays an important role in this.[26] Furthermore, it challenges the idea that long-term *gymnázia* have the potential to significantly stimulate students' learning capabilities, suggesting that performance is strongly influenced by the family background, rather than being acquired at school. Indeed, many experts see these schools as a privileged vehicle to university education.[27]

The secondary education system also suffers from low motivation among teachers. Part of the problem lies with teachers' salaries, which are not high relative to the average at comparable qualifications. The widely accepted view, one that government's officials and trade union's representatives share, is that wage increases should focus primarily on quality improvements and work complexity, rather than the years of service, as at present. In principle, schools directors are free to grant bonuses, up to 12% of the amount of the base-salary applicable to a particular seniority class. However, this often gets used to

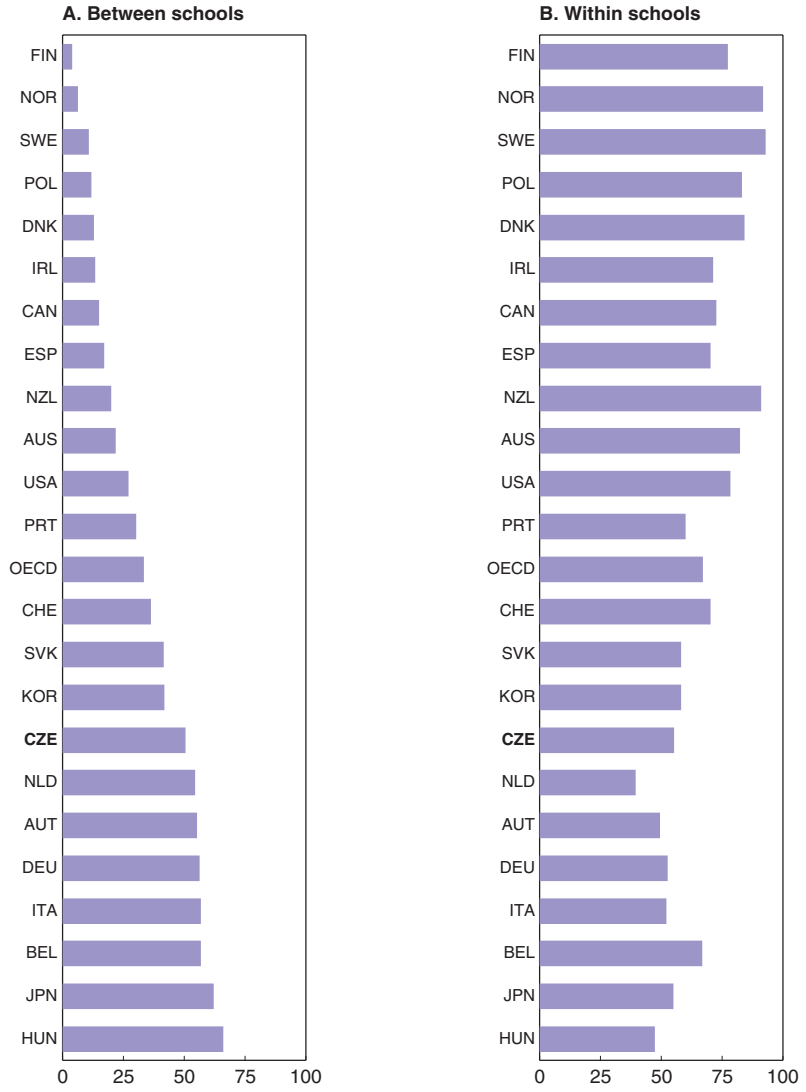
Table 4.3. **Comparisons of 15-year old students' performances in upper-secondary education**

	Municipality size	Share of 15-year old students enrolled in the secondary vocational schools whose skills are higher than the bottom 25% students in the secondary technical schools	Share of 15-year old students enrolled in the secondary technical schools whose skills are higher than the bottom 25% students in *gymnázia*
Boys	Small	32	33
	Large	41	40
Girls	Small	15	20
	Large	15	24

Source: Munich (2006).

Figure 4.6. **Variance in student performance between schools and within schools, 2003**

Per cent of average variance in student performance across OECD countries



Source: OECD, *Learning for Tomorrow's World: First Results from PISA 2003*.

compensate additional work or is distributed as a uniform bonus and so it is not used as a means to reward individual teaching quality.

In addition, other factors explain the low motivation of the teachers. Teachers have the view that their opinions are not often solicited and used as input to reform. Obsolete and rigid teaching methods with stress on rote learning are not only a source of problems for the skill development of students, but also make teaching unattractive.[28] This problem should be eased by the ongoing curricula reform which aims to steer away from rote learning towards more problem–solving approaches *(e.g.,* communication, search and

processing of information, simulation of practical case studies and teamwork). In this regard, the further development of language and computing skills, as well as e-learning are highly relevant in developing general workplace skills and represent a priority in education policy.[29] Some measures were approved in 2005 to improve language skills that should cover the whole population.

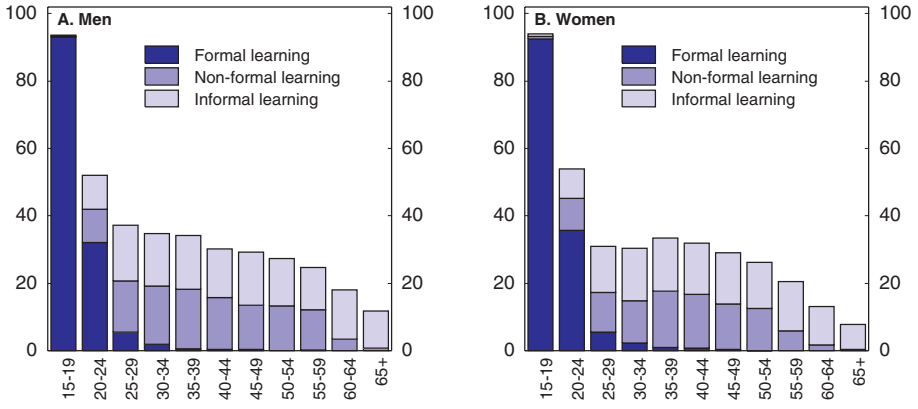
While there are advantages to the Czech system of decentralised responsibility in secondary education, it has risks of wide regional disparities in service quality. Ongoing reform of the school leaving examination system could, in principle, bring more standardised nation-wide final assessments (*maturitní zkouška*) and increase opportunities for benchmarking. Notably, the new exam includes a standardised section, in addition to the questions set by schools. However, because implementation of the new system is left to the discretion of the schools, use of the standardised school leaving exam is still very limited – essentially restricted to few pilot projects. This situation weakens the scope for using the *maturitní zkouška* as a benchmarking tool; for example, there is strong reluctance to make the results of output measurement public.

In dealing with the integration of disadvantaged students, problems regarding the education of the Roma children are important to consider. A recently taken decision to move disadvantage students out of the special schools and to integrate them in the ordinary schools is a welcome development towards meeting the recommendations of the 2004 *Economic Survey*.[30] However, the concentration of Roma children in remedial special schools is still very high.

Lifelong learning could be boosted by higher possibilities to transfer qualifications

As mentioned above, there is significant potential for a stronger lifelong learning approach to education in the Czech Republic in light of the relatively low attainment rates in tertiary education among middle and older age groups and expected demographic developments. Participation in continuing education is indeed low; the share of the working age population in these programmes is only about 5% (Figure 4.7) and has even

Figure 4.7. **Structure of lifelong learning, 2003**[1]
% of age-group population



1. Non-formal learning is organised and structured learning outside the formal education system, for example enterprise or community based. Informal learning is learning from other non-organised, unsystematic individual learning.

Source: Czech Statistical Office, *Labour Force Survey*, *Ad hoc* module 2003.

declined recently. In part, this is because providers have been slow to adapt to economic changes and business sector needs. Another problem is the limited possibility to transfer individual qualifications and knowledge between levels and types of institutions, even though recent regulatory changes should help.[31]

Policies to increase the efficiency of the education system

The previous sections have discussed the main strengths and weaknesses of the Czech education system, focusing on secondary and tertiary education, together with lifelong learning. Though the education system is performing reasonably well on some fronts, further reforms are needed to cater to the rapidly expanding demand for tertiary-level education. Secondary-school attainment has traditionally been high, but in the working-population as a whole the Czech Republic has one of the lowest shares of degree-level attainment in the OECD. However, change is underway due to a rapid rise in the tertiary enrolment rate among school leavers. This is only partially offset by population decline in young cohorts and overall demand for tertiary education courses is expected to continue growing for some time.

In broad terms policy needs to work on three fronts. Better signalling in tertiary education for students and providers is needed to further help diversification, particularly towards shorter and more vocationally oriented courses. Secondary education needs to become more efficient and relevant to the labour market through enhancement of general education, amalgamation of different types of schools and greater transferability between schools for students. Finally, lifelong learning needs support through better access and a wider range of courses.

Providing better signals for tertiary students and providers should get high priority

The rapid expansion of tertiary education requires more resources and better incentives for both students and higher education institutions. The introduction of tuition fees for students in public universities that at least partially reflect the cost of tertiary courses would make for better decision making by students and faster reaction of universities to changing demands. This diversification of funding for tertiary education would also help universities cope with further rises in student numbers. In effect, it would be unfair to raise large amounts of extra funding for Czech universities *via* general taxation considering the significant private gains from tertiary education (Table 4.4). Indeed, those with a university degree earn, on average, about 65% more than those with secondary education. One practical solution would be to adopt a system in which students in public universities pay an annual tuition fee. If followed, this option would increase students' awareness of the importance of service quality, leading them to demand stricter and more transparent teaching evaluation practices. One model for reform is the UK's recently implemented system in which about 40% of all students are in practice exempt and about 15% pay only part of the fee.[32] The tuition fees could or could not vary across subjects and/or universities; there is no established best practice in this regard. The United Kingdom has so far preferred to apply a common level of fees across subjects and universities, an approach recently followed also by Austria where a very low common fee is applied.[33] However, most other tuition fee systems allow some variation.

If tuition fees are introduced they should be accompanied by publicly supported student loans in which repayments are conditional on graduate income. This would help reduce the risk that up-front payments limit access to university education. Many OECD

Table 4.4. **The earning premium of education**[1]

	Males	Females
Australia	121	117
Belgium	115	124
Canada	117	115
Czech Republic	**166**	**145**
Finland	130	127
France	127	131
Germany	124	115
Hungary	202	164
Ireland	117	132
Korea	103	138
New Zealand	106	112
Norway	142	149
Spain	99	86
Sweden	114	119
Switzerland	121	140
United Kingdom	124	141
United States	120	129

1. Earnings of the employed population, 25-to-64-year-olds, with tertiary education relative to the same population with secondary education. Figures refer to the most recent year available, which for the Czech Republic is 2004. It generally is 2003 or 2002 in the case of the other countries.

Source: Czech Ministry of Education, Youth and Sports; OECD, *Education at a Glance*.

countries have some form of public loans for financing tuition fees and/or living costs. Their experience suggests that, when combined with a student loan system, letting students contribute to the costs of tertiary education does not have adverse equity effects or result in decreasing levels of access.[34]

The public cost of a student loan scheme depends on various aspects of the repayment conditions, one of which is the interest rate charged. Experience in some countries suggests that a zero real interest rate can be costly (*e.g.* New Zealand and the UK). Moreover, there is little consensus as to whether a general interest-rate subsidy is the most effective way of helping the most disadvantaged students. Indeed, a number of countries (*e.g.* the Netherlands and Sweden) apply a quasi market interest rate and combine this with targeted pro-access policies.

Any increase in funding has to be linked to output quality monitoring and evaluation. In addition, it should be complemented by strengthened co-operation between universities and enterprises. This would encourage providers to introduce programmes that are more in tune with the labour market. Arguably, more co-operation with business would also allow providers to more easily cope with the consequences on demand of implementing a tuition fee scheme – particularly, the expected greater attention of students to course content and quality.

Increasing the efficiency and relevance of secondary education

Secondary schools enjoy a good reputation and benefit from a well established institutional tradition. However, further changes in focus and flexibility in the system are required to better cope with changing skill requirements in the labour market. As mentioned above, recent policy initiatives have included the voluntary introduction of a new secondary school leaving examination (*maturitní zkouška*). In further developing the new school leaving exams, closer consultation with universities should be considered. This

would help university faculties to increase their reliance on *maturitní zkouška* results for admissions. For example, the results concerning the common, standardised part of the *maturitní zkouška* could substitute for all or part of the access examinations that currently university faculties organise on their own. This should not only reduce the workload for university admissions but also help limit social segregation *via* the university entrance exams. In addition, the experience so far with the *maturitní zkouška* reform suggests that a high degree of co-ordination with curriculum reform is needed because of the close interdependence between curricula and final exams.

Four-year secondary general education is important because it caters for entry to tertiary education. Various factors lie behind the relatively low share of upper-secondary school students receiving this general education. The most important perhaps is the notion – quite widespread in a number of influential circles – that in order to maintain quality the *gymnázium* should be restricted to a narrow elite. This argument misses the fundamental point that intellectual abilities are not limited to a small proportion of pupils. Thus access to the general courses in secondary schools that provide options for entering tertiary education should be widened. This could be achieved by making these courses more widely available in the secondary technical schools and by equalising the quality standards with those of the 4-year *gymnázia*. More generally, choices could be broadened if upper secondary school curricula were differentiated among broad subject-based streams and if students were allowed to transfer both between and within schools more easily. Each stream would have to lead to final examinations comprising both a specific part and a standardised common part. For instance, many countries run secondary general schools with three streams, "scientific", "humanities" and "socio-economic".

The multi-year *gymnázium* (*i.e.* 6- and 8-year courses) has potentially far reaching effects on equity, as well as the quality and effectiveness of the system as whole. Indeed, there is a strong case that reform should go deeper than simply widening access to general education and that a different structure of secondary education is needed in order to enable bright children to develop according to their potential and without discriminating against low-achievers. Structural reform to the school system has been proposed in strategic documents by the MEYS. For example, the 2001 *National Programme for the Development of Education in the Czech Republic* states that: "A decisive change in the basic schools will be the significant strengthening of their lower secondary level as a result of the gradual elimination of multi-year general secondary schools (*gymnázia*). Starting from 2002, no new students should be admitted to the first year of these types of general secondary schools."[35] The streaming of a minority of students into elite publicly funded schools from age eleven should indeed be phased out. This should be complemented by actions that raise the quality of the basic schools and make the transfer of students and teachers between schools easier.[36]

Decentralisation of responsibility for secondary schooling has raised the importance of output measurement and benchmarking. A recently introduced assessment system has merits but its effectiveness needs to be strengthened, in particular by allowing the publication of assessment results and by giving the School Inspectorate more scope in information gathering.[37] In many OECD countries output measurement and benchmarking play a crucial role in the secondary education system, particularly where responsibilities are decentralised. Publicly accessible school-by-school information helps establish "quality maps" of the school system and this encourages school directors, teachers and local interested parties (*e.g.* students, parents and the business sector) to take remedial action

when schools under-perform. The assessment and evaluation system should be expanded to cover schools, types of schools, regions and the entire school system. This should in particular assess how graduates are prepared for employment and further education.

The currently low motivation of teachers would be increased by encouraging greater use of financial rewards for good performances, although giving school directors more opportunities to reward individual efforts may not be easy to implement. However, more flexible compensation will not be sufficient and there should also be more in-service training to ensure that teachers adapt to change in secondary school system, particularly if access to general education is widened. By increasing job satisfaction, these measures could be important in making the teaching profession more attractive to qualified teachers.

Some aspects of improving the framework for lifelong learning

Recent OECD work shows that there are strong links between the regulatory framework for qualifications and the opportunities for continued education by adults.[38] Specifically, where learning is more systematically organised and inter-connected, the chances of maintaining inclusion are improved, which is essential to motivate the least successful to learn. This is an important issue for the Czech Republic because the strong segmentation of the education system makes it difficult for adults to add to their qualifications. The Czech education system is too rigidly geared towards a set of standard pathways through the education system; access to the education system for adults who want to take either secondary or tertiary level courses needs to be increased and a greater range of programmes is required. A new act was approved in early 2006 that should in principle widen the opportunities for obtaining adult qualifications. In implementing the new measures and considering further follow up measures targeting adult learning, the government should ensure that the admission system becomes more user-friendly. Indeed, there has been little policy progress along the lines of the *Bologna process*, which calls for more recognition of education acquired outside the formal education system, as well as acceptance of a wider range of secondary-schools qualifications in university entrance. There is also a need for establishing a more systematic approach to funding mechanisms and quality assurance. Moreover there is scope for encouraging demand for continued education, for example thorough information and guidance programmes. Resources freed up from demographic decline in secondary education suggest that the function and clientele of secondary schools could be widened to adult education. However, the costs of such a development should be benchmarked against alternatives, such as tendered private-sector provision, to check that this is an efficient way of providing adult education.

Management of EU funding in a period of rapid demographic transition

As discussed above, a key policy concern is how to make the best use of opportunities for EU-funding given competing priorities and constraints in co-financing capacities. For example, co-financing needs could considerably shrink the amount of funds available to expand performance-related pay for teachers. Demographic developments will to some extent ease this problem because decline in the size of secondary school cohorts in the coming years ought to generate savings in secondary education budgets. In this context, one way of ensuring that EU-funds are spent without negative effects on other important non-mandatory expenditures would be to put priority on using the savings from

demographic change to reduce the potential drain of co-financing. It is important, however, to elaborate carefully priorities and implementation mechanisms.

Ensuring that the potential savings from demographic change are realised is a challenge in itself, and the opportunity cost of sluggish adjustment to reduced student numbers may be high. Even though the structure of public subsidies to the secondary schools has worked effectively so far, regular assessments of resource allocation are needed to ensure that new circumstances are coped with efficiently. On this front, the central authorities should request more detailed projections about future school needs from regions and municipalities. Such information, once assembled and evaluated by the MEYS, would enhance the effectiveness of spending prioritisation and resource allocation.

Ensuring good co-ordination within the government will be important for making the best use of EU funds, particularly where there is a natural overlap in policymaking, as in R&D and tertiary education. Although the MEYS will play a central role in education-related aspects of EU funding, there is some overlap with other ministries. The Ministry of Labour in particular will continue to play a role in the policies to strengthen the links between education and employment, while the Ministry of Industry and Trade will remain active in research policies, including at the university level. While the benefits of a well co-ordinated education policy are potentially large, some observers believe that these may not be forthcoming unless oversight by the Ministry of Finance is enhanced.

Notes

1. The tertiary education enrolment rate has more than doubled between 1995 and 2004, from 7% to 15%. In addition, the chances of being admitted among applicants has increased from less than 50% to 60%.
2. The Czech Republic is certainly not unique in this respect, the opportunities for university graduates have widened substantially in virtually all central European and Baltic countries. The challenges that these countries face in the matter of tertiary education are surveyed in a recent World Bank study (World Bank, 2005).
3. The Czech commonly used expression is "multi-year *gymnasium*" when referring to the six and eight-year *gymnázia*. Nearly 10% of pupils move from the basic school to the eight-year *gymnázia* when they reach the age of 11-years. There are also six-year *gymnázia* but these are much less common. See Koucký *at al.* (2004).
4. Formally, the Higher Education Institutions also include a number of so called non-university Higher Education Institutions primarily focussed on bachelor programmes. Being relatively new, however, only a small number of students attend these institutions. For simplicity, throughout this Chapter the terms "Higher Education Institution" and "university" are used interchangeably.
5. See Koucký (2004).
6. The education expectancy indicator refers to both full-time and part-time education over the individual's lifetime. For the Czech Republic the indicator has increased markedly over the past decade, from about 14 to 16½ years at present. Even so, there is still a little more progress required to close the gap with the OECD average (17.3 years).
7. Projections are from Ministry of Education, Youth and Sports (2005), p. 5. It is thought that the university population could rise by more than 55 000 because revised figures show the number of enrolled students for the Academic year 2005-2006 was considerably higher than assumed in the projection.
8. The main reason for the backlog of demand for tertiary education is historic. Prior to the transition the proportion of the working-age population that had attained tertiary education was very modest. At the beginning of the transition, post-secondary education was concentrated on vocational education provided by institutions without tertiary status (OECD, 2004a).

9. It is estimated that about one third of the current number of secondary schools will have to be closed in the coming years.
10. See OECD (2005a) for a wider discussion.
11. For instance, the share of public spending that goes to education in Mexico, Korea and New Zealand is among the highest in the OECD countries; yet total public spending accounts for a significantly lower proportion of GDP in these countries than in the Czech Republic. See OECD (2005a).
12. Research and development expenses are financed also by other Ministries, including from the budgets of the Ministry of Trade and Industry, the Ministry of Agriculture and the Ministry of Health Care. See Chapter 5 for a wider discussion of research and innovation policies.
13. . Prior to 1995, however, funding per-student was higher in the Czech Republic than in other countries. The relatively low degree of adaptability of the Czech tertiary education system is also revealed by the comparison across levels of education. Specifically, for primary, secondary and post-secondary non-tertiary education changes in enrolment have been a main driving factor behind changes in overall funding. As a result, the level of funding per student in these schools has been remarkably stable overtime (Figure 4.5).
14. Total public funding has increased since 2002, particularly in 2005 when the increase equalled 18.5% in nominal terms, compared with an increase of 8% in the total number of students. Given the very low level of inflation this means large real increase in funding.
15. See MEYS (2006), pp. 64-65 which states that "[The long term under-financing of the Higher Education Institutions (HEIs)] is caused by a decrease in the real public support per student and the low flow of private funds into the HEIs in general." The Czech Republic currently participates to the *OECD Thematic Review of Tertiary Education* and MEYS (2006) is the background report that was prepared in that context.
16. . See also Matějů and Simonová (2003) who conclude that reforms by the universities themselves have been very limited relative to the scope opened up by regulatory changes since the beginning of the 1990s, particularly those aimed at increasing the administrative autonomy of universities.
17. See for instance Ministry of Education, Youth and Sports (2005) which states that "the structure of study opportunities falls short of employers' needs", p. 34.
18. Even though roughly three quarters of programmes are in the three years bachelor regime at present, there still remain wide variations in the way programmes and universities have responded to the introduction of shorter programmes. For example, philosophy and a number of natural science areas still operate under the old longer programme regime. Indeed, in some universities the longer programmes continue to predominate. On the side of students, there is evidence indicating that many students still prefer to continue their education after a bachelor degree until they acquire a master degree.
19. Ministry of Education figures for 2002 show that about 44% of applicants who took part in entrance tests were not admitted.
20. Cases of abuse in admission practices have been reported in Czech newspapers.
21. See Matějů, Řeháková and Simonová (2003) for a framework discussion of inequality problems in access to tertiary education in the Czech Republic. See also OECD (2005b).
22. From the administrative viewpoint, access to the general secondary track is fixed in two ways, directly by the owners of the schools (*e.g.* the regions) and indirectly by the MEYS *via* the annual budget that it prepares. In addition, the MEYS decides on the opening of a new school, as well as its supply capacity and programme orientation.
23. The limited entry to the *gymnázia* has cascade effects: pupils entering the technical schools because they did not get into the *gymnázia* push pupils who would prefer to go to technical schools into the vocational schools.
24. See Munich (2006), forthcoming.
25. Such variations regard, more specifically, the mathematic scale. See for wider discussions of these issues OECD (2004b), (2004c) and (2005a).
26. See Matějů and Straková (2005). The authors also discuss the history of multi-year *gymnázia*, which were introduced after 1989, following up on a tradition that dates back to the pre-war education system. Interestingly, however, the authors remark that even back then some education experts

were sceptical about the advantages of the multi-year *gymnázia* and concerned about the implications for social segregation.

27. See also Koucký *et al.* (2004). Based on the PISA 2003 results (OECD, 2004c), the authors show that the family background matters more than academic abilties in explaining access to the multi-year *gymnázia*.

28. Many OECD countries face major difficulties in recruiting enough qualified teachers. See OECD (2005c) for a comparative discussion.

29. See OECD (2004d) for a wider discussion of the potential role of information and communication technologies in education. For a discussion of the role of e-learning see OECD (2005e).

30. See OECD (2004a) for a wider discussion of the issue of integrating Roma children in the Czech education system.

31. Specifically, a 2004 law allows some secondary and higher professional qualifications to be awarded solely on the basis of demonstrated abilities, rather than as a result of attending a relevant school. For a cross-country comparative discussion of lifelong learning experiences see OECD (2005d).

32. See OECD (2004e). The main argument used by Czech government officials against the introduction of fees is that this would add to the already high living costs for students implying an extra burden on family incomes. However, this argument misses the point that the expected returns of education are very high, something that the public opinion already recognises and takes into account in its own evaluation of the problem. In fact, the results of recent public opinion pools suggest that a majority of the Czech population, including students themselves, agree that a system of tuition fees (combined with loans) would enable more young people to obtain a university education (Matějů, 2004).

33. See OECD (2005f).

34. See Blöndal *et al.* (2004) for a wider discussion.

35. See Ministry of Education Youth and Sports (2001), p. 30.

36. The 1996 OECD Review of the Czech Republic National Policies for Education observed that "multi-year *gymnázium* is to a large extent a return to the pre-1948 period". See OECD (1996, p.182).

37. Quality assurance and improving the coherence of the evaluation system is among the objectives of the 2004 Education Act (Box 4.2).

38. See Behringer and Coles (2003) for further discussion of the ways in which the qualification framework can influence the quality of learning experiences.

Bibliography

Behringer, F. and M. Coles (2003), "The Role of National Qualifications Systems in Promoting Lifelong Learning, Towards an Understanding of the Mechanisms that Link Qualifications to Lifelong Learning", *OECD Education Working Paper*, No. 3, OECD, Paris.

Blöndal, S., S. Field and N. Girouard (2002), "Investment in Human Capital Through Upper-Secondary and Tertiary Education", *OECD Economic Studies*, No. 34, OECD, Paris.

EURYDICE/CEDEFOP (2005), *Structures of Education, Initial Training and Adult Education Systems in Europe – Czech Republic 2005*, Brussels.

Koucký, J. (2004), "The Knowledge Economy, Human Capital and Education Policy"; *Quality and Efficiency in Education*, European Commission, Luxembourg.

Koucký *et al.* (2004), "Učení pro život. Výsledky výzkumu OECD PISA 2003" [Learning for Life, Outcomes of OECD survey PISA 2003]. Speciální příloha *Učitelských novin*, ročník 107, číslo 46, 2004 [Special annex to *Učitelské noviny*, Vol. 107, No. 46].

Matějů, P. (2004), "Czech Higher Education at a Crossroad", *The Prague Post*, 24 November 2004.

Matějů, P., B. Řeháková and N. Simonová (2003), "Transition to University under Communism and after its Demise", *Czech Sociological Review*, 2003, Vol. 39, No. 3.

Matějů, P. and J. Simonová (2003), "Czech Higher Education at the Crossroad", *Czech Sociological Review*, 2003, Vol. 39, No. 3.

Matějů, P. and J. Straková (2005), "The Role of the Family and the School in the Reproduction of Educational Inequalities in the Post-Communist Czech Republic", *British Journal of Sociology of Education*, Vol. 26, No. 1, February, pp. 15-38.

Ministry of Education, Youth and Sports (2001), *National Programme for the Development of Education in the Czech Republic-White paper*, Institute for Information and Education, Prague.

Ministry of Education, Youth and Sports (2005), *The Long Term Plan for Educational, Scientific, Research, Development, Artistic and Other Creative Activities of Higher Education Institutions for 2006-2010*.

Ministry of Education, Youth and Sports (2006), *OECD Thematic Review of Tertiary Education, Country Background Report for Tertiary Education*, February.

Munich, D. (2006), "Přechod žáků na střední školy: diskrepance mezi nabídkou a poptávkou a jejich důsledky" [Transition of pupils to upper-secondary schooling level: discrepancy between supply and demand and its consequences] in Matějů, P. and J. Straková eds., 2006, *(Ne)rovné šance na vzdělání: Vzdělanostní nerovnosti v České republice*, [(Un)equal study opportunities: educational inequalities in the Czech Republic], forthcoming, Academia, Prague.

OECD (1996), *Review of the Czech Republic National Policies for Education*, OECD, Paris.

OECD, (2004a), *OECD Economic Surveys: Czech Republic*, OECD, Paris.

OECD (2004b), *What Makes School Systems Perform?* OECD, Paris.

OECD (2004c), *Learning for Tomorrow*, OECD, Paris and (2005a).

OECD (2004d), *Education Policy Analysis, Getting Returns from Investing in Educational ICT*, OECD, Paris.

OECD (2004e), *OECD Economic Surveys: The United Kingdom*, OECD, Paris.

OECD (2005a), *Education at a Glance*, OECD, Paris.

OECD (2005b), *From Education to Work, A Difficult Transition for Young Adults with Low Levels of Education*, OECD, Paris.

OECD (2005c), *Teachers Matter, Attracting, Developing and Retaining Effective Teachers*, OECD, Paris.

OECD (2005d), *Learning a Living, First Results of the Adult Literacy and Life Skill Survey*, OECD, Paris.

OECD (2005e), *E-learning in Tertiary Education, Where Do We Stand?* OECD, Paris.

OECD (2005f), *OECD Economic Surveys: Austria*, OECD, Paris.

World Bank (2005), *SelectedIssues in Fiscal Reform in Central Europe and the Baltic Countries*, Vol. I, Main Report.

ANNEX 4.A1

Roadmap from basic to tertiary education

Basic education

Basic education is in two parts, primary education, which lasts 5 years, and lower secondary education (4 years). The second part can be taken apart from the basic school education track, through attending the long-term *gymnázium*, which students can access when they are 11- or 13-years old (so called multi-year *gymnázium*).

Upper-secondary Education

General upper-secondary education can be acquired at the *gymnázia*, which normally lasts 4 years, but can last 8 or 6 years. Another type of upper-secondary institution is the technical school (*střední odborné školy*), which has a slightly general orientation (51% of total courses are general, other courses are vocational). Both *gymnázium* and secondary technical studies are completed by a leaving examination (*maturita*). In addition, there are the secondary vocational schools (*střední odborná učiliště*), which can last 2, 3 or 4 years, with each programme leading to a specific level of occupational qualification. Most secondary vocational schools provide 3-year programmes. Admittance to any secondary schools is conditional upon successfully completing the basic education programmes and meeting the school specific admittance requirements (usually an examination).

Tertiary education

Tertiary technical/professional schools

The tertiary professional schools (*vyšší odborné školy*) form one of the two-tracks of tertiary education and have a vocational focus. Access to these schools is conditional upon successfully passing the secondary school leaving examination and meeting specific entry requirements. The tertiary technical schools lead to a diploma which generally is not recognised as a bachelor degree. Students pay tuition fees.

Higher education institutions

Czech tertiary education also comprises public and private higher education institutions (*vysoké školy*) which together form the second track of tertiary education. Bachelor and master programmes are open to applicants who have passed a *maturita* and meet the university specific entry requirements (typically an examination). The bachelor programme (3-4 years) is the first cycle of higher education. Because the introduction of bachelor programmes is still incomplete, long-term university programmes continue to play a role. In particular, not all long-term master programmes follow a bachelor

programme; a number of them can be taken parallel to it (the situation varies across universities and types of programmes). Such parallel master programmes last between 4 and 6 years. Master programmes last between 1 and 3 years when they follow after a bachelor degree. The doctoral programme (3 years) is the highest level of higher education and follows after a master programme.

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Chapter 5

Enhancing the business environment: policies to promote innovation

The Czech government considers innovation policy a key component of the effort to improve the business environment. This chapter underscores the importance for the Czech Republic of expanding R&D activities that have a potential for commercial innovation. It also points to the relevance of good general business conditions in encouraging research and ensuring that the economy benefits from the international diffusion of innovation. Concerning targeted policies, the need for structural reforms to improve the research and innovation environment is described. The chapter looks at options to create a coherent governance framework for public R&D and to make the allocation of research funds efficient. Assessment of changes in R&D tax allowances and the strategy for giving direct support to innovative SMEs is also made. Finally, the chapter considers what reforms are needed to help the creation of stronger science-industry links and the take-off of the venture capital and "business angels" market.

Czech R&D activity is below the OECD average, but compares favourably with other Eastern European OECD countries, not only in terms of the overall level of activity but also in the mix between private and public research. Nevertheless, there is considerable room for improvement in policy. Reforming the research and innovation system is a key priority of several recent policy documents, including the *Economic and Growth Strategy* and the *National Innovation Policy of the Czech Republic for 2005-10*. The government's broad objective is to strengthen the organisation and the effectiveness of the public research framework with a new approach that emphasises research results and their commercial uses. This is going to require better organisation of the funding system, including making public support more accountable and results-driven.

The chapter first examines innovation activity and then looks into the importance of good framework conditions for supporting the effectiveness of innovation policy. This is followed by an assessment of what needs to be done to correct weaknesses in financial and administrative support to R&D. The chapter expands on some policy issues brought up in recent OECD work on *Going for Growth* and the policy recommendations are summarised in Box 5.1.[1]

Box 5.1. **Recommendations on innovation policy**

General business framework conditions and innovation

Framework conditions are a key precondition for a healthy level of innovation activity and this should be an important consideration in overall thinking in innovation policy:

- Macroeconomic conditions are a particularly important driving force for innovation activity.
- Generating healthy framework conditions underscores the need for a well educated workforce, as well as a high quality regulatory framework for business.

Policies to improve governance

The current system of public support for research is cumbersome. Work needs to be done to improve the public governance system, through simplification and re-definition of tasks and responsibilities:

- There is a need to reduce the number of R&D-related budgetary lines.
- The responsibilities of state administration in innovation need to be reformulated so as to orient innovation policy more clearly towards research that develops commercial applications or provides academic groundwork with potential for commercial application.
- With a view to tie pure and applied research more closely, there might be scope for enhancing the effectiveness of the Council even further by, for example, greater business-sector representation.
- Better co-ordination between Ministries involved in R&D spending and policy is also required.

Box 5.1. **Recommendations on innovation policy** *(cont.)*

Improving the allocation of research funds

The majority of public funding is allocated on an institutional rather than project-specific basis:

- As a step towards a more contestable funding model, the government should expand project-based funding.
- Ensuring that the available financial resources are directed towards the highest quality research projects also requires adjustments in the evaluation system. Public support allocation criteria should be modified to give more weight to the research record of the applicant team, rather than of the institution with which the team is affiliated.
- A system of periodic Research Assessment Exercises should also be considered.

Tax allowances

- Changes to the tax allowance system have been made only recently and policy should focus on evaluation before deciding on any further changes. Evaluation should in particular include assessing compatibility with fiscal policy objectives. In addition, sunset clauses should be considered for such programmes.

Support schemes for innovative SMEs

- Public support for SMEs comes through a range of financial and non-financial support schemes, many of which aim to focus support on businesses that are engaged in R&D or are innovative in a broader sense. To help increase the returns on public research spending, technology support schemes for innovative SMEs should be backed by an information system on current and upcoming development of projects in regions and municipalities.

Regulatory changes to help science industry links

As elsewhere in the OECD, the Czech Republic faces the challenge of strengthening links between researchers from public research organisations and industry:

- More regulatory changes should be considered to improve access and flexibility in doctoral programmes and post-doctoral positions. More performance-related pay in public-sector research positions could also be envisaged.
- More weight should be attached to joint work with business in evaluating research activities.
- There is also room for improving the information and administrative systems regarding intellectual property rights. There is notably a case for the intellectual property benefits system to give more incentives for researchers and institutions to commercialise inventions.

Creating the conditions for the take-off of venture capital services

The venture capital market is small – indeed indicators show that the Czech Republic has one of the lowest levels of venture capital investment in international comparison:

- The government plans to support both the venture capital market and activities of "business angels" through the creation of a "risk capital fund" (KAPITAL). This scheme is likely to need fine-tuning, and a good perspective on overall cost-effectiveness needs to be maintained, so impact assessment and monitoring is essential.
- Avenues for altering investment and tax rules, as well as stock market rules, need to be explored in order to encourage pension funds and "business angel" firms to enter the venture capital industry. As a step in this direction, Parliament is presently examining changes to the regulation on collective investment.
- There is also a need for science and engineering university programmes to include more practical business training courses.

The need to expand research that has a potential for commercial application

Innovation affects economic growth, particularly by boosting multifactor productivity. In this regard, OECD work stresses the positive interaction between public and private research.[2] Public research can be particularly beneficial when it generates positive spill overs to a wide range of firms or industries thereby complementing the business-sectors own research efforts.

For the Czech Republic, total R&D activity is equivalent to only about 1.3% of GDP. As Chapter 1 shows, quite a number of OECD countries have at least twice this level of activity. Interestingly, the share of R&D conducted by business enterprises is not far behind the OECD average (Table 5.1) and this is broadly encouraging. However, public research workers in universities and the Academy of Sciences have little incentive to interact with the private sector. As a result, most public-sector research is not geared towards commercial application and the exchange of knowledge between industry and academic institutions is low. For example, evaluation of research results still focuses on citations, rather than granted patents, licences sold, commercially exploited patents and other indicators that underscore the intensity of the co-operation between firms and government institutions. Strict regulations on public research institutions are also thought to weaken the signals to turn knowledge into commercial gains (see below). This is particularly the case with the

Table 5.1. **Indicators of innovation activity**

	Czech Republic	Highest level of indicator in neighbour countries[1]	Lowest level of indicator in neighbour countries[1]	OECD average
R&D activities				
Total R&D spending as a percentage of GDP	1.3	1.0	0.6	2.2
Of which:				
Business	51.4	45.1	30.3	61.6
Government	41.8	62.7	41.8	30.5
Higher education	2.2	2.4	0.4	4.9
Human resources in science and technology				
Total researchers per 1 000 total employment				
Business	1.3	1.1	0.5	4.2
Government	1.0	1.2	1.0	0.5
Higher education institutions	0.9	2.9	1.5	1.7
Public/private R&D linkages				
Share of publicly-financed business R&D	12.0	22.1	6.4	7.4
Share of government and university R&D funded by business	5.1	10.3	7.8	4.9
Scientific output				
Scientific publications per million population	256.5	243.3	148.7	467.7
Innovative output				
Triadic patents per million population	1.2	2.7	0.2	41.5
Number of EPO applications per million population	7.5	10.5	2.0	91.1
Technological entrepreneurship				
Investment in venture capital as a percentage of GDP				
Early stages	0.008	0.012	0.003	0.082
Expansion	0.048	0.042	0.012	0.175
High- and medium-high-technology exports as a percentage of total exports	59.4	12.0	42.3	66.6

1. Based on a comparison between Hungary, Poland and Slovak Republic.
Source: OECD (2005), *Science, Technology and Industry Scoreboard*.

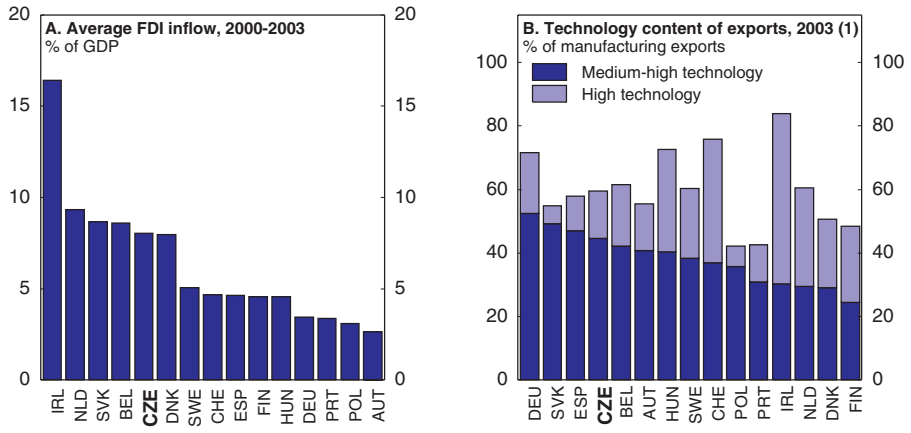
institutions that belong to the Academy of Sciences, even though recently introduced lighter regulations should help in this respect. The dichotomy between private and public research is confirmed in a wide range of other indicators (Table 5.1):

- Patenting activity is low by international standards. The number of patent families per capita filed in the world's three main patent offices is relatively low, not just compared with the OECD average, but also neighbouring countries.
- However, based on publication rates in international journals, the quality of research is relatively high when evaluated against neighbouring countries.
- There is little by way of business-funded R&D in universities and other public research institutes. Corporate co-financing of research carried out by universities and other government agencies is significantly rarer than in Hungary, Poland and the Slovak Republic.
- Reflecting spending on R&D, the number of scientists and researchers overall is relatively low. In the regional comparison, the number of business researchers is high, but the Czech Republic scores very poorly in terms of researchers in the higher education sector.

Healthy general business conditions help boost innovation

Framework conditions are a key precondition for a healthy level of innovation activity and this should be an important consideration in overall thinking in innovation policy. As the Czech economy is very open, processes that "import" innovation are particularly important. Indeed, recent OECD work underscores that international trade brings in innovations embodied in imported goods and services.[3] Similarly, inward foreign direct investment is also an important vehicle for knowledge diffusion. These are arguably important considerations for the Czech Republic, given its significant multinational enterprise sector (Figure 5.1, Panel A). Foreign companies make a large contribution to service and manufacturing exports – particularly in motor vehicles, computer

Figure 5.1. **Foreign direct investment and trade flows**



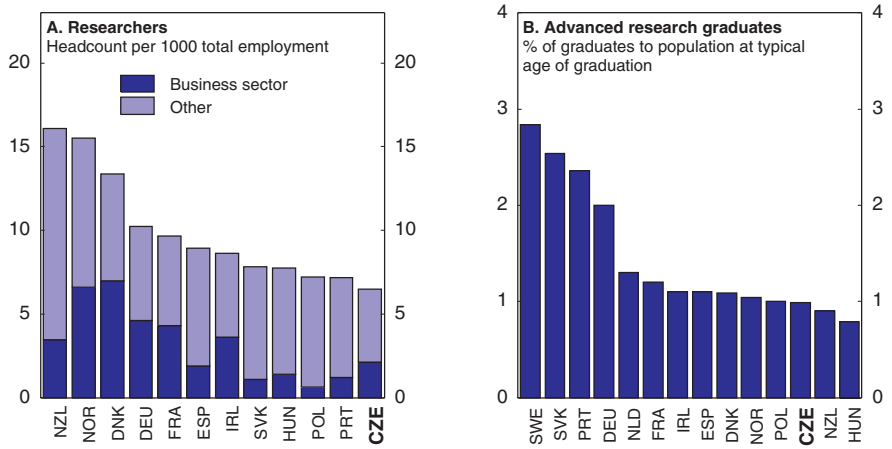
1. Medium-high technology includes electrical machinery, motor vehicles, chemicals (excluding pharmaceuticals), rail and transport equipment and machinery and equipment. High-technology includes aircraft, pharmaceuticals, office and computing machinery, radio and communications equipment and medical and precision instruments.

Source: OECD (2005), *Science Technology and Industry Scoreboard*.

manufacturing and computer-related services – and the share of manufacturing exports in medium-to-high technology intensive industries is relatively high (Figure 5.1, Panel B).[4] In addition, the Czech Republic has been gaining strength in outsourced services, some of which involve R&D (software outsourcing is a good example).[5]

Both original research and the absorption of innovation also require a well educated workforce, particularly as regards tertiary education. As mentioned above, the Czech Republic has a relatively low number of scientists in relation to its population (Figure 5.2). Indeed, tertiary education attainment in general is relatively low compared with many OECD countries. The enrolment rate is rising rapidly but, as Chapter 4 discusses, both the secondary and tertiary education systems need further reform to cope with this.

Figure 5.2. **Human resources in R&D, 2003**



Source: OECD, *Education at a Glance; Main Science and Technology Indicators.*

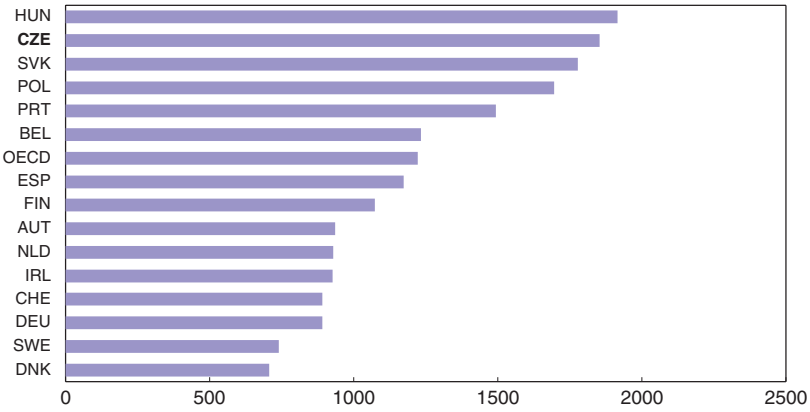
In addition, OECD analysis shows that macroeconomic conditions are a particularly important driving force for innovation activity. Factors such as robust output growth, stable inflation and low real interest rates matter in explaining differences across member-countries in the expansion of R&D.[6] It is evident that a strong macroeconomic framework is essential to encourage existing enterprises to bring forward their research plans, including into new products and processes.

Good quality general regulatory frameworks for business and appropriate targeted support for new entrepreneurial activities are also important for innovation because they mean high-risk business ideas are more likely to be put into action. Therefore, the policy recommendations made in Chapter 1 aimed at improving the business regulatory framework may have spin-offs in terms of increasing the country's potential for innovation and research. For the Czech Republic, the importance of these policy areas is accentuated by the lagging dynamism of the small-and-medium enterprises (SMEs) sector. Indeed, based on indicators such as the contribution of SMEs to total manufacturing employment and value added, the Czech Republic is below the median for OECD countries.[7] Moreover, business interactions of these companies with the international firms located in the country are rare.

In terms of general purpose technologies the Czech Republic has some way to go before catching up with the levels of Information and Communication Technologies diffusion seen in leading OECD countries. Indeed, the cost of a business-based basket of fixed-line and mobile telephone calls is high relative to the OECD average, albeit somewhat below the levels observed for Hungary, Slovakia and Poland (Figure 5.3). Monthly charges for broadband internet access are also high. This underscores the need for continued vigilance to anti-competitive practices in markets for telecommunications.

Figure 5.3. **Telephone charges for business, November 2005**[1]

USD PPP



1. Including calls to mobile networks and international calls and excluding tax.

Source: OECD, *Communications Outlook*; Teligen.

Broad features of current policy on innovation

Policy thinking on research and innovation has changed significantly over the past few years. This is reflected in a number of strategic documents: the government's *Growth Strategy*, the *National Lisbon Programme*, and the *National Innovation Policy of the Czech Republic*. All these documents see technical and technological developments as an important factor in maintaining competitiveness given global business developments.

Czech innovation policy broadly aims to encourage both more private-sector research and a more market-driven approach to research by public-sector institutions and universities. As part of the Lisbon strategy for growth promoted by the European Union, the government has a target of boosting public R&D intensity to 1.0% by 2010, with private-sector R&D being set to increase to two thirds of total spending over the long term. Such quantitative goals provide useful focus but need to be underpinned by changes to the regulatory framework for innovation. The need to safeguard the formation of a strong SME sector is one important aspect of this. Moreover, if undertaken quickly, policy change would also encourage the large foreign-owned sector to follow up its earlier productive investment with a new wave of R&D-oriented inward investment.[8]

The concrete measures of this strategy can be put under six headings: reform of the governance framework for public R&D, improved allocation of research funding, strengthening of tax breaks for R&D spending, additional support for innovative SMEs, strengthening of science-industry links and expanding the venture capital market.

Policy options to improve the research and innovation environment

The current system of public support for R&D is cumbersome because spending is divided between many ministries and institutions, including the Academy of Sciences and the special body in charge of grant allocations – the Grant Agency. Fragmentation problems are found in many OECD countries but are somewhat more severe in the Czech Republic.[9] In total there are 22 state authorities with distinct R&D budgets. Co-ordination problems are reflected in a lack of coherence between strategic and policy documents and overlaps in R&D programmes. Moreover, several regional and local governments are also active in undertaking autonomous initiatives. The priority areas for further improvement of the public governance framework are twofold: to introduce simplification and to re-define tasks and responsibilities of the key public players.

It is important that plans reducing the large number of R&D-related budgetary lines are followed through. The governance issue needs to be tackled by tightening of responsibilities and tidying up of financial arrangements. The authorities recognise this problem but unfortunately, the prospects of introducing concrete measures in the near future look weak. In part, this is because there is a lack of agreement about which budgetary lines should be cut. Policy advisors close to the Ministry of Industry and Trade (MIT) consider that optimally there should be only between five and ten budgetary lines.

In addition, to give policy-makers more scope for linking funding to achievements, reduction in budgetary lines should be accompanied by substitutability between lines as there is hardly any interdependence at present. As a result, the distribution of the public research budget between institutions has been fairly stable overtime. The experience of other OECD countries suggests that making budgetary lines more flexible has a positive impact on efficiency because this stimulates competition and widens the scope for interdisciplinary research between different public research institutions.

Furthermore, the responsibilities of state administration in innovation need to be reformulated so as to orient innovation policy more clearly towards research that develops commercial applications or provides academic groundwork with potential for commercial application. At present there is a lack of jurisdictional responsibility for innovation and this accentuates the strong policy bias in favour of basic research. The *National Innovation Policy for 2005-2010* flags intention for stronger assignment of responsibility to the MIT because of its more explicit involvement in industrial, competitiveness and innovative SMEs policies, though no concrete schedule for doing this is outlined.

The Research and Development Council plays a key role in innovation policies but, in order to ensure that pure and applied research activities become more closely tied, its role and responsibilities need some adjustments. Created in 2000, the Council is the umbrella organisation for R&D with representatives from various ministries, public research institutions, the private sector and regional authorities. The Council sets out short- and medium-term research priorities and objectives and in this way helps counter co-ordination problems. It also prepares the annual research budget proposal which is then submitted to the Ministry of Finance. Consistent with the current policy goal of shifting towards commercial innovation, the Council focuses on both basic and applied research. However, the effectiveness of the Council could be enhanced even further by, for example, greater business-sector representation.

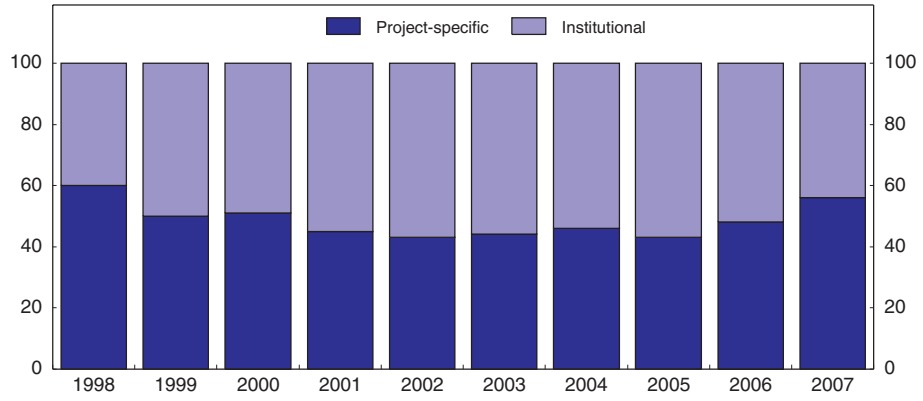
Better co-ordination between Ministries involved in R&D spending and policy is also required. Several ministries play a role in innovation policy. The Ministry of Education,

Youth and Sports (MEYS) and the MIT understandably play significant roles. The former is responsible for research and development while the latter is responsible for supporting SMEs, as well as the development of the innovation infrastructure, such as science and technology parks and business incubators. However, other ministries are also involved in R&D policy including the Ministry of Agriculture and the Ministry for the Environment. Ministerial responsibilities are defined by the Competence Act of 1969 which, despite subsequent amendments, fails to provide strategic focus for innovation policy. There are also problems of overlap between the activities of the Research and Development Council and the MEYS.

Improvements should be made to the way research funds are allocated

The Czech authorities readily acknowledge that there are problems in the way research funds are allocated. Indeed, the government's *Growth Strategy* describes the existing system of public support for R&D as "allow[ing] a number of beneficiaries to produce no more than research papers."[10] The majority of public funding is allocated on an institutional rather than project-specific basis in a split of roughly 60-40% (Figure 5.4). For the key public-sector research institutions, this imbalance is even more pronounced. Only 13% of total public funding to the Academy of Sciences is allocated to specific projects; for the university sector the share of project specific funding is 29%. As a step towards a more contestable funding model, the government should expand project-based funding. The authorities have plans to reverse the division between institutional and grant-based funding to 40-60% by 2010. If achieved, the new split would more closely reflect emerging best practices in other countries. Increasingly, OECD countries opt for more short-term project-based funding, while paring back long term and institution based funding.

Figure 5.4. **Distribution of public R&D expenditure**
Per cent of government R&D expenditure



Source: Government of the Czech Republic (2005a), *Economic Growth Strategy of the Czech Republic* .

Private as well as public research institutions can bid for funding from the Grant Agency, whose role is to help with financing of basic research projects. A number of OECD countries tie the amount of public funding universities and public research institutions can receive to a requirement that research ventures are co-financed with the private sector.

There is a welcome proposal in a recent policy document to adjust the public universities funding system in a similar way.[11]

Ensuring that the financial resources available are directed towards the highest quality research projects also requires adjustments in the evaluation system. Some quantitative performance-indicators for measuring R&D outcomes are already in use, such as the number of graduates, the completion of doctorate training, as well as publication and citation rates. However, the emphasis on traditional indicators of past achievements means that qualification for public funds is almost entirely the domain of established R&D organisations, which discourages recently established research units from making research-grant applications. To rectify this, public support allocation criteria should be modified to give more weight to the research record of the applicant team, rather than of the institution with which the team is affiliated.

A system of periodic Research Assessment Exercises should also be considered. Several OECD countries augment the information they get from measurable outcomes with a subjective quality assessment peer review (Australia, Finland, Denmark, and Iceland). Their experience suggests that this exercise becomes particularly valuable when the assessment panel includes foreign researchers.

The *National Innovation Policy of the Czech Republic for 2005-10* recommends creating a research and innovation support fund following the Hungarian model. Hungary's Innovation Fund, which began operating in 2004, is a novel way of funding R&D projects and other innovation programmes. However, as discussed in the 2005 *Survey* for Hungary, the potential gains of the scheme need to be evaluated against the downsides of increased complication of the business tax environment and additional administrative costs (Box 5.2).[12] In addition, the *Survey* warns against the fact that the Hungarian scheme earmarks revenues from the Fund to R&D spending. This implies less flexibility in public financing and risks non-optimal allocation of funds to R&D. The option of sunset clauses should be considered when designing such programmes.

Box 5.2. **Financing R&D grants: the example of Hungary's Innovation Fund**

Hungary's Innovation Fund is the main source of financing targeted innovation policy. It is financed by a turnover-based tax on businesses (so called Innovation Contribution) and a matching transfer from central government. Only firms with more than 50 employees are required to pay the Contributions (0.3% of firm turnover as of 2006). A key feature of the Fund is that firms can deduct the value of R&D spending from their contribution – the aim being to add further incentives for R&D activity on top of tax allowances, as even firms with no profits are able to write off the Contribution. One downside of the fund is that earmarking revenues for R&D support in this way risks a non-optimal level of support for targeted R&D policy. The additional complication of another "tax" on business also raises questions about the usefulness of the scheme. Whether the scheme has been a positive move rests much on whether it will indeed widen R&D activity. On this front, effective checks are needed to ensure that any reported increase in R&D activity is through a genuine increase in research spending rather than creative accounting.

Recourse to tax breaks is growing

In 2005 a 100% deduction of R&D expenditure from the profit base used to calculate corporate tax was introduced. The deduction can be made on a range of expenses including purchases of capital goods that will be used in research activities, patent and trademark registrations and evaluations of research outcomes by certified companies. Notably, this measure applies only to in-firm R&D, *i.e.* outsourcing of research activities and purchases of intangible research outcomes produced elsewhere (a license, for example) cannot be deducted. Understandably, the deductions do not apply to expenditure related to direct R&D subsidy. Gifts and transfers of real estate assets that will be used for research purposes are tax exempt. Furthermore, preferential lease of publicly owned properties is under consideration. This new measure is intended to boost the development of the innovation infrastructure – the creation of a new technology park, for example.

As the R&D allowance is recent, it is difficult to gauge its effects and therefore whether more, or less, scope for tax support should be considered. Recent OECD work suggests that the effectiveness of R&D tax breaks is mixed. Tax-breaks have the advantage that they provide non-discriminating support for R&D, thus avoiding the difficulties of "picking winners" that is an element of most other R&D support schemes. The experience of various OECD countries suggests that tax incentives are more conducive than direct grants in encouraging research that has commercial applications. On the other hand, they raise risks of duplications between projects, as well as the possibility of substantial deadweight costs. Given these considerations, the authorities should focus on evaluating the impact of the current level of support before deciding on any new changes. Evaluation should in particular include assessing compatibility with fiscal policy objectives.

Direct support schemes for innovative SMEs

Public support for SMEs comes through a range of financial and non-financial schemes, many of which aim to focus support on businesses that are engaged in R&D or are innovative in a broader sense (such as service-sector innovation, for example). In particular, free-interest credits and soft loans are provided to SMEs within the frame of programmes run by the Czech-Moravian Guarantee and Development Bank, with two such programmes being START and KREDIT.[13] Risk managers from the Bank report that guidance from a better certification system would reduce difficulties in assessing the actual innovative content of an investment.

Moreover, in countries such as the Czech Republic where there is a need for the SMEs sector to become better integrated into the supply chain of the multinational sector, direct support programmes for the development of the innovation infrastructure can help. Through its operational arm *CzechInvest*, the MIT runs several such programmes, providing support for technology parks, integrated "clusters" of local firms, business incubators and technology transfer centres.[14] Welcome attention is paid to preliminary project design – *e.g.* search for suitable partners and support to local authorities in the identification of needs and potentialities. For example, the amount of the subsidy provided under the programme KLASTRY (CLUSTER) covers around 75% of total preparatory costs and 50% of project implementation costs – the latter calculated over a period of three years.[15] Experience elsewhere suggests that, in order to help increase the returns on public research spending, technology support schemes for innovative SMEs should be backed by an information system on current and upcoming development projects in regions and municipalities.

As of end-2005, however, the number of approved projects for technology parks, *etc*. still waiting for financing far exceeds the number of projects underway, an indicator of delays and implementation difficulties.[16] This is problematic, particularly given that the opportunities for such projects are set to increase through the larger allocations of the 2007-13 EU budget. As in other areas, success in tapping into the EU funds for R&D depends crucially on having good administrative support.

Regulatory changes to help science industry links

As elsewhere in the OECD, the authorities are trying to encourage more public-private partnerships in innovation.[17] New legislation approved in 2005 makes public research managers responsible for deficits and debts of their institutions and opens-up the possibility for a loss making institution to be dissolved.[18] These changes are welcome because they mean that control by public institutions' managers over the research and innovation investment decisions they make is set to increase. Arguably, they will also be more encouraged to establish research partnerships with the business sector.

While these are useful steps, further improvements are required. More regulatory changes should be considered to improve access and flexibility in doctoral programmes and post-doctoral positions. More performance related pay in public-sector research positions could also be envisaged. On top of strengthening the potential for establishing closer industry-science ties, these measures could also help attract back Czech researchers from abroad. Public-private links should also be improved by raising the importance of joint work with business in evaluating research activities.

There is also room for improving the information and administrative systems regarding intellectual property rights. It is thought that one reason underlying the presently low level of patenting is a lack of understanding on the importance of property rights by researchers; more information and training programmes would be one way of tackling this issue. Some observers report that more regulatory work to simplify the administrative system for patents and copyrights could also be helpful. There is a case for reforming the intellectual property benefits system to give more incentives for researchers and institutions to commercialise their inventions.

A small venture capital market

Access to finance is one of the key constraints for innovative SMEs. The venture capital market is very small – indeed indicators show that the Czech Republic has one of the lowest levels of venture capital investment in international comparison (when measured relative to GDP, Table 5.1). In part, this is because Czech high-risk investment proposals are typically too small for venture capital agents to consider because of high evaluation costs, including investors joining the management team of the companies. The government plans to support both the venture capital market and "business angels" activities through the creation of a "risk capital fund" (KAPITAL). The new scheme is scheduled to be launched at the end of 2006 in the form of a pilot project, after which the fund will be co-financed using European structural funds. This scheme is likely to need fine-tuning, and a good perspective on overall cost-effectiveness needs to be maintained, so impact assessment and monitoring is essential.

Several other factors explain the lack of enthusiasm for entrepreneurial financing by venture capitalists, specifically:

- Cultural factors. Czech entrepreneurs generally feel more accustomed to use banking loans, with the currently low interest rates reinforcing this attitude even further.
- Lack of business skills. Czech innovators are reportedly generally good at conceiving ideas but are often very weak when it comes to selling them. They are notably unable to prepare well defined, and therefore marketable, business plans and this greatly hinders their ability to find financing.
- Restrictive investment and taxation rules. Pension and life insurance funds face a 5% ceiling on the proportion of funds they can invest in unlisted shares. While intended for prudential reasons, this level is quite low in the OECD comparison, even though at present funds do not fully exploit the conceded limit. At the same time, profits accruing to venture capital investors are subject to multiple taxation – respectively, at the level of the enterprise, the venture capital company itself and finally the financial investor level.
- Lack of clear exit strategy. Venture capital investors attach strong importance to exit strategies. Upcoming improvements to bankruptcy legislation should help improve exit strategies for when ventures run into financial problems. However, venture capitalists also sometimes wish to exit when businesses are successful, typically through initial public offerings (IPOs). These are rare in the Czech Republic, for example only one IPO was made in 2005. In part, this reflects an undeveloped stock market, which is very small in relation of GDP. However, it could also be attributable to minority shareholders enjoying a relatively low degree of investment protection in the Czech Republic.[19]

Taken together, these factors exacerbate the low use of venture capital and suggest scope for additional policy action. In particular, avenues for altering investment and tax rules, as well as stock market rules, need to be explored in order to encourage pension funds and "business angel" firms to enter the venture capital industry. As a step in this direction, Parliament is presently examining changes to the regulation on collective investment. Once passed, the new legislation will authorise the creation of new Qualified Investment Funds which will be entitled to operate under less restrictive requirements than retail collective funds thus encouraging innovative investment. However, the discussion above also underscores the need for science and engineering university programmes to include more practical business training courses.

Notes

1. See OECD (2006).
2. See OECD (2001a and 2003a).
3. See Jaumotte and Pain (2005).
4. However, the export share in narrowly defined high tech products still lags behind the OECD average by a large margin.
5. Marin (2006) discusses investment choices in Eastern Europe by, in particular, German and Austrian firms.
6. Again see Jaumotte and Pain (2005).
7. On both accounts the Czech Republic occupies the 14th position of the ranking, out of a total number of 23 countries surveyed by the *OECD SME and entrepreneurship outlook*. See OECD (2004a) and (2005b).

8. Examples of foreign companies having already established (or being in the process of establishing) innovation centres in the Czech Republic are Bosch (electronic components for auto vehicles), Panasonic (digital television screens), Siemens (development of new railway cars, locomotives and trams), Mercedes Benz (design and test of innovative car concepts and the related machineries for production) and Bang and Olufsen (development of audio, video and telecommunication products). For example, between 150 and 200 employees are going to be hired by the new Bosch and Siemens centres, most of which are university graduates.
9. For a wider discussion of R&D public governance issues see OECD (2003b) and OECD (2005b).
10. See Government of the Czech Republic (2005), p. 118.
11. See Ministry of Education, Youth and Sports (2005), p. 18.
12. See for a wider discussion OECD (2005c).
13. According to figures made available by *CzechInvest*, as of December 2005, 513 and 440 START and KREDIT projects, respectively, had been approved, of which 361 and 257 actually funded. Clients periodically submit information about the state of their business to the Czech-Moravian Guarantee and Development Bank.
14. Examples of such programmes are PROSPERITA, KLASTRY, ROZVOJ and INOVACE. As of December 2005, 9 PROSPERITA programmes had been approved, along with 19 KLASTRY, 110 ROZVOY and 59 INOVACE.
15. These figures refer to "eligible costs" only as specified in the programme prospectus. Examples of preparatory "eligible costs" are the costs of searching for suitable companies for clusters, as well as the costs of evaluating the viability of the cluster. Examples of implementation "eligible costs" are the costs of lease and equipment of offices, the costs of acquisition of tangible assets needed to ensure the functioning of the cluster, wage costs and the costs of benchmarking with foreign clusters. "Eligible costs" must be expended in compliance with the programme objectives in order to qualify for the subsidy. See *www.czechinvest.cz/* for details about different programmes.
16. Notably, out of the total number of approved projects belonging to the programme classes PROSPERITA, KLASTRY, ROZVOJ and INOVACE (see above endnote 20), only 26 ROZVOY projects were classified as "paid" by December 2005.
17. See OECD (2005d).
18. The act will be effective from 2007. Any public research institution will be organised around three bodies, director, the board and the supervisory board. The register of public research institutions will be maintained by the Ministry of Education, Youth and Sports.
19. See OECD (2004, p. 68) according to which the Czech Republic is an example where the interest of minority shareholders could enter into direct conflict with that of large shareholders, notably in the context of a group of companies. This could happen when, for example, a controlling company shifts assets away from a dominated company by means of a capital increase to which the subsidiary must subscribe.

Bibliography

Government of the Czech Republic (2005a), *Economic Growth Strategy of the Czech Republic*, Prague.

Government of the Czech Republic (2005b), *National Innovation Policy of the Czech Republic for 2005-10*, Prague, June.

Guellec, D. and B. van Pottelsberghe de la Potterie (2001), "R&D and Productivity Growth: Panel Data Analysis of 16 OECD Countries", *OECD Economic Studies,* No. 33, 2001/II.

Jaumotte, F. and N. Pain (2005), "From Ideas to Development: The Determinants of R&D and Patenting", *Economics Department Working Papers,* No. 457, OECD, Paris.

Marin, D. (2006), "A New International Division of Labour in Europe: Outsourcing and Offshoring to Eastern Europe", *Journal of the European Economic Association*, Papers and Proceedings, 2006, forthcoming.

Ministry of Education, Youth and Sports (2005), *The Long-term Plan for Educational, Scientific, Research, Development, Artistic and Other Creative Activities of Higher Education Institutions for 2006-10*, Prague, August.

OECD (2001a), *The New Economy, Beyond the Hype: The OECD Growth Project*, OECD, Paris.

OECD (2001b), *Science, Technology and Industry Outlook 2001*, OECD, Paris.

OECD (2003a), *The Sources of Economic Growth in OECD Countries*, OECD, Paris.

OECD (2003b), *Governance of Public Research, Towards Better Practices*, OECD, Paris.

OECD (2004a), *OECD Territorial Reviews, Czech Republic*, OECD, Paris.

OECD (2004b), *Corporate Governance, A Survey of OECD Countries*, OECD, Paris.

OECD (2005a), *SME and Entrepreneurship Outlook*, OECD, Paris.

OECD (2005b), *Governance of Innovation Systems*, OECD, Paris.

OECD (2005c), *OECD Economic Surveys: Hungary*, OECD, Paris.

OECD (2005d), *Public-private Partnerships for Innovation*, DSTI/STP/TIP(2005)8, OECD, Paris.

OECD (2006), *Going for Growth*, OECD, Paris.

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Glossary

CKA	Czech Consolidation Agency
CNB	Czech National Bank
CSSD	Czech Social Democratic Party
DB	Defined-benefit
DC	Defined contribution
DSL	Digital Subscriber Lines
ERM II	Exchange Rate Mechanism II
ESA95	European Standard Accounts
FDI	Foreign domestic investment
GDP	Gross domestic product
GHGs	Greenhouse gases
ICT	Information and communication technology
IPOs	Initial public offerings
KDU-CSL	Christian Democratic Union – Czech People's Party
KSCM	Communist Party of Bohemia and Moravia
MEYS	Ministry of Education, Youth and Sports
MIT	Ministry of Industry and Trade
MLSA	Ministry of Labour and Social Affairs
MTEF	Medium Term Expenditure Framework
NUTS2	Nomenclature des Units Territoriales Statistiques
ODS	Civic Democratic Party
PAYG	Pay-as-you-go
PISA	Programme for International Student Assessment
PPP	Public-private sector partnerships
R&D	Research and development
SFDI	State transportation fund
SFRB	State housing fund
SME	Small and medium-sized enterprise
SZIF	State agriculture intervention fund
US-DEU	Freedom Union – Democratic Union Party
VOCs	Volatile organic compounds

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