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CZECH REPUBLIC

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

The economic situation and policies of the Czech Republic were reviewed by the Committee on 28 April 2016. 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 13 May 2016.

The Secretariat's draft report was prepared for the Committee by Falilou Fall and Christine Lewis under the supervision of Mr. Andreas Wörgötter. The draft has benefitted from valuable background research by Martin Hronza and Zdenek Pikhart, seconded from the Ministry of Industry and Trade and Ministry of Finance respectively. Research assistance was provided by Corinne Chanteloup and Béatrice Guerard. Heloise Wickramanayake formatted and produced the layout. The previous Survey of the Czech Republic was issued in March 2014.

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BASIC STATISTICS OF CZECH REPUBLIC, 2015

(Numbers in parentheses refer to the OECD average)*

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	10.5		Population density per km²	133.5	(35.1)
Under 15 (%)	15.2	(18.0)	Life expectancy (years, 2013)	78.3	(80.4)
Over 65 (%)	18.1	(16.3)	Men	75.2	(77.8)
Foreign-born (%, 2011)	7.1		Women	81.3	(83.0)
Latest 5-year average growth (%)	0.03	(0.60)	Latest general election	October	2013
ECONOMY					
Gross domestic product (GDP)			Value added shares (%, 2014)		
In current prices (billion USD)	182.0		Primary sector	2.7	(2.5)
In current prices (billion CZK)	4 475.8		Industry including construction	38.0	(26.4)
Latest 5-year average real growth (%)	1.4	(1.7)	Services	59.3	(71.1)
Per capita (000 USD PPP)	33.7	(40.4)			
GENERAL GOVERNMENT Per cent of GDP					
Expenditure[a]	42.6	(42.3)	Gross financial debt (2014)	57.5	(118.7)
Revenue[a]	42.1	(38.5)	Net financial debt (2014)	20.4	(76.0)
EXTERNAL ACCOUNTS					
Exchange rate (CZK per USD)	24.6		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	12.6		Machinery and transport equipment	55.7	
In per cent of GDP			Manufactured goods	15.9	
Exports of goods and services	84.6	(54.1)	Miscellaneous manufactured articles	12.1	
Imports of goods and services	78.2	(49.6)	Main imports (% of total merchandise imports)		
Current account balance	0.9	(0.07)	Machinery and transport equipment	45.4	
Net international investment position (2014)	-32.4		Manufactured goods	17.3	
			Chemicals and related products, n.e.s.	11.3	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate for 15-64 year-olds (%)	70.2	(66.2)	Unemployment rate, Labour Force Survey (age 15 and over) (%)	5.0	(6.8)
Men	77.9	(74.1)	Youth (age 15-24, %)	12.6	(13.9)
Women	62.4	(58.5)	Long-term unemployed (1 year and over, %, 2014)	2.7	(2.5)
Participation rate for 15-64 year-olds (%, 2014)	73.5	(71.2)	Tertiary educational attainment 25-64 year-olds (%, 2014)	21.5	(33.5)
Average hours worked per year (2014)	1 776	(1 770)	Gross domestic expenditure on R&D (% of GDP, 2014)	2.0	(2.4)
ENVIRONMENT					
Total primary energy supply per capita (toe, 2014)	3.9	(4.1)	CO_2 emissions from fuel combustion per capita (tonnes, 2013)	9.6	(9.6)
Renewables (%)	8.5	(9.1)	Water abstractions per capita (1 000 m^3, 2014)	0.2	
Fine particulate matter concentration (PM2.5, µg/m^3, 2013)	16.6	(13.8)	Municipal waste per capita (tonnes, 2014)	0.3	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2012)	0.256	(0.308)	Education outcomes (PISA score, 2012)		
Relative poverty rate (%, 2012)	5.3	(10.9)	Reading	493	(496)
Median disposable household income (000 USD PPP, 2012)	15.1	(22.1)	Mathematics	499	(494)
Public and private spending (% of GDP)			Science	508	(501)
Health care (2013)	7.1	(8.9)	Share of women in parliament (%, February 2016)	19.6	(27.8)
Pensions (2011)	9.6	(8.7)	Net official development assistance (% of GNI)	0.12	(0.39)
Education (primary, secondary, post sec. non tertiary, 2012)	2.8	(3.7)			

Better life index *www.oecdbetterlifeindex.org*

* Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 29 member countries.

a) 2014 for the OECD aggregate.

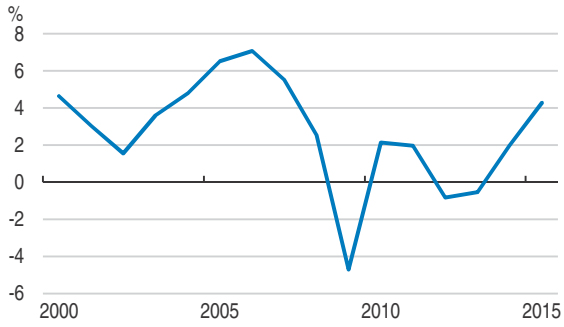
Source: Calculations based on data extracted from the databases of the following organisations: OECD, International Energy Agency, World Bank, International Monetary Fund and Inter-Parliamentary Union.

Executive summary

- *Growth has picked up temporarily*
- *Strengthening innovation policies and market regulations to bolster productivity*
- *Improving the effectiveness of the public sector*

Growth has picked up temporarily

Real GDP growth



Source: OECD Economic Outlook database.

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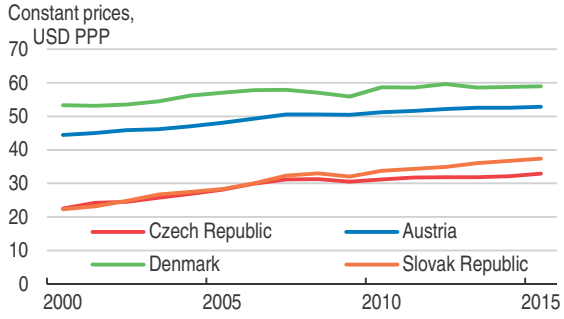
Growth picked up strongly in 2015 thanks to a combination of temporary effects, mostly absorption of expiring EU funds and low commodity prices, but the recovery since the global crisis has been uneven, mainly because of volatile investment. Monetary policy continues to provide economic support, and the unconventional exchange rate floor appears to have achieved its purpose. Indeed, inflation is projected to return to the target of 2% in the course of 2017, mainly driven by wage increases thanks to a strong labour market. The fiscal position is good but ageing-related spending will increase, calling for long-lasting reforms, in particular of the pension system. The Czech Republic scores well on indicators of inequality and rates of poverty are very low, although important gender equity issues need continued attention.

Strengthening innovation policies and market regulations to bolster productivity

Convergence in labour productivity has stalled

GDP per hour worked



Source: OECD Productivity database; OECD calculations.

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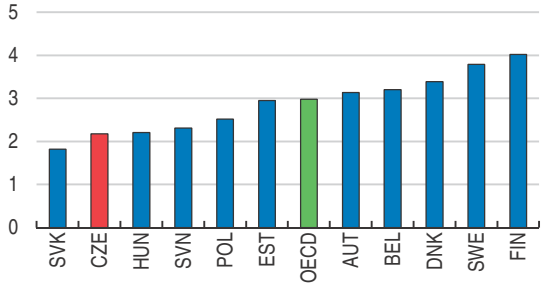
Convergence of incomes and living standards towards the OECD average has stalled since the crisis, reflecting weak productivity growth. With the largest gains from foreign investment and the opening of the economy having been realised, productivity growth needs to stem from more competitive domestic markets, greater mobility and stronger management capacity. The expansion of successful firms and the exit of unproductive ones appear to be hindered by low mobility and cumbersome bankruptcy rules. Access to finance is reported to be difficult for SMEs. Better targeting of government R&D support and more focused innovation policies will lift Czech firms' competitiveness and productivity.

Improving the effectiveness of the public sector

Public administration performance indicator

Covering regulation, wastage and justice



Source: Dutu and Sicari (2016).

StatLink http://dx.doi.org/10.1787/888933364876

Spending on public administration is relatively low and so are indicators of its performance. Insufficient monitoring and transparency resulted in inefficient public procurement and investment. More co-ordination and oversight, better planning and evaluation, and greater focus on measuring and publishing outcomes and results will raise the effectiveness of public spending. The high share of small municipalities makes provision of high quality public services difficult. Benchmarking of service providers should become standard and joint provision of services should be increased.

MAIN FINDINGS	KEY RECOMMENDATIONS
Monetary and fiscal policies	
The threat of deflation appears to be falling.	Exit the exchange rate floor when deflation risk recedes.
The fiscal stance is adequate and fiscal outlook is sustainable subject to population-ageing related reform implementation.	Implement the new fiscal framework and the fiscal council.
Fostering productivity	
Business R&D spending is low relative to other OECD countries.	Develop government co-financing schemes to complement grants and increase fiscal incentives for business R&D spending.
Organisation and administration of R&D and innovation policies are too complex.	Step up efforts to unify the design, assessment and coordination of research and development and innovation policies in a single institution. Specifically, research institutions should be under the responsibility of the same institution.
Exit and entry barriers in markets are still high, especially for SMEs.	Limit the possibilities to delay bankruptcy procedures and eventually allow for the write-off of debts.
Access to finance for SMEs, in particular for start-ups, is difficult.	Accelerate the creation of funds and guarantee programmes to support SMEs and innovation.
The tax system is not neutral with respect to the size of firms.	Reconsider the appropriateness of tax advantages and reduced social security contributions for the self-employed. Align social security coverage of the self-employed with that of employees.
Promoting a more effective public sector	
Too much public procurement spending is wasted.	Further improve tools and rules to increase use of joint procurement by public entities. Increase auditing throughout the process.
Choices of public investment projects lack coordination across different parts of the government and between levels of government.	Designate responsibility for the coordination and prioritisation of investments on the basis of the highest social return. Evaluate investment needs in a standardised way across sectors.
Insufficient information is available about policy outcomes, making broad priorities like gender equity or environmental sustainability more difficult to achieve.	Use and publish standardised performance indicators for publicly funded activities at all levels of government.
The system of territorial administration fragments capacity and hampers delivery of high quality public services.	Establish framework conditions which help municipalities to reap the benefits from joint service provision, while building support for mergers. Reduce the share of grants and transfers that are earmarked and ensure adequate service standards are maintained by monitoring performance.

Assessment and recommendations

- *Turning to long-term challenges while the economy is growing*
- *Structural challenges*
- *Fostering productivity for better living standards*
- *Enhancing the effectiveness of the public sector*

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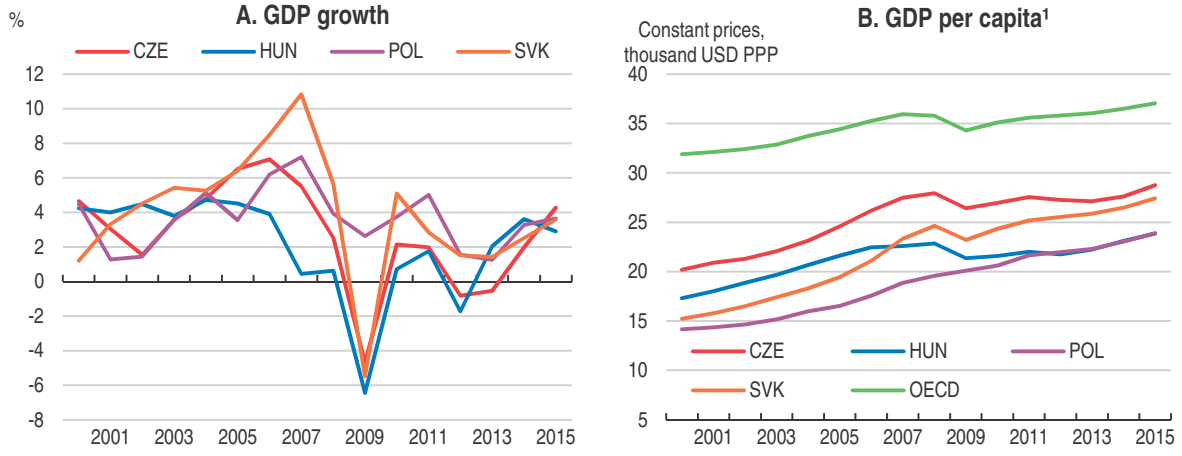
Turning to long-term challenges while the economy is growing

Key challenges for stronger and inclusive growth

During twenty years of OECD membership the Czech Republic successfully adopted many best practice policies. Since the early 1990s growth has been strong, though volatile, driven by opening markets, inflows of foreign investment supported by a competitive industrial base, a favourable geographical location and good initial conditions. Until the mid-2000s income per head also grew relatively strongly, catching up toward the OECD average (Figure 1). However, in the aftermath of the crisis, growth almost stopped, mainly reflecting a decline in productivity growth. Growth picked up sharply in 2015 although to a considerable extent it was on account of one-off factors, in particular exceptionally high public investment.

Figure 1. **Growth has picked up**



1. 2015 data for the Czech Republic and Poland are estimates.

Source: OECD Economic Outlook database; OECD Productivity database; OECD National Accounts database; and OECD calculations.

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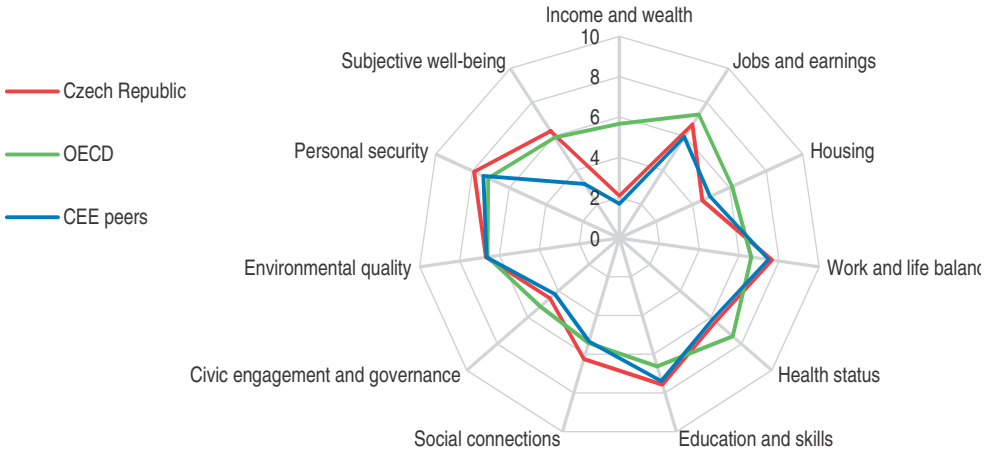
The Czech Republic is doing very well in terms of many aspects of well-being. It scores higher than the average OECD country in indicators of overall personal security, work-life balance, social connections, and education and skills. The income dimension is where the Czech Republic lags the most behind the average OECD country (Figure 2, Table 1). Improvements are also needed in civic engagement and governance, housing and health.

The Czech Republic is among the best performers in terms of inequality and poverty risks across OECD countries. Overall, inequality and poverty have stayed remarkably low in the past 15 years, even through the crisis. Inequality levels are fairly comparable among Czech regions, whereas poverty rates are high in the Northwest and Moravia-Silesia regions (but still below the OECD average) (Figure 3). These regional differences indicate where more initiatives to combat poverty are needed.

Figure 2. **Measures of well-being**

Better life index[1], index scale 0 (worst) to 10 (best)



1. For each dimension indicators are normalised according to the following formula: (indicator value - minimum) / (maximum - minimum) x 10 and averaged. The OECD aggregate is population-weighted. CEE peers are Estonia, Hungary, Poland, the Slovak Republic and Slovenia. Note that the OECD does not officially rank countries in terms of their BLI performance.

Source: OECD (2016), OECD Better Life Index, *www.oecdbetterlifeindex.org*.

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Table 1. **Indicators of well-being relative to other OECD countries**

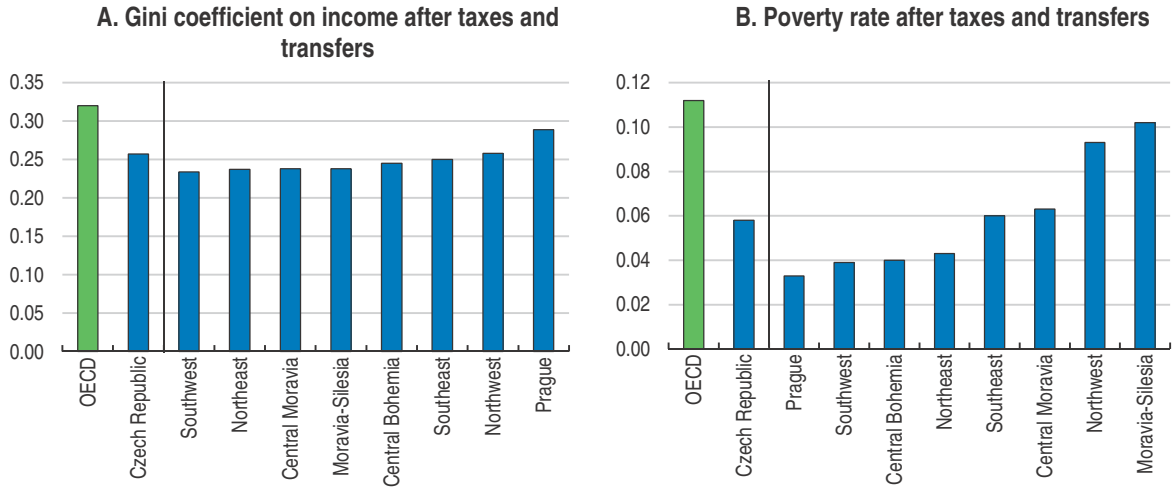
Ranked in top third ♦, ranked in middle third Δ, ranked in lowest third ●

Category	Indicator	Relative performance
Housing	Dwellings without basic facilities	Δ
	Housing expenditure as a share of household income	●
	Rooms per person	●
Income	Household net adjusted disposable income	●
	Household net financial wealth	●
Jobs and earnings	Employment rate	Δ
	Labour market insecurity	Δ
	Long-term unemployment rate	Δ
	Personal earnings	●
Social connections	Quality of support network	Δ
Education and skills	Educational attainment	♦
	Student skills	Δ
	Years in education	Δ
Environmental quality	Air pollution	●
	Water quality	Δ
Civic engagement	Stakeholder engagement for developing regulations	♦
	Voter turnout	●
Health status	Life expectancy	●
	Self-reported health	●
Subjective well-being	Life satisfaction	Δ
Personal security	Feeling safe walking alone at night	Δ
	Homicide rate	Δ
Work and life balance	Employees working very long hours	Δ
	Time devoted to leisure and personal care	Δ

Source: OECD (2016), OECD Better Life Index, *www.oecdbetterlifeindex.org*.

Figure 3. **Inequality and poverty are relatively low but vary across regions**

Ratio, 2010



Note: The Gini coefficient is zero if everyone has the same income and is one if a single person has all the income. The poverty rate shows the share of the population with an income of less than 50% of the respective national median income. Income is after taxes and transfers, adjusted for differences in household size.

Source: OECD Regional Well-Being database *http://dotstat.oecd.org/Index.aspx?DataSetCode=*RWB and OECD Income Distribution database.

StatLink *http://dx.doi.org/10.1787/888933364283*

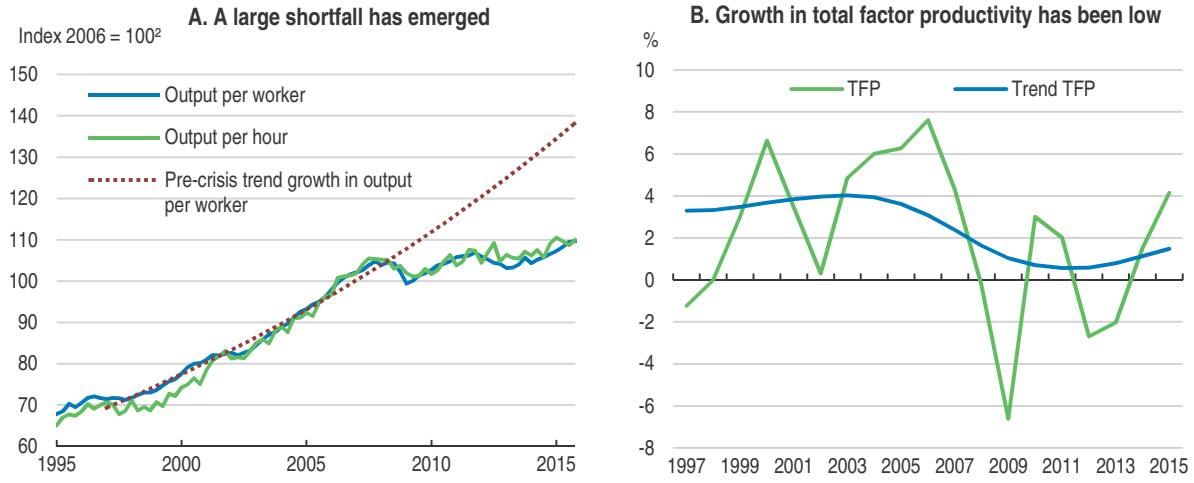
The Czech Government has established a unit in the Office of the Government to co-ordinate plans for implementing and monitoring the Sustainable Development Goals (SDGs) – 17 goals for high and low income countries that are part of the global 2030 Agenda. While the Czech Republic is relatively well placed regarding the goal of ending poverty, there appear to be larger challenges relating to energy efficiency and combatting climate change (OECD 2015a, 2011a). This reflects the energy-intensive economy, high emissions of greenhouse gases and high exposure to particulate matter. Decisive policies should be designed to reverse trends and change behaviours. More progress is also needed to achieve effective and accountable institutions, as perceptions of corruption are still high. There is the need for a political push to fight corruption where it exists and to demonstrate to people that public services are run under fair rules.

The most promising mechanisms for increasing inclusive growth and well-being in the Czech Republic are to revive productivity growth and improve delivery of public services. As in many other OECD countries, since the crisis there has been a clear shortfall in productivity that has impeded strong growth (Figure 4). While part of the shortfall has a cyclical component, to a significant extent the decrease of the productivity growth rate appears to be of a structural nature.

To sustain further improvements in living conditions, the Czech Republic will need to move up the value chain and improve the skills of its workforce in order to pay higher wages. This will require deeper investment in the development of domestically-driven productivity growth. The key messages of this *Economic Survey* are:

- The macroeconomic situation is good. Overall, the fiscal position is satisfactory and monetary policy has supported the economic recovery. In the medium-term a pension reform is necessary to avoid that ageing-related spending will become an unsustainable burden for public finances if low replacement rates turn out not to be politically acceptable.

Figure 4. **Labour productivity has disappointed since the crisis**[1]



1. Output refers to real gross value added.
2. Pre-crisis trend growth in output per worker is calculated from a linear trend between 1997 and 2006, and is projected from 2007Q1 onwards.

Source: Calculations based on data from OECD Economic Outlook database.

StatLink http://dx.doi.org/10.1787/888933364296

- The economy is recovering but productivity growth has decelerated markedly since the crisis. This calls for adjustments in government innovation and R&D policies and strengthening the framework conditions to make them more productivity friendly.
- Public sector efficiency suffers from insufficient monitoring and evaluation of policies and their outcomes, as well as the fragmented organisation of sub-national government. Better co-ordination, planning, monitoring and evaluation are needed at all levels of government to improve the effectiveness of the public sector.

The economic outlook is positive

Economic growth was exceptionally strong in 2015, reaching 4.3% (Table 2). Growth was mainly driven by domestic demand underpinned by absorption of expiring EU funds and low commodity prices (Figure 5, Panel A). Household consumption was supported by income growth and a declining savings rate accompanied by a surge in credit (Figure 5, Panel B). The declining savings rate has followed rising household confidence (Figure 5, Panel E). Investment has risen, in particular public investment, which was boosted by the use of expiring EU funds. But this will decline in 2016 as the drawing from the new cycle of EU funding gradually begins. Industry was boosted by a rebound in the automotive sector, which benefited from both demand from abroad and domestic orders. Exports grew solidly in 2015, helped by strengthening demand from trading partners.

The unemployment rate has decreased steadily since 2013 and is now below the OECD estimate of full employment (Figure 5, Panel D). Robust job creation pushed up wages by around 4% in 2015, contributing to growth in household consumption and leading to the beginning of underlying inflation pressures, as evidenced by core inflation (CPI excluding food and energy) rising to 1.9% recently (Figure 6, Panel B). Headline inflation has remained low however, reflecting the very large decline in world oil prices and falls in food prices.

Economic growth is projected to slow in 2016 due to falling public investment, largely reflecting lower disbursement of EU structural funds in the transition to the new funding

Table 2. **Macroeconomic indicators and projections**

Annual percentage change, volume (2010 prices)

	2012 Current prices (billion CZK)	2013	2014	2015	2016 (projected)	2017 (projected)
GDP[1]	4 042	-0.5	1.9	4.3	2.4	2.6
Private consumption	1 998	0.7	1.4	2.8	3.3	2.8
Government consumption	783	2.3	1.8	2.8	2.3	2.0
Gross fixed capital formation	1 052	-2.8	2.0	7.4	0.0	3.2
Housing	149	-7.8	3.6	6.6	2.3	3.4
Final domestic demand	3 833	0.1	1.7	4.0	2.2	2.8
Stockbuilding[2]	9	-0.6	0.6	0.7	-0.5	0.0
Total domestic demand	3 842	-0.5	2.3	4.8	1.6	2.7
Exports of goods and services	3 097	0.0	8.8	7.2	5.5	5.7
Imports of goods and services	2 897	0.1	9.8	8.1	4.9	6.2
Net exports[2]	200	0.0	-0.2	-0.2	0.8	0.1
Other indicators (growth rates, unless specified)						
Potential GDP	. .	1.3	1.5	1.8	1.8	1.8
Output gap[3]	. .	-3.7	-3.3	-0.9	-0.4	0.4
Employment	. .	1.0	0.7	1.4	0.6	0.4
Unemployment rate	. .	6.9	6.1	5.0	4.4	4.2
GDP deflator	. .	1.4	2.5	0.7	0.8	1.3
Consumer price index	. .	1.4	0.4	0.3	0.5	1.8
Core consumer prices	. .	0.8	0.4	1.4	1.6	1.9
Household saving ratio, net[4]	. .	5.5	5.7	5.1	4.9	4.8
Current account balance[5]	. .	-0.5	0.2	0.9	1.4	1.0
General government fiscal balance[5]	. .	-1.3	-1.9	-0.4	-0.5	-0.4
Gross government debt (Maastricht definition)[5]		45.1	42.7	41.0	41.0	40.6
Three-month money market rate, average	. .	0.5	0.4	0.3	0.3	0.3
Ten-year government bond yield, average	. .	2.1	1.6	0.6	0.5	0.5

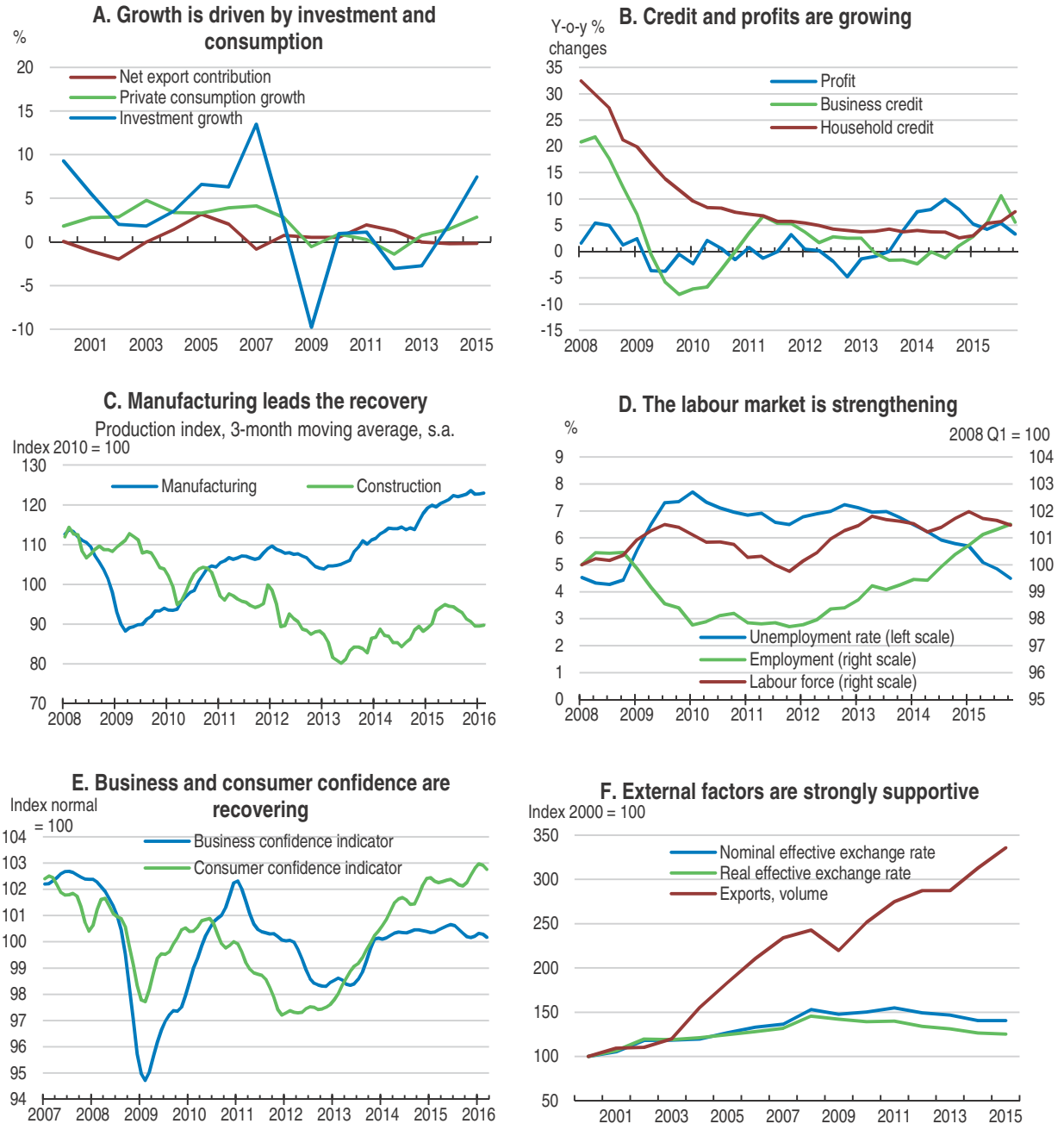
1. Working day-adjusted.
2. Contributions to changes in real GDP, actual amount in the first column.
3. As a percentage of potential GDP.
4. As a percentage of household disposable income.
5. As a percentage of GDP.

Source: OECD (2016), OECD Economic Outlook: Statistics and Projections database, June.

cycle. However, even at 2.4%, growth will be above its estimated potential. Wages and employment will keep household incomes, and therefore consumption, growing at a strong pace. Private investment is also projected to increase thanks to favourable credit conditions, growth in profits and better external demand conditions. As the effects of lower oil prices fade and the strengthening of employment and wages in 2015 continues in 2016 and 2017, inflation is projected to be around the central bank's 2% target in the course of 2017.

Risks stem mainly from external factors given the economy's integration in global value chains. Reductions in the degree of European integration, a disappointing growth recovery in Europe or the transmission of slower growth in big emerging economies would hit exports and investment. On the upside, swifter implementation of structural reforms in big European countries could strengthen confidence and improve the business climate. A stronger pick-up in wage growth or a lower savings rate would result in higher consumption growth. Faster take-up of EU funds would boost public investment. But there are vulnerabilities from the external environment, in particular from developments in Europe (Table 3).

Figure 5. **Czech economic developments**



Source: OECD Economic Outlook database; Czech National Bank; OECD Quarterly National Accounts database; OECD Main Economic Indicators database.

StatLink http://dx.doi.org/10.1787/888933364309

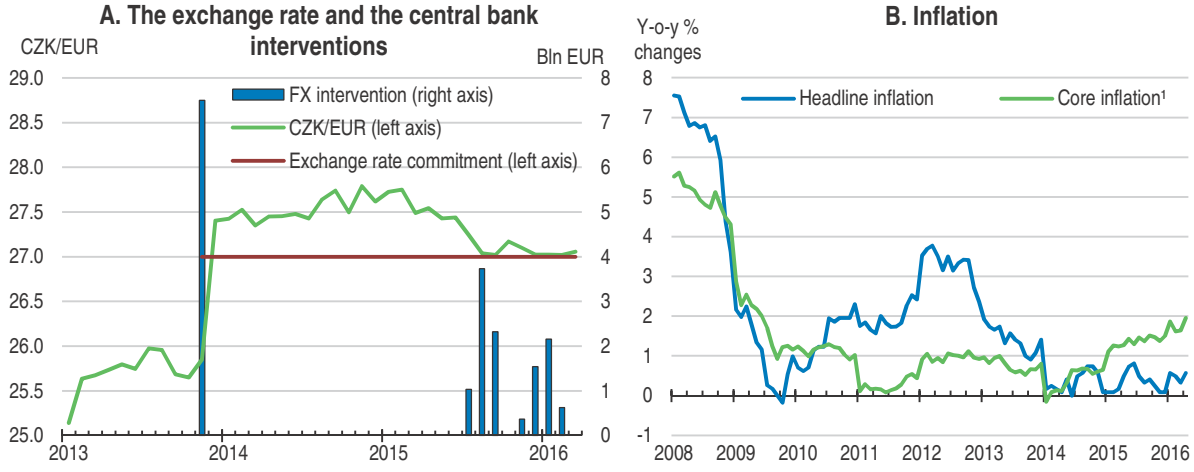
Table 3. **Potential vulnerabilities of the Czech economy**

Shock	Possible impact
Limits on the free movement of goods and labour in the European Union	The Czech economy is landlocked in the Schengen area and very integrated into European value chains and would be struck by major changes affecting the flow of goods and labour across Europe.
Geopolitical tensions in and around Europe, including an aggravation of tensions in the Middle East	A downturn in activity in Europe could jeopardise the economic development of the Czech Republic.

Monetary policy

As the Czech economy slowly recovered from the global crisis, it was characterised by low growth, low inflation, and fears of real exchange rate appreciation. As in many countries and in the euro area, the Czech National Bank (CNB) has pursued extremely accommodative monetary policy. Since end 2012, the monetary policy rate was at the "technical zero" level. Confronted with a persistent deflationary risk, in November 2013 the CNB announced that it would use the exchange rate as a further policy instrument within its inflation-targeting strategy. In particular, the CNB announced, that it would (if necessary) intervene in the foreign exchange market, as much as necessary, to maintain the koruna above a floor set at CZK 27 to the euro (Franta et al., 2014; Alichi et al., 2015). This floor prevented an appreciation that could have pushed inflation negative (Figure 6). After the introduction of the floor, the CNB did not have to intervene until July 2015. Since then, foreign reserves have been accumulated, up to 38% of GDP. The CNB has confirmed its commitment to the inflation-targeting framework and a floating exchange rate and has postponed abolishing the floor several times in line with revisions of its inflation forecast. Recently, it has announced the floor will not be abandoned before the start of 2017 and considers it likely that the commitment will be discontinued in mid-2017.

Figure 6. **Foreign exchange market and inflation**



1. CPI excluding food and energy.

Source: Czech National Bank; OECD Main Economic Indicators database and OECD Economic Outlook database.

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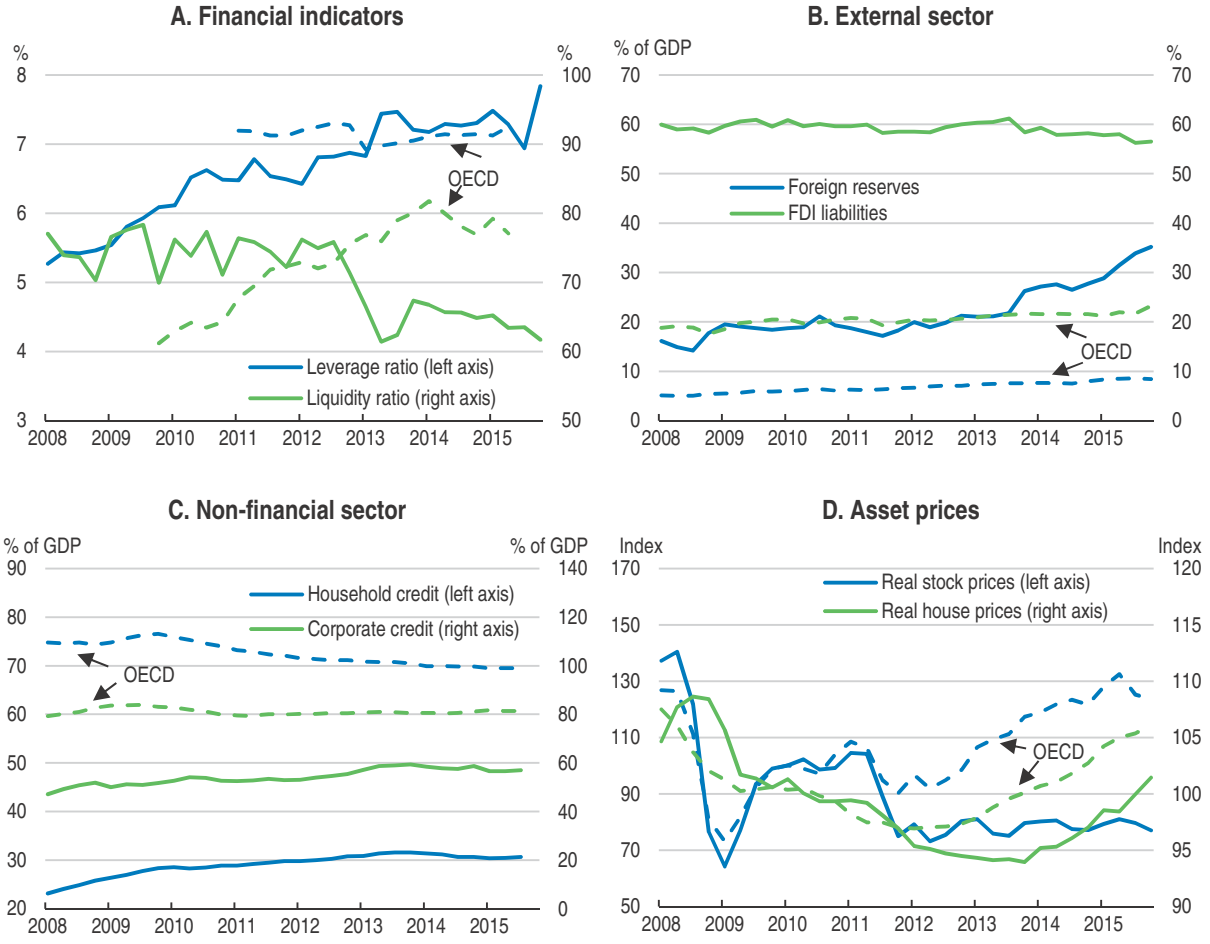
Exiting the floor will have to be done with care, but exit must take place eventually because the floor will become incompatible with the inflation-targeting framework, and may require large and costly foreign exchange interventions to maintain for longer than necessary. Some intervention was needed in late 2015 and early 2016. Inflation is now being held down by the drop in energy prices, and is therefore expected to rise; core inflation, which excludes energy and food, is already near 2%. As the threat of deflation recedes, the CNB should therefore exit the floor according to its plans. This may be accompanied by an appreciation of the exchange rate, which may depress activity, but the CNB has repeatedly communicated its readiness to moderate any abrupt exchange rate swings after the exit. If necessary, there is also room to use expansionary fiscal policy to support activity (see below). Fiscal policy is projected to be slightly expansionary in the

next two years. Rebalancing the policy mix away from a very expansionary monetary stance could accelerate the structural consequences of a convergence towards a services-based economy as this policy mix will possibly result in a temporary loss of competitiveness. This underlines the importance of innovation- and entrepreneurship-friendly structural reforms, as well as the need for productivity-enhancing improvement of the co-operation between business and science. The effectiveness of this policy mix would also be improved by structural reforms which increase the supply elasticity of the part of the economy which produces for domestic use.

Financial vulnerabilities appear relatively low, with a well-capitalised banking sector and comparatively low levels of private sector indebtedness (Figure 7). FDI liabilities are a large share of external liabilities relative to the average OECD country and have been stable.

Figure 7. **Indicators of potential macro-financial vulnerabilities**



Note: In each panel the dashed line is the weighted average of OECD countries with available data using nominal GDP at PPP rates. Leverage ratio is regulatory Tier 1 capital to total (unweighted) assets. Liquidity ratio is liquid assets to short-term liabilities. FDI liabilities are direct investment liabilities, not seasonally adjusted, in per cent of total external liabilities. Real stock prices are the broad share index deflated by the consumer price index with 2010=100. Real house prices are deflated using the private consumption deflator from the national account statistics with 2010=100.

Source: Röhn, O., A. Caldera Sánchez, M. Hermansen and M. Rasmussen (2015), "Economic Resilience: A New Set of Vulnerability Indicators for OECD Countries", *OECD Economics Department Working Papers*, No. 1249, OECD Publishing, Paris; OECD Housing Prices database; OECD Monthly Economic Indicators database; BIS; IMF International Financial Statistics; IMF Financial Soundness Indicators.

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One emerging risk is the increase in private-sector credit during 2015, supported by falling lending margins and easing credit standards. In turn, this contributed to a pick-up in housing price growth. However, the increase in both credit and house prices is less stark when taking into account growth in GDP and household incomes. In 2015 the CNB deployed macro-prudential instruments to reduce the risks to the banking sector, including recommendations to contain loan-to-valuation ratios on loans against residential property, and announced the introduction of a countercyclical capital buffer from 2017. Consideration should be given to further tightening maximum loan-to-valuation ratios to avoid excessive lending and also increasing bank surveillance to ensure that property valuations remain prudent.

Fiscal sustainability

In the last two years the stance of fiscal policy (not related to EU funds) has moved from being slightly expansionary to being slightly restrictive (Table 4). However, public investment, propelled by EU funds, has contributed to the rebound in growth (see Chapter 2) making the overall fiscal impulse (including EU-financed investment) clearly expansionary in 2014 and especially in 2015. Gross public debt has stabilised at a low level relative to most EU countries. Given the expected decrease in public investment due to lower use of EU funds, somewhat more expansionary fiscal policy in 2016 would smooth the investment profile and GDP growth.

Table 4. **Fiscal indicators**

Per cent of GDP

	2013	2014	2015	2016[1]	2017[1]
Spending and revenue					
Total revenue	41.6	40.8	42.2	40.9	41.0
Total expenditure	42.8	42.8	42.6	41.4	41.3
Net interest payments	1.1	1.1	0.9	0.8	0.7
Budget balance					
Fiscal balance	-1.3	-1.9	-0.4	-0.5	-0.4
Cyclically adjusted fiscal balance[2]	0.4	-0.5	0.0	-0.3	-0.5
Underlying fiscal balance[2]	0.1	-0.4	0.2	-0.3	-0.5
Underlying primary fiscal balance[2]	1.2	0.6	1.1	0.5	0.1
Public debt					
Gross debt	58.4	57.6	55.8[1]	55.8	55.4
Gross debt (Maastricht definition)	45.1	42.7	41.0	41.0	40.6
Net debt	18.2	20.4	19.8[1]	19.7	19.3

1. Projection
2. As a percentage of potential GDP

Source: OECD (2016), OECD Economic Outlook: Statistics and Projections database, June

Building a fiscal framework to reinforce the sort of prudent fiscal behaviour that has characterised the Czech Republic in the past would help to cement medium-term fiscal sustainability. The Government has sent to parliament a proposal to strengthen the fiscal framework, which aims at implementing the EU directive on sound budgetary frameworks (Table 5). The framework includes a spending rule derived from the structural budget balance rule (Table 5). Such a rule depends on ex-ante estimation of the structural balance, that is, the fiscal balance adjusted for the cyclical position of the economy and one-off measures. The framework also includes a fiscal council, which can provide transparent

Table 5. **Key features of the proposed fiscal framework**

Instrument	Description
Central government spending rule	Expenditure ceilings in cash terms will be primarily derived from the need to achieve a structural deficit of not more than 1% of GDP and to prevent the general government deficit from exceeding 3% of GDP in normal times. It requires estimating government structural revenues plus one percentage point of the nominal GDP forecast with adjustments including a correction for previous outcomes. To allow some flexibility, escape clauses are included; e.g. following a large recession or natural disaster.
Central government debt rule	The first debt limit is 55% of GDP. At this point, the government must submit a draft of the next budget leading to long-term sustainable public finances to the Chamber of Deputies and local governments and other public institutions will face constraints. The second debt limit is the European debt threshold of 60% of GDP. Above this point, the government must propose measures that guarantee that the part of the debt level above the 60% threshold decreases by 5%.
Local government debt rule	Local government debt must not exceed 60% of the last four years' average revenue. If this is crossed, the local government must reduce the part above the threshold by 5% per year. If not, the equivalent amount is "saved" from the revenue transfers from central government
Independent fiscal institution	The National Budgetary Council will be created and made responsible for monitoring the development of general government finances and compliance with fiscal rules, including producing an annual report on each.
Public finance transparency	Fiscal data (including sub-sectors of general government) are already published on the website of the Ministry of Finance. Medium-term budgeting has been strengthened by making the budget draft and medium-term outlook publicly available.

Source: Ministry of Finance (2015), *Fiscal Outlook of the Czech Republic*, November 2015.

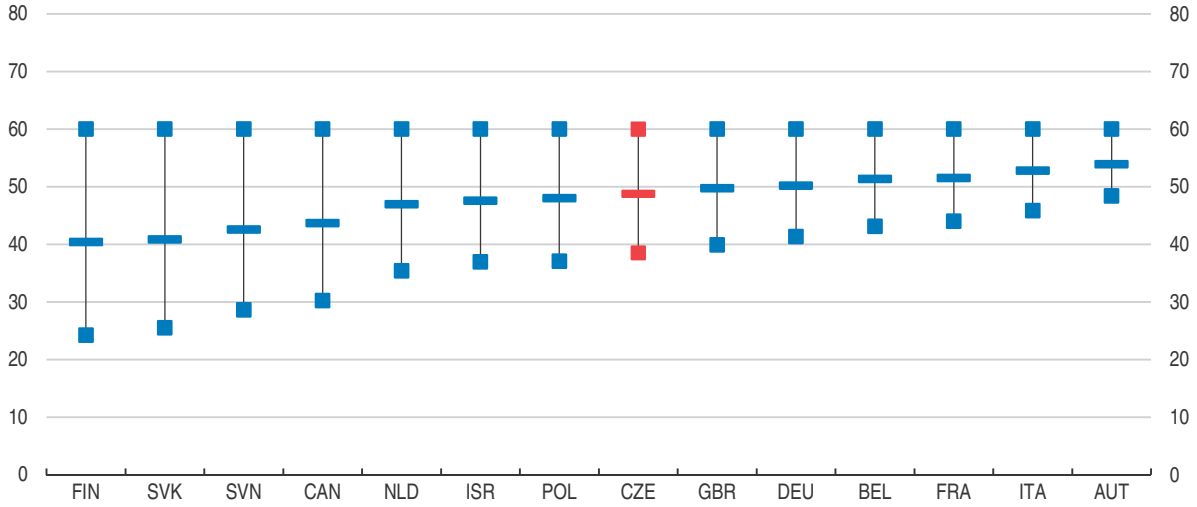
and independent assessment of the fiscal position. Swift implementation of the framework is important.

However, structural balance rules have important drawbacks when used for policy making because it is difficult to estimate output gaps and therefore structural balances in real time (Fall et al., 2015). By contrast, an expenditure rule can be decisive by limiting over-spending in cyclical upswings. As most of the automatic stabilisers are on the revenue side, such a rule does not imply pro-cyclicality. If after some experience the structural budget balance rule proves too difficult to implement, the authorities should consider modifying it.

The fiscal framework also has a debt ceiling of 60% of GDP. Simulations taking into account shocks on macroeconomic variables show that the risk of uncontrolled debt dynamics is limited if debt stays below 60% of GDP (Fall et al., 2015). A debt target should be set to maintain a low level of public debt and reduce the risk of going beyond the debt ceiling of 60% of GDP, even in a severe shock. Some other small open economies target much lower levels of debt; for example, Australia aims at maintaining the debt level between 20 and 30% of GDP, the Slovak Republic's debt brake rule starts at 50% of GDP and Poland's brake rule is at 43% of GDP. Simulations based on a country's past shocks can indicate the size of the cushion that is needed between the debt ceiling and the debt target to reduce the risk of exceeding the debt ceiling in the event of an adverse shock. In the case of the Czech Republic, taking into account a distribution of shocks similar to history, on average a debt target 10 percentage points below the 60% of GDP debt ceiling provides enough cushion (Figure 8; Fall and Fournier, 2015).

Figure 8. **Debt dynamics taking into account macroeconomic shocks**

Prudent debt levels under unchanged fiscal behaviour to minimize the risk of hitting a 60% of GDP debt threshold, 2030, per cent of GDP[1, 2, 3]



1. The thick horizontal lines show the median debt level and extreme values are the 25th and the 75th percentiles.
2. The modelling is done using the OECD debt measure which is 13.2 percentage points higher than the Maastricht measure for the Czech Republic in 2013.
3. For countries with a high initial debt level, the simulation induces a strong consolidation path.

Source: Fall, F. and J-M. Fournier (2015), "Macroeconomic Uncertainties, Prudent Debt Targets and Fiscal Rules", *OECD Economics Department Working Papers*, No. 1230, OECD Publishing, Paris.

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Reforming tax collection and VAT

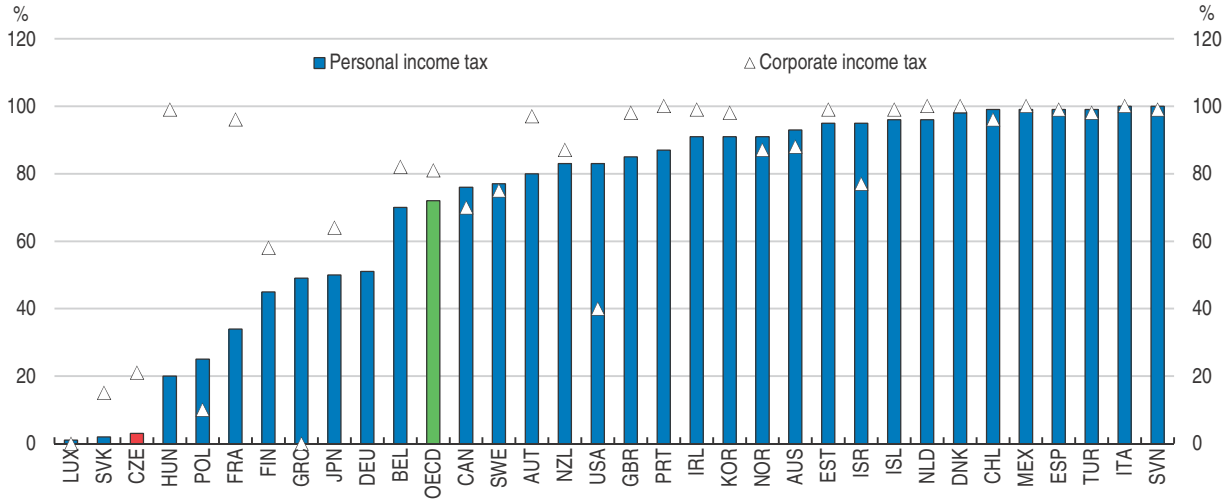
Tax collection is complicated and costly in the Czech Republic. Efficiency is also hampered by low use of electronic filing (Figure 9). VAT non-compliance is considerable and has become a policy priority for the government. The European Commission (2015a) estimates the difference between what VAT revenues would be with full compliance and perfect enforcement and actual VAT revenues to be 22.4% in 2013, which is 7 percentage points higher than the EU average (Figure 10). In recent years, the government introduced measures to fight VAT evasion and increase the efficiency of the system through greater use of electronic systems.

In 2015, the Czech Republic adopted further measures to fight VAT fraud. To increase transparency, a register of all contracts above CZK 50 000 signed by most public entities and state-owned enterprises is starting from mid-2016. Also, by the end of 2016 a system is to be in place for systematic electronic recording of sales. From 1 January 2016 all VAT payers are required to submit their VAT declaration electronically and they are obliged to file specific statements reporting data about their taxable supplies of goods and services based on invoices. The information provides the tax authorities with a detailed overview of taxable persons' transactions and it enables cross-checking of the data shown by the supplier and the buyer. The government is also expanding the use of the reverse charge method to collect VAT on domestic business-to-business transactions; this method can be helpful in reducing VAT fraud in high-risk sectors (OECD, 2014a).

The Czech Republic is encouraged to further enhance VAT compliance by simplifying its VAT regime and by ensuring a stable regulatory and administrative environment. Notably the multiple VAT rate system in the Czech Republic creates opportunities for

Figure 9. **Use of electronic tax filing is low**

Percentage of all tax returns that were filed electronically, 2013 fiscal year



Source: OECD (2015), *Tax Administration 2015: Comparative Information on OECD and Other Advanced and Emerging Economies*, OECD Publishing, Paris.

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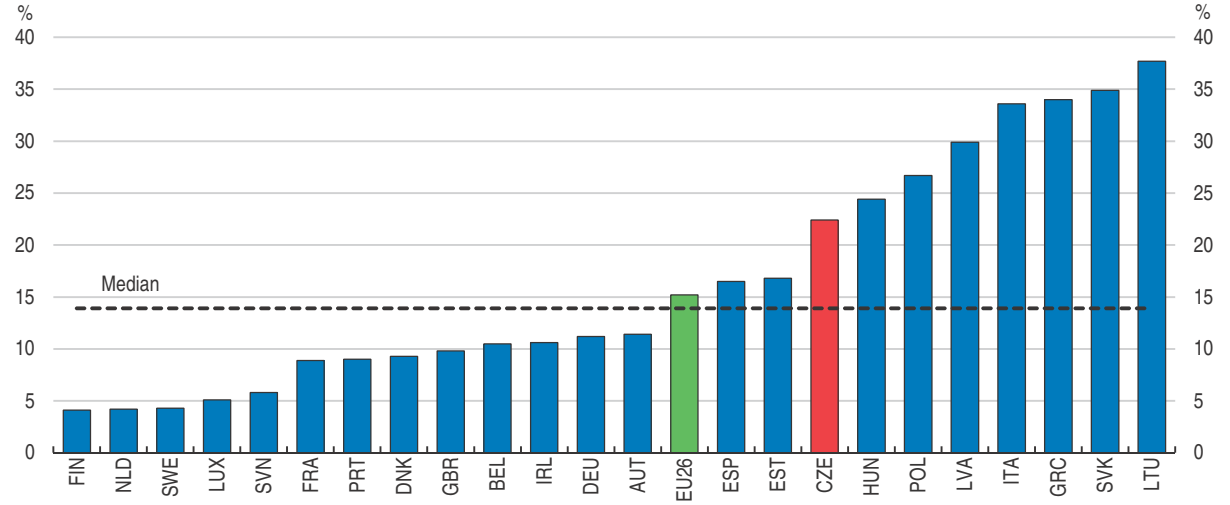
Figure 10. **VAT revenue loss due to tax avoidance and evasion is above the EU average**

VAT gap as a percentage of liability[1], 2013



1. The VAT Gap is defined as the difference between the amount of VAT actually collected and the VAT Total Tax Liability (VTTL), in absolute or percentage terms. The VTTL is an estimated amount of VAT that is theoretically collectable based on the VAT legislation and ancillary regulations.

Source: European Commission (2015), *Study to Quantify and Analyse the VAT Gap in the EU-27 Member States*.

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avoidance and optimisation strategies and increases compliance costs. The Czech Republic currently has a standard VAT rate of 21% but two reduced rates (10% and 15%) and the classification of items has been changing over time. These changes create uncertainties and incentives for vested interests to lobby for more favourable VAT rates and add to the administrative burden of firms. A clear rule and rationale for VAT classification should be established and the number of goods and services taxed at a reduced VAT rate should be limited.

Structural challenges

Progress on structural reform recommendations from previous Surveys

Previous surveys have examined policies in a wide range of areas, including: improving the fiscal framework and taxation policy; making the business environment more competitive; reforming education and strengthening skill use; raising health spending efficiency; and increasing energy efficiency. Progress has been made in many of these areas since the 2014 *Economic Survey*, as highlighted in Annex 1.

Promoting competition and improving the business environment has been a recurring theme in OECD surveys. In particular, recommendations have called for stronger enforcement of competition policy, more competitive markets in network industries, reduced government involvement in state-owned enterprises (and improved management) and more efficient judicial processes.

Fighting bid-rigging and cartels remains a top priority of the Office for the Protection of Competition. In 2015 it issued three decisions on cartels, one of which was related to bid-rigging and saw the highest fine ever imposed by the Office (CZE 2 billion or EUR 73 million). The Office has also been training public procurement officials in detecting bid-rigging. The resources of the Office are still insufficient and mostly devoted to public procurement, with a high staff turnover rate, partly reflecting low wages. The resources of the Office should be increased to allow it to better perform its duty and its regulatory power strengthened.

Reforming state-owned enterprises has been somewhat slower; however, the forthcoming State Ownership Policy contains proposals to concentrate governance of all SOEs under a single authority and to privatise minority shareholdings and companies operating on market principles, as was recommended. As discussed below, public procurement processes have improved substantially since 2012, although continued efforts are needed to stamp out corruption and improve value-for money.

Because of the importance of education to the convergence process and achieving equitable outcomes, Surveys have examined the full range of the education system. The need for early childhood education, reducing elitism in the school system (including early streaming) and benchmarking schools have been highlighted as ways of reducing the influence of social background on later outcomes. Recommendations also included measures to increase linkages between employers and the education system and increasing the quality of tertiary education.

The early childhood education system will provide legal rights to a kindergarten place for all children aged four from 2017 and aged three from 2018, and two-year olds will be allowed into kindergarten. However, these changes should be accompanied by an increase in capacity. Measures to reduce early streaming in the school system have yet to be elaborated.

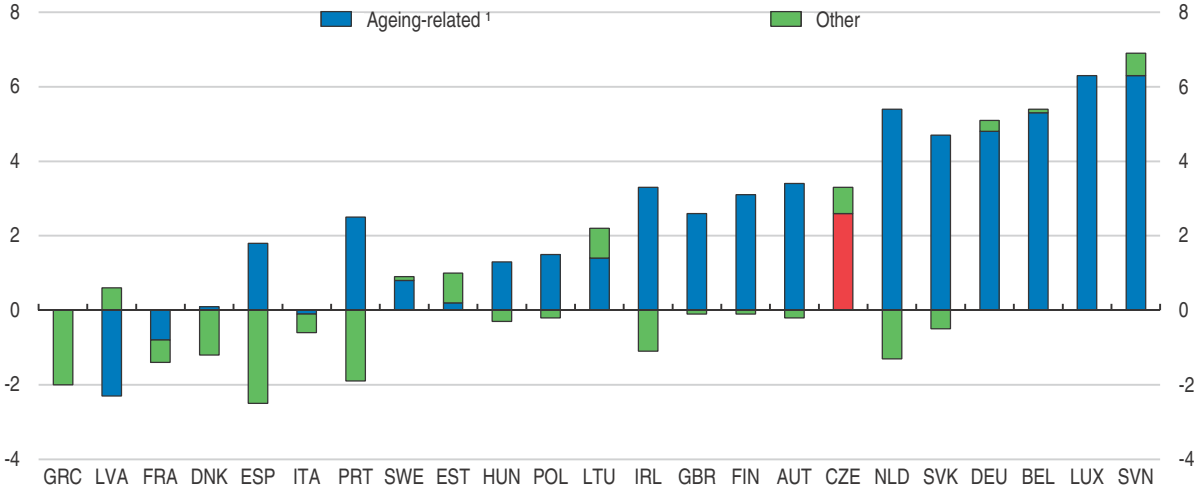
Programmes to increase linkages between educational institutions and employers include support for youth internships in firms and a new programme developed with business representatives to increase practical training within the vocational education system. In 2014 tax deductions were introduced to encourage workplace training of students. Amendments to the Higher Education Act (adopted in early 2016) will require greater measurement and reporting of performance, which will strengthen the accreditation process and therefore educational quality.

Future pension adequacy may pose a challenge for public finances

Government social spending represented 21% of GDP in 2014 and around 46% of government spending. Health and pension expenditures are the most important items. Ageing-related spending is expected to increase by 2.6 percentage points of GDP by 2060 (Figure 11). The public pension scheme has two components: a basic pension and an earnings-related pension linking benefits to average career wages and years of contributions. It has been reformed several times to guarantee its sustainability. The retirement age is set to increase gradually to 66 years and 8 months in 2041 for both women and men (OECD, 2015b, 2014b) and then by 2 months every year without a ceiling. A formal cap on retirement age is planned, however, with a regular assessment by an expert committee to link it with life expectancy.

Figure 11. **The impact of ageing on public finances**

Change in gross public expenditure between 2013 and 2060 in the baseline scenario, in percentage points of GDP



1. Ageing-related expenditure covers expenditure on pensions, health care and long-term care.

Source: European Commission (2015), "The 2015 Ageing Report: Economic and budgetary projections for the 28 EU Member States (2013-60)", European Economy, No. 3, Economic and Financial Affairs, Brussels.

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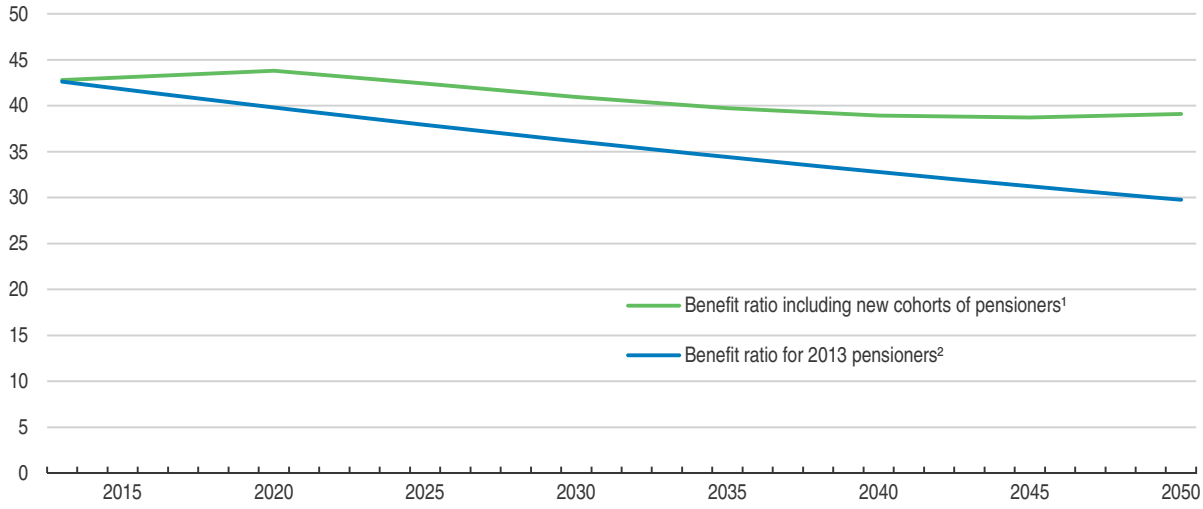
Pension spending is also to be restrained by a falling replacement rate of public pensions over time (OECD, 2014b). As retirees' pension income is mainly constituted by public pensions, there is a risk that old-age poverty will rise, especially as the second pillar (a voluntary scheme) has been closed (there was little take-up). Indeed, in the future the average pension income relative to the average wage will be falling, increasing the poverty risk of pensioners, especially among old retirees, even though purchasing power is preserved (Figure 12). This could lead to political pressures that would significantly increase pension spending. Therefore re-instituting a second pillar could be a response to mitigate the risk of old-age poverty, although it might have to be made mandatory (as in, for example, Denmark and Sweden) or be accompanied by fiscal incentives (as in New Zealand where enrolment is automatic with an opt-out option). The financing of the second pillar should be designed carefully to guarantee that it will not lower the current sustainability of the first pillar or increase the overall already high level of labour taxation. As such schemes are typically defined-contribution, it will take time for people to

Figure 12. **The benefit ratio is declining over time**

Average pension benefit as a percentage of average wage



1. European Commission projection.
2. Assuming annual inflation of 2% and real wage growth of 1.5% from 2013 to 2060. Pensions are indexed by inflation plus one-third of wage growth.

Source: European Commission (2015), The 2015 Ageing Report: Economic and Budgetary Projections for the 28 EU Member States, European Economy No. 3, Economic and Financial Affairs, Brussels; OECD calculations.

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contribute enough to accumulate sufficient old-age incomes. Therefore, the sooner they are created, the better it will be.

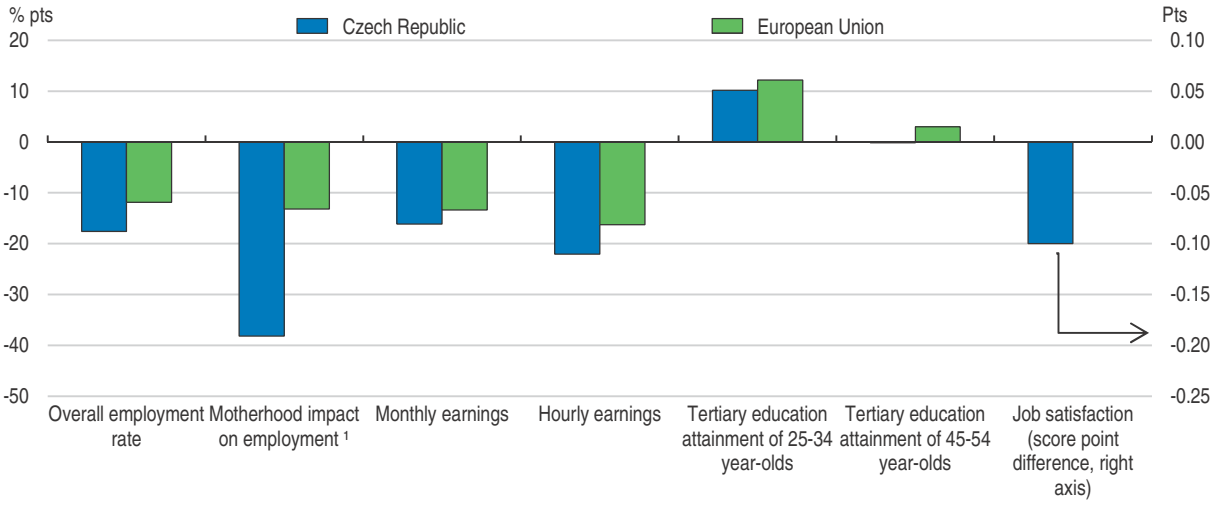
Improve inclusiveness through a gender balance agenda and better integration of minorities

Czech society is one of the most equal in the OECD. However labour market outcomes for women and for those in socially deprived areas, mostly people of Roma ethnicity, are relatively poor, as highlighted in earlier *Surveys* (OECD, 2014b, 2010a). For women the challenge is to raise wages, which are well below those of men, and improve career prospects by lowering barriers to participation. Better integrating Roma into the labour force would not only improve their well-being but would also be an investment that would yield returns by reducing future needs for social benefits and mitigating the fiscal effects of population ageing.

Reconciling career and family choices is a growing problem for Czech women, as is now recognised in the government's gender equality agenda. Women are increasingly investing in tertiary education, but their paid employment tends to fall once they have children and begin parental leave, which averages 2½ years (OECD, 2014b). Only 4% of children under two years old were enrolled in childcare and pre-school services in 2013, compared to the OECD average of 33% (OECD Family database). Accordingly, 82% of women without children have jobs but only 44% of mothers of children under six do, which is one of the largest gaps in the EU (Figure 13). By disrupting women's careers, these long spells out of the labour force contribute to a large wage gap between men and women and likely explain part of the low job satisfaction amongst Czech women. Removing obstacles to female career paths could raise job satisfaction and boost productivity by reducing skill

Figure 13. **Gender gaps in the labour market are large**

Percentage point difference between female and male outcomes, unless specified



1. Difference in employment rates of women aged 20-49 with children up to 6 years old and those without children.

Source: OECD Labour Force Statistics database; Eurostat; OECD Earnings database; OECD (2015), *Education at a Glance*.

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shortages. In particular, ensuring that parents with children can make the same career choices as those without children is key.

Institutions and policy choices add to barriers to gender equity. There is a shortage of affordable early childhood education and care. Demand has expanded rapidly: in 2014/15 there were 50 800 unsuccessful applications for kindergartens, compared to 6 810 nine years earlier, although this may partly reflect an increase in the number of applications per child (Office of the Government, 2014; European Platform for Investing in Children, 2016). There are less than 50 public crèches (for children of less than three years of age) (OECD, 2014b). Private options are increasing but appear limited and expensive.

Parental leave arrangements are among the most generous in the OECD: paid maternity leave is six months, job protection is three years, and the parental lump-sum benefit can be paid out in monthly instalments according to the decisions of parents until the child is four. In the case of a long payment period, the monthly amount is low. Public spending on maternity and parental leave payments totalled 0.9% of GDP in 2011, which was the second largest in the OECD (according to the OECD Social Expenditure database). However, it is more than double pre-school expenditure; public spending on childcare is very low. The provision of an income tax credit for the principal earner with a dependent spouse earning less than CZK 68 000 increases the implicit tax rate on second earners' wage income. Returning to work is also hindered by the nature of jobs: just 7% of female employees work part-time, compared to 24% on average in OECD countries.

The government introduced two new measures in 2014 to expand access to childcare: a personal income tax credit for childcare expenses and incentives for the formation of "children's groups" by firms, NGOs and others. Further planned measures include lowering the age limit for kindergarten to two years (from three years) and making one year of pre-school compulsory. "Micro-nurseries" for children aged 6 months to 4 years are being piloted using EU funds. These steps are broadly in line with earlier OECD recommendations

(OECD, 2014b, 2010a) although it remains an open question whether the credit is sufficiently high to have a significant impact on the affordability of private services (Kalíšková, 2015).

Going forward, measures should focus on expanding childcare and reducing disincentives to returning to work. Government spending should shift to a larger share on childcare, particularly to address the shortage in crèches that arose when responsibility for childcare shifted to municipalities without matched resources. Pre-schools and schools should offer after-hours care. Conditional on the expansion of affordable and quality childcare, the maximum duration of parental leave should be reduced as planned and, to break down stereotypes, part should be reserved for fathers. The public sector could play a leading role by promoting part-time work and other flexible working arrangements in a way which does not restrict career choices, by providing child groups and by reporting statistics on gender equality.

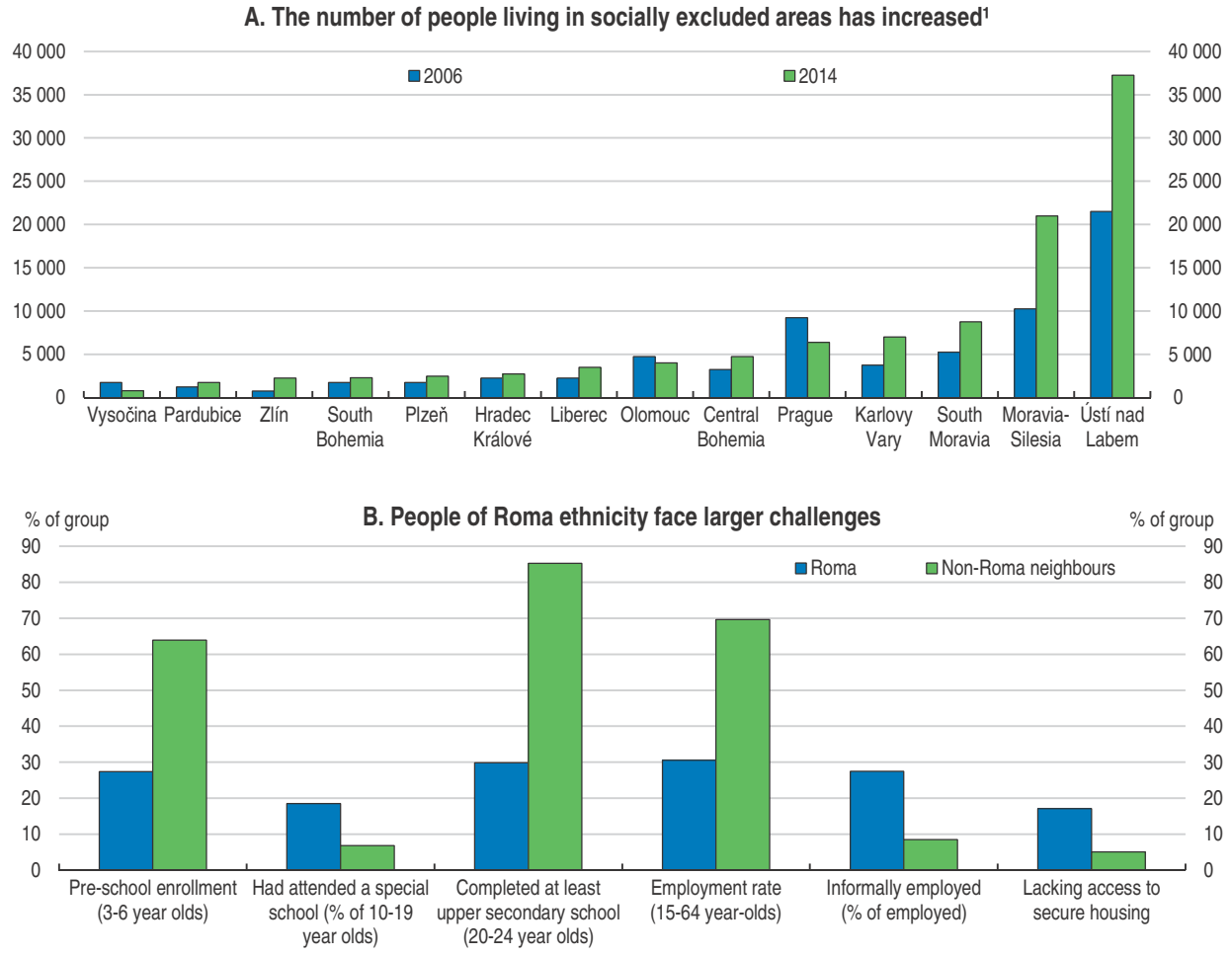
Social exclusion is a small but growing challenge: the number of socially excluded areas doubled from 2006 to 2014, to 606 areas, affecting an estimated 95 000 to 115 000 inhabitants (GAC, 2015). The increase has been uneven across the country and mostly affects people of Roma ethnicity, who face additional challenges (Figure 14). A general problem is that key policy areas such as education and social housing are the responsibility of municipalities, but funding allocations do not match the considerable variation in the severity of the problem.

Features of the Czech education system – such as practical special schools, early streaming and the difficulty of transferring from one educational track to another – reinforce the effects of socio-economic background on educational outcomes (OECD, 2014b). This mechanism particularly affects Roma who disproportionately attend special schools for children with mild mental disabilities, which has been attributed to discrimination and low language capacity because Czech is often not the language spoken at home (Figure 14, Panel B; World Bank, 2012; Gatti et al., 2016). These schools have reduced curricula, permanently limiting educational attainment, and graduates face very limited labour market prospects. The government's plans to support as many pupils as possible in mainstream education and to introduce a year of compulsory pre-school are welcome steps towards breaking the cycle of disadvantage. The successful integration and acceptance of Roma (and children with mild mental disabilities) into mainstream schools will require additional support for schools, including teacher training, specialised teacher aides and financial resources.

The adoption of the National Social Housing Strategy in 2015 is an opportunity to create a more coherent policy with appropriate governance and oversight. Currently, support is available through allowances funded by the central government and also public housing, which is mostly owned by municipalities. However, the lack of a national social housing framework means that many low-income households, particularly Roma, rent private dormitories and hostels, using housing allowances, because municipalities will not accept them as tenants (ECRI, 2015). Only around 6% of the public housing stock is reserved for low-income and disadvantaged households (de Boer and Bitetti, 2014). The planned Act on Social Housing should create the right to "decent housing", to fair and equal treatment, define disadvantaged groups and create a register of social housing.

The government plans to increase spending on housing benefits in 2016. However, the change in the composition of housing benefits increases the risk of many disadvantaged people, particularly Roma, falling into homelessness. The timing of the policy changes

Figure 14. **Challenges for social inclusion**



1. Socially excluded areas are defined as physically or symbolically delimited spaces where more than 20% of the population live in inadequate conditions. The data shown are the midpoint of the estimated range.

Source: GAC (2015), *Analysis of Socially Excluded Localities in the Czech Republic*, Prague. UNDP/World Bank /European Commission Regional survey 2011 and FRA Pilot survey 2011, *www.eurasia.undp.org/content/dam/rbec/docs/Roma_survey_data___Czech_Republic_2011.xls*; World Bank (2012), *Toward an Equal Start: Closing the Early Learning Gap for Roma Children in Eastern Europe*, World Bank, Washington, DC.

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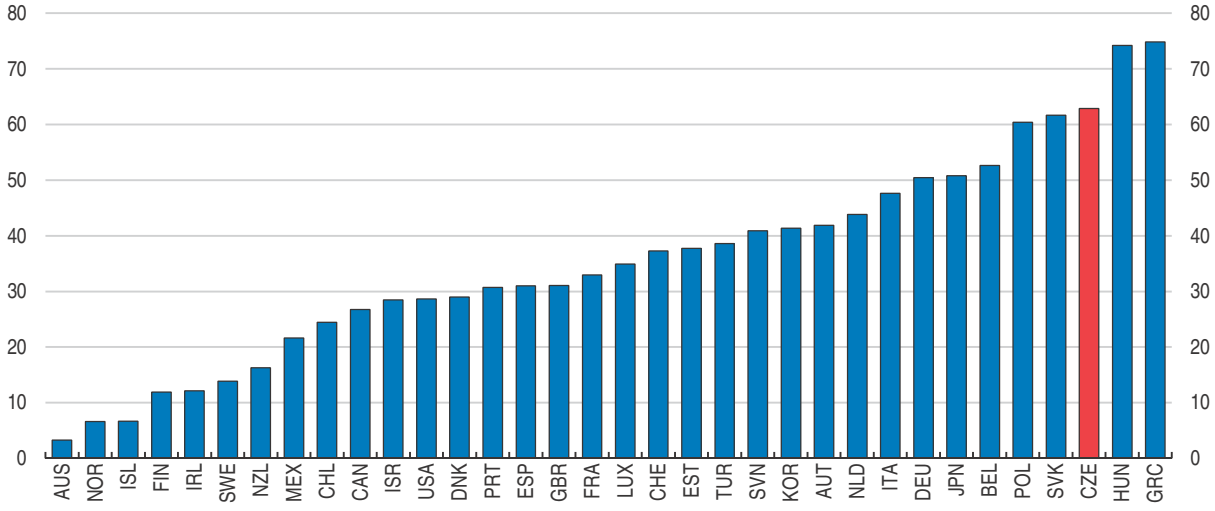
should be reconsidered so the changes form a package. Local governments should be provided with sufficient resources, including legal advice and social workers, as is planned under the government's Roma integration strategy. The establishment of a national social housing register should include targets and minimum occupancy rates of the most severely disadvantaged groups, including Roma, to be monitored to prevent segregation.

Greener growth through more co-ordinated and cost-effective policies

The economic expansion over the past two decades has been accompanied by efforts to improve the environment. Indicators of environmental outcomes – such as measures of air and water quality – have improved. Nonetheless, air pollution remains a major environmental and health issue, the rate of death due to air pollution is among the highest in Europe and emissions of some pollutants continue to breach EU limits (Figure 15) (EEA, 2015). Greenhouse gas emissions per unit of GDP are the sixth-highest in the OECD due to

Figure 15. **Reducing air pollution is important for the environment and Czechs' health**

Deaths from air pollution per 100 000 inhabitants, 2013



Source: Institute for Health Metrics and Evaluation.

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a coal- and energy-intensive economy despite significant progress in reducing total greenhouse gas emissions in the first years after transition.

In addition to regulation, a range of investment programmes, subsidies and other forms of support aim to improve energy efficiency and reduce air pollution. Subsidies and grants for energy efficiency and pollution reduction schemes have been expanded, using EU and national funds. These include improving the energy efficiency of housing, commercial buildings and public buildings through better insulation, and promoting renewable energy installations on buildings. To improve air quality, an EU-funded boiler replacement programme for households has begun, replacing the solid fuel boilers that create pollution, notably particulate matter. Take-up has been high. However, the programme is not targeted to areas of high air pollution. Also, many of the replacement boilers are still coal-fuelled; installation of gas boilers would cost more initially but would reduce pollution more. All programmes, including national programmes, should be evaluated ex ante and ex post and monitored during implementation and amended accordingly.

Effective tax rates on carbon emissions (apart from transport fuel) are amongst the lowest in the OECD, which dulls the incentives to transition towards a low carbon economy (OECD, 2015c, 2013a). The tax reform which was put forward to partly shift the tax mix from income taxes towards environmentally related taxes did not receive legislative approval. Such a reform would increase incentives to increase energy efficiency and contribute to lowering pollution.

Final prices for electricity for households and firms have fallen since 2012, weakening the incentive to adjust consumption patterns. Relatively low commodity prices provide an opportunity to increase effective taxation rates on carbon emissions. Likewise, the currently low oil price provides an opportunity to reduce the 20% gap between diesel prices and petrol prices to reduce diesel use which is more polluting.

Policies that reduce the price of pollutants should be phased out as they essentially increase the incentive to consume these products and run counter to other measures. There may be more efficient ways of assisting low-income households than discounted heating bills, through the social safety net and programmes such as upgraded insulation.

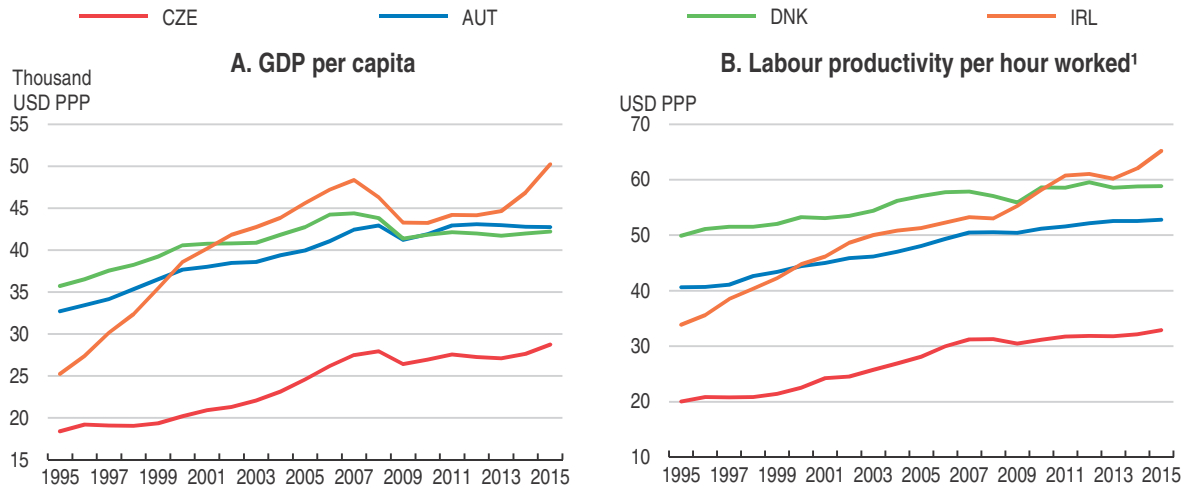
Although there is a State Environmental Policy, the multitude of national action plans and programmes create both duplication and gaps. For instance, the Energy Efficiency Action Plan does not include transport policy. However, the creation of an Energy Efficiency and Savings Department under the Ministry of Industry and Trade should improve co-ordination across ministries. Integrating Environmental Impact Assessments into the building approval process has proved also difficult and further changes to the Building Act are expected in 2016.

Fostering productivity for better living standards

Over the past two decades, incomes in the Czech Republic have risen towards the OECD average. Between 1995 and 2014, real GDP per capita rose by 48%, and it stood at 76% of the OECD average in 2014. Productivity catch-up was critical, aided by better integration into the global economy. However, since the 2008 global crisis, the convergence process has stalled (Figure 16, Panel A).

Figure 16. **Stalled convergence of the Czech Republic**

Constant prices, USD PPP



1. 2015 data for the Czech Republic and Ireland are estimates.

Source: OECD Productivity database; OECD National Accounts database; OECD calculations.

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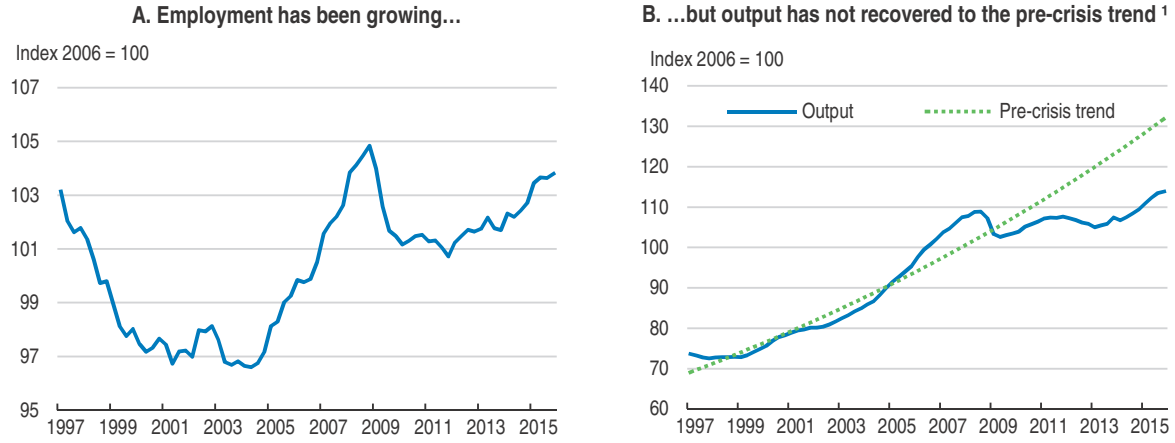
Labour productivity trends show a clear structural break in 2008 at the beginning of the crisis (Figure 16, Panel B). Furthermore, labour productivity growth fell in all sectors but financial and insurance activities in the period 2007-13 compared with 2001-07, with manufacturing suffering the strongest decrease (Chapter 1). On the upside, since 2013 both employment and output have grown at a faster rate than pre-crisis trends, although it is difficult to say how long this will continue (Figure 17).

The analysis of the productivity shortfall since the crisis shows that productivity is 21% below its pre-crisis trend (Figure 18, Panel A) and potential productivity is 16% lower

Figure 17. **Weak output is the main drag on productivity at the aggregate level**



1. Pre-crisis trend growth for output (real GDP) is calculated from linear trends between 1997 and 2006, and are projected from 2007Q1 onwards.
Source: Calculations based on data from OECD Economic Outlook database.

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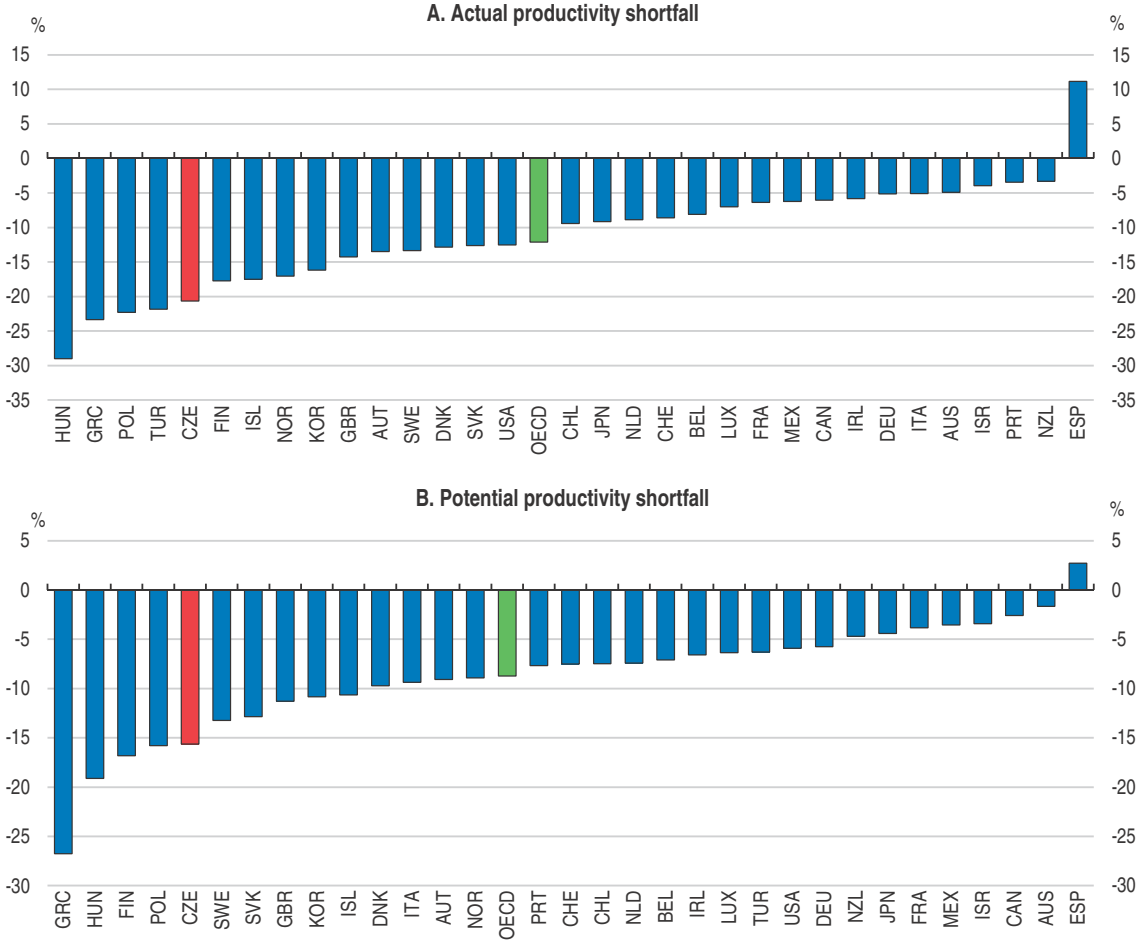
Figure 18. **The labour productivity shortfall in the Czech Republic is mainly structural**

Deviation from pre-crisis trend growth, Q4 2015



Note: Pre-crisis trend growth (potential growth) is calculated via a linear trend between 1997 and 2006, and is projected from 2007Q1 onwards. Labour productivity is defined as real gross domestic product (GDP) divided by total employment. The OECD aggregate is calculated as an unweighted average of the data shown.
Source: Calculations based on data from OECD Economic Outlook database.

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(Figure 18, Panel B). While cyclical developments are at play, these findings indicate that the productivity shortfall is mainly structural (Chapter 1). This suggests scope for improved structural policies to boost productivity in the Czech Republic.

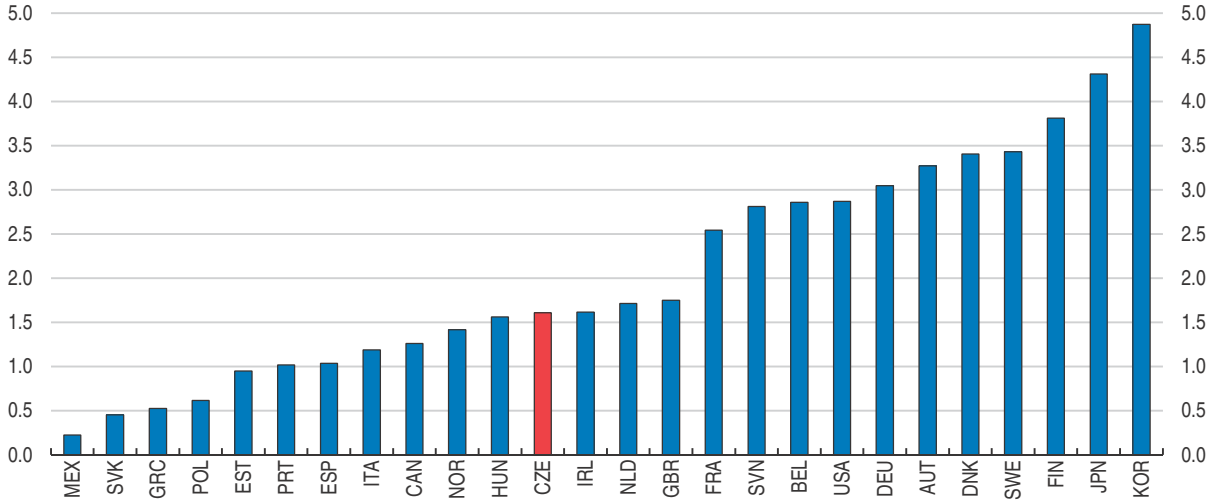
Strengthening R&D and innovation policies to foster productivity

R&D and innovation performance are still low

R&D spending has been increasing since 2003 and amounted to 2% of GDP in 2014. This represents a significant effort towards setting up a performing innovation system. Spending on R&D is still below the OECD average (2.4% of GDP). It is evenly distributed among basic research, applied research and experimental development. Business enterprise research and development (BERD) represents the biggest share of R&D spending but government spending is 40% of the total. BERD is mainly by firms that are foreign-owned or affiliated to foreign enterprises (56% of BERD in 2014). Nevertheless, R&D intensity remains relatively modest for a country with such a large manufacturing sector (Figure 19). One reason is that Czech firms affiliated to foreign companies, in particular in manufacturing, tend to be concentrated in the low value-added segment of the global value chain with low R&D (Münich et al., 2014).

Figure 19. **Business R&D intensity**

2014 or latest available, as a percentage of value added in industry



Note: Business R&D intensity is calculated as business R&D expenditure relative to value added.
Source: OECD (2016), Main Science and Technology Indicators database.

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Despite the sustained effort to increase R&D spending, the innovation performance of the Czech Republic remains mixed. In the European Union's classification of country innovation performance, the Czech Republic is classed as a moderate innovator (European Commission, 2015b). The manufacturing sector has only a moderate innovation performance. Lacklustre performance also reflects that SMEs, which are the vast majority of firms, do not innovate much (OECD, 2015d).

Streamline the administration and implementation of innovation policy

The organisation and administration of R&D and innovation (RDI) policies is still too complex (see Box 1.2 in Chapter 1). Spending is divided among 11 ministries and bodies and 7 types of financial support (Government of the Czech Republic, 2015). There are also initiatives at the regional and industry levels. This creates a fragmented system of support. There are also overlaps between the different strategies (Innovation, SMEs and Exports) and the programmes put in place for their implementation. Some restructuring has already been made with the merging of some spending bodies in the Technology Agency. The fragmented organisation of R&D between universities and the institutions pertaining to the Academy of Science is amplified by the competition for research funding based on grants and on the institutional funding allocation based on a points system. Moreover, while university funding is managed by the Ministry of Education, the Academy of Science has its own budget chapter and the Council of Research and Development and Innovation is an advisory body to the government responsible for R&D strategy, evaluation and R&D budget allocation. On the other hand, innovation policies are mainly managed by the Ministry of Industry and Trade.

The fragmentation of innovation policies seems to be partly driven by the specialisation of the different bodies along with a limited set of financial instruments available to each. The respective role of the different stakeholders should be further clarified as they all intervene in the same areas. It is furthermore necessary to unify the design, assessment and coordination of implementation of research and development and innovation policies in a single institution. The intended creation of the Ministry of Science and Research could be an opportunity to put all research institutions under the responsibility of the same institution and give that institution the mandate to co-ordinate the design, implementation and evaluation of R&D and innovation policies. First steps were taken in 2014 by establishing the position of Deputy Prime Minister in charge of Science, Research and Innovation within the Office of the Government.

Increase and better target R&D and innovation funding

The increase in RDI spending should be continued as it is a key element for upgrading the economy in the global value chain. The Czech Government has put in place programmes to encourage higher business R&D spending by intensifying collaboration between businesses and research institutions. These programmes are financed by EU funds as well as from national resources (the new high-tech R&D support programme TRIO and programmes administered by the Technology Agency of the Czech Republic). However, direct government funding of business RDI is modest, representing 0.1% of GDP in 2013. Using these programmes, more co-financing should be developed to incentivise firms to mobilise their own resources.

Well designed and properly administered tax incentives for RDI can complement direct support. Government support for business R&D through tax incentives increased by 12.2 percentage points between 2006 and 2013, to 32.1% of government R&D spending (OECD, 2015d). Tax incentives are more neutral, except for firm size, and less government-guided than grants are, as firms have to mobilise their own resources toward their own projects before claiming the tax refund. Furthermore, it is important to guarantee that R&D tax incentives are refundable or contain carryover provisions so as to avoid overly favouring less dynamic incumbents at the expense of dynamic young firms (OECD, 2015e). However, grants tend to be more effective in spurring RDI spending and they correspond

more to SMEs' needs for RDI. Therefore, a balance should be maintained between different types of government funding through grants, loans, co-financing, loan guarantees and tax provisions. In any case, the uncertainties about receiving tax deductions related to RDI spending should be reduced through a simplified and more transparent claiming system. To ensure that R&D tax credit claims are legitimate, programmes such as the Technology Agency's training of tax officials should be further developed.

Demand-side measures can also support innovation. Such measures can help to create a market for innovation that addresses particular environmental and societal challenges (e.g. healthcare and pollution reduction). In particular, public procurement contracts have played a central role in creating a leading innovation sector in some countries (for instance defence spending in technology in Israel). Innovative pre-commercial public procurement and partnerships can stimulate innovation. In those cases, a public contracting authority, for the purpose of purchasing goods, services or works, introduces into the procurement terms criteria that require innovative solutions. A strong regulatory framework should be put in place to make sure that young innovative firms have access (OECD, 2014c).

Venture capital is very low in the Czech Republic (0.006% of GDP in 2014) and essentially non-existent for seed and start-up enterprises. This produces a financing gap for early-stage innovative companies. To remedy this, the government is planning to set up an innovation fund with the participation of the European Investment Fund. Also, a guarantee programme for innovation is being developed, jointly financed by the EU and managed by the Czech-Moravian Guarantee and Development Bank (CMZRB). The main instruments envisaged are loans, financial guarantees and grants for SMEs, while consultancy services for start-ups will be supported by grants only. While targeting the early financing of seeds and start-ups is appropriate given the lack of risk capital available for these projects, the choice of instruments should be considered carefully. Some grants are necessary to encourage the development of innovative initiatives. Also, fiscal incentives could be considered for venture capital investments in innovation. Moreover, in addition to venture capital, the development of seeds and start-ups necessitates a favourable ecosystem constituted of high quality infrastructure, available skilled human resources, frontier research and a business-friendly environment (Wilson, 2015).

Framework conditions are key for productivity

Facilitating start-ups and SME growth to fuel productivity

Entrepreneurship plays a key role in innovation and therefore productivity (OECD, 2010b). Start-ups and SMEs often play a leading role in the introduction of advances in products, processes, organisational methods and marketing techniques, which push catching-up toward the technological frontier and are thus conducive to rapid productivity growth and job creation (Adalet McGowan et al., 2015; Aghion et al., 2007; Criscuolo et al., 2014). It is therefore critical for policy to stimulate start-ups and SME creation.

To this end, the government should accelerate the implementation of instruments planned in the SME Strategy 2014-20 (Ministry of Industry and Trade, 2015), such as the National Innovation Fund. The one-stop-shop for start-up companies, which would promote direct registration of new companies in the commercial register and, in the second phase, the simplification of the registration process and the reduction of fees, is still under examination by parliament.

Instruments (loans, grants, subsidies, guarantees, consultancy support) and programmes for SMEs could be simplified. There are too many instruments, calls for projects and grants that imply administrative costs for SMEs that apply. Indeed, an SME needing different types of support would have to address requests to different institutions for: support of financially healthy businesses in search of investors, (CzechLink programme), consulting services for strategic management and innovation management (CzechInvest Agency), programmes aimed at improving the infrastructure for the development of human resources with an emphasis on technical education (CzechInvest Agency), soft loans and preferential loan guarantees for SMEs (CMZRB), and support for experimental development in the field of advanced technology, environment and energy and transport (TACR). Such streamlining would also ease access to finance for SMEs, which is particularly important in the Czech Republic as SMEs are the vast majority of firms.

Firms tend to have low managerial quality but a high share of over-skilled workers

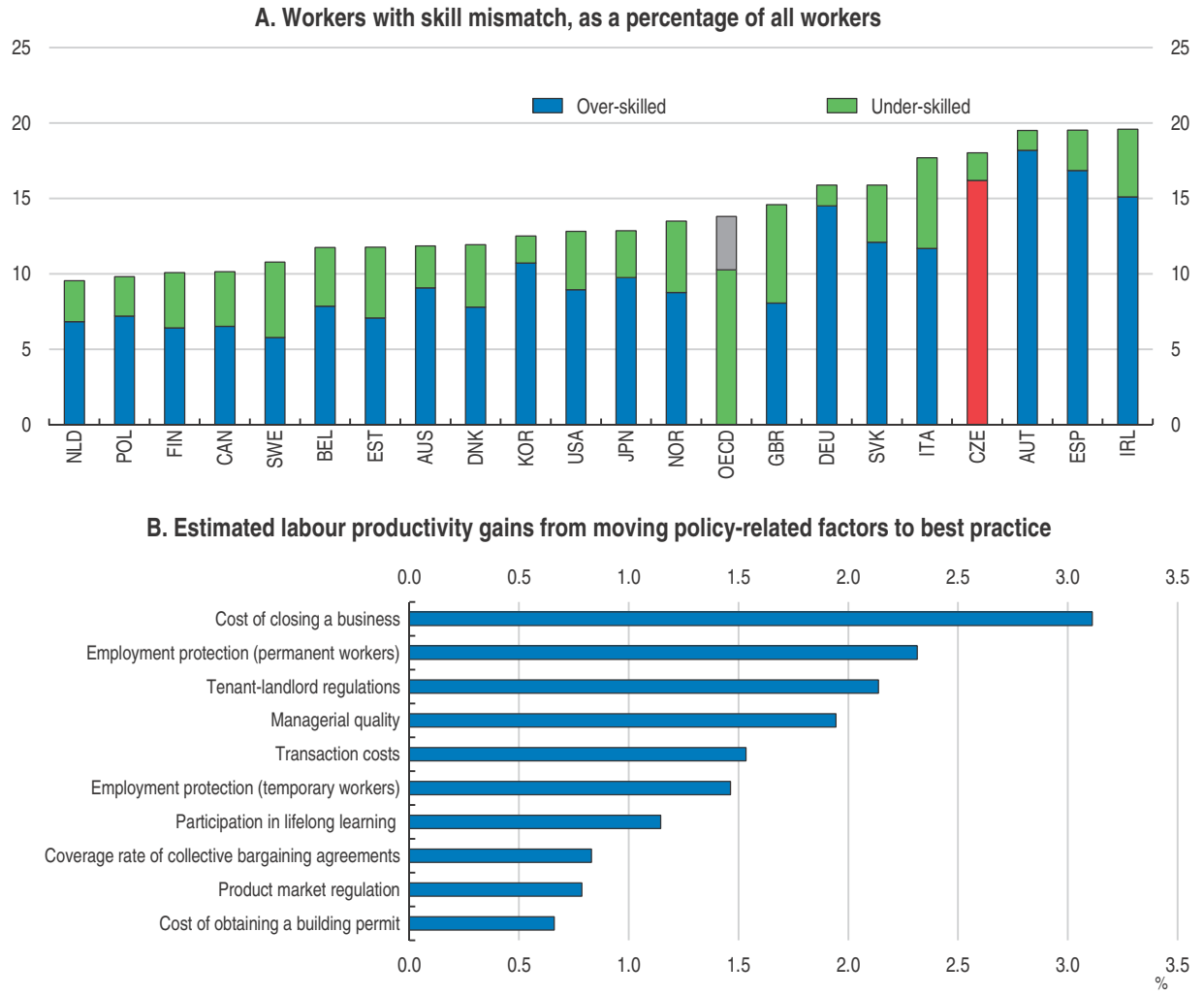
Efficient management to boost productivity requires managers with the necessary skills, knowledge and authority, and high managerial quality has been shown to improve firm-level performance (Adalet McGowan et al., 2015; Bloom et al., 2012). A range of metrics related to managerial quality and practices suggest that Czech managers outperform those in other CEE countries but they fall short of small high income countries (Chapter 1). For example, there is considerable scope to increase the use of professional management, which is associated with faster convergence in multifactor productivity at the country level (Andrews and Westmore, 2014; World Economic Forum, 2015). Also, Czech firms invest a smaller share of value added in managerial organisational capital than in most OECD countries with available data (OECD, 2015d).

Lower managerial quality is associated with skill mismatch, which is particularly high relative to other OECD countries (Adalet McGowan and Andrews, 2015a). The skill mismatch measure suggests that a relatively small share of Czech workers is under-skilled but a relatively high share of workers – 16% – is over-skilled (Figure 20, Panel A). This seems partly due to the unattractiveness of wages and careers in some industries and regions and to mismatch between workers' education and labour market demands. Estimates suggest that improving the quality of managerial capital to the level of Finland (best practice) would reduce the probability of skill mismatch by around 5%, which would increase labour productivity by almost 2% (Adalet McGowan and Andrews, 2015a, 2015b; Figure 20, Panel B).

Raising competition and resource re-allocation to boost productivity

Key policies to lower mismatch are those that remove barriers to mobility of resources and workers and promote competition (Adalet McGowan et al., 2015). There could be large impacts from lowering the cost associated with closing a business and reducing the stringency of employment protection legislation (Figure 20, Panel B). In particular, the protection of workers against individual dismissal is the second-highest in the OECD (OECD, 2013b). Improving the functioning of the private rental market and also transport linkages could increase the number of jobs workers can reach, thereby improving the match between workers' skills and their job. Efficient allocation of resources by facilitating the entry and growth of SMEs would improve productivity. Increasing the effectiveness of the education system, as proposed in OECD (2014b), would also improve skill use and transitions from school to work.

Figure 20. **Reducing the extent of skill mismatch would increase labour productivity**



Note: In Panel A data for Belgium are from Flanders and data for the United Kingdom are from England and Northern Ireland. Mismatched workers are those whose literacy proficiency score is in the top or bottom 5% of self-reported well-matched workers in their country and occupation following (OECD, 2013). In Panel B estimates are based on: i) logit regressions of probability of mismatch controlling for age, marital and migrant status, gender, education, firm size, contract type, a dummy for working full-time and working in the private sector; and ii) OLS regressions of labour productivity on skill mismatch. "Employment protection" relates to the stringency of employment protection legislation.

Source: OECD (2013), *Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, Paris; Adalet McGowan, M. and D. Andrews (2015), "Skill Mismatch and Public Policy in OECD Countries", *OECD Economics Department Working Papers*, No. 1210, OECD Publishing, Paris.

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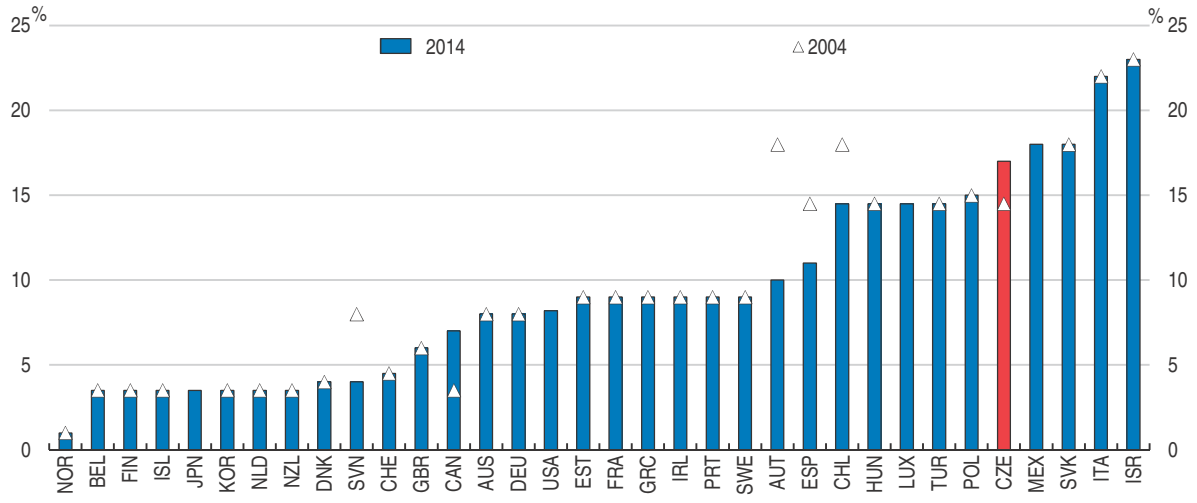
Costly and time consuming insolvency procedures hinder resource re-allocation between lower productivity firms and better performing ones (Adalet McGowan et al., 2015). The total cost of bankruptcy procedures is among the highest in the OECD (Figure 21). In the Czech Republic, the insolvency proceedings is mainly focused on preserving creditor claims and is restrictive for entrepreneurs. When bankruptcy resolution does not successfully satisfy creditors, remaining claims are not extinguished and persist to burden the debtor. The length of the proceedings should be reduced by limiting the possibilities for creditors (or, in principle, debtors) to delay the final decision

Figure 21. **The cost of bankruptcy proceedings is high**

Average cost of bankruptcy proceedings as a percentage of the estate's value



Note: The cost is calculated on the basis of questionnaire responses and includes court fees and government levies; fees of insolvency administrators, auctioneers, assessors and lawyers; and all other fees and costs.
Source: World Bank, Doing Business database.

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point. Finally, it is also desirable to enhance the possibilities of liabilities write-off at the end of the judicial proceedings.

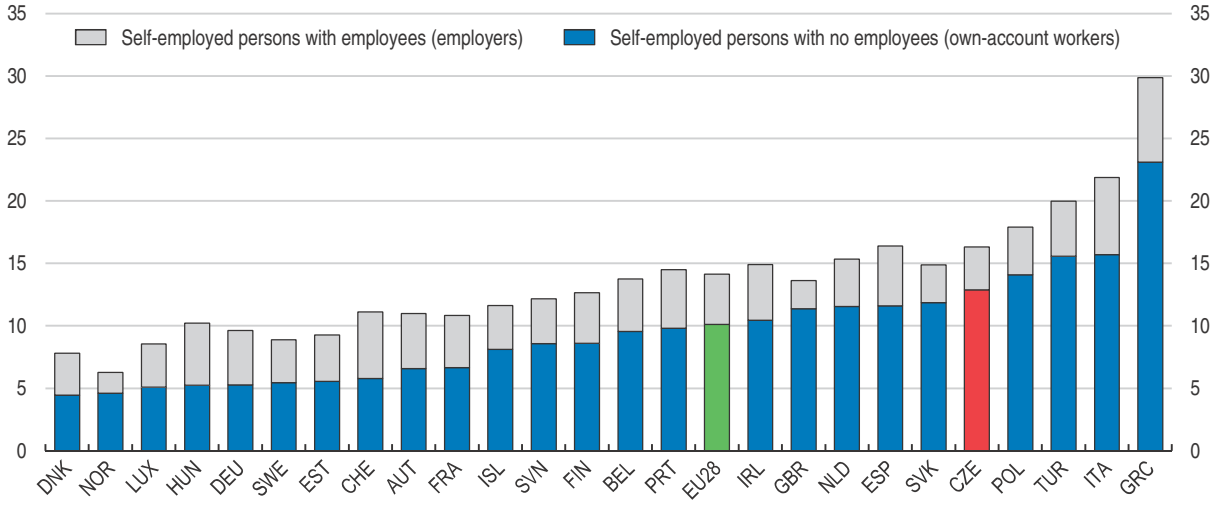
Competition and regulation policies could be further improved, as discussed in the *2014 Czech Republic Economic Survey* (OECD, 2014b, Chapter 1) and in the section above reviewing implementation of past recommendations. A competitive environment favours the development of successful firms and reduces economic rents. For instance, the Czech Republic has a high number of regulated professions. Therefore, reform to open regulated professions is needed.

The efficiency of resource allocation is influenced by the differences in taxes on businesses and revenues of the self-employed. There is a risk that the pattern of SME growth could be distorted by differential treatment of firms in the tax system. One particular issue is the development of self-employment. Self-employed workers are 17% of total employment and this number is increasing (Figure 22). That number is particularly high for a country which does not have an important agricultural segment (Araújo and Maleček, 2015). In part, this may be induced by the tax structure, which gives preferential treatment to the self-employed in comparison with employees. The total tax burden for an average employee in the Czech Republic (personal income tax together with social security contributions) reached 37% in 2013, as opposed to 28.1% in the case of an average self-employee, while self-employees' average gross earnings are 34% higher than that of employees (OECD, 2015f). For instance, based on an annual cash-flow threshold of CZK 2 million, self-employees' benefit from income tax deductions of up to 80%, depending on their occupation, which comes on top of preferential treatment with respect to social security contributions.

These tax differences are suspected to have led to the development of strategic sub-contracting by firms which reduces the tax base for both firms and the self-employed. Indeed, the low tax burden for the self-employed has led to a phenomenon of false self-

Figure 22. **Self-employment is high**

Per cent of total employment (15-64 year olds), 2015



Source: Eurostat

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employment (commonly referred to as "*švarcsystém*" in Czech), with employees not benefitting from a standard contract with their employer, working instead as a self-employed worker (OECD, 2010a; Araújo and Maleček, 2015). Given the negative effect of self-employment on tax revenues and the PAYG pension pillar, an amendment of the Act on Income Taxes imposed ceilings for flat-rate tax deductions for self-employees, effective from 2015, which should somewhat reduce the attractiveness of false self-employment. The tax structure could be reformed to ensure less distortion between workers and self-employees.

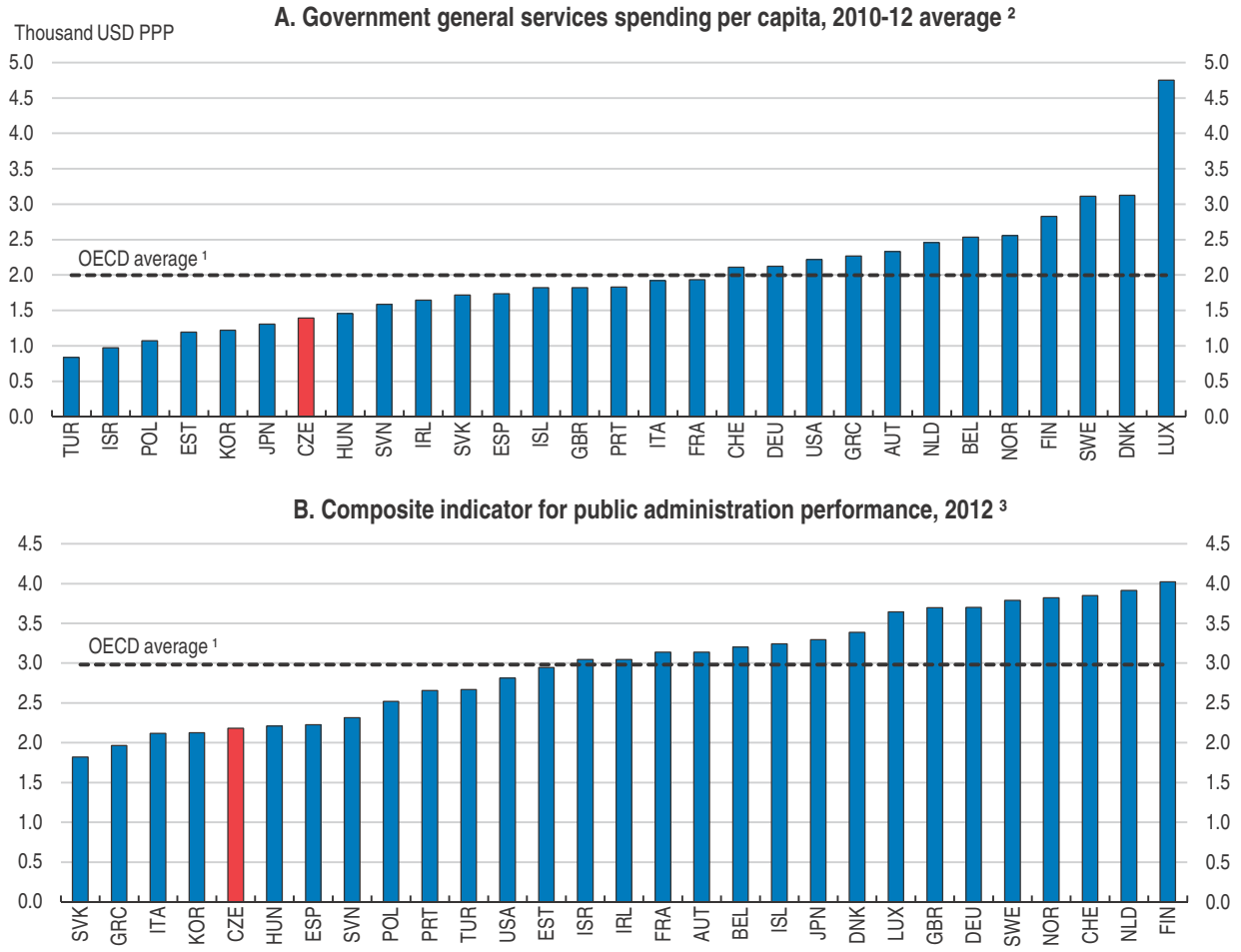
Enhancing the effectiveness of the public sector

Spending on public administration is, per capita (PPP-adjusted), less than three-quarters of the average OECD country (Figure 23, Panel A). However, indicators of the performance of the public administration – the degree of corruption and regulation, the quality of justice and the level of government efficiency – are also comparatively low (Figure 23, Panel B). Even allowing for spending levels, performance appears low, with some estimates suggesting performance could be improved by around one-third, holding spending constant (Dutu and Sicari, 2016). The government's *Strategic Framework of the Development of Public Administration in the Czech Republic* aims to improve the quality and efficiency of the public administration (Ministry of Interior, 2014).

Increasing the effectiveness of the public administration

The capacity of the government to design and administer projects has been hampered by high levels of turnover of personnel within the civil service, creating discontinuities in policy and loss of institutional knowledge. The 2015 Civil Service Act created a national civil service, which had been an unfulfilled requirement of EU accession. The Act aims to depoliticise the public service and increase professionalism and stability. Key changes include: requiring all appointments and promotions to be opened to competition under specified procedures; linking remuneration and performance assessment more closely;

Figure 23. **Expenditure and performance for public administration are low**



1. Unweighted average of data shown; excludes Australia, Canada, Chile, Mexico and New Zealand.
2. General services spending includes general public services, order and safety and excludes interest payments.
3. Synthetic indicator based on OECD's Product Market Regulation (PMR) Indicator to proxy the levels of bureaucracy (33% of indicator) and results of the 2014 WEF survey on the quality of justice, level of corruption and government inefficiency.

Source: Dutu, R. and P. Sicari (2016), "Public Spending Efficiency in the OECD: Benchmarking Health Care, Education and General Administration", *OECD Economics Department Working Papers*, No. 1278, OECD Publishing, Paris.

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codifying rights and responsibilities; and facilitating whistleblowing. The changes bring many human resource management policies more in line with other OECD countries.

The implementation of the Act should improve stability of the workforce by weakening political influence, increasing tenure and providing clearer career paths. Regular performance pay, which can reach up to 43% of regular pay, is better linked to performance appraisals, which should improve incentives. However the large wage penalty for skilled public sector workers (de Castro, Salto and Steiner, 2013) may still make retention difficult. The appropriateness of compensation and conditions should be reviewed with the aim of improving retention. Also, some new requirements may constrain policy innovation and improvements in management; for instance, private-sector candidates face significant barriers when applying for senior public sector management positions. Similarly, making senior civil servants permanent in their role to bar political influence could increase rigidity too much. Mobility could be increased by taking

experience in other roles (or ministries) into account in promotion decisions, or by encouraging secondments. In Australia, Belgium and the Netherlands, competencies (knowledge, skills and behaviours) are being managed so as to increase transferability and accordingly, mobility and flexibility (OECD, 2015g). A review is planned for 2016. It should evaluate the implementation of the new Act, including the effects on staff engagement and the capacity of human resources units, with follow-up changes to the Act, its implementing regulations and associated processes as required.

Parts of the e-Government programme should complement the evolution of more outcome-based monitoring and evaluation processes, which will also raise the effectiveness of the public sector. The focus to date has been on creating portals for accessing information and interacting with the government. Datasets that have been made available have helped to increase transparency but have generally been input-focussed. Nonetheless these data have allowed some municipalities, NGOs and academia to carry out benchmarking and other evaluation exercises. In many cases – such as education outcomes – data already exist but are not published. Standardised performance indicators should be created and published and used in budgetary processes. As with other projects, continuous monitoring and evaluation of e-government projects is required to control costs and keep processes on target. An OECD Public Governance Review could help the implementation of a whole-of-government approach to performance monitoring and the e-Government programme.

Reducing wastage and increasing value from public procurement and investment

Public procurement is a means of acquiring intermediate goods and services and construction works and was equivalent to around one-third of government spending in 2014 (according to the OECD Government at a Glance database). Significant steps have been taken since 2012 to increase transparency and controls over procurement processes, but some concerns about the lack of competition, transparency and enforcement remain (OECD, 2014b). In 2015 the Supreme Audit Office labelled procurement "the highest-risk area of the state's financial management" (SAO, 2015a). Legislative changes in 2016 improve access to tenders, increase transparency and lower the administrative burden.

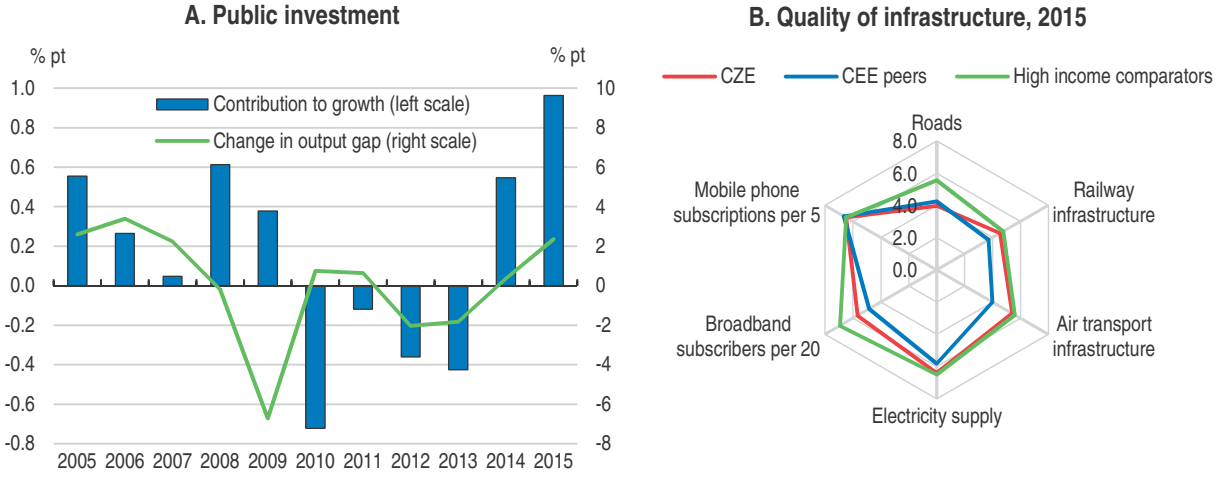
Indicators from the European Commission's *Single Market Scoreboard* suggest that competition in procurement is too low. In 2014 almost one-fifth of procedures were granted without a call for tender and one-fifth of contracts were awarded in tenders with only one bidder. Joint purchasing by public authorities is used less than in other EU countries but would be particularly beneficial given the large number of contracting authorities. Combining contracts would increase contract size, thereby generating economies of scale, lowering administrative costs and improving competition in tenders. Tools should be further developed to facilitate joint purchasing. Active steps should be taken to achieve greater use of available tools across government bodies, including through rules and guidelines. Central and regional governments should help to co-ordinate innovative solutions among other public bodies and municipalities.

Greater oversight and personal accountability are also needed to overcome a range of problems including failures to observe rules and regulations, setting discriminatory tender terms, contract splitting, inappropriate use of exceptions and failures in audit systems (SAO, 2015a, 2015b; UOHS, 2015). Clear chains of responsibility should be established. Auditing should be increased throughout the process. Procurement officials should be required to disclose conflicts of interest and register their private interests (including those

of close relatives) to bring disclosures more in line with best practice (OECD, 2015h). The procurement portal should continue to be developed in a user-focussed way, making clearer guidelines, training and technical assistance available. Specialist competency centres should be established at the central and sub-national level to help with technical contracts, including for public-private partnerships.

Problems with procurement processes, along with broader co-ordination issues, have contributed to volatility in government investment by central and local governments. The pro-cyclicality of investment deepened the recent recession then contributed to shortages in construction in 2014 (Figure 24, Panel A). Public investment contributed 1 percentage point to real GDP growth in 2015 (adjusted for the effect of a fighter jet lease) and will subtract from growth in 2016. Investment in some types of infrastructure has been relatively low and there appear to be large gaps with small high-income countries in road quality and broadband access, for example (Figure 24, Panel B).

Figure 24. **Public investment has been volatile and lacking in some areas**



Note: In Panel A public investment in 2015 has been adjusted for the effect of the Gripen fighter jet lease. In Panel B high-income comparators are: Austria, Belgium, Denmark and Sweden; CEE peers are: Estonia; Hungary; Poland; the Slovak Republic and Slovenia. Measures of the quality of transport infrastructure and electricity are based on a score from 1 (low) to 7 (high).
Source: OECD Economic Outlook database; OECD National Accounts database; OECD Broadband database; World Economic Forum, The Global Competitiveness Index Historical Dataset.

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The investment cycle needs strengthening to reap the gains from public investment expenditure. Prioritisation of national investment projects is needed to direct funds to where returns are highest. The forthcoming Strategic Framework of Sustainable Development provides an opportunity to adopt a whole-of-government approach and overcome sector-based investment strategies. It should lead to greater co-ordination of projects and multi-year planning. It should also be informed by an evaluation of current and future infrastructure gaps. To improve project selection, *ex-ante* cost-benefit analysis should be used systematically for large projects. Likewise, the new "standing conferences" of key stakeholders at the national and regional level that will prepare action plans for EU-financed investment should also be used for all national programmes cutting across ministries or levels of government. Improvements to practices for monitoring and evaluating EU-financed projects should be extended to all significant investment projects.

Realising the benefits of decentralisation

Czech local governments have responsibility for delivery of some key government services, including education (regions and municipalities), transport (regions and municipalities), social services (regions and municipalities), waste and waste water services (municipalities), and health (regions and municipalities, with social security funds). But their autonomy is limited in areas such as education and health. Overall, sub-national governments account for around one-quarter of government expenditure, close to the average OECD country.

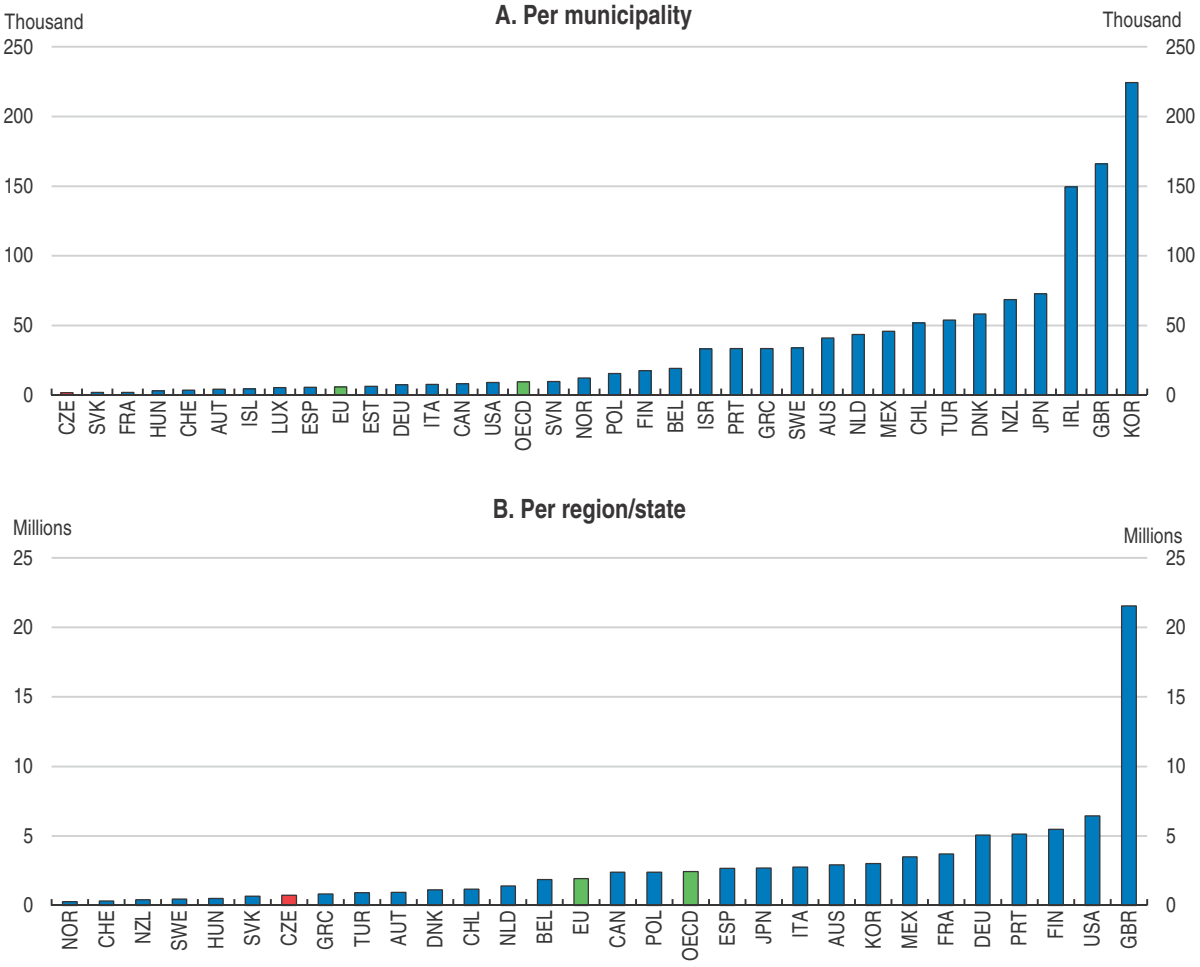
A well-known feature of sub-national government in the Czech Republic is the high degree of territorial fragmentation: with over 6 200 of them, its municipalities are the smallest on average in the OECD; and the regions are the seventh-smallest (Figure 25). Around three-quarters of municipalities have fewer than 1 000 residents and one-quarter have fewer than 200 residents. An additional layer of territorial administration is formed by the 205 "municipalities with extended powers" that perform specific functions on behalf of the central government, such as child protection and issuing passports. However, the system is complicated further by differentiated delegated functions performed by some other municipalities, such as issuing building permits or having a registry office. Another complication is the incomplete transition from the previous administrative system based on districts and municipalities (Ministry of Interior, 2014). The government's Strategic Framework for the public administration is a welcome attempt to streamline these responsibilities and complete the transition. Services such as driving licences and ID cards could be concentrated in "one-stop shops" at the 205 municipalities, for example.

Longstanding concerns are that municipalities are too small to deliver high quality services, and that capacity is stretched too thinly (OECD, 2011, 2006). Costs of administration per capita are higher in the smallest municipalities and decline as municipal size increases, up to 1 000-2 000 residents. In addition, municipal provision of key social services – for example, preventative health services, childcare and long-term care – is too low overall, but data enabling comparisons are not available. While educational attainment is good across the country, the large number of municipalities is hampering the consolidation of the school network so regions with many municipalities tend to have smaller schools (Figure 26; Shewbridge et al., 2016). Performance indicators should be introduced, regularly published and used in benchmarking exercises to help to identify good practices, inform local constituencies and improve outcomes. Norway's KOSTRA system is an example of best practice in monitoring local services that integrates information from multiple sources to make performance indicators accessible for local governments, the public, the media and researchers (OECD, 2009).

The problem of small municipalities is mitigated through inter-municipal co-operation. Around 90% of municipalities are involved in some form of inter-municipal co-operation, and bodies such as the Union of Towns and Municipalities try to promote co-operation. Ultimately, however, co-operation has been ad hoc. It is often relationship-dependent and it does not necessarily occur where fragmentation is worst (Chapter 2). It is also difficult to manage. Mergers are a first-best solution to achieve more concentrated service provision and are used by many OECD countries but they are difficult politically. Nonetheless they should be supported more, using stronger financial and non-financial incentives and performance indicators such as efficiency of service delivery to generate local support. Other ways of achieving similar benefits of consolidation of services through

Figure 25. **Czech municipalities and regions are among the smallest in the OECD**

Average number of inhabitants



Note: Average calculations are based on estimated population data as of 2015 or 2016 for most countries. Data for OECD and EU are unweighted averages.

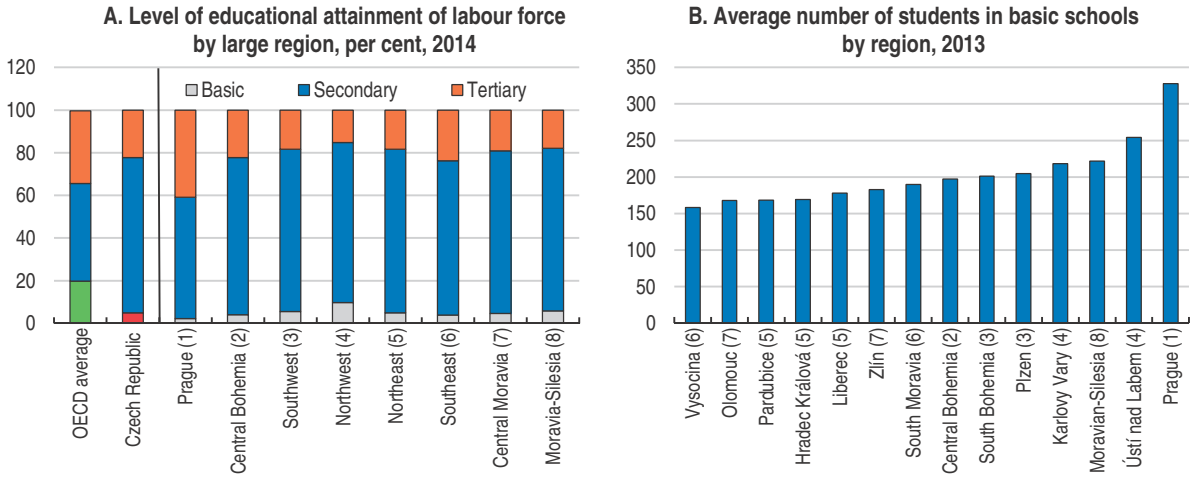
Source: OECD (2016), Subnational Governments in OECD Countries: Key Data (brochure), OECD, Paris, *www.oecd.org/regional/regional-policy*. Database: *http://dx.doi.org/10.1787/05fb4b56-en*.

StatLink http://dx.doi.org/10.1787/888933364502

their joint provision should be established to achieve a minimum size for service delivery in particular areas, such as health care, education or social services. In Italy and Hungary some form of co-operation is required for small municipalities. Alternatively, minimum standards of service provision or financial incentives could be used to generate co-operation but they would need to be sufficiently strong. A unit could be established in the central government to facilitate and monitor co-operation. Centres of shared specialist services are currently being piloted on a voluntary basis and, if successful, should be expanded to form a country-wide network.

Sub-national governments are mostly financed through a mix of shared taxes (personal and corporate income tax and VAT) and grants and transfers, from the central government. Over 60% of municipalities' revenue is from tax revenue, while for regions a little over 60% of revenue is from grants and transfers. Compared to other OECD countries, sub-national governments have relatively little autonomy over revenues: they have control

Figure 26. **Educational attainment is consistently good but the system could be organised more efficiently**



Note: Large regions (TL2 level) encompass several small regions (TL3 level). The numbers in parentheses show which larger region the small regions in Panel B belong to. Basic (or elementary) education includes primary and lower secondary education. OECD average is an unweighted average of countries with available data for 2013 or 2014.

Source: OECD Regional Statistics database; Shewbridge, et al. (2016), *OECD Reviews of School Resources: Czech Republic*, OECD Publishing, Paris, *forthcoming*.

StatLink http://dx.doi.org/10.1787/888933364517

over just 1.2% of total tax revenues. Most grants are earmarked. Municipalities receive recurrent tax on immovable property and can set the rate within a range specified in legislation. Municipalities that perform additional functions (e.g. issuing permits) receive additional compensation. User charges and income from infrastructure are other sources of revenue for municipalities. Regions and municipalities can also raise funds by applying for additional grants from the central government or European Union or by selling assets.

The tax-sharing formula has been the subject of much debate. Each region's share of the overall allocation to regions is set in the legislation. For municipalities, revenues are strongly linked to the population size and only weakly to cost drivers and the local economy and therefore there is little reward for growing the tax base. The link in the tax-sharing formula to where revenue is raised could be strengthened further, for regions and municipalities, accompanied by an explicit equalisation component to account for differences in revenue-raising capacity. Recurrent tax on immovable property is low relative to other OECD countries and most municipalities only charge the minimum tax rate. Effective tax rates should be raised to increase the share of revenues that municipalities directly control. More importantly, the calculation should be based on property value rather than property size, with these values updated regularly, as in most OECD countries. This could be combined with land-use planning instruments at municipal and regional level to avoid unintended consequences such as urban sprawl (Blöchliger, 2015).

The vast majority of grants and transfers to sub-national governments are earmarked, and are mostly for education and investment spending. Earmarking is generally associated with lower efficiency (Bergvall et al., 2006). It also limits regional and municipal governments' ability to match services provided to local needs. Part of the regions' revenues earmarked for education is for municipalities, which complicates administration and assessment of the system (Shewbridge et al., 2016). Greater use of benchmarking, including measures of quality, along with requirements of minimum service levels could

accompany greater flexibility in grant spending. This could encourage innovation and efficiency gains while safeguarding performance. It may also increase spending on infrastructure investment (Kappeler et al., 2013).

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ANNEX

Progress in structural reform

The objective of this annex is to review action taken since the previous Survey (March 2014) on the main recommendations from previous Surveys that are not reviewed and assessed in the current Survey.

A. Strengthening the fiscal framework and fiscal sustainability

Recommendations in previous *Surveys*	Action taken
Use a multi-pronged approach to secure fiscal sustainability. • Take steps to secure an increasing effective retirement age. • Continue to ensure that the indexation of pensions does not lead to old-age poverty problems. • Consider options for diversifying income sources for pensioners. • An additional measure could be to bring forward the increases in the statutory retirement age.	An Expert Committee on Pension Reform will prepare reform proposals to stabilise the system in the long run.
Improve financial literacy and awareness of the population. Prepare regular reports on pension prospects to inform the public about their future retirement incomes.	Since 2015 citizens can access their pension account online and calculate their entitlement. The Czech Social Security Agency now automatically mails basic information on pension accounts to people approaching retirement age.
Improve transparency of budgetary documentation. Include a regular tax expenditures report in the annual draft budget proposal.	Citizens' Budgets and tax expenditure reports are now published on the Ministry of Finance website. Since January 2015 a catalogue of open data is available on the Ministry of Finance website. Data meet transparency and openness requirements of the Open Government Partnership and include the budget, state debt and audits executed.
Establish a responsibility for the government to announce a debt target that is translated into medium-term expenditure ceilings broken down to individual ministries' targets.	No action taken. A different approach based on the structural balance was chosen.

B. Promoting competition and improving the business environment

Recommendations in previous *Surveys*	Action taken
Improve the managerial integrity of remaining state-owned enterprises by concentrating governance within a single authority. Privatise and divest business-related state-owned enterprises and activities.	A policy document on state ownership is being prepared. No significant action has been taken on privatisation.
Ensure that the leniency programme is working properly to unearth cartels, and that efforts to eliminate bid-rigging are successful. Remove the special sector regulation for food retailing from the competition policy framework.	In 2014 the Office for the Protection of Competition issued 7 decisions on prohibited horizontal agreements. In 2015 the Office issued 3 decisions on cartels, one of which involved the highest overall fine imposed by the Office. The number of leniency applications received by the Office has been increasing and applications are better targeted and well prepared. In response to complaints against the wording of the Act on the Significant Market Power in the Sale of Agricultural and Food Products, the Office drafted an amendment to ensure more efficient enforcement of the specific provision.
Secure effective independence for all network regulators, improve the co-ordination between the competition authority and regulators, and have a common approach to what constitutes a proper definition of market dominance.	No action taken.
Tackle vertical constraints on competition via effective ownership unbundling or via holding structures with financial separation of all activities that counters the risk of cross-subsidisation.	No action taken.
Increase the speed and reduce the cost of judicial proceedings, particularly in respect of contract enforcement and bankruptcy.	The Attorney's fee was significantly reduced in July 2015, reducing the cost of proceedings. Draft legislation to increase the speed of judicial proceedings will be presented to the Government in 2016. The Ministry of Justice has also prepared a draft legislative proposal to simplify insolvency proceedings.
Strengthen mechanisms for screening regulatory impact assessment (RIA) when legislative proposals are considered.	To strengthen RIA, in 2015 professional chambers were added as new subjects in the comment procedure within the legislative process.

C. Reforming education and strengthening skill use and school-to-work transitions

Recommendations in previous *Surveys*	Action taken
Encourage employers to provide training to young unskilled workers through tax subsidies or targeted reductions in social security contributions. Looking ahead, if the statutory minimum wage increases sufficiently, an additional measure could be the introduction of a youth minimum wage linked to training.	No action taken.
Increase participation of private employers in vocational education by simplifying institutional frameworks and governance.	New measures to promote co-operation between schools and enterprises include tax benefits for employers who allow practical teaching in their workplace and conclusion of voluntary contractual relationships between a pupil/student and an employer. The Ministry of Education, Youth and Sports (MEYS) in co-operation with the Confederation of Industry of the Czech Republic implemented the "POSPOLU" project aimed at mapping and encouraging co-operation between schools and enterprises, to provide professional training of students in a real work environment.
Introduce a contractual employment relationship between the apprentice and the employer.	In 2015 the MEYS published a Recommendation and model contracts for concluding the contractual relationship between employers and secondary school students or higher vocational school students.
Expand workplace training by providing subsidies to the participating firms for difficult to place students.	The "Internships for Youth 2" project was implemented from February 2014 to November 2014, following on from "Internships for Youth 1" (2012-14) within the Operational Programme "Human Resources and Employment". The project offered students in the last year of secondary school, college and university the opportunity to gain practical experience (of 1–3 months). Employers received a financial contribution during the practical training. Follow-up of the project is under discussion.
Secure quality in the provision of tertiary education by introducing output-based accreditation criteria and student fees to increase resources for the provision of public tertiary education, accompanied by a mixed system of means-tested grants and income-contingent repayment loans.	The 2016 amendment to the Higher Education Act obliges higher education institutions to perform internal quality assessments focused mainly on the outputs of their activities. Outcomes of these assessments will be part of the documentation for the accreditation process.
Avoid elitism in secondary education, including phasing out streaming at the age of 11, and strengthen benchmarking of schools and students.	Avoiding premature streaming of children into different education paths is part of the first strategic priority (Reducing Inequality in Education) of the Strategy of Education Policy of the Czech Republic to 2020 that was adopted by the government in July 2014.

D. Improving health spending efficiency

Recommendations in previous *Surveys*	Action taken
Review in-patient capacity and prepare a national capacity plan to guide medium-term contracts with providers, as well investments and equipment purchases.	No action taken.
Introduce compulsory active substances prescription and an electronic prescription system. Stimulate co-ordinated purchases and auctions of drugs and other supplies.	An electronic prescription system is being developed.
Introduce soft gate-keeping to improve care management.	No action taken.
Implement plans for e-Health while ensuring adequate security and resources for implementation.	A national e-Health strategy is expected to be released in 2016. It will include identifiers, metrics and feasibility studies. The Ministry of Health is seeking support from EU structural funds.
Improve risk-adjustment formula among insurers by implementing pharmaceutical drug groups.	Legislation to redistribute funds collected for health insurance among health insurance companies based on pharmacy-based cost groups (the PCG method) has been introduced into the legislative process.
Work towards a definition of the basic package of health care paid for by public system and develop a private insurance market to cover other expenditures.	No action taken.

E. Making the tax structure more growth and employment friendly

Recommendations in previous *Surveys*	Action taken
Harmonise and simplify the definitions and tax bases for the personal income tax and social security contributions (SSCs). Reduce the number of tax expenditures. Introduce a single declaration covering all labour taxes.	The creation of a Single Revenue Authority has been put on hold by the current government.
Reduce the disparities in the tax treatment of dependent workers and the self-employed.	Claims of lump-sum expenditures have been capped for taxpayers applying largest lump-sum claims (CZK 1.2 million for those applying 60% and CZK 1.6 million for those applying 80%). The lump sum has been limited to a maximum income of CZK 2 million. The introduction of mandatory electronic recording of sales in restaurants and hotels is also expected to reduce *de facto* disparities in treatment due to fraud.
Increase the real estate tax revenues by raising tax rates and linking the tax to actual market prices.	No action taken.

F. Achieving efficiency in the energy system

Recommendations in previous *Surveys*	Action taken
Ensure full consistency among strategic policies, including currently prepared documents on Environmental, Energy and Transport Policies to anchor private sector expectations about future policies. Improve the co-ordination of transport and land use plans.	The Government Council for Sustainable Development was established in 2014 to ensure consistency among strategic policies. The Council is chaired by the Prime Minister and will update the Strategic Framework for Sustainable Development to implement the 2030 Agenda for Sustainable Development (i.e. the Sustainable Development Goals). The National Action Plan for Clean Mobility was developed with relevant Ministries and private sector stakeholders. Strategic plans aim to improve co-ordination in transport and land use. The State Energy Policy includes links to environmental and transport policies and is binding for state representatives and authorities, which should provide consistency among strategic policies and anchor private sector expectations of future policies.
Strengthen the use of cost-benefit analysis and the effectiveness of environmental impact assessment for all policy instruments. Ensure proper ex ante, on-going and ex post evaluations.	Amendments to the Act on environmental impact assessment (EIA) aim to strengthen the use of cost-benefit analysis and the effectiveness of EIA for all policy instruments (effective from April 2015).
Systematically estimate abatement costs and adjust public intervention and subsidies to ensure equalised marginal abatement costs. Avoid overlaps and ensure common standards among instruments.	National subsidy programmes and EU-funded programmes are coordinated to prevent overlaps and to be comparable in their design and indicators.
Tax away windfall gains linked to the remaining free allocations of ETS allowances. Monitor and evaluate the efficiency of free ETS permit allocations.	For the third trading period (2013-20) the free allocation is fully harmonized on the European level, including the principle that no free allowances are allocated to the power sector. Thus, windfall profits are abated.
Support implementation of carbon taxation at the EU level. Realign the excise tax rate on all fossil energy sources and products, based on their carbon content and other environmental externalities, notably by increasing the relative taxation of diesel. Remove several excise tax reliefs on fuel use.	No action taken.
Plan a strategic switch to low-emission sources and technologies. Rebalance support for renewables to promote the lowest cost sources in a technologically neutral way.	The State Energy Policy includes a roadmap for the energy mix. It includes necessary policy actions to meet the particular targets, particularly targeted energy mix of 2040. The National Action Plan for Renewables (finalised in 2016) sets a path for the share of renewable energy and support needed to achieve this at lowest possible cost and ensuring technological neutrality. New installations of renewable energy sources are no longer supported by feed-in tariffs, with the exception of small hydropower plants and biogas plants using waste.
Enhance competition in the energy sector to increase market entry, minimise inefficiency and losses and stimulate emission-reducing innovations, including smart grids and meters.	The Operational Programme "Enterprise and Innovation for Competitiveness" aims to support innovative technologies. Support has been introduced for efficient combined heat and power generation, subject to legislative requirements and the achievement of primary energy savings. Implementation of smart metering is a part of the National Action Plan for Smart Grids (approved in 2015). Earlier cost-benefit analyses did not establish the cost-effectiveness of mass roll-out so meters will be gradually rolled out.
Apply best practices in support of energy efficiency among SMEs, promoting Energy Performance Contracting and the development of Energy Service Companies. Continue support for the energy efficiency improvements from EU structural funds under the next EU financial framework.	Projects analysing the suitability of Energy Performance Contracting (EPC) are supported through the national "EFEKT" programme and the discussion about the possibility of EPC for buildings owned by the central government is underway. Four operational programmes (OP) under the framework 2014–20 focus on energy efficiency: OP Enterprise and Innovation for Competitiveness, OP Environment, Integrated Regional OP and OP Prague – Growth Pole. Calls for proposals have been launched to promote energy efficiency in the household sector and in industry, with special attention to SMEs.
Develop traffic management in urban areas, including traffic restrictions in city centres, parking fees and incentives to commute by public transport. Strengthen control of emission from older vehicles and stimulate the renewal of vehicles through adequate carbon pricing.	No action taken.

Thematic chapters

Chapter 1

Fostering productivity for income convergence

Over the past two decades, the income level of the Czech Republic has converged considerably towards the OECD average. However, after the 2008 global crisis, the convergence process stalled. Shortfalls in labour productivity have developed and are mainly structural. Policies are needed to foster domestic sources of productivity growth. Better targeting of government R&D support and more focused innovation policies that would be aided by a streamlining of policy institutions and interventions are necessary. In particular, tailored policies to increase knowledge-based capital (skills, management capacity, collaboration, etc.) are necessary to increase Czech firms' productivity. Also, resources reallocation should be facilitated by reforming framework conditions. In particular, bankruptcy rules, competition and regulation policies, access to finance and SME taxation need to be improved to boost SMEs' growth and productivity.

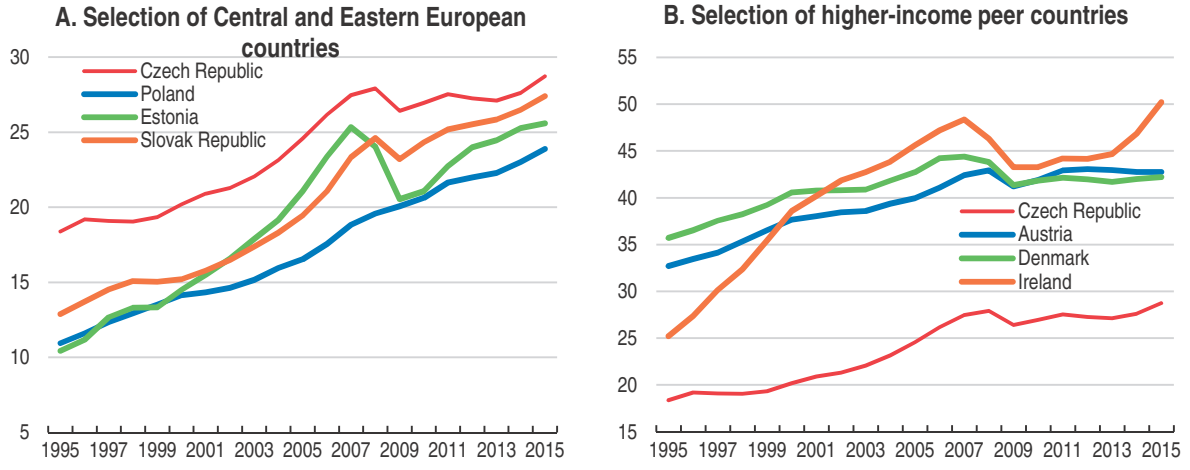
The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities or third party. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Introduction

Over the past two decades, the income level of the Czech Republic has converged towards the OECD average. Between 1995 and 2013, GDP per capita rose by 48%, reaching 76% of the OECD average level in 2014. Productivity catch-up was critical, aided by better integration into the global economy. However, since the 2008 global crisis, the convergence process has stalled. While other countries in Central and Eastern Europe (CEE), in particular Estonia, Slovakia and Poland (Figure 1.1, Panel A), continued to converge, Czech GDP per capita has lingered around its 2008 level (Figure 1.1, Panel B). Moreover, in comparison with either CEE countries or "small" advanced European countries, labour productivity in the Czech Republic has a similar lacklustre performance as GDP per capita (Fall and Lewis, 2016). The growth rate of labour productivity has fallen from 4.3% in the period 2001-07 to 0.4% in the period 2007-14.

Figure 1.1. **GDP per capita**

Constant prices, thousand USD PPP



Source: OECD Productivity database; OECD calculations.

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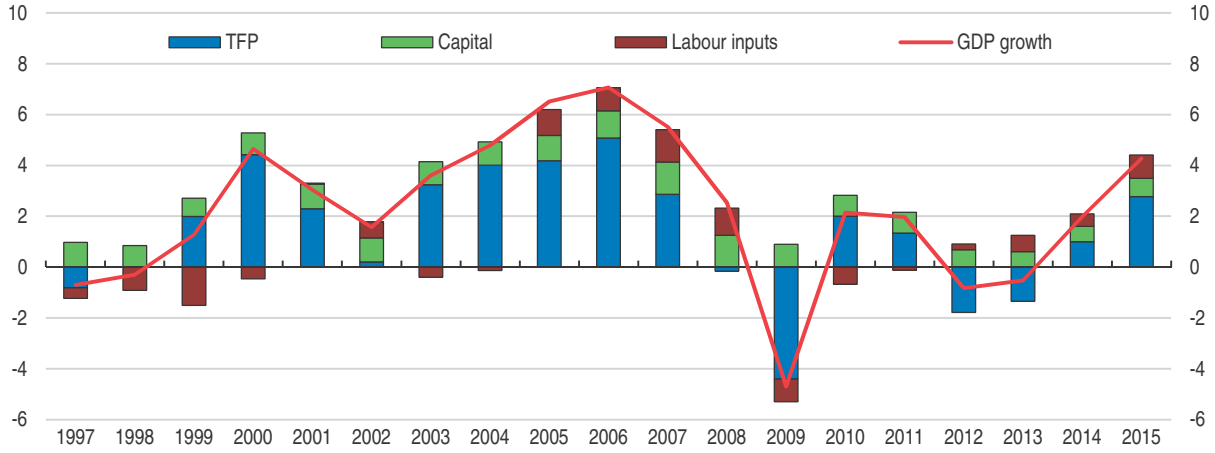
Gains in total factor productivity and capital accumulation had been the main drivers of Czech economic growth in the pre-crisis period (Figure 1.2) and the slowdown in both have contributed to flat profile of output since the beginning of the crisis, especially total factor productivity.

In the first section of this chapter, productivity developments are decomposed and analysed. In particular, the impacts of labour productivity's evolution, the dynamic of capital accumulation and the effects of productivity at the sectoral level on aggregate productivity are disentangled. The second section focuses on R&D and innovation policies to foster productivity growth. In the third section, the different policies to improve the market framework conditions for productivity and, therefore, businesses' growth are analysed.

Figure 1.2. **Decomposition of GDP growth**

Percentage points



Source: OECD Economic Outlook database; OECD calculations.

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The productivity growth rate slowdown is structural

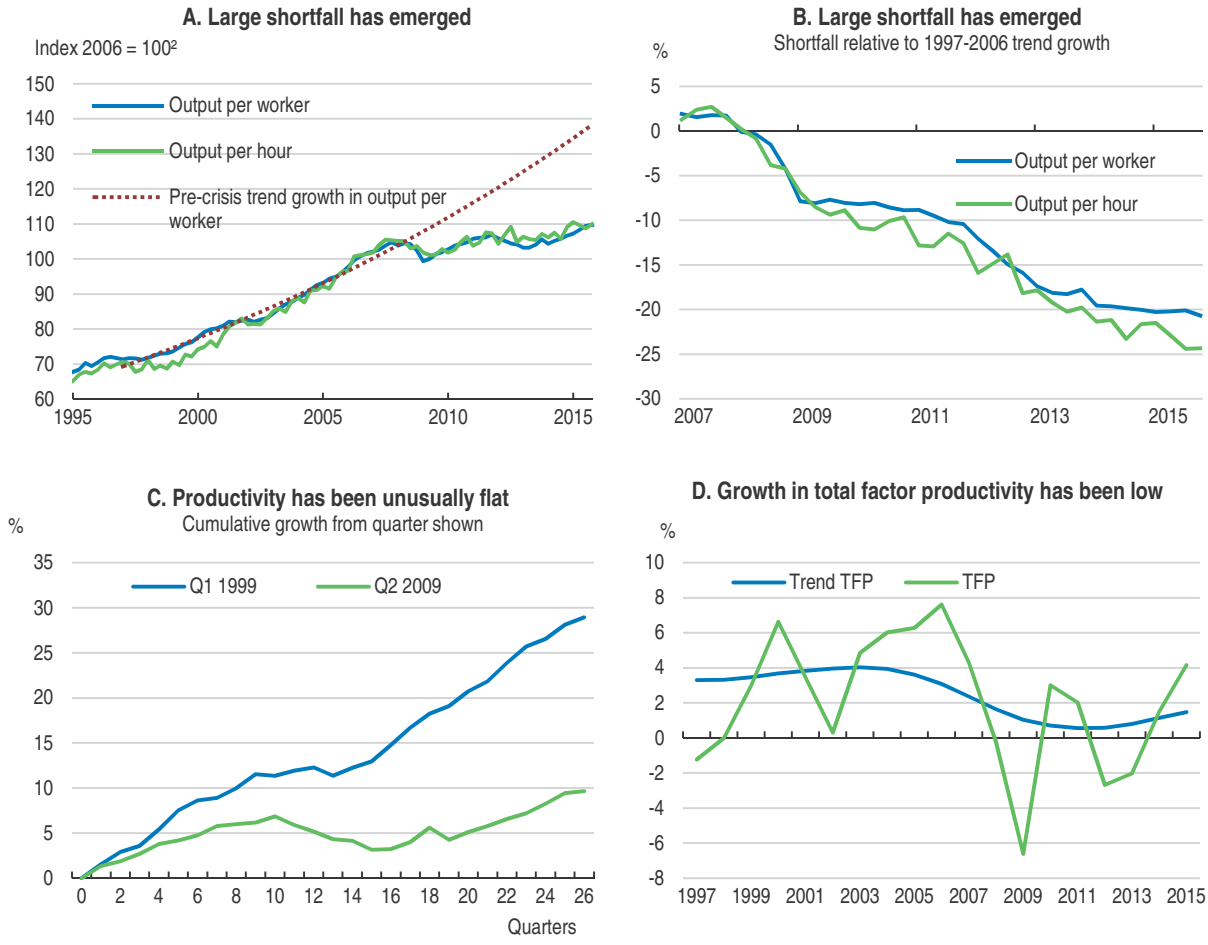
Labour productivity and total factor productivity growth rates have declined

Labour productivity trends show a clear structural break in 2008 at the beginning of the crisis (Figure 1.3, Panel A). With respect to the pre-crisis trend, a large labour productivity shortfall has emerged, amounting to 21% (Figure 1.3, Panel B). Figure 1.3, Panel C confirms that the post-crisis development is abnormally flat, pointing to a trend change in production processes since the crisis. Compared with earlier periods of very slow or negative growth, the economy has not been able to recapture the same dynamism after the 2008-09 recession. However, the gap is not growing anymore. Figure 1.3, Panel D shows that total factor productivity has slowed down.

The increase in employment occurred in a context of an expanding labour supply. Since 2009, the working age population has been decreasing, partly due to ageing and declining inward migration. However, participation has increased markedly, in particular among individuals aged between 50 and 64, offsetting demographic shifts (Fall and Lewis, 2016).

However, relying on productivity levels may obscure productivity trends. The evolution of the productivity level could be affected by positive and negative cyclical developments. Using potential productivity helps to disentangle short-run and long run developments, although estimates of potential productivity as of potential GDP could be subject to frequent revisions (Ollivaud and Turner, 2014). At 16%, the Czech Republic exhibits one of the highest potential labour productivity shortfalls, while the productivity shortfall is 21% (Figure 1.4). While cyclical developments are at play, the productivity shortfall seems to be thus largely structural, pointing to a need for structural reforms to boost productivity growth.

Figure 1.3. **Labour productivity has disappointed since the crisis**[1]



1. Output refers to real gross value added.
2. Pre-crisis trend growth in output per worker is calculated from a linear trend between 1997 and 2007, and is projected from 2008 onwards.

Source: Calculations based on data from OECD Quarterly National Accounts database and OECD Economic Outlook database

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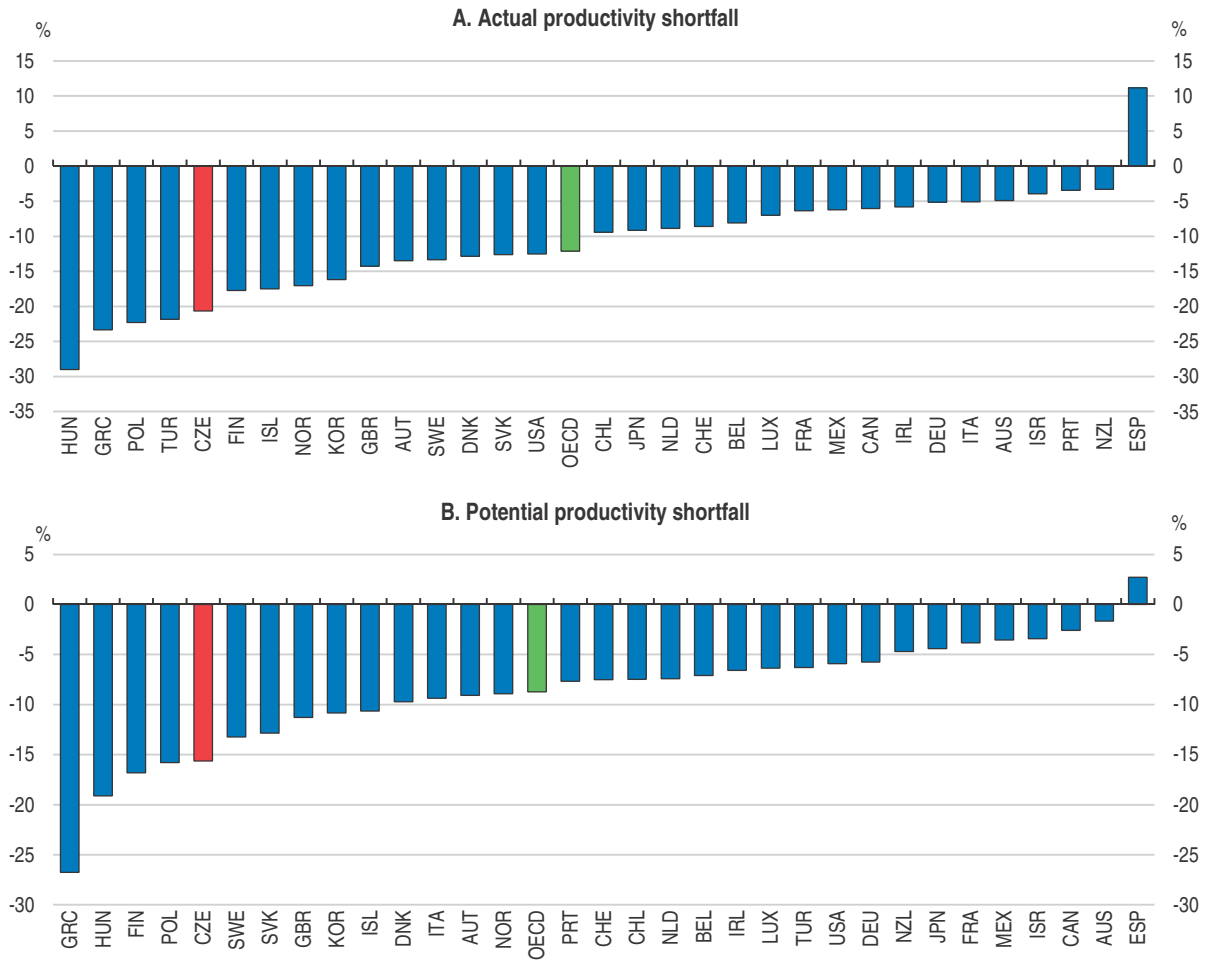
Figure 1.4. **The labour productivity shortfall is mainly structural**

Deviation from pre-crisis trend growth, Q4 2015



Source: Calculations based on data from OECD Economic Outlook database.

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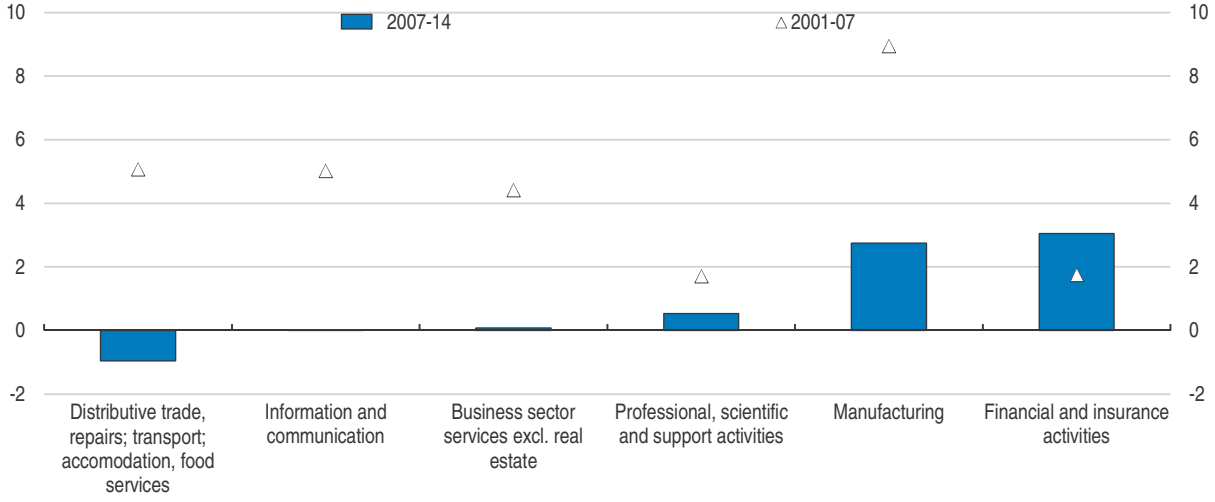
Contribution of sectoral productivity to total productivity is slowing down

The shift in the composition of the economy, in particular from services (non-financial) to manufacturing, has accelerated since the crisis, with manufacturing representing 25% of total value added in 2014 compared to 18.1% in 2004. Labour productivity growth in the manufacturing sector has decreased since the crisis but remains positive, while it is close to zero in the service sector. Further decomposition of labour productivity by activity shows that labour productivity growth fell in all sectors except for financial and insurance activities in the period 2007-13 compared with 2001-07, with manufacturing displaying an important decrease (Figure 1.5).

A shift-share analysis shows that the sectoral reallocation of resources, in particular of employment, plays only a small role in productivity developments. The main driver of aggregate productivity growth is within-sector labour reallocation (Fall and Lewis, 2016).

Figure 1.5. **Labour productivity by main activity**

Real value added per hour worked, average annual rate of change



Note: Business sector services cover distributive trade, repair, accommodation, food and transport services; information and communication; financial and insurance; professional, scientific and support activities.
Source: OECD Productivity Database, April 2016.

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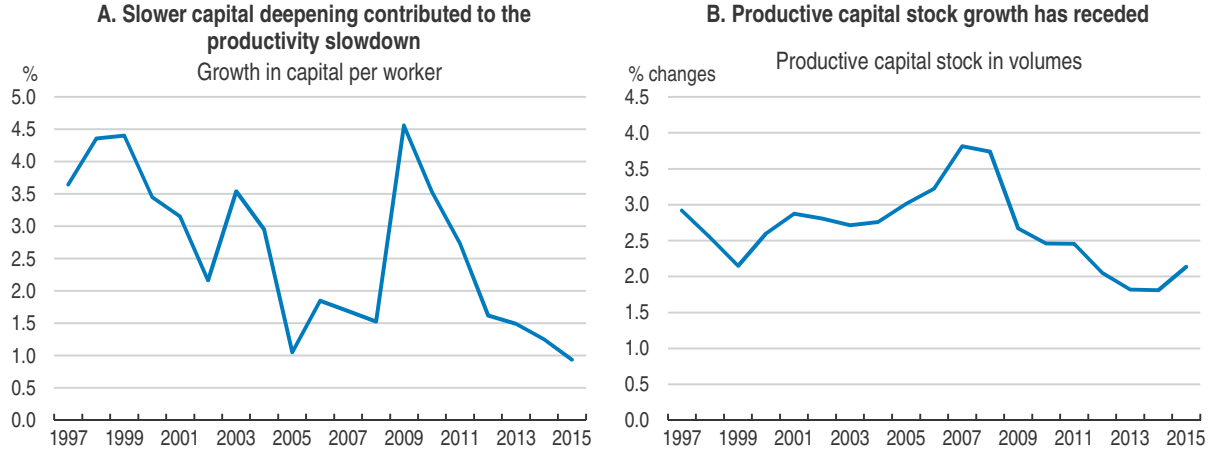
Investment and capital accumulation growth have receded

The lacklustre economic performance is partly explained by business investment and capital accumulation, which have lost steam since the start of the crisis. The slower capital stock accumulation is explained partly by a decline in the investment rate (Figure 1.6). However, the Czech investment rate remains among the highest in the OECD and intangible investment has shown a stronger dynamic since the crisis, though from a low level and is still somewhat below the OECD average (Fall and Lewis, 2016). The lower growth rate of capital stock since the crisis led to lower capital intensity which contributed to lower labour productivity growth.

Figure 1.6. **Capital accumulation has been undermined by the crisis**



Source: OECD Economic Outlook database.

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Leveraging R&D and innovation policies to foster productivity

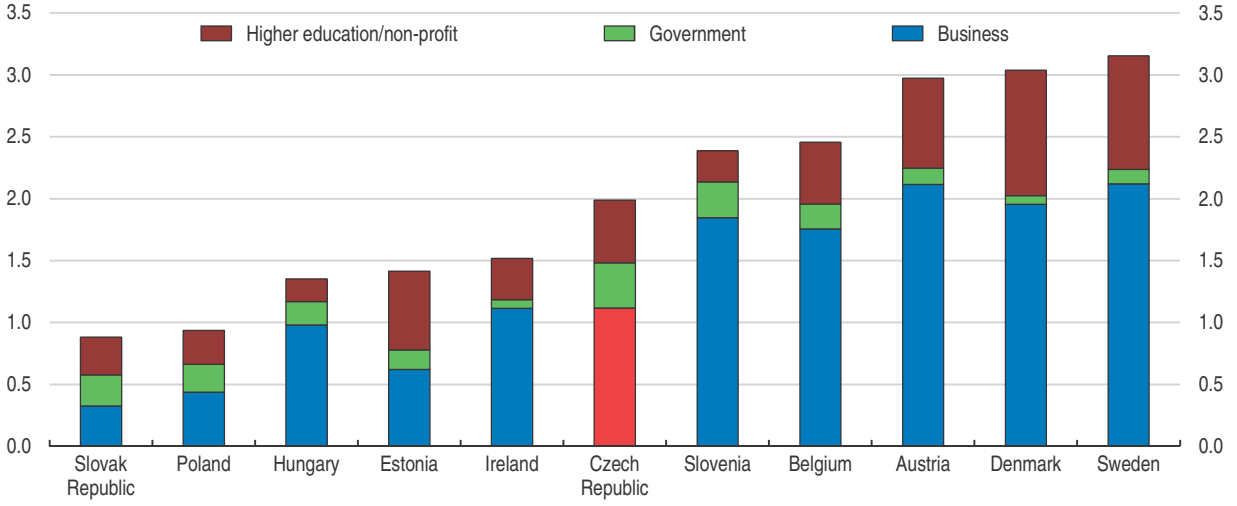
Until 2008, country-level characteristics contributed the most toward explaining productivity growth in catching-up countries, such as the Czech Republic (Dall'Olio et al., 2014). More precisely, since independence, inward foreign direct investment, international linkages of firms and credit availability have had a significant impact on productivity growth. As the Czech economy is already one of the most integrated in the global value chain (Figure 1.23), reviving the productivity catching-up process has to be domestically-driven. In particular, there is a need to boost the productivity of Czech firms not affiliated to foreign firms and to facilitate the expansion of SMEs and the creation of new firms. Moreover, improving infrastructures is essential to create a productive environment for firms (see Chapter 2).

The R&D and innovation performance are not yet satisfactory

R&D spending has been increasing since 2003 and amounted to almost 2% of GDP in 2014. Czech R&D spending is evenly distributed among basic research, applied research and experimental development. Business enterprise research and development (BERD) represents the biggest share of R&D spending, but a non-negligible part (40%) is coming from government spending (Figure 1.7). BERD is mainly initiated by firms that are foreign-owned or affiliated to foreign enterprises (56% of BERD in 2014).

Figure 1.7. **Research and development expenditure by sector**

% of GDP, 2014



Source: OECD (2016), Main Science and Technology Indicators database.

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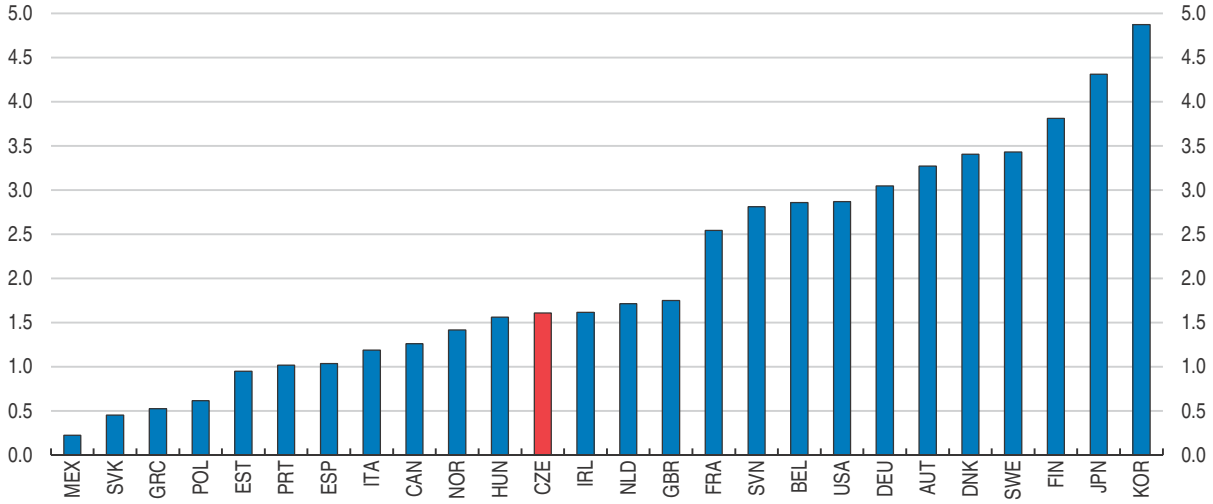
Overall, the R&D intensity remains relatively modest for a country with such a large manufacturing sector (Figure 1.8). One of the reasons is that Czech firms affiliated to foreign companies, in particular in manufacturing, tend to be concentrated in the low value-added segments of global value chains with low R&D. Indeed, cross-border investment in Czech manufacturing generates jobs for low-skilled workers and deepens the specialisation in the low-technological segments with little room for upgrading (Munich et al., 2014).

Despite a sustained effort in the past ten years to increase research, development and innovation (RDI) spending, the innovation performance of the Czech Republic remains

mixed. In the European Union's classification of country performances in terms of innovation, the Czech Republic is among the group of moderate innovators (Figure 1.9). There has been noticeable progress in some dimensions of the innovation environment such as increases in higher education, in particular the number of doctorate graduates and people with tertiary degrees.

Figure 1.8. **Business R&D intensity**

2014 or latest available, as a percentage of value added in industry



Note: Business R&D intensity is calculated as business R&D expenditure relative to value added.
Source: OECD (2016), Main Science and Technology Indicators database.

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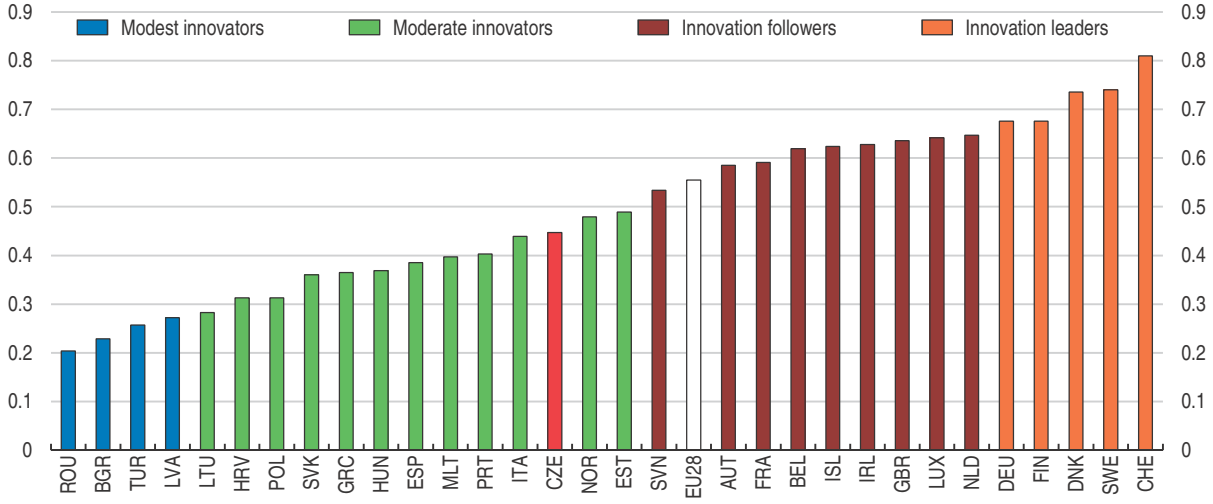
Figure 1.9. **Innovation performance is moderate**

Index score 0 to 1



Note: Average performance is measured using a composite indicator building on data for 25 indicators going from a lowest possible performance of 0 to a maximum possible performance of 1. Average performance reflects performance in 2012 due to a lag in data availability.
Source: European Commission, Innovation Union Scoreboard 2015.

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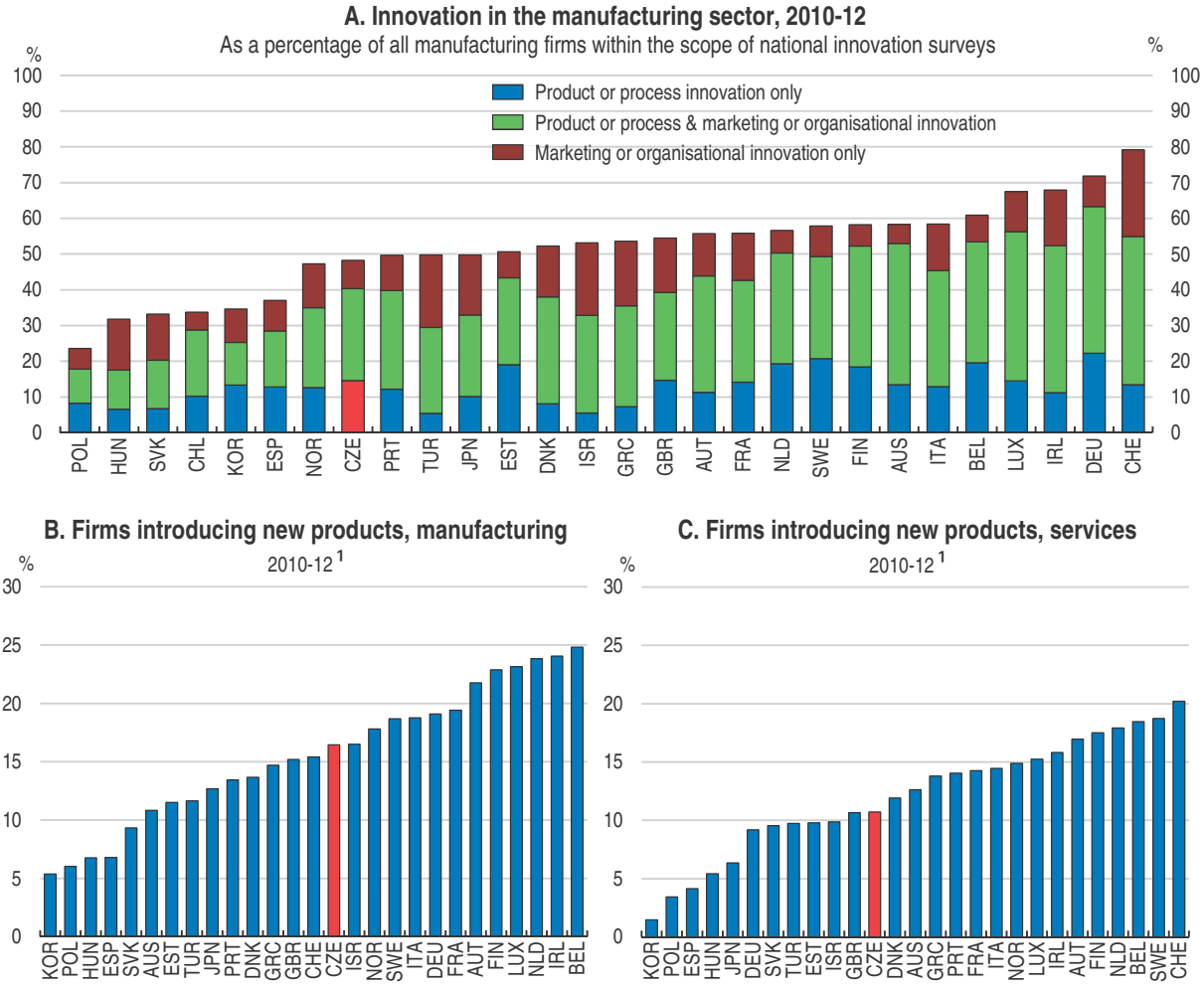
Modest performance in innovation is also apparent in small and medium-sized enterprises (SMEs). SMEs account for the vast majority of Czech firms, but few are innovators (OECD, 2015a). Furthermore, the manufacturing sector, which is important in the economy, has a moderate innovation performance (Figure 1.10, Panel A). In particular, product and process innovation is relatively low. The service sector, which plays an important role as provider of inputs for the manufacturing sector, has a weak performance indicator. Figure 1.10, Panel B shows that only around 10% of firms in the service sector introduce new products in the market.

Figure 1.10. **Innovation is moderate in manufacturing and services sectors**



1. As a percentage of all firms in each sector within the scope of national innovation surveys.

Source: OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society*, OECD Publishing, Paris. *http://dx.doi.org/10.1787/sti_scoreboard-2015-en.*

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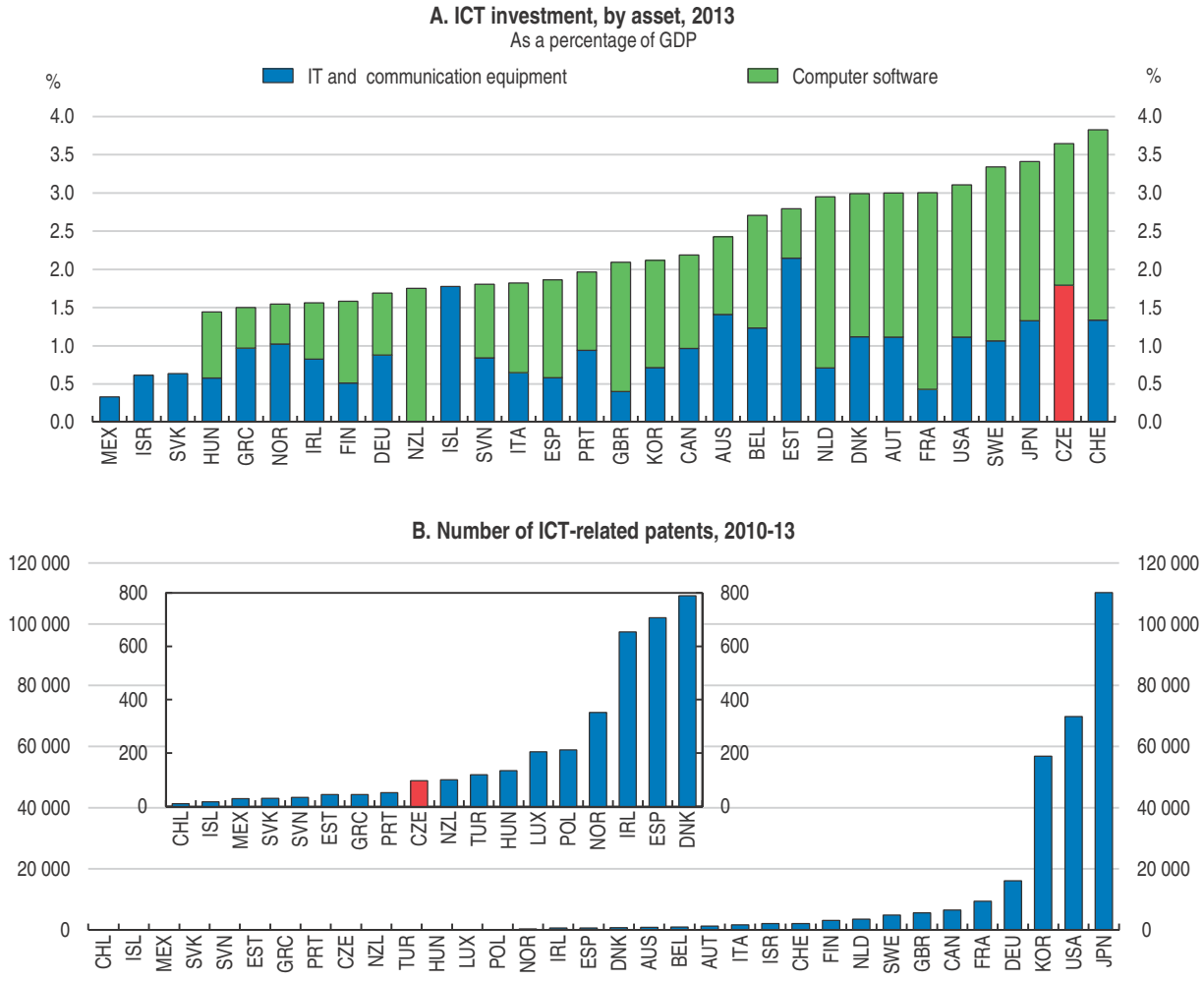
This mismatch between RDI spending and innovation performance is also illustrated by the ICT sector. In Figure 1.11 (Panel A), Czech firms are among those that devote one of the highest share of their equipment investment to ICT components, while they rank among the moderate innovative enterprises (Figure 1.11, Panel B). Therefore, it is not only

the level of RDI spending which explains the moderate innovation performance but also the enabling environment (resource reallocation and framework conditions) and the complementary investments (in skills, organisational change, process innovation, management etc.).

Figure 1.11. **Innovation results are not in line with spending: illustration from the ICT sector**



Source: OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society*, OECD Publishing, Paris. *http://dx.doi.org/10.1787/sti_scoreboard-2015-en.*

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Increase and better target R&D and innovation funding

Better targeting R&D spending

In the last ten years Czech spending on R&D has increased steadily from 1.1% of GDP in 2003 to 2% of GDP in 2014 (OECD, 2015a). That level is still below the OECD average (2.4% of GDP) but is a significant effort towards setting up a well-performing innovation system. The increase in RDI spending should be continued as it is a key element for the upgrading of the economy in global value chains. Government R&D spending is focused on basic research and higher education institutions, but a non-negligible part of government R&D spending is directed to support BERD undertaken in SMEs, representing 64% of R&D

spending of SMEs. Large firms, in particular those with foreign affiliations, run their R&D more independently.

Different measures could be considered to increase and better target government funding of RDI. One reason business RDI spending is low in comparison with the leading innovative countries (Figure 1.7) is that because most of the important Czech firms are foreign owned or affiliated, they do not decide their RDI initiatives. However, that does not seem to be the only reason, as 58% of business R&D was incurred by foreign controlled affiliates in 2011 (OECD, 2015a). There is also a lack of investment in RDI by national firms. The government has put in place programmes to encourage greater business RDI spending by intensifying collaboration between businesses and research institutions. These programmes are financed by EU funds as well as from national resources (the new high-tech R&D support programme TRIO and by the Technology Agency). However, direct government funding of business RDI is moderate, representing 0.1% of GDP in 2013. Under these programmes, more co-financing should be developed to incentivise firms to mobilise their own resources.

Government R&D spending should better incentivise Czech firms, which seem to invest less in R&D than foreign-affiliated firms. That would broaden the scope of R&D activities undertaken in the country. Important steps have been made recently to reinforce innovation policy. The RDI enabling environment has been boosted with infrastructure programmes and the creation of competence centres. Using EU funds, 8 centres of excellence and 40 regional centres of R&D have been founded or extended (investment in infrastructure), mostly specialised in specific topics (biotechnology, biomedicine or sustainable energetics, etc.) and inside universities, technology institutes and the Academy of Science. The competence centres supported by the Technology Agency of the Czech Republic (Box 1.1) are more focused on the development of soft knowledge and human resources.

The conversion of research into innovation in goods, services and processes could be improved by increasing the collaboration between research institutions and enterprises. Programmes run by the Technology Agency should be reinforced to bolster the transformation of research developed in public entities into marketable goods and services. For instance, mixed public-private entities could be set up closely related to the different research institutions in charge of scrutinising the different research results and developing further those that have a potential market.

The development of the evaluation framework of R&D support should be accelerated. An important part of R&D and innovation financing is based on grant projects. The government is planning to introduce a global evaluation framework, including improvements in the information system, to assess research outputs and more general benefits. The point system of evaluation used for the allocation of R&D support to research institutions is largely criticised. It gives biased incentives for short-run research and strategies to earn points at the expense of long-run and more promising research. Core research institutions' financing should be more secured and its renewal subject to evaluations at reasonable intervals and grant financing of research used to direct or support research on national priorities. A comprehensive evaluation framework is crucial for better orienting research funding towards general purpose technologies and also allows funding to be reallocated to new projects or objectives easily (Rodrik, 2008).

Box 1.1. **Technology Agency of the Czech Republic**

The Technology Agency of the Czech Republic (TACR) is part of the state system of support for applied RDI. TACR was established in 2009 under the Act on Support for Research, Experimental Development and Innovations. TACR is in charge of implementing innovation policies, by providing targeted support to projects on applied research that contribute to increasing competitiveness and economic growth.

TACR is a separate entity that independently manages resources allocated by the state budget. In 2014 the approved budget was CZK 2.96 billion and in 2015 CZK 2.86 billion of which targeted support represents 97% and 96% respectively. Its support is carried out under different programmes:

- The **Alpha Program** aims to support applied research and experimental development in the field of advanced technology, environment and energy and transport. It is the largest program of TACR.
- The **Beta Program** aims to support RDI designed for the needs of public authorities. The programme is implemented by entering a single procurement in research and development based on the requirements of relevant government authorities.
- The **Competence Centres Program** focuses on long-term (up to eight years) and the establishment of centres of research development and innovation in advanced fields. The program supports the creation of strategic partnerships between enterprises and research organisations. The emphasis is also placed on motivating young early-stage researchers.
- The **Omega program** aims to strengthen research activities in the field of applied social sciences. The specific objectives of the program include improving the efficiency of public policies, implementing and promoting the interests of the Czech Republic, and development of regions in the context of the European integration process, among other areas.
- The **Gamma program** aims to support the verification of the results of applied research and experimental development in terms of their practical application, and to prepare their subsequent commercial exploitation.
- The **Delta Program** aims to promote co-operation in applied research and experimental development through joint projects of international technology and innovation agencies or other similar institutions and research organizations supported by the TACR.
- The **Program Epsilon** has a particular focus on improving the position of the Czech industry by supporting projects of applied research and experimental development, the results of which have high potential for rapid application in new products, production processes and services, particularly in the following priority areas: a competitive knowledge-economy; sustainability of energy and material resources; environment for a good life.

In 2014, 229 projects in programmes Alpha and Omega were completed. Most of them lasted for 3-4 years. Most of the projects were realized in Prague and South Moravia, and from a sectoral perspective in manufacturing.

Targeted fiscal incentives for innovation

Well designed and properly administered tax incentives for RDI can complement grants funding. Government support for business R&D through tax incentives increased by 12.2 percentage points between 2006 and 2013, to 32% of government R&D spending (OECD, 2015a). European innovation leaders tend to have a higher share of tax incentives in their R&D spending (Denmark, 53.8%; Netherlands, 87.4%; the United Kingdom, 48.3%). Also, tax incentives are more neutral, except for firm size, and less government guided than grants as firms mobilise their own resources toward their own projects before claiming the tax reduction.

However, tax incentives may favour incumbents at the expense of young firms. Indeed, the implicit subsidy rate of tax incentives is related to firm profitability and young firms and SMEs are often in a loss position in the early years of an R&D project (Adalet McGowan et al., 2015a). The effect may be particularly hampering for productivity growth, as young firms are often very entrepreneurial and innovative in countries with well-performing innovation systems. Furthermore, it is important to guarantee that R&D tax incentives are refundable or contain carryover provisions so as to avoid overly favouring less dynamic incumbents at the expense of dynamic young firms (OECD, 2015b). Therefore, a balance should be maintained between different types of government funding through grants, loans, co-financing, loan guarantees and tax provisions. In any case, the uncertainties about receiving tax deductions related to RDI spending should be reduced through a simplified and more transparent claiming system. To ensure that R&D tax credit claims are legitimate, programmes such as the TACR's training of tax officials should be further developed.

A complementary financing tool of innovation is demand-side measures to support innovation. Such measures can be useful in creating a market for innovation that addresses particular environmental and societal challenges (e.g. healthcare and pollution reduction). In particular, public procurement contracts have played a central role in creating leading innovation sectors in some countries (for instance defence spending in technology in Israel). Innovative pre-commercial public procurement is one such measure. In this case, a public contracting authority, for the purpose of purchasing goods, services or works, introduces into the procurement terms criteria that require innovative solutions. However, a strong regulatory framework should be put in place to make sure that young innovative firms have access and to avoid a technology lock-in situation (OECD, 2014a). Performance based contracts with revision clauses can be effective to guarantee that the objectives of the public procurement contract are met.

Venture capital

Venture capital is very low in the Czech Republic (less than 0.006% of GDP in 2014). The share of venture capital in total investment in private equity (non-publicly traded companies) during the period 2007-10 amounted to just 3.2% on average, which is far below the European level (12%). Venture capital is almost inexistent for seed and start-up enterprises. Venture capital funds in the Czech Republic usually invest in later development stages of enterprises. This produces a financing gap due to the absence of a financial market for early-stage innovative companies. Also, banks and traditional financing institutions are not willing to finance risky projects with a high innovation potential.

To remedy these financing gaps for SMEs and start-ups, the government is planning to increase access to capital from public funds for SMEs and to facilitate the implementation of innovative competitive projects by SMEs under the Operational Programme Enterprise and Innovations for Competitiveness 2014-20 (OP EIC). Support will be provided in the form of consultancy services for start-ups (business plan, legal advice, accounting, management, etc.) and financial instruments as grants for SMEs. The main framework for venture capital is the planned National Innovation Fund. It is a EUR 45 million investment platform dedicated to SMEs' and seed projects' financing. It will be managed initially jointly with the European Investment Fund and it seeks to mobilise private sector participation in equity financing.

While targeting the early financing of seeds and start-ups is appropriate given the lack of risk-capital available for these projects, the choice of instruments should be considered carefully. Some grants are necessary to encourage the development of innovative initiatives, however, the ex-ante assessment and selection process should be monitored strictly to avoid opportunistic behaviour and capture. Also, government support of equity investments in high-potential young firms should be done in partnership with the private sector (Wilson, 2015). Such an arrangement is likely to be more successful in fostering a sustainable venture capital sector and will help avoid the common pitfalls of government "picking winners". Therefore, increasing the participation of private sector actors such as banks via co-financing for instance could guard the National Innovation Fund against choices biased toward non-financial criteria for innovation perspectives. Moreover, in addition to venture capital, the development of seeds and start-ups necessitates a favourable ecosystem constituted of high quality infrastructure, available skilled human resources, frontier research and a business friendly environment (Wilson, 2015).

Streamline the administration and implementation of innovation policy

The organisation and administration of R&D and innovation policies is still too complex (see Box 1.2). Spending is divided among eleven ministries and bodies and seven types of financial supports of different nature. This creates a fragmented system of support. Indeed, R&D and innovation policies are developed and implemented in different government bodies, mainly in the Ministry of Industry and Trade, Ministry of Education, Youth and Sports (MEYS), the Academy of Science, the Czech Science Foundation, the Technology Agency of the Czech Republic (TACR), the Office of Government and the Research and Development Council. Also different line ministries (defence, agriculture, etc.) run specific programmes. Some restructuring has already been made with the merging of some spending bodies in the TACR in 2009 (see Box 1.1) and by establishing the position of Deputy Prime Minister for Science, Research and Innovation in 2014. However, the innovation system still suffers from the specialisation of the different bodies each with a limited set of intervention instruments. The RDI targeted support from national funds can be done according to the RDI law only via grants which prevents using any innovative instruments. Allowing the different institutions to use pooled instruments for interventions would increase their efficiency and reduce the number of interlocutors for enterprises. Restrictions on financial instruments available for innovation financing in the financial law governing R&D and innovation policies could be lifted.

There are also overlaps between the different strategies (Innovation, SMEs and Export) and programmes put in place for their implementation, not to mention initiatives at the regional and industry association level. The respective role of the different stakeholders should be further clarified as they all intervene in the three main areas (enabling environment, funding research projects and human resources). The establishment of an overarching strategy, the National Research, Development and Innovation Policy of the Czech Republic in 2016-20, is also a first step to ensure consistency between the different strategies and programmes.

The policy design and the implementation of innovation policies should be streamlined and more co-operation should be sought. It is furthermore necessary to unify the design, assessment and coordination of the implementation of research and development and innovation policies in a single institution. The intended creation of the Ministry of Science and Research could be an opportunity to put all research institutions

Box 1.2. **Czech innovation policies and bodies: a complex organisational structure**

The Czech Republic innovation policy is a complex matrix of strategies, policy instruments, programmes and institutions.

Strategies

There are different strategies with overlapping goals and firm targets that contribute to innovation policies. The main ones are:

- **The National Innovation Strategy of the Czech Republic 2012-20** adopted in 2011. The key objective is to reinforce innovation and the use of high technology as source of competitiveness. It is supplemented by **the Conception of support of small and medium enterprises for the period 2014-20** which is focused on four strategic priorities: (1) the cultivation of business environment, development of advisory services and education for entrepreneurship, (2) development of business based on the support of research, including innovation and business infrastructure, (3) support of the internationalisation of SMEs, (4) sustainable energy development and innovation in the energy sector. This strategy is detailed annually in **the Action Plan to Support Small and Medium-sized Enterprises**, which defines the implementation of individual measures.
- **The National Research, Development and Innovation Policy of the Czech Republic in 2016-20** is key document of R&D area. It focuses on four strategic priorities: (1) consolidation of the management of R & D; (2) improving public sector research quality; (3) co-operation between the private and public sectors in R & D area and stimulating innovation in enterprises; (4) strategic focus of applied research according to the needs of users from the private and public spheres.
- **The National Research and Innovation Strategy for Smart Specialization Czech Republic** (RIS3 strategy) was also established as a precondition for the drawing of EU funds on RDI and is part of the national RDI strategy. It identified areas where policy actions are necessary to increase innovation performance of firms for competitiveness. Also, there is an initiative on Industry 4.0 created by the Ministry of Industry and Trade targeting applied research.

Programmes

Several programmes are run to strengthen the innovation capability of the business sector. Significant efforts to promote innovation are channeled through the **Technology Agency of the Czech Republic** (see Box 1.1). In addition, the **Operational Programme Enterprise and Innovations for Competitiveness 2014–20** (OPEIC) is mainly financed by EU funds. The OPEIC, conducted by the MIT, is the third-largest fund for the period 2014-20 after operational programmes for *Transport* and *Integration* with a budget of EUR 4.3 billion. It is focused on supporting the development of R&D for innovation, business development and competitiveness of SMEs, effective consumption of energy, energy infrastructure development and renewable resources, development of high-speed access networks and technical assistance.

Institutions

There are many institutions acting in the R&D and innovation domain. The Ministry of Industry and Trade is the leading body on innovation policies. Many research organizations established their centers for technology transfer which are to ensure the link between RI and industry and application of research results. Another instrument for strengthening the link between RI and enterprises are Competence Centre projects under the programme of TACR (see Box 1.1 on TACR).

Further support is provided by *CzechInvest*, the Agency for Investment and Business belonging to the MIT. Its role is to attract foreign investment in manufacturing, strategic services and technology centres. Other supports of RDI are provided by the Czech Science Foundation, Ministry of Industry and Trade, the Academy of Sciences and different line ministries.

The overall system appears highly fragmented, making it difficult to carry out an evaluation of the effectiveness and benefits of the overall RDI policy. An umbrella organisation with sufficient powers and the ability to implement and enforce its policies is necessary.

under the responsibility of the same institution and give that institution the mandate to co-ordinate and evaluate innovation policies.

Upgrading the innovation system will increase productivity and competitiveness

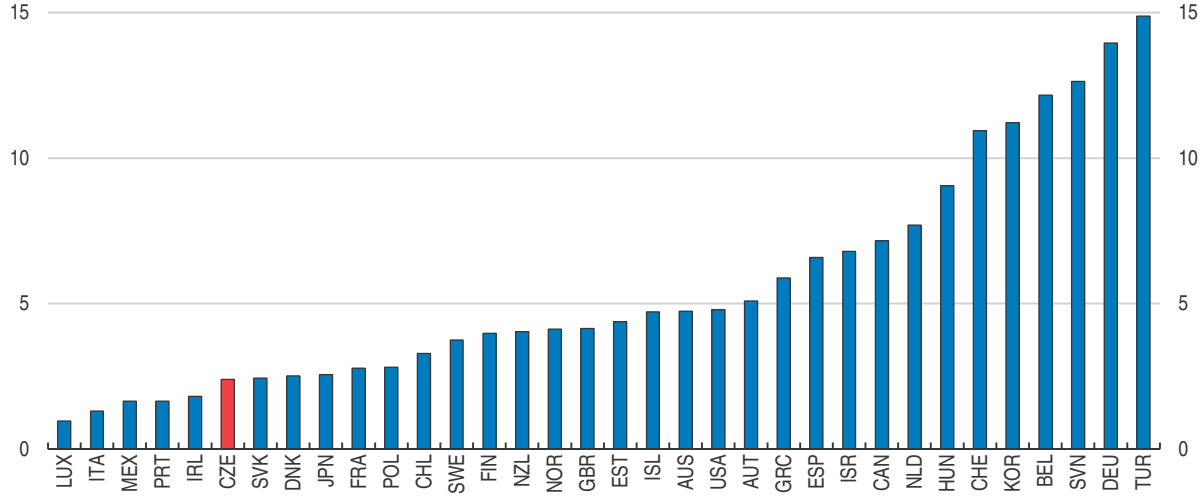
Foster the collaboration between businesses and public entities

Limited collaboration between businesses and public research entities is one of the weaknesses of the innovation system. Only 14.4% of SMEs and 30.3% of large firms collaborate on innovation with higher education or research institutions (OECD, 2015a). Funding of higher education institutions from businesses is among the lowest in the OECD (Figure 1.12). Collaboration between research institutions and businesses is a factor of diffusion of innovation from frontier technology (Adalet et al., 2015). Also, given the strong presence of foreign firms, one could expect that Czech firms incorporate more externally developed innovations (Figure 1.13). Different factors are holding back the collaborative environment on RDI. First, local firms tend to be focused on production to meet demand from foreign companies, with a concentration and over-representation in the low value-added segments of the manufacturing value chain. Second, many firms are owned or affiliated with foreign firms which generally do not place innovation activities in the Czech Republic. Finally, Czech firms tend to lack non-technical management competencies, in particular, management of innovation capacities, to better exploit their technical competencies.

However, some specific manufacturing industries such as the automotive sector have set up successful collaborations with technological institutions and universities. There are already different strengths such as some successful research institutions, technological capacity, and supporting institutions that could be further capitalised on to enhance the collaboration between businesses and research institutions. A promising instrument in this area will be the realization of Operational Programme Enterprise and Innovations for Competitiveness 2014–20. The ALPHA and GAMMA programmes run by the Technology

Figure 1.12. **Share of higher education R&D financed by industry**

2014 or latest available, in per cent



Source: OECD (2016), Main Science and Technology Indicators database.

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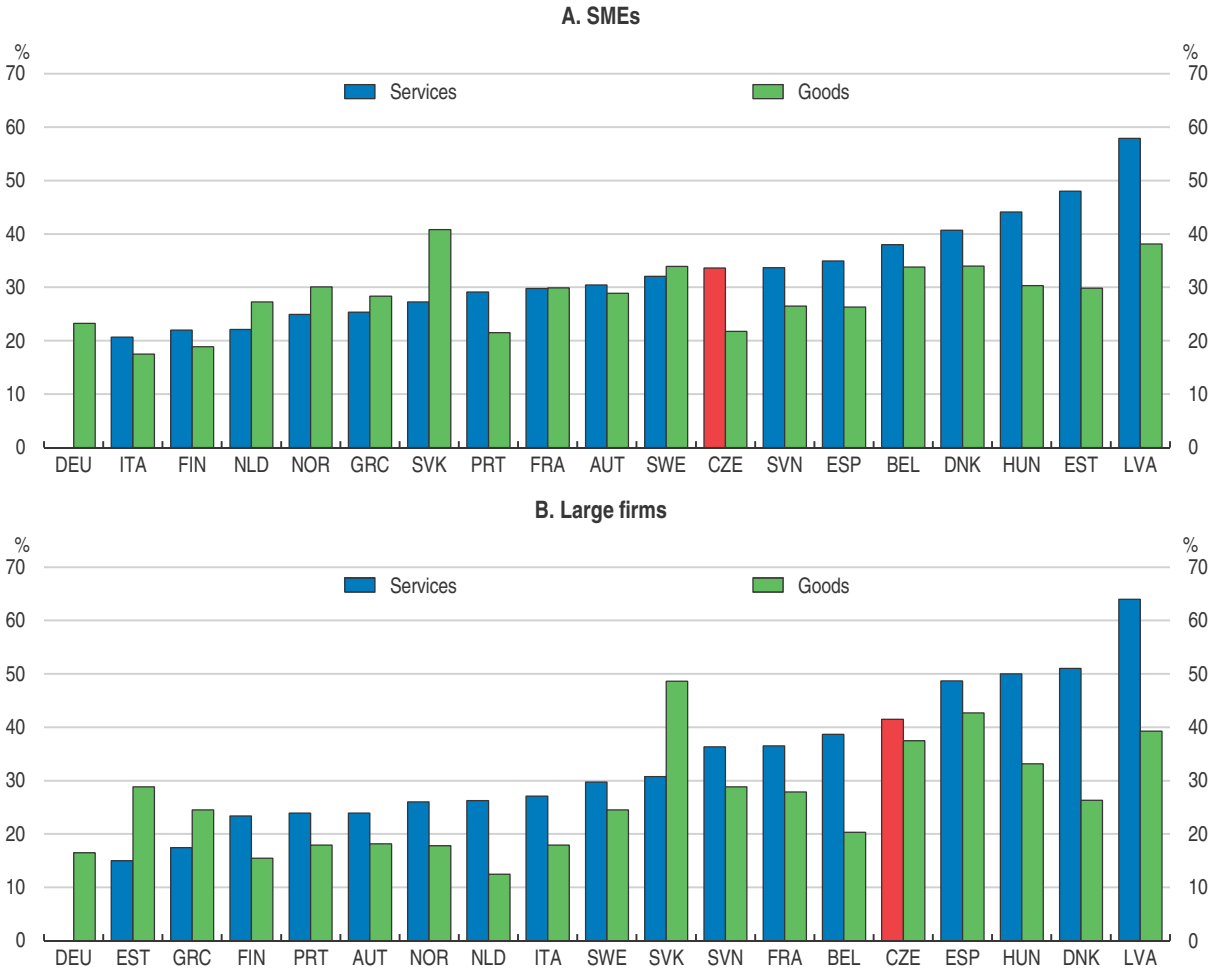
Figure 1.13. **Externally developed goods and services used in innovation**

As a percentage of firms introducing each type of innovation, 2010-12



Source: OECD (2015), OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society, OECD Publishing, Paris. *http://dx.doi.org/10.1787/sti_scoreboard-2015-en.*

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Agency to support applied research and experimental development could be strengthened and used to better target more results-focused projects.

Some mobility schemes for public researchers to work during some periods in businesses' research centres could be put in place to facilitate interactions between research institutions and firms. This would also enhance mobility and knowledge transfers between corporate and academic institutions. Some government funding for research projects developed inside firms could be tied to collaboration with public entities.

Investment in knowledge-based capital to promote productivity diffusion

Knowledge-based capital (KBC) is one of the key drivers of innovation and productivity growth. It also plays an important role in the diffusion of ideas and innovation adoption from global frontier firms to home frontier firms, and thereby fosters convergence and catch-up (Adalet McGowan et al., 2015a). Knowledge-based capital refers to intangible assets or intellectual capital in three main groups: computerised information (e.g. software

and databases); innovative property (patents, copyrights, designs and trademarks); and economic competencies (including brand equity, aspects of advertising and marketing, firm-specific human capital, etc.) (Corrado et al., 2009). The development of KBC depends on framework conditions, which foster innovation and within firm actions.

The Czech economy and firms appear weakly integrated in international knowledge flows and collaboration in science and innovation. While the number of international co-inventions seems satisfactory, the rate of international co-authorship is relatively low in science and innovation. Moreover, the number of international co-inventions is partly driven by the high presence of foreign owned or affiliated enterprises. The integration of Czech firms and universities in international scientific networks should be raised. A greater part of government R&D grants should be directed to programmes including international collaborations under Czech leadership (less than 4% of government R&D spending). Participation in international programmes would increase technology and knowledge transfers to and adoption in the Czech Republic.

The patenting activity of Czech firms should be further developed. It seems that Czech firms and innovators prefer patenting in other EU countries and the United States because of the large market size. However, given the royalties and externalities attached to patenting and the possibility of multiple registrations of patents and intellectual property rights, the government could put in place facilities (language and legal support, etc.) for international patenting, in particular at the EU level (European Patent Office). For instance, international trade in knowledge assets has increased noticeably (10% growth rate) in many countries and receipts represent 5% of GDP in Israel and the Netherlands, compared with only 1.5% in the Czech Republic.

Organisational capacity is the combination of knowledge, processes and systems that allows firms to perform their activities efficiently. It can be defined as the know-how developed at the firm level. It is one of the most important elements in the differentiation of firms in terms of performance or productivity. Indeed, access to physical capital, technology and existing innovations is easier than access to intangible competencies in performing activities. Investment by Czech firms in organisational capital is very low, both in the manufacturing and services sectors (OECD, 2015a). Programmes could be put in place to raise top managers' awareness of the role of organisational capital and particularly, as strategic factor of firms' productivity and differentiation.

Appropriate framework conditions are needed to increase productivity

Removing obstacles for firm expansion and start-up creation will boost productivity

Start-ups and young SMEs often play a leading role in the introduction of advances in products, processes, organisational methods and marketing techniques. They push the economy toward the technological frontier and are thus conducive to rapid productivity growth (Adalet McGowan et al., 2015a; Aghion et al. 2007), which in the long run is the fundamental driver of incomes and well-being. Many empirical studies have shown the close relationships between entrepreneurship and SME activity and economic growth and job creation (OECD, 2010a). A larger number of small businesses and start-up rates are associated with more rapid economic growth (Erken et al., 2008), and job creation (Neumark et al., 2008; Haltiwanger, 1999; Henrekson and Johansson, 2008).

Research from OECD countries highlights the role of young firms as job creators both through new start-ups and firm growth; young SMEs generated 42% of new jobs on average

over 2001-11 even though they represented 17% of employment (Criscuolo, et al., 2014). The birth rate of enterprises (at least one employee) at 11.3% in 2012 in the Czech Republic compares well with the OECD average (OECD, 2015c). Most of them are very small (1-4 employees) and they are evenly distributed among industry, services and construction.

It is therefore critical for policy to stimulate start-ups' creation, firm expansion, knowledge development and exploitation in firms. In the SME Strategy 2014-20, the Czech Republic has four priorities set out (see Box 1.2). The implementation of the strategy should be accelerated. For instance, the one-stop-shop for start-up companies, to promote the direct registration of a new company in the commercial register of notaries and, in the second phase, the simplification of the registration, and the reduction of fees, is still under examination by the parliament.

The strategy and its implementation should be strengthened, streamlined and simplified. There are too many instruments, call for projects and grants that imply administrative costs for SMEs that apply. Indeed, an SME could need different types of support, which would imply addressing requests to different institutions. For instance, there are different bodies, instruments and calls devoted to the support of financially healthy businesses in search of investors (CzechLink programme), to consulting services for strategic management and innovation management (CzechInvest Agency), programmes aimed at improving the infrastructure for the development of human resources with an emphasis on technical education (CzechInvest Agency), soft loans and preferential loan guarantees for SMEs (CMZRB), and support for experimental development in the field of advanced technology, environment and energy and transport (TACR). Such streamlining would also ease access to finance for SMEs, which is particularly important in the Czech Republic as SMEs are the vast majority of firms.

While firm creation is important for innovation and productivity growth, ensuring the development of successful small firms will also boost productivity in the Czech Republic (Figure 1.14). Indeed, the gap between the productivity of small firms and large firms is important. The productivity of small size firms (up to 9 employees) is 60% and 40% lower than the productivity of large firms (250+ employees) in the manufacturing-construction and service sectors, respectively (Figure 1.14).

Low productivity of SMEs is driven partly by the high incidence of self-employment in the Czech Republic. It has one of the highest percentages of self-employed workers in the European Union (Eurostat data). Self-employment is often less productive than employment in firms due to multi-tasking and other factors of scale. However, with an important manufacturing sector where many SMEs supply intermediate goods and services, there is room for bigger SMEs that could reap the benefits of economic scale and access to foreign markets.

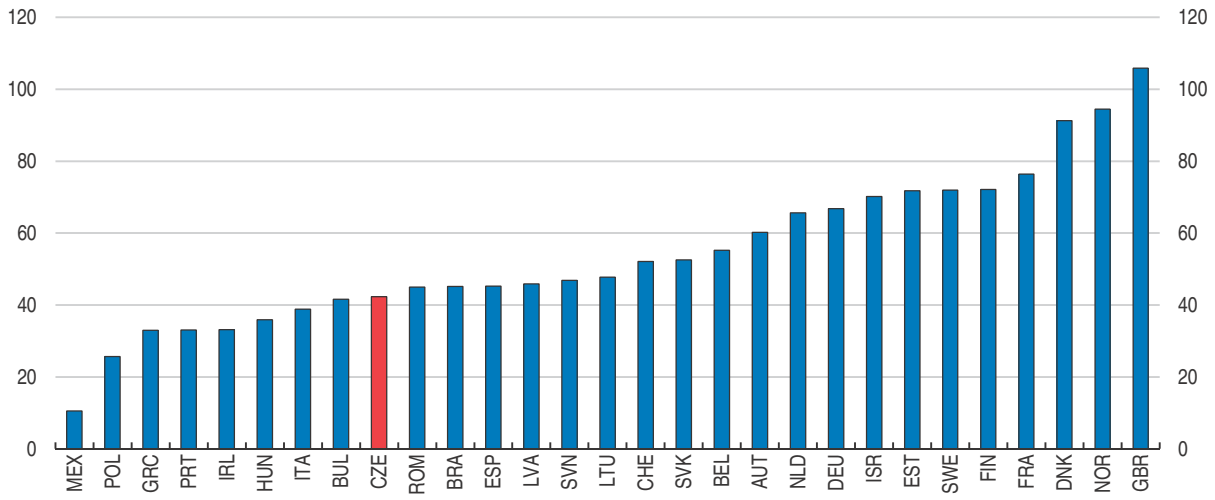
Boosting the growth and expansion of SMEs should be a more central and explicit target of government policy. The current strategies centre their action on support for innovation and export diversification. More attention should be paid to the framework conditions to favour SMEs' expansion (section on resource reallocation below).

Improving the management quality of Czech firms

Making the most of available resources and implementing new technologies and techniques to boost productivity requires managers with the necessary skills, knowledge and authority. Higher managerial quality has been shown to improve firm-level

Figure 1.14. **Labour productivity of small firms is low**

2013 or latest, productivity of firms of 1 to 9 persons employed, index productivity of firms of more than 250 persons employed = 100



Note: Productivity is measured as value added per persons employed.
Source: Calculations based on OECD (2015) Entrepreneurship at a Glance.

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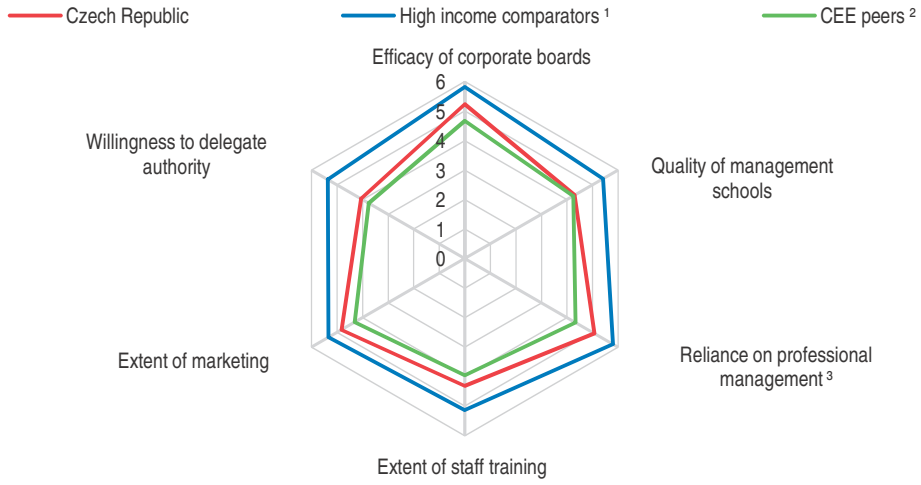
performance through the adoption and implementation of new technology and practices and to reduce skill mismatch amongst workers (Adalet McGowan et al., 2015b; Bloom et al., 2012a, 2012b). A range of metrics related to managerial quality and practices suggest that Czech practices are outperforming CEE peers but further improvement is needed to catch up to other small, high income countries (Figure 1.15). Czech firms still have less reliance on professional management – an indicator of overall managerial quality from the *Global Competitiveness Report* that has been associated with faster convergence in multifactor productivity at the country level (Andrews and Westmore, 2014). There are also particularly large gaps in the perceived quality of management schools, which may contribute to gaps in the knowledge of best practice, and also in the willingness to delegate authority, which may limit firm growth but is dependent on trust and the quality of management at lower levels (Figure 1.15; Bloom et al., 2012c).

The aggregate figures mask heterogeneity within the economy. Managerial quality – as measured by literacy proficiency following Adalet McGowan and Andrews (2015a) – is much higher at large firms than at small firms (Figure 1.16). Similar results are found using numeracy proficiency as a measure of managerial quality. It is more efficient for better managers to be responsible for a larger share of economic activity (Adalet McGowan and Andrews, 2015a). However, in the Czech Republic, a much smaller share of the best managers (those with scores in the top quartile) are working in firms with over 250 employees compared to other small high income countries. Productivity-enhancing practices such as improvements to products and processes appear to be more common at foreign-owned firms, indicating better management (Table 1.1). This is consistent with findings for other countries in the World Management Survey (Bloom et al., 2014).

Lower investment in managerial skills is also likely to be affecting the diffusion of knowledge of best practices. Czech firms seem to invest less in managerial organisational capital than in non-managerial training, whereas the reverse is typically true elsewhere (OECD, 2015a). The amount is also smaller: in 2011-12 the Czech private sector invested half

Figure 1.15. **Indicators of management quality and practices**

2015, scores range from 1 (lowest) to 7 (highest)



1. High income comparators are Austria, Belgium, Denmark and Sweden.
2. CEE peers are Estonia, Hungary, Poland, the Slovak Republic and Slovenia.
3. This variable takes the highest value (7) when senior managers are professional managers who obtained their position based on merit and qualifications and the lowest value (1) when senior management are mostly family and friends.

Source: Calculations based on World Economic Forum (2015), The Global Competitiveness Index Historical Dataset 2005-15.

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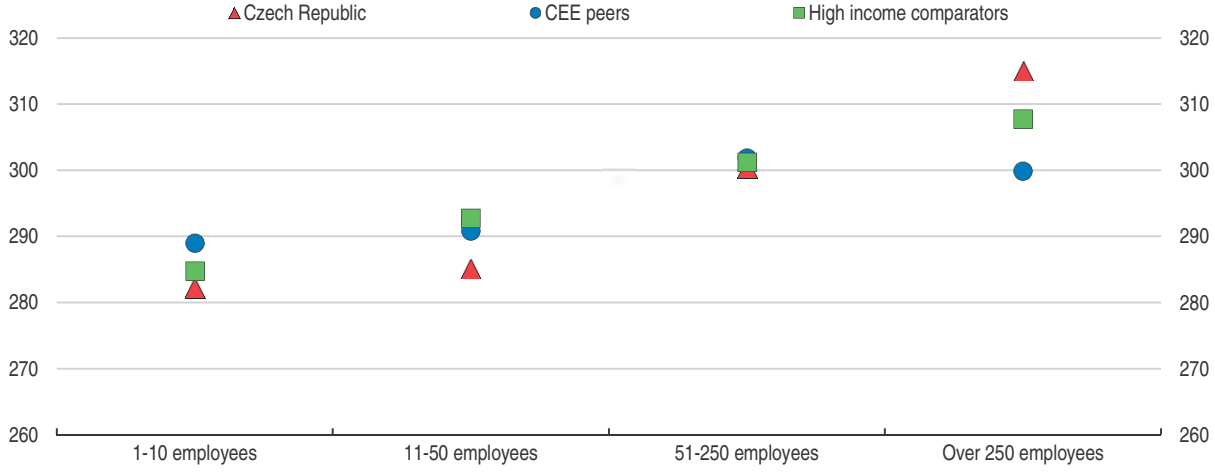
Figure 1.16. **There is a large difference in managerial quality by firm size**

Average literacy proficiency scores of managers by size of firm



Note: CEE peers are Estonia, Poland and the Slovak Republic; high income comparators are Austria, Belgium, Denmark and Sweden. Averages for country groupings are unweighted.

Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012).

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Table 1.1. **Management outcomes by ownership and sector**

Per cent of firms undertaking activity

Share of firms that implemented:	By ownership		By sector	
	Domestic	Foreign-owned	Manufacturing	Market-based services
New/improved products or services	51.5	61.9	60.3	46.8
New/improved production or supply methods	30.6	41.7	39.2	26.4
New/improved organisational practices or structures	24.3	26.9	28.6	21.2
New/improved marketing methods	21.9	40.6	23.5	27.3
Employee ideas developed	52.3	69.6	56.8	54.3

Note: The survey question asked about changes made in the previous three years. Establishments are classified as foreign owned if they are at least 50% foreign owned. The sample is restricted to the sectors shown. Caution is warranted due to the small sample size. The median weights from the survey have been applied. Market-based services include services in: trade; accommodation and food; information and communication; finance; real estate; professional; and administrative services.
Source: OECD calculations based on the EBRD-World Bank Business Environment and Enterprise Performance Survey 2013.

of the typical investment made in countries with available data. The PIAAC data show that 63% of Czech managers had undertaken some job-related training in the previous year, a lower share than in most other countries. Training was more common at larger firms. The quality of existing training may also need to be raised (Figure 1.15). Good practices would be diffused more effectively by lowering barriers to the mobility of talented managers within the labour market, as discussed below. Encouraging skilled immigration could also help implementation of best practices. Some improvement may also occur naturally over time as the PIAAC data indicate that managerial quality is highest for managers aged 25-44 years. However, reforms that increased competitive pressures, as discussed below, could also spur improvements in management techniques (Adalet McGowan and Andrews, 2015b; Bloom et al., 2012b).

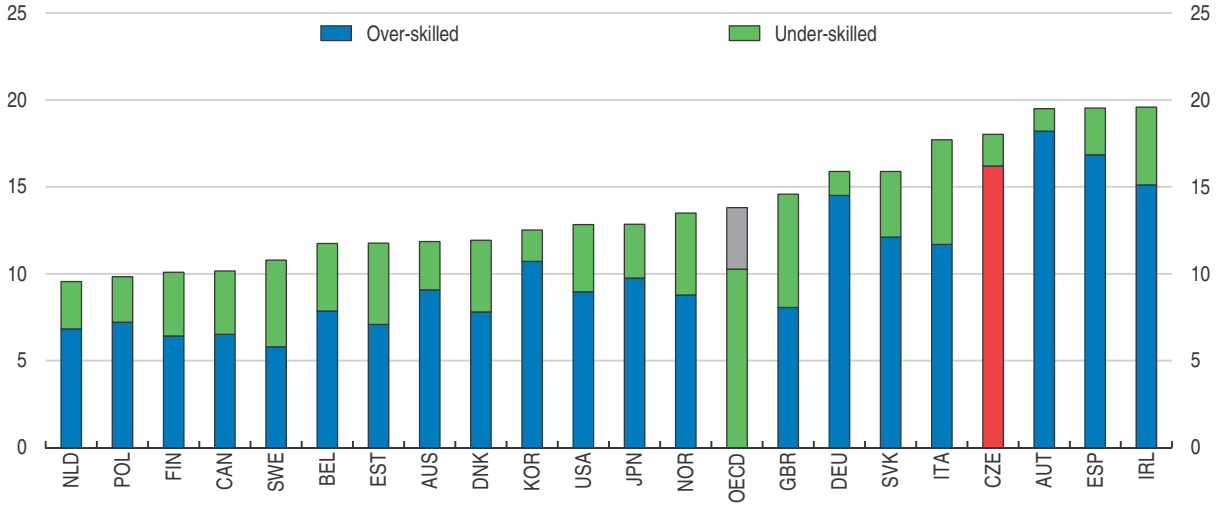
Skill mismatch is high and likely affecting productivity

Lower managerial quality is also associated with skill mismatch, which is particularly high in the Czech Republic relative to other OECD countries (Figure 1.17). This measure (following the definitions in Adalet McGowan and Andrews (2015a) and OECD (2013)) suggests that a relatively small share of Czech workers is under-skilled but a relatively high share of workers – 16% – is over-skilled. At the economy-wide level, this will constrain productivity to the extent that these over-skilled workers could be better employed by other more productive firms. At the firm level, over-skilled workers also represent an under-utilised resource, perhaps due to lower management quality. Estimates from OECD countries suggest that improving the quality of managerial capital to the level of Finland (best practice) would also reduce the probability of skill mismatch by around 5% and increase labour productivity by almost 2% (Adalet McGowan and Andrews, 2015b).

The probability of a worker being over-skilled reflects individual characteristics of the worker and their job, as well as characteristics of the economy and the policy environment. Younger and more educated workers are more likely to be over-skilled, even when other individual characteristics are controlled for (Table 1.2; Adalet McGowan and Andrews, 2015b). Although these patterns are common across countries, the effects are larger in the Czech Republic, particularly for level of education, and may in part be related to the important increase in tertiary graduates in the past decade, which has not been matched

Figure 1.17. **A relatively high share of Czech workers are over-skilled**

Measure of skill mismatch in literacy, per cent of workers



Note: Data for Belgium are from Flanders and data for the United Kingdom are from England and Northern Ireland. Mismatched workers are those whose literacy proficiency score is in the top or bottom 5% of self-reported well-matched workers in their country and occupation.

Source: OECD (2013), *Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, Paris.

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by enough change in labour demand. Workers whose studies were in the fields of humanities or sciences are also more likely to be over-skilled (Table 1.2). Montt (2015) shows that mismatch between field of study and occupation is comparatively high in the Czech Republic. Improving the match between education and labour market needs could therefore help to reduce mismatch, for example by publishing information on labour market outcomes by field of study and institution, modifying financing for a better match of VET programmes and increasing incentives to participate in lifelong learning, as recommended in OECD (2014b).

Mismatch would be reduced by removing barriers to the mobility of resources and workers and promoting competition. In particular, there could be large impacts from lowering the cost associated with closing a business (discussed below) and reducing the stringency of employment protection legislation (Figure 1.18). The protection of workers against individual dismissal is the second-highest in the OECD, which affects hiring and firing decisions and reduces the quality of matches between workers and jobs.

Measures that increase geographic mobility may help workers move to more productive jobs. With privatisation and successive reforms, the private rental market has expanded considerably over two decades but it remains small relative to Western European countries (14% of the housing stock in 2011) (de Boer and Bitetti, 2014). Reforms since 2012 reduced rent control and increased landlord rights but their effectiveness is limited by long eviction procedures and the consequent use of temporary contracts makes private rental insecure (de Boer and Bitetti, 2014). Measures to reduce the high transaction costs associated with housing transactions could also lower barriers to mobility. Improving transport linkages could also reduce mismatch by increasing the range of jobs that a worker can reach. This could include raising the quality of roads to lower travel times and securing a more competitive rail sector (OECD, 2014b).

Box 1.3. **Skill mismatch and worker characteristics**

Recent studies using the OECD *Survey of Adult Skills* (PIAAC) data highlight the link between skill mismatch and productivity as well as the importance of field of study (Adalet McGowan and Andrews (2015a); Montt (2015)). This box builds on the relationship between over-skilling and worker characteristics in Adalet McGowan and Andrews to consider field of study and industry.

Variable definitions generally follow Adalet McGowan and Andrews (2015a), with insignificant variables excluded to preserve degrees of freedom. Even after allowing for educational attainment and age, workers whose studies were general, in "humanities, languages and arts", in "social sciences, business and law" or in "science, maths and computing", are more likely to be over-skilled in their current job (Column 2 and 4). Workers in the manufacturing sector are more likely to be over-skilled than those in primary industries, construction and energy (Column 3 and 4). However, manufacturing workers with non-tertiary post-secondary education are less likely to be over-skilled (Column 5).

Table 1.2. **Overskilling and worker characteristics**

Dependent variable = 1 if the worker is overskilled and 0 otherwise

	(1)	(2)	(3)	(4)	(5)
Female	-0.085***	-0.102***	-0.086***	-0.103***	-0.085***
	(0.022)	(0.025)	(0.023)	(0.026)	(0.022)
Aged 25-34	0.016	0.013	0.017	0.015	0.017
	(0.034)	(0.037)	(0.033)	(0.036)	(0.033)
Aged 35-44	-0.080**	-0.079**	-0.075**	-0.070**	-0.072**
	(0.033)	(0.036)	(0.033)	(0.036)	(0.034)
Aged 45-54	-0.104***	-0.107***	-0.100***	-0.099**	-0.109***
	(0.037)	(0.040)	(0.037)	(0.039)	(0.037)
Aged 55 +	-0.152***	-0.158***	-0.146***	-0.150***	-0.142***
	(0.040)	(0.041)	(0.039)	(0.039)	(0.040)
Upper secondary education	0.152**	0.130	0.154**	0.141*	0.056
	(0.072)	(0.088)	(0.071)	(0.085)	(0.104)
Post-secondary, non-tertiary	0.279***	0.252**	0.282***	0.264**	0.705***
	(0.101)	(0.113)	(0.102)	(0.113)	(0.147)
Tertiary education	0.223***	0.183**	0.229***	0.200**	0.230**
	(0.072)	(0.091)	(0.072)	(0.088)	(0.116)
Firm size: 11-50 employees	0.033	0.036	0.029	0.031	0.031
	(0.027)	(0.028)	(0.028)	(0.029)	(0.028)
Firm size: 51-250 employees	-0.073**	-0.077**	-0.084**	-0.092***	-0.079**
	(0.031)	(0.033)	(0.033)	(0.035)	(0.033)
Firm size: over 250 employees	0.027	0.022	0.014	0.003	0.014
	(0.032)	(0.033)	(0.033)	(0.034)	(0.032)
Studied humanities/social sciences		0.163***		0.167***	
		(0.040)		(0.041)	
Studied science		0.065**		0.076**	
		(0.031)		(0.031)	
Manufacturing sector			0.068**	0.076**	0.046
			(0.029)	(0.030)	(0.140)
Services sector			0.035	0.021	-0.159
			(0.031)	(0.030)	(0.105)
Manufacturing*upper secondary					0.067
					(0.143)
Manufacturing*post secondary					-0.564***
					(0.214)
Manufacturing*tertiary					-0.102
					(0.161)

Box 1.3. **Skill mismatch and worker characteristics** *(cont.)*

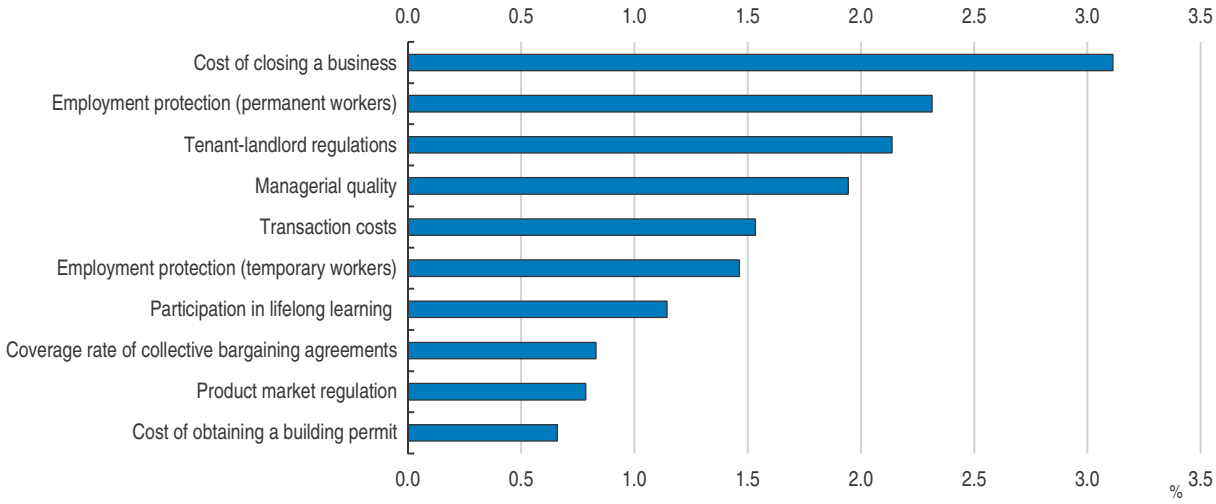
Table 1.2. **Overskilling and worker characteristics** *(cont.)*

Dependent variable = 1 if the worker is overskilled and 0 otherwise

	(1)	(2)	(3)	(4)	(5)
Services*upper secondary					0.225*
					(0.116)
Services*post secondary					-0.326
					(0.207)
Services*tertiary					0.137
					(0.123)
Number of observations	2 724	2 536	2 724	2 536	2 536

Note: Estimates are from logit regressions. All variables are dummy variables. The omitted categories are: male; age 15-24; basic education; firm of 1-10 employees; studied a general programme, teacher training, engineering, manufacturing and construction, agriculture and veterinary science, health and welfare or services; works in primary industries, construction, electricity, water or the energy sector. Values shown are marginal effects, corresponding to the impact of a change in the explanatory variable on the probability of mismatch at the mean of the explanatory variable. Robust standard errors are shown in parentheses. ***, ** and * denotes statistical significance at the 1%, 5% and 10% level, respectively.
Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012).

Figure 1.18. **Estimated labour productivity gains from moving policy-related factors to best practice**



Note: Estimates are based on: i) logit regressions of probability of mismatch controlling for age, marital and migrant status, gender, education, firm size, contract type, a dummy for working full-time and working in the private sector; and ii) OLS regressions of labour productivity on skill mismatch.
Source: Adalet McGowan, M. and D. Andrews (2015), "Skill Mismatch and Public Policy in OECD Countries", *OECD Economics Department Working Papers*, No. 1210, OECD Publishing, Paris.

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There is a risk that isolated actions to increase the flexibility and productivity of the economy and raise the returns to skills, which are currently low in the Czech Republic, cause income inequality to rise from its currently low level (OECD, 2015d). While reducing skill mismatch should imply higher wages, it may not happen uniformly across the skill distribution, especially because the returns to skills are higher for low-skilled workers than

to high-skilled workers. Policymakers should therefore reduce the linkages between socioeconomic background and education (as proposed in earlier *Economic Surveys*) and ensure the tax-benefit system helps offset the resulting effects on inequality.

Raising competition and resource re-allocation to boost productivity

Favouring resource re-allocation to boost productivity

Efficient allocation of resources by favouring the entry and growth of SMEs would improve productivity. Indeed, it allows the replacement and exiting of less productive firms and the allocation of resources (capital and human resources) to dynamic firms. Andrews and Cingano (2012) show that barriers to firm entry, stringent bankruptcy legislation, employment protection legislation and unfavourable financing conditions can undermine resource allocation and productivity. They find evidence that higher barriers to firm entry and more stringent bankruptcy legislation tend to disproportionately lower allocative efficiency in industries characterised by high firm turnover relative to low turnover industries. Similarly, tighter employment protection legislation is found to disproportionately lower the efficiency of employment allocation in high layoff industries. Also, restrictions to competition in finance and low financial development are associated with lower productivity. And, these results tend to be more detrimental in innovative sectors. These results are in line with different findings in the literature (Hopenhayn and Rogerson (1993) on tax wedge effects; Barseghyan and DiCecio (2011) on entry costs; Moscoso-Boedo and Mukoyama (2012) on entry regulation and firing costs; and, Buera et al. (2010) on the role of financial frictions and credit underdevelopment).

Bankruptcy procedures are too costly

Bankruptcy legislation is important for allocative efficiency. Costly and time consuming insolvency procedures dent resource re-allocation between lower productivity firms and better performing ones (Adalet McGowan et al., 2015). However, bankruptcy laws have to be balanced between encouraging entrepreneurship and the reallocation process and protecting creditors and suppliers in particular of SMEs. Low recovery rates for creditors may cause tighter credit conditions, reducing access to finance for firms.

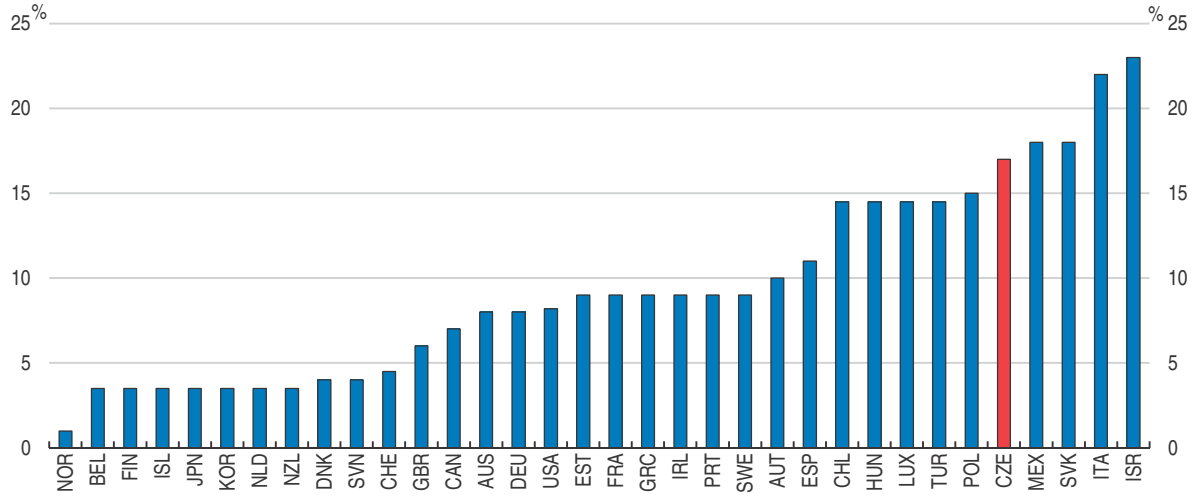
In the Czech Republic, the bankruptcy legislation allows any entity (individuals as consumers or indebted and individual entrepreneurs) to resolve its negative economic situation by filing an insolvency petition. There are three basic types of settlement methods - bankruptcy, reorganisation and discharge. However, SMEs are principally qualified to reorganisation and discharge only under specific conditions. The actual process is mainly focused on preserving creditor claims. It is therefore restrictive for entrepreneurs, in particular for small ones. Indeed, the process excessively requires that creditors or a majority of them agree with the solution proposed. Also, when bankruptcy resolution does not successfully satisfy creditors, remaining claims are not extinguished and persist to burden the debtor. Among the features of the insolvency proceedings in the Czech Republic that are known to increase the duration and tend to be detrimental to efficient process are: persistent insufficient protection from (bullying) unjustified insolvency petitions and restrictive conditions imposed on majority vote among creditors on insolvency proceedings.

Overall, the process remains too formal, slow and costly (Figure 1.19). It often requires the assistance of a lawyer. The government could consider reforms that simplify the

process for very small entities with small liabilities. Also, possibilities to delay the process either by the creditor or debtor should be reduced. For instance, majority vote among creditors on insolvency proceedings could be put in place to help speed insolvency procedures. Finally, an amendment allowing the write-off of debtor liabilities at the end of the judicial proceedings should be introduced.

Figure 1.19. **The cost of bankruptcy proceedings is high**

Average cost of bankruptcy proceedings as a percentage of the estate's value



Note: The cost is calculated on the basis of questionnaire responses and includes court fees and government levies; fees of insolvency administrators, auctioneers, assessors and lawyers; and all other fees and costs.
Source: World Bank, Doing Business database.

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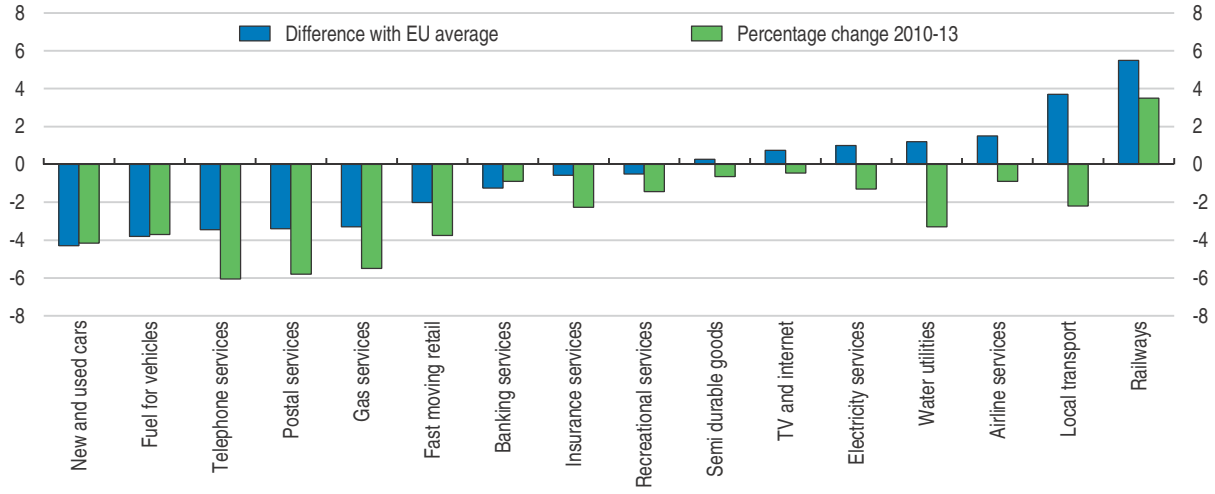
There is still room for improving the competition and regulation framework

The Czech Republic has undertaken many reforms to establish a competitive market economy in recent decades. Czech competition law is harmonised with EU competition rules. Nevertheless, according to EU's Consumer Markets Scoreboard which assesses consumer conditions the Czech Republic is below the EU average (Figure 1.20).

Also, as already extensively assessed in the *2014 Czech Republic Economic Survey* (OECD, 2014b, Chapter 1), competition and regulation can be improved. In particular, significant barriers to entrepreneurship remain according to OECD Product Market Regulation Indicators (Figure 1.21). For instance, barriers to entrepreneurship are much higher in Czech Republic compared to Slovakia. Also, in terms of the severity of barriers, the Czech Republic is amongst the member states with the highest number of regulated professions. Therefore, reform to open regulated professions is needed

The Office for the Protection of Competition is in charge of enforcing competition law. The overall situation and performance assessment of the agency has not changed since the publication of the *2014 Economic Survey*. Agency resources are still insufficient and mostly devoted to public procurement with a high staff turnover rate due to short tenure, which partly reflects low wages. The resources of the Office should be increased to allow it to better perform its duty and its regulatory power strengthened.

Figure 1.20. **Consumer market scoreboard: Czech Republic versus EU average**



Source: European Commission (2014),*Consumer Markets Scoreboard: Making markets work for consumers*, 10th edition, June 2014.

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Streamlining access to finance for SMEs

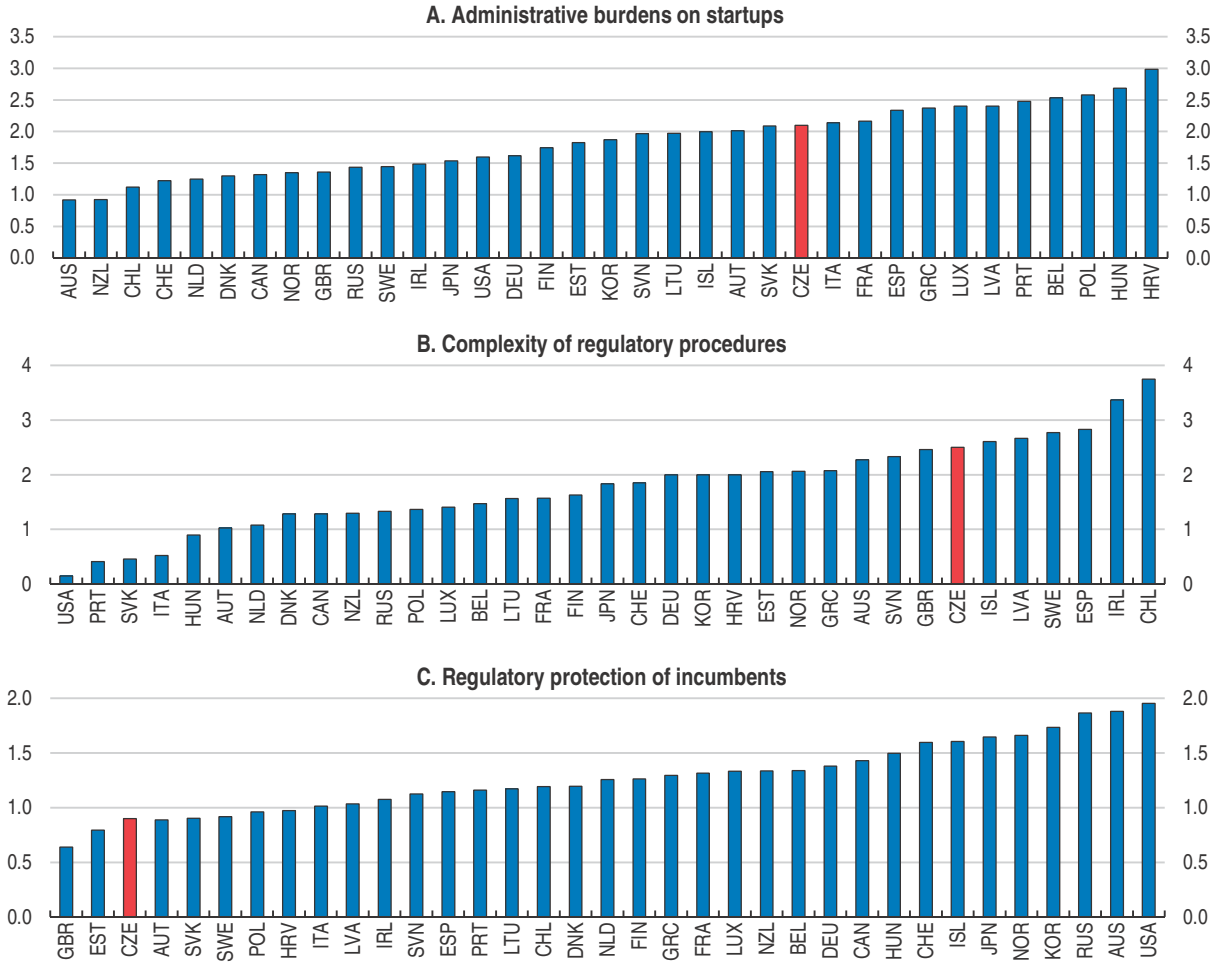
The financing of SMEs and young firms is an important dimension of resource re-allocation and the development of young high potential firms. It is furthermore important for the development of innovative firms. Access to finance for SMEs is particularly important in the Czech Republic as SMEs with less than 9 employees represent 95% of all enterprises (OECD, 2015c).

Business financing has been decreasing in the Czech Republic since the crisis, particularly from 2009 (Figure 1.22, Panel A). On the one hand, the application of stricter rules for credit by banks led to more selectivity of borrowers and higher loan collateral and, on the other hand, the demand from entrepreneurs was lower due to gloomier economic perspectives and higher uncertainty (OECD, 2015e). New SME loans peaked in 2008 and then contracted by 31% over the 2008-11 period as the global crisis hit (Figure 1.22, Panel B). However, loans increased in 2015 along with GDP growth.

The Czech government has set up or strengthened different financial institutions to develop the financing of SMEs, including the CMZRB (see Box 1.4), the Czech Export Bank and the Export Guarantee and Insurance Corporation. The financing takes different forms with guarantees for loans and for exports playing a major role. Different programmes are in place to support the financing of SMEs (see Box 1.5). There is a need to streamline the framework so that entrepreneurs and SMEs do not face too many institutions when they are looking for financing. The instruments could be refined to make sure that they really correspond to the needs of entrepreneurs, in particular of start-ups. Indeed, start-ups in general do not look for loans or guarantees on their loans but for capital. The creation of a government sponsored investment fund is welcomed and can help the development of venture capital. Its creation should be accelerated. Another important instrument envisaged and jointly financed by the EU is a guarantee fund for innovative SMEs to be managed by the Czech-Moravian Guarantee and Development Bank (CMZRB). The guidelines for the insurance and guarantee programme for innovation managed by the Czech-Moravian Guarantee and Development Bank (CMZRB) still need to be vetted by the EU for the implementation of innovation programmes relying on EU funding. There is also a need to accelerate the process for this programme to start operating.

Figure 1.21. **Barriers to entrepreneurship, 2013**

2013, Index scale 0-6 from least to most restrictive



Note: For the United States, data refer to 2007.

Source: OECD, Product Market Regulation database, *www.oecd.org/economy/pmr*, June 2015.

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Box 1.4. **The Czech-Moravian Guarantee and Development Bank**

The Czech-Moravian Guarantee and Development Bank, Inc. (CMZRB) was founded in 1992 as a specialised banking institution to support small and medium-sized enterprises. The bank's shareholders are the Czech Republic, which holds 100% of the shares and all voting rights. The Czech Republic is represented by the Ministry of Industry and Trade, Ministry of Regional Development and the Ministry of Finance.

Although the provision of services expanded over the years, the support for small and medium-sized enterprises (SMEs) is still the main task. Besides the support of government programmes for SMEs, the bank has expanded its activities to include support in the areas of housing and financing of municipal development projects in the area of infrastructure. The Bank provides bank guarantees, soft loans, grants and related banking services. The main clients are SMEs and owners of apartment buildings (housing cooperatives and apartment owners).

Box 1.4. **The Czech-Moravian Guarantee and Development Bank** *(cont.)*

The Bank offers the following kind of products/services:

- The guarantee program 2015-23 in collaboration with the Ministry of Industry and Trade (MIT). The main goal of the programme is to facilitate access to bank financing for SMEs. The programme provides guarantees up to 80% of the principal amount of the loan, under the limit of CZK 30 million for the principal (loan). The program also supports social entrepreneurs who employ disadvantaged people by a contribution up to 10% of the guaranteed loan, up to CZK 500 000. Loans and guarantees are provided directly by commercial banks, which have a contract with CMZRB. In the initial years of the programme, the fund will be able to guarantee loans of up to CZK 5.3 billion.
- Another guarantee programme is INOSTART, which is designed for start-ups. Pilot projects have started in the Moravian-Silesian and Olomouc Region and the programme were later extended to the entire country.
- In 2014, CMZRB enhanced co-operation with the Czech Export Bank, which finances SME exports. CMZRB continues to provide export guarantees and direct export credits.
- In the framework of the regional programme, the CMZRB provides soft loans for SMEs in the South-Bohemian Region for the acquisition of fixed assets and inventories with a favourable interest rate for a period of 6 years.
- Another important programme of the CMZRB also provides guarantees for a bid in open tender from CZK 50 000 up to CZK 5 million. Guarantees as collateral are provided if the subject of the tender is the supply of products, goods, services and works for tenders announced by entities registered in the Czech Republic.
- CMZRB is also an intermediary under the Multiannual Programme for the Competitiveness of Enterprises and SMEs 2014-20 (COSME). It is the first programme linked to the so-called Juncker package. The COSME is implemented and funded by the European Commission and implemented by member states. CMZRB will provide guarantees for investment loans and loans for the purchase of supplies up to CZK 4.1 million for SMEs (up to 50 employees).
- Municipalities have also access to CMZRB financing through four programmes: (1) Preferential regional loans for Municipalities in the South Bohemian Region, (2) long-term loans funded by the Regional Development Fund, (3) municipal loans in the programme OBEC 2, (4) and municipal loans in the Municipal Loan programme 2 (MUFIS 2).

Box 1.5. **SME financing programmes**

The government policy support to SMEs' financing is based on the Act No. 47/2002 Coll., on support to small and medium-sized enterprises and the document Small and Medium-sized Enterprises Support Strategy 2014-20 (Ministry for Industry and Trade).

Operational Programme Enterprise and Innovation 2007–14 (OPEI) was the financial instrument funded from the EU Structural Funds 2007-13 for the support of firms competitiveness. OPEI was focused on indirect and direct support for entrepreneurs, especially SMEs and in general to overcome existing barriers of access to capital. Support was provided primarily to businesses with higher innovation potential, to stimulate R&D in enterprises, to establish co-operation between academia and business and to encourage starting-up new businesses.

The GUARANTEE programme (which was a part of OPEI) for small businesses uses the resources from terminated guarantees and repaid loans. The guarantee fund is administered and managed by CMZRB. During 2013, the programme was extended to support entrepreneurs affected by the floods. In this programme, CMZRB cooperates with private partner banks and provides SMEs with partial guarantees (between 60-80% of the loan provided by the private bank) (see Box 1.4).

Box 1.5. **SMEs financing programmes** *(cont.)*

The REVIT programme focuses on support of SMEs operating in regions with lower and declining economic activity and high unemployment (i.e. structurally disadvantaged regions) or in regions affected by natural disasters. The programme enables SMEs to gain preferential loans (usable for covering investment or operational costs) and grants. The programme is funded from the national budget and is administered and managed by the CMZRB.

The INOSTART programme is focused on supporting innovative start-ups characterised by large risks, a short financial history and low collateral to raise funds. The programme allows novice innovative entrepreneurs (up to 3 years of business activity) to gain access to credit through a guarantee for loans up to 60% of the outstanding loan principal. Entrepreneurs can obtain guarantees for loans up to CZK 15 million. The programme also includes advisory services related to the strategic management and the implementation of business plans. Starting from May 2014 the programme was extended to medium-sized enterprises and to all regions of the Czech Republic.

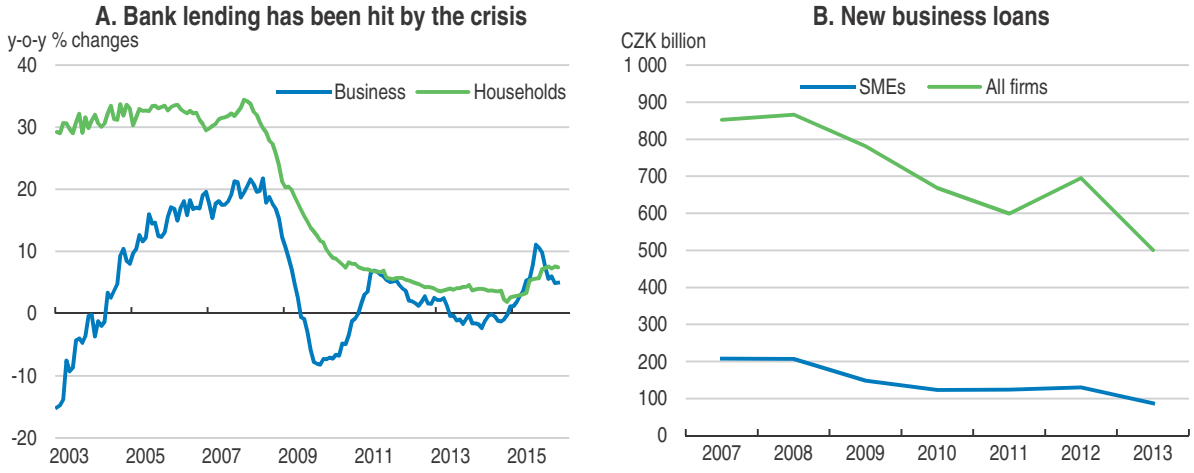
Source: OECD (2016), *Financing SMEs and Entrepreneurs 2015: An OECD Scoreboard*.

Reform taxation of SMEs and the self-employed

The efficiency of resource allocation is influenced by the structure of taxes on businesses and revenues of the self-employed. The statutory corporate income tax rate of 19% is low by international standards. Nevertheless, there is a risk that the pattern of SME growth could be distorted by differential treatment of firms in the tax system. One particular issue is the development of self-employment. Self-employed workers are 17% of total employment (Figure 22). That number is particularly high for a country which does not have an important agricultural sector (Araújo and Maleček, 2015). In part, this may be induced by the tax structure, which gives preferential treatment to the self-employed in comparison with employees. The total tax burden for an average employee in the Czech Republic (personal income tax together with social security contributions) reached 37% in 2013, as opposed to 28.1% in the case of an average self-employee, while self-employees' average gross earnings are 34% higher than that of employees (OECD, 2015c). For instance, based on an annual cash-flow threshold of CZK 2 million, self-employees benefit from income tax deductions of up to 80% of their cash-flows or revenues for self-employed workers in agriculture, craftsmen, etc.; 60% for other self-employed workers; 40% for artists, writers and other intellectual activities and 30% for revenues from house rental and associated categories, which comes on top of preferential treatment with respect to social security contributions. These deductions seem particularly generous (OECD, 2015f) and these thresholds can generate strategies to avoid crossing the threshold, such as inefficient splitting, which slows down the reallocation process (Chen and Mintz, 2011).

Indeed, this tax structure is suspected to have led to the development of strategic sub-contracting by firms which reduces the tax base for both firms and the self-employed. Indeed, the low tax burden for the self-employed has led to a phenomenon of false self-employment (commonly referred to as "*švarcsystém*" in Czech), with employees not benefitting from a standard contract with their employer, working instead as a self-employed worker (OECD, 2010; Araújo and Maleček, 2015). Given the negative effect of self-employment on tax revenues and the PAYG pension pillar, an amendment of the Act on Income Taxes imposed ceilings for flat-rate tax deductions for self-employees, effective from 2015, which should somewhat reduce the attractiveness of false self-employment. The tax structure could be reformed to ensure less distortion with size.

Figure 1.22. **Business loan growth of financial institutions**



Source: European Central Bank and OECD (2015), Financing SMEs and Entrepreneurs.

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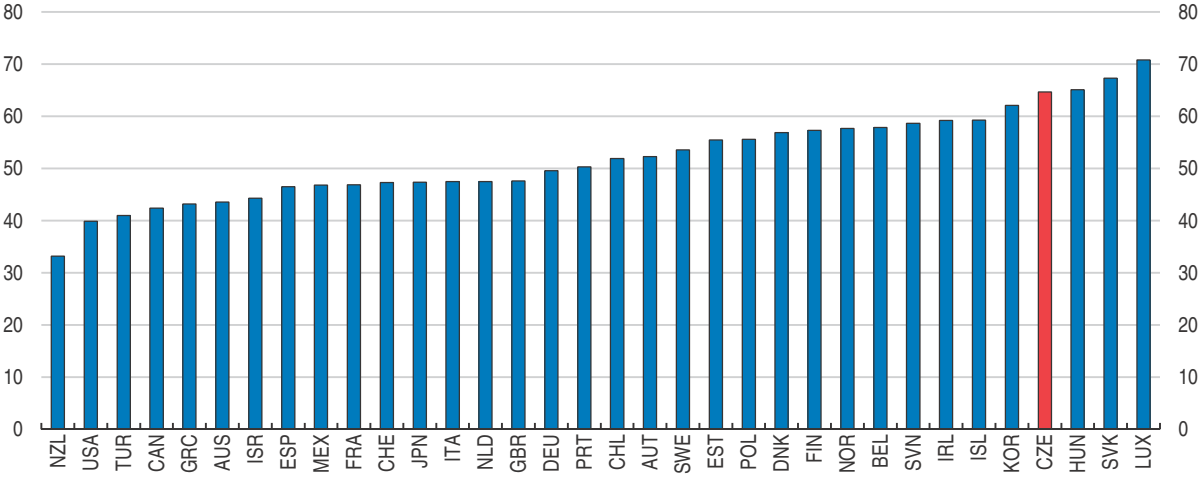
Leveraging the high participation in global value chains to increase productivity

The Czech economy is one of the most integrated in global value chains (GVC) (Figure 1.23). However, its participation is highly concentrated within European value-chains. The foreign content of the Czech Republic's exports (45.1%) was amongst the highest in the OECD in 2011. Of the Czech Republic's total exports of domestic value-added in 2011, 58.6% reflected exports of intermediates (OECD, 2015g). Also, 41% of the Czech Republic's domestic value added was driven by foreign final demand.

Figure 1.23. **Participation in global value chains is high**

2011, % of gross exports



Note: The indicator, as proposed by Koopman et al. (2010), is expressed as the share of foreign inputs (backward participation) and domestically produced inputs used in third countries' exports (forward participation) in a country's gross exports. Further details can be found in the OECD Trade Policy Paper No. 159.

Source: OECD, Trade in Value Added (TiVA) – October 2015: Trade in Value Added (TiVA): Forward and backward linkage indicators.

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Participation in GVC affects productivity through different channels including FDI and outsourcing. Different studies have tried to estimate the impact of FDI on the economy. For instance, Harding and Javorcik (2012) suggest FDI inflows can lead to an increase in the quality of exports in developing countries in both absolute terms and in terms of bridging the distance to the quality frontier. Also, Javorcik (2008) reports that the presence of multinationals can lead to knowledge spillovers to local firms in the same industry or to local firms in the supplying sectors, which can facilitate product upgrading. For instance, in a recent World Bank survey, 24% of local enterprises in the Czech Republic and 15% in Latvia reported that they have learned about the availability of new technologies by observing multinational enterprises operating in their country and their sector. Half of the suppliers of multinationals surveyed in the Czech Republic reported improving their quality control systems in response to the request of their multinational customers.

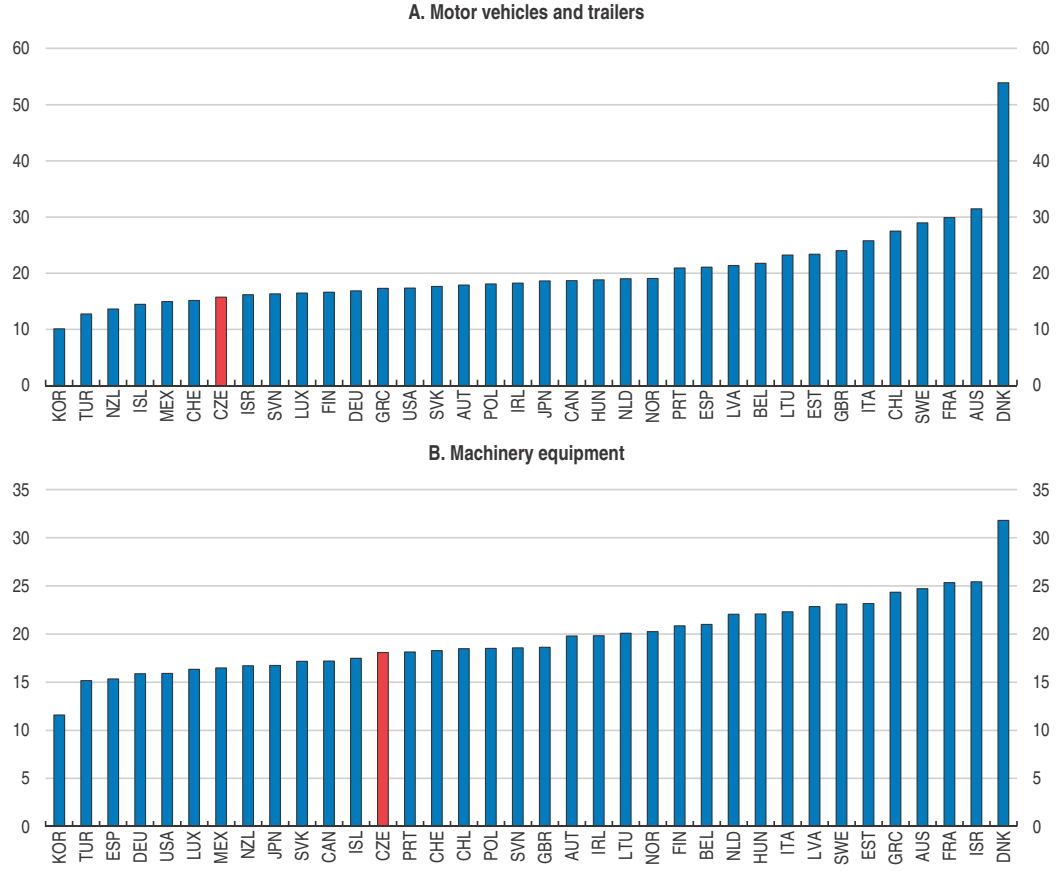
However, the spillover effects of FDI inflows are not straightforward to capture and estimation results are mixed. Some studies have focused on German investments in the Czech Republic. German enterprises are the most important partners of the Czech economy, in particular in the manufacturing sector. Overall, the existing evidence indicates that the vertical integration model accounts for a much larger share of German direct investment in Central and Eastern Europe than in other major destinations (Marin, Lorentowicz and Raubold, 2003; Gauselmann, Knell and Stephan, 2011). However, the results depend a lot on threshold effects and variables to disentangle vertical and horizontal integration. Moreover, Stancik (2007) found that domestic companies tend to be negatively affected by the presence of foreign companies in the Czech Republic, especially in upstream sectors. Havranek and Irsova (2011) found that vertical spillovers tend to be somewhat more positive in this respect. Munich et al. (2014) analyse the spillover effects between German firms and Czech affiliates by types of legal relationship. They find that both greenfield and M&A Czech daughters are significantly less likely to be high-tech than their German mothers in manufacturing, but there does not seem to be a statistically significant difference in the service sector.

More importantly, Munich et al. (2014) find that from the Czech point of view, "the cross-border investment in manufacturing generates jobs for low-skilled workers, possibly reducing unemployment in this segment of the labour market, but the investment projects fall short of expectations as far as their contribution to technological upgrading is concerned as they predominantly deepen specialization of the local economy in low-tech jobs". However, cross-border investment in the service sector appears much more promising in terms of stimulating the upgrading process. Indeed, the deepening fragmentation of production makes a lock-in situation in the low-cost edge of global production networks more likely than before.

One way to capture the benefits from GVCs is through outsourcing. One can distinguish outsourcing of services from material outsourcing and also domestic outsourcing from offshore outsourcing, which designates the sourcing of inputs from outside the boundaries of the firm and beyond home country borders. At the industry level, using intermediate inputs as a proxy for outsourcing, OECD input-output data show that the degree of outsourcing varies across the manufacturing sector likely depending on the position as suppliers or assembler in the value chain. However, in the motor vehicles sector, one of the most important manufacturing sectors in Czech Republic, the degree of outsourcing is relatively low compared to other countries (Figure 1.24). Outsourcing of

Figure 1.24. **Intermediate inputs in key manufacturing sectors**

Services input as percentage of gross output, 2011



Source: OECD calculations based on OECD Input-output database.

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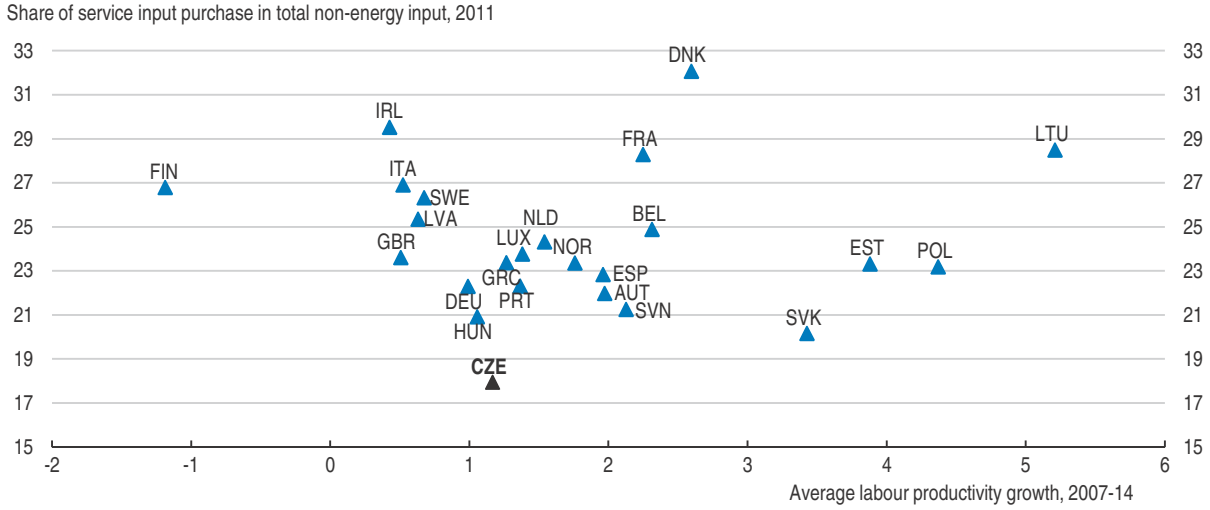
services is relatively low in all sectors as illustrated in Figure 1.24. Therefore, Czech firms may not be benefiting from the productivity gains outsourcing can generate.

Estimates of the impact of outsourcing on productivity at the firm or industry level are mixed and very dependent on the industry or country and even firm specific characteristics. For instance, Görzig and Stephan (2002) on German firms find a positive and significant effect of outsourcing on firm performance, measured as returns per employee. This effect is strongest for material outsourcing, but negative for services in the short run. Moreover, they find that increased subcontracting and outsourcing of services reduces firm profitability, whereas firms engaged in material outsourcing tend to do better than those that do not outsource. Such result implies that there is a limit to outsourcing. Girma and Görg (2004) analysed the impact of outsourcing on both labour productivity and TFP for three separate UK manufacturing industries over the period 1982-92. They found positive and significant impact of outsourcing on productivity levels for plants in the chemical and engineering industries. But, the effect of outsourcing in the electronics sector is negative though not significant.

More recently, Schworer (2013), focusing on Europe between 1995 and 2008, shows that many services that were previously provided internally have systematically been outsourced. He finds evidence that service offshoring and offshoring of non-core manufacturing activities have contributed to an increase in productivity, whereas no significant link is found for offshoring of core manufacturing activities and domestic outsourcing. From an extensive survey of the empirical literature, Olsen (2006) concludes that there are no clear patterns as to how outsourcing affects productivity, and much seems to depend on both sector- and firm-specific characteristics. In particular, there are several indications that part of the productivity enhancing effects from offshore outsourcing is driven by firm-specific strategic elements such as increasing the focus on core competencies.

The analysis of the impact of outsourcing on labour productivity at the industry level in Czech Republic suggests that Czech firms may not reap all the productivity gains they could from services outsourcing. Figure 1.25 shows that when compared to countries in the same segment in global value chains (Estonia, Lithuania, Poland and Slovakia) Czech firms incorporate lower level of services outsourced in their production and experience a lower labour productivity growth rate.

Figure 1.25. **Services outsourcing and labour productivity growth in the manufacturing sector**



Source: OECD calculations, Input-Output OECD database.

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Recommendations to foster productivity growth and income convergence

R&D and innovation systems

- Develop government co-financing schemes to complement grants and increase fiscal incentives for business R&D spending.
- Unify the design, assessment and coordination of research and development and innovation policies in a single institution. Specifically, research institutions should be under the responsibility of the same institution.
- Increase R&D spending effectiveness by better targeting government funding to broaden the scope of R&D activities in the Czech Republic.
- Increase incentives and funding through the national programmes of applied research and innovations to develop collaboration between research entities and businesses.
- Develop mobility schemes for public researchers to work during some period in businesses' research centres to facilitate the inter-actions between research institutions and firms.
- Use public procurement contracts to initiate innovative solutions in strategic areas with societal benefits.
- Encourage the participation of managers and workers in training and further education to increase the productivity of staff. Offer individual training accounts or refundable tax credits to individuals that undertake training at accredited institutions.
- Remove the barriers to the mobility of workers to reduce skill mismatch by improving the functioning of the private rental market, lowering the cost of closing a business and easing the stringency of employment protection legislation.

Creating a productivity enhancing environment

- Limit the possibilities to delay bankruptcy procedures and eventually allow for the write-off of debts.
- Reduce the number of regulated professions and strengthen the competition and regulatory framework of product markets.
- Accelerate the creation of funds and guarantee programmes to support SMEs and innovation.
- Reduce the advantages of self-employment in terms of social contributions and personal income tax.

Other recommendations

- Increase the share of government R&D grants directed to programmes including international collaborations and to support activities conducive to the acquisition of knowledge-based capital.

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Chapter 2

Enhancing public sector efficiency and effectiveness

Spending on public administration itself is relatively low and so are indicators of its performance. Challenges include wastage in public procurement, insufficient management of the investment cycle and high levels of staff turnover. This chapter considers ways of building on recent reforms, including better procedures for EU-financed projects and the new Civil Service Act, to raise the efficiency and effectiveness of the public sector. Performance monitoring is underused but could help drive improvements in service delivery. The structure of local government, which includes over 6 200 municipalities, exacerbates the challenges of the public administration by complicating co-ordination and stretching capacity. Accordingly, the second part of the chapter focuses on ways of improving the efficiency and quality of public service delivery and realising greater benefits from decentralisation.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

The public sector has played an important role in increasing the well-being of the Czech population and shaping the convergence process over the past two decades. As part of the transition from central planning towards a market economy, it has provided public goods and services and a social safety net. Technological developments have been a driver of change and also provided solutions. The structure of administration has also shifted closer to the community, with a system of self-governing regions and municipalities and a network of joined-up municipalities between. Major reforms are currently underway to enable the public administration to meet changing demands and strengthen its role in the income convergence process.

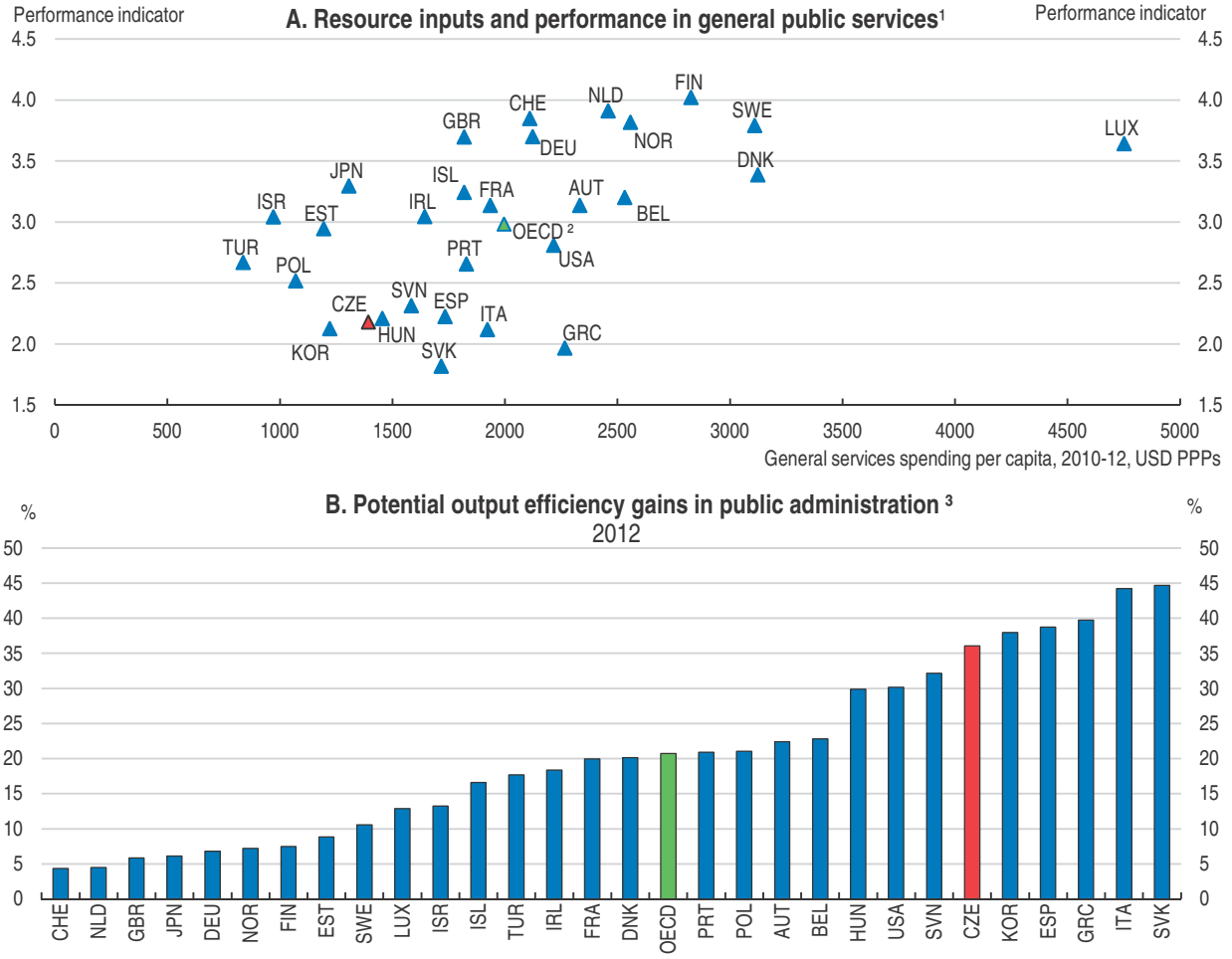
Previous OECD *Economic Surveys* have focussed on the role of local government in increasing public sector spending efficiency as well as the pension and healthcare systems (OECD, 2006, 2011a). This chapter examines ways that the public sector and its administration can become more effective and in doing so, deliver better outcomes. Because the division of responsibilities between levels of government has a strong influence on public sector efficiency, the second part of the chapter focuses on ways to improve the effectiveness of the arrangements with and between sub-national governments.

Enhancing the effectiveness of public spending

Government spending represented around 43% of GDP in 2014, close to the OECD average of 45%. Given spending pressures outlined in the *Assessment and Recommendations,* it is crucial to ensure that funds are being allocated to types of spending with the greatest benefits taking into account future needs; for example, effective public investment can help speed up convergence in income and living standards. There is also scope to increase the efficiency of spending. Three interrelated sources of past inefficiencies that the government aims to improve are: (i) wastage in public procurement; (ii) inadequate and at times ineffective investment spending, including difficulties absorbing available EU funds; and (iii) poor human resource management in the public service (Office of the Government, 2015). Collection and publication of indicators of output is increasing, which combined with benchmarking and e-Government tools, can drive the quality of government services towards best practices faster.

Spending on public administration itself is relatively low, just under three-quarters of the OECD average (per capita and PPP-adjusted), which is in line with other CEE (Central and Eastern European) countries (Figure 2.1, Panel A). However, the performance of the public administration also appears to be relatively low, as indicated by regulation and corruption (which affect competition as well as wastage), the quality of justice and government efficiency. Estimates by Dutu and Sicari (2016) imply that the performance of the public administration could be improved by around one-third, holding spending constant (Figure 2.1, Panel B). Recognising this problem, the government's *Strategic*

Figure 2.1. **Comparing the efficiency of public administration across OECD countries**



1. Composite performance indicator for public administration outcome based on OECD's Product Market Regulation Indicator to proxy the levels of bureaucracy (33% of indicator) and results of the 2014 WEF survey on the quality of justice, level of corruption and government inefficiency. General services spending includes general public services, order and safety and excludes interest payments.
2. Unweighted average of data shown; excludes Australia, Canada, Chile, Mexico and New Zealand.
3. Potential gains are measured if efficiency in a country were to be raised to the level implied by the estimated efficiency frontier while holding inputs constant and under the assumption of non-increasing returns to scale. The frontier is calculated using data envelopment analysis based on one output (composite performance indicator) and two inputs (GDP per capita and public administration spending). Averages over the period 2010-12 were used for expenditure to capture its effects on performance and smooth its developments.

Source: Dutu, R. and P. Sicari (2016), "Public Spending Efficiency in the OECD: Benchmarking Health Care, Education and General Administration", *OECD Economics Department Working Papers*, No. 1278, OECD Publishing, Paris.

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Framework of the Development of Public Administration for 2014-20 aims to strengthen the policy-making environment, improve implementation and evaluation and shift the focus of the administration more towards outputs and outcomes (Box 2.1).

Using public procurement for efficient provision of public services

Public procurement represents a relatively important means of purchasing goods, services and construction works at all levels of government in the Czech Republic, equivalent to almost 15% of GDP or one-third of government spending (Figure 2.2). Procurement by state-owned utilities is also significant (equalling 9% of GDP in 2008 (OECD,

Box 2.1. **Strategic Framework of the Development of Public Administration for 2014-20**

The Strategic Framework links to the government's National Reform Programme and the EU operational programmes. The Ministry of Interior is responsible for co-ordinating its design and implementation, but other ministries have been allocated co-ordinating roles for some objectives. Management rests with the Government Council for Public Administration, which is chaired by the Ministry of the Interior. But some responsibilities overlap with the Government Council for Competitiveness and Informational Society.

Table 2.1. **Summary of objectives**

Strategic objectives	Specific objectives
1. Modernisation of the public administration	i) Use of process management elements, introduction of standards ii) Reduction of regulatory burden iii) Development of quality management methods in the public administration iv) Introduction of a public administration evaluation system
2. Reviewed and optimised performance of the public administration at the territorial level	i) Harmonisation of territorial administrative structure and public services at the territorial level ii) Review and changes in the functions of the administratively divided towns iii) Optimised system of public contracts iv) Modification and streamlining of the public administration system of financing of agendas performed in delegated powers v) Reduction of the risk of insolvency of territorial self-administration
3. Increased public administration accessibility and transparency through e-Government	Completion of a functional e-Government structure
4. Development of professional human resources in the public administration	i) Implementation of the Civil Service Act ii) Management and development of human resources in the public administration

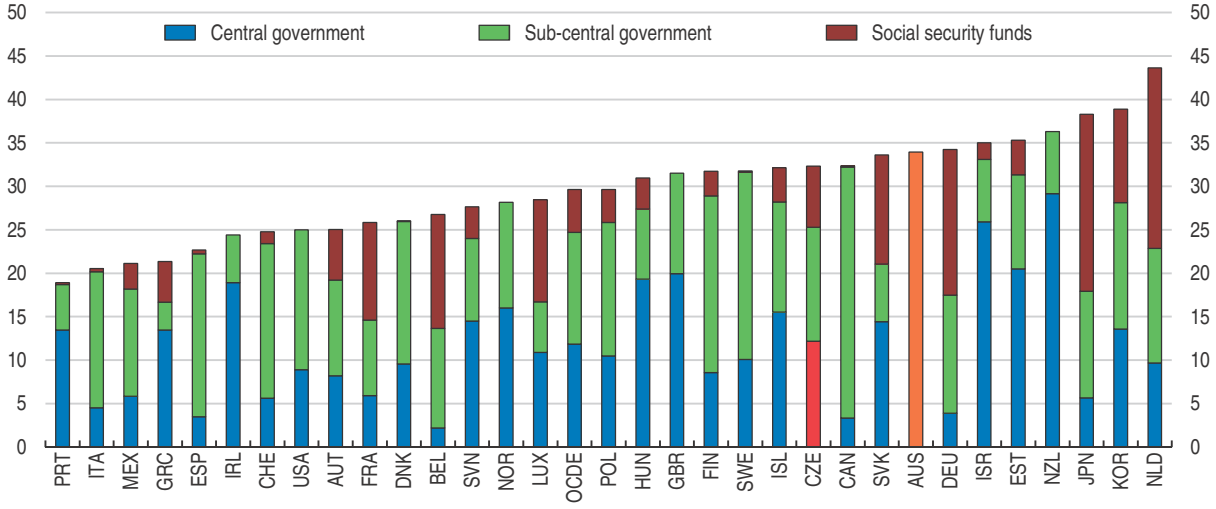
Source: Ministry of Interior (2014), *Strategic Framework of the Development of Public Administration in the Czech Republic for 2014-20.*

2011b)). Significant reforms have been made in the past four years to increase transparency and controls over processes, largely driven by pressure from the European Commission. But concerns remain about the lack of transparency, competition and enforcement that cause wastage and distort competition in product markets (OECD, 2014a). In 2015 the Supreme Audit Office highlighted public procurement as "the highest-risk area of the state's financial management" (SAO, 2015b). Expectations of corruption reduce competition if firms choose not to participate in tenders – survey data suggest this is a more common reason for not participating in tenders than in most other European countries (European Commission, 2014). Transparent and competitive procurement procedures with appropriate internal control systems and expertise are essential for effective procurement spending (OECD, 2013a, 2013b).

Significant steps were taken to increase transparency in 2012, including requiring publication of details of all contracts and increasing the number of cases where a new tender or competitive tender would be required. Increased data collection and the annual report on public procurement by the Ministry of Regional Development have facilitated greater scrutiny of public procurement and contracting authorities. From mid 2016 new public contracts above CZK 50 000 will be published in a centralised public register and from mid 2017 unpublished contracts will be automatically cancelled. However, there are exceptions that should be reconsidered, such as for small municipalities, the Office of the President, the Parliament and the Constitutional Court. To further increase accountability, the Ministry of Regional Development should compile performance indicators such as

Figure 2.2. **Public procurement spending by level of government**

% of general government spending, 2014 or latest



Source: OECD Government at a Glance database.

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transaction costs, procurement times and usage of efficiency-enhancing vehicles (framework agreements and consolidated contracts). It should compare these across public entities to identify problems and facilitate learning from good practices.

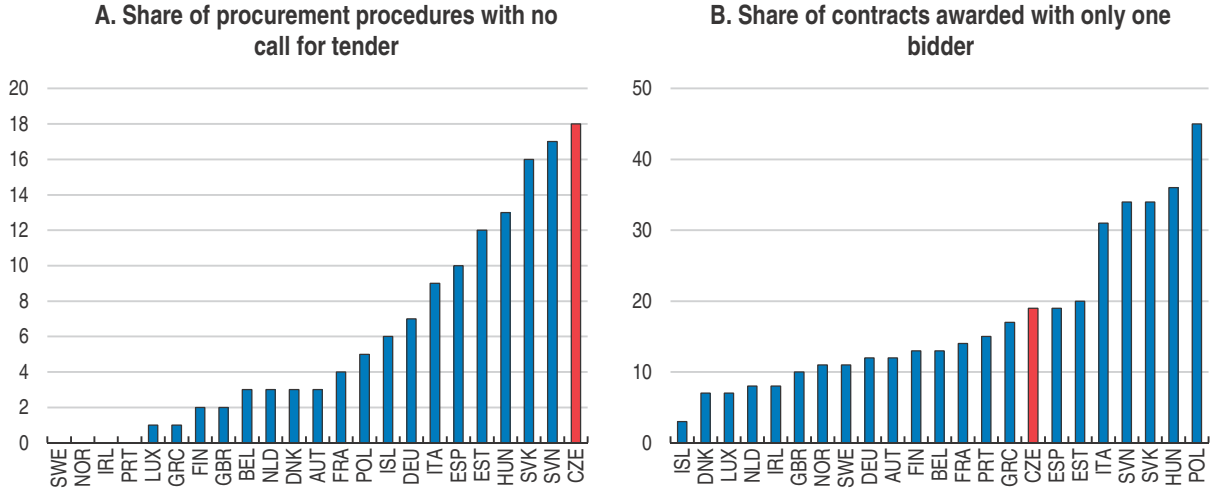
Balancing accountability and enforcement against the compliance burden has proved difficult. Administrative demands were considered too high for all parties after the 2012 amendments. Accordingly, amendments in 2013, 2015 and 2016 aimed to reduce compliance burden. The scope for awarding a contract in the case of just one bidder was widened again, as was the scope for conducting a tender without negotiation. In 2015, the share of single-bid contracts increased to its 2010 level – one-third – after falling below 20% during 2013-14 (EconLab, 2016). Other means of enforcement are therefore more critical. Amendments in 2016 aim to reduce the compliance burden further. For example, only the successful company will need to prove its eligibility for the contract, which will improve accessibility for SMEs, as required by EU directives. Differences between the legislation governing procurement and other public tenders (concessioning and licencing) add to the compliance burden, as have frequent legislative changes. The legislation and procedures should be reviewed to evaluate the balance between enforcement and administrative burden. The review could be an *ex post* Regulatory Impact Assessment and should include a stakeholder survey. The implementation of EU directives on e-Procurement (by 2017) provides an opportunity to tackle compliance costs and improve processes.

Overall, competition in public procurement remains relatively low (Figure 2.3). Competitive procedures are crucial to achieve value for money and fight corruption (OECD, 2015c). A particular challenge is the large number of contracting authorities: in 2014 almost 15 000 contracts were signed and one-third (57% by value) were by non-governmental public bodies (e.g. the Academy of Sciences, associations of municipalities) (Ministry of Regional Development, 2015). Combining contracts would increase their size, supporting competition, and could also yield economies of scale and lower administration costs. Yet, the European Commission's *Single Market Scoreboard* suggests just 5% of procedures in 2014 involved more than one buyer – half the EU average and one-quarter of the United Kingdom.

Tools should be further developed to increase joint procurement, with rules and guidelines to increase their use. Options include centralised purchasing bodies, framework agreements, dynamic procurement, e-catalogues, consolidated contracts and contracts with options (OECD, 2015c). Central and regional governments should help co-ordinate joint purchasing solutions among other public bodies and municipalities. Tools from the OECD procurement toolbox should be applied to contracts that are negotiated without tender to preserve competitive elements. Information allowing comparison of the prices of goods and services is already published online and should be more widely used along with more systematic assessment of value-for-money.

Figure 2.3. **Indicators of competition in public procurement**

Per cent, 2014



Source: European Commission, Single Market Scoreboard, *http://ec.europa.eu/internal_market/scoreboard/performance_per_policy_area/public_procurement/index_en.htm*.

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Problems related to a lack of effective oversight persist throughout the procurement cycle. These include failing to observe rules and regulations, setting discriminatory tender terms, contract splitting, inappropriate use of exceptions and failures in audit systems (SAO, 2015a, 2015b; UOHS, 2015). An increasing number of awarded contracts have been taken to the Office for the Protection of Competition for review and only a small fraction of cases were found free of misconduct but subsequent appeals generated delays (UOHS, 2015). Auditing, surveillance and enforcement of the procurement cycle are crucial to achieve value for money, and for reducing fiscal risks from EU funding being "corrected" due to compliance problems. These processes must also reach smaller local governments, where poor procurement practices appear more common (Table 2.2). Clear chains of personal responsibility should be established so that delivery is to the standards and timeframe contracted. Procurement officials should be required to disclose conflicts of interests (OECD, 2015c, 2003). Establishing a register of private interests of procurement officials and close relatives would also bring disclosures closer to best practice.

As in all OECD countries, procurement has expanded beyond an administrative function due to technological developments, the need for greater value-for-money and changes in tendering processes to a focus on non-price criteria such as quality and life-cycle costs. A specific challenge is the lack of expertise due to the multitude of contracting

Table 2.2. **Comparing procurement across types of government**

Type of contracting authority	Number of entities	Total value (CZK, bln)	Procurement practices score		
			Median	% below 50	% below 60
Central government	92	367	64	2	26
Large municipalities (>20 000 inhabitants)	60	212	65	3	23
Small municipalities	121	55	60	17	49
State- and municipal-owned enterprises	64	792	67	2	23

Note: The score is calculated as the weighted average of 11 indicators of accessibility, competition and supervision. The indicators are based on purchase data and each can theoretically range from 0 to 100. Central government data include ministries and national level agencies and are for 2012-14; cities data are for 2011-13; enterprises data are for 2012-14. The data only cover institutions with at least 10 contracts in the period.
Source: EconLab (2016), zIndex website,_www.zindex.cz/#results (accessed 4 April 2016).

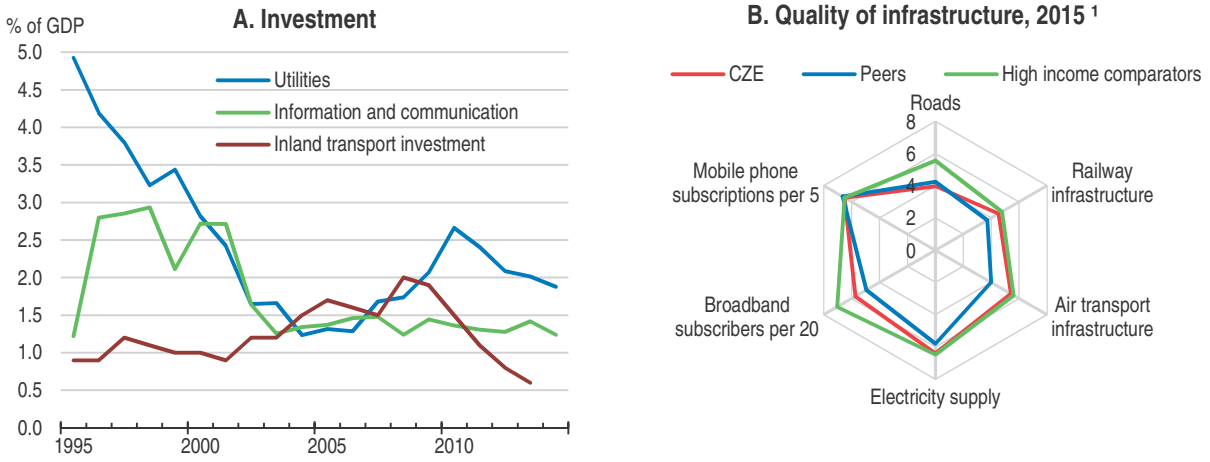
authorities. The national authorities have increased training, including via e-training on the public procurement portal. The portal should continue to be developed in a user-focussed way with clearer guidelines and more training and technical assistance. Competency centres should be developed within the central and regional governments to help bridge capacity gaps in other public bodies and municipalities (also in the area of public-private partnerships, discussed below). Turnover of key staff also erodes expertise. There may be benefits from certification of the profession: a majority of OECD countries now recognise public procurement as a specific profession (OECD, 2013a).

Maximising the impact of public investment spending through better planning and implementation

At 4.6% of GDP on average over the past two decades, public investment appears relatively high. Yet net investment has been low – or negative in some years – because of high levels of depreciation. And until 2015, investment in sectors associated with public infrastructure investment had also fallen (Figure 2.4, Panel A). Measures of infrastructure performance compare well to other CEE countries but there are gaps with high-income comparators in road quality and broadband access (Figure 2.4, Panel B). The Regional Development Strategy for 2014-20 also highlights the need for better infrastructure (Ministry of Regional Development, 2014). More infrastructure investment would help facilitate catch-up, through direct effects on the capital stock, as well as economies of scale, network externalities and competition-enhancing effects (OECD, 2015a). To capture these benefits, networks should be opened up to greater competition (OECD, 2014a). Other kinds of public investment that are needed include investment in research to support innovation and boost productivity (see Chapter 1) and investment to address population ageing and environmental challenges. Public investment can also crowd in business investment, for example, by creating backbone infrastructure.

Public investment has also been volatile and, in recent years, procyclical (Figure 2.5). Fiscal consolidation, changes of government and the associated turnover of staff, procurement and co-ordination difficulties implementing EU-funded projects pulled down investment at all levels of government. Problems in large public bodies such as the Roads and Motorways Directorate also hindered investment. Problems integrating European requirements for environmental impact assessments into approval processes have also added to delays (European Commission, 2016a). Public investment contributed 1 percentage point to real GDP growth in 2015 (adjusted for the effect of the Gripen fighter

Figure 2.4. **Infrastructure investment has fallen and is still needed in some areas**



1. Measures of the quality of transport infrastructure and electricity are based on a score from 1 (low) to 7 (high). High-income comparators are: Austria, Belgium, Denmark and Sweden; CEE peers are: Estonia, Hungary, Poland, the Slovak Republic and Slovenia.

Source: OECD National Accounts database; International Transport Forum database; OECD Broadband database; World Economic Forum, The Global Competitiveness Index Historical Dataset 2005-15.

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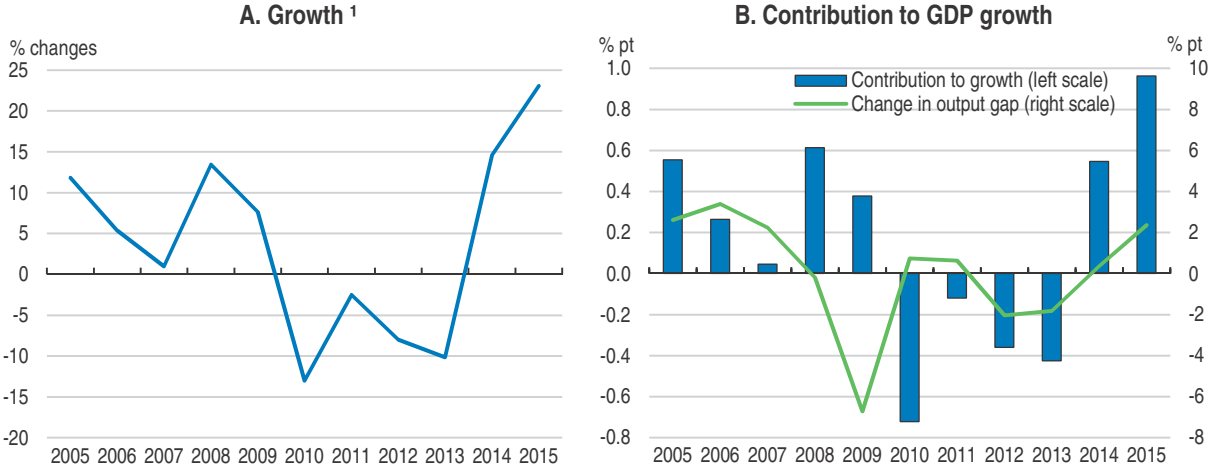
jet lease) and will subtract from GDP growth in 2016. This reflects the transition between EU funding cycles, with a late finish to the previous cycle and new programmes not yet underway. This volatility also generates knock-on effects to product markets and the labour market.

Difficulties with EU-financed projects contributed to volatility in investment and illustrate many of the challenges for public projects more generally. In the 2007-13 programming period, available EU structural funds, mostly for investment projects, totalled EUR 26.5 billion (17% of average annual GDP, or 2½ per cent of GDP on average per year). By end 2013, only half of the funds had been paid out by the European Commission. Although available funds were larger as a share of GDP in Poland and Estonia, investment

Figure 2.5. **Government investment has been volatile and procyclical**



1. Investment in 2015 has been adjusted for the effect of the Gripen fighter jet lease.

Source: OECD calculations based on OECD Economic Outlook database.

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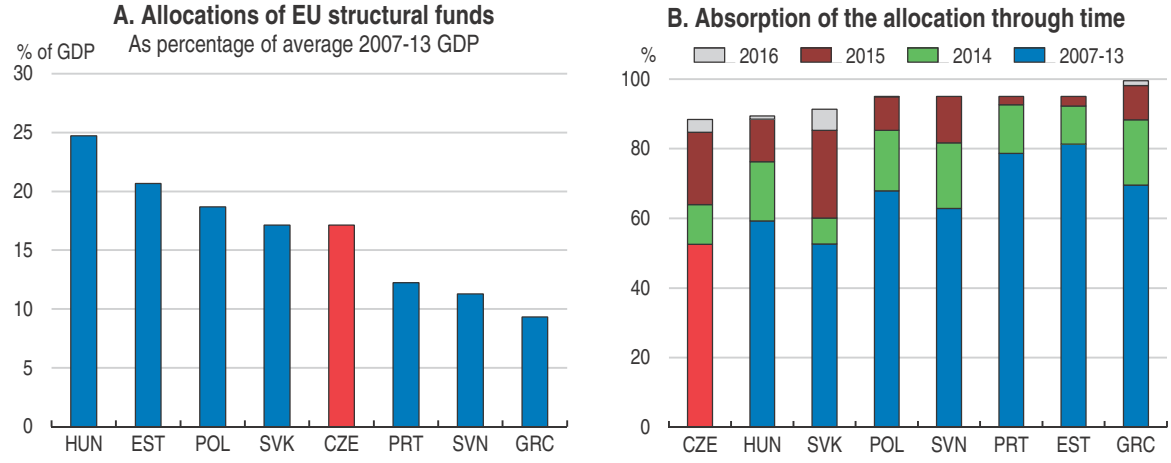
proceeded more smoothly (Figure 2.6). Accordingly, there was a rapid ramp-up in 2014 and 2015 and the absorption rate is ultimately expected to reach around 95% of the initial allocation. The process highlighted deficiencies in co-ordination, capacity and framework conditions – key pillars of effective public investment across levels of government (Box 2.2). In particular, delays stemmed from: too many programmes with differing, and complex, procedures; lack of co-ordination across and between levels of government; variations in programme rules; lack of personal accountability and monitoring, partly due to staff turnover; and problems with procurement processes delaying tenders (SAO, 2015a; European Commission, 2015a; Ministry of Finance, 2013). In some cases the Commission "corrected" its payments due to compliance problems and some funds were "decommitted" because they were not spent on time. The rapid increase in spending likely reduced spending efficiency: for example, construction prices were pushed up and 40% of tenders with EU funding in 2015 had just one bidder (EconLab, 2016; SAO, 2015a).

Figure 2.6. **Size and absorption of the 2007-13 programme of EU structural funds**



Note: This is the sum of all EU funds: Cohesion Fund, European Regional Development Fund and European Social Fund. Absorption rate is the total percentage of available funds paid out by the European Commission and is expected to rise further for some countries during 2016 and 2017.

Source: OECD *Economic Outlook* database; European Commission, European Structural and Investment Funds database.

StatLink http://dx.doi.org/10.1787/888933364793

Significant steps have been taken to improve co-ordination, capacities and framework conditions for the 2014-20 period. "Standing conferences" have been established at the national and regional level (using the eight regional groupings channelling EU funding). These conferences include important territorial stakeholders and will prepare action plans that form the basis for calls for tender. There is also a stronger focus on integrated strategies within regions and community-led local development. Greater emphasis on *ex ante* strategic planning, as required by the European Commission, could improve the framework for project selection and implementation. The number of programmes has been reduced, procedures for managing the programmes have been simplified and a uniform methodology applied across all programmes. More extensive use of indicators and electronic systems for monitoring progress should increase accountability and facilitate evaluation and corrective action being taken. Overall, these changes should improve the efficiency and effectiveness of investment and should be applied to other government processes. Greater use of available EU technical assistance could also help build capacity.

Box 2.2. **OECD recommendations for effective public investment across levels of government**

OECD members have developed recommendations to help governments assess the strengths and weaknesses of their public investment capacity to maximise the quality and impact of public investment. A toolkit is available to help countries assess their current practices in line with the following principles.

Table 2.3. **Key principles for effective investment**

Pillar	Principles
Co-ordinate public investment across levels of government and policies	Invest using an integrated strategy tailored to different places
	Adopt effective instruments for co-ordinating across national and sub-national levels of government
	Co-ordinate horizontally among sub-national governments to invest at the relevant scale
Strengthen capacities for public investment and promote policy learning at all levels of government	Assess upfront the long-term impacts and risks of public investment
	Engage with stakeholders throughout the investment cycle
	Mobilise private actors and financing institutions to diversify sources of funding and strengthen capacities
	Reinforce the expertise of public officials and institutions involved in public investment
	Focus on results and promote learning from experience
Ensure proper framework conditions for public investment at all levels of government	Develop a fiscal framework adapted to the investment objectives pursued
	Require sound and transparent financial management at all levels of government
	Promote transparency and strategic use of public procurement at all levels of government
	Strive for quality and consistency in regulatory systems across levels of government

Source: OECD (2014), Recommendation of the Council on Effective Public Investment Across Levels of Government

Results will be conditional on the implementation of these improvements. Moreover, the current programming period is already delayed and problems with the previous period risk being repeated (SAO, 2015a).

A greater strategic focus is also needed so that national objectives drive the choice of projects, including co-financed projects, and resources are used most effectively. The forthcoming Strategic Framework of Sustainable Development to 2030 provides an opportunity to adopt a whole-of-government approach and overcome sector-based investment strategies. It should be informed by an evaluation of current and future infrastructure gaps. Prioritisation of projects across sectors should be able to draw on comparable analysis. The Strategic Framework should also build on the projects planned for the 2014-20 programming period. Clearer responsibility for co-ordination of investments and their prioritisation is also needed. An existing part of the government could be designated with this responsibility. Another possibility is to follow the model of Infrastructure Australia, a small independent statutory body tasked with preparing and updating "infrastructure audits" and a 15-year investment plan and maintaining a list of "priority projects" to inform the public debate. Multi-year planning would also reduce the volatility of investment and provide insulation from changes of government. An OECD Public Governance Review could be used to help implement the Strategic Framework and improve planning and co-ordination across levels of government.

Existing good practices should be extended more widely. For example, projects funded by "programme financing" (investment inside the national budget involving state organisational units) follow strict procedures and requirements, with cost-benefit analysis, reporting of indicators and tools for monitoring progress towards goals. But in other parts of the public sector, cost-benefit analysis is underused. It should be used more

systematically, particularly for large projects. In a number of OECD countries *ex ante* cost-benefit analysis is mandatory for all investment projects above a given threshold (OECD, 2015b). Electronic platforms could be developed further to centralise and share knowledge and guidelines for the entire process of planning and implementation. The success of the reforms will also depend on the effectiveness of changes in procurement procedures, implementation of the Civil Service Act, and monitoring more generally, discussed in more detail below.

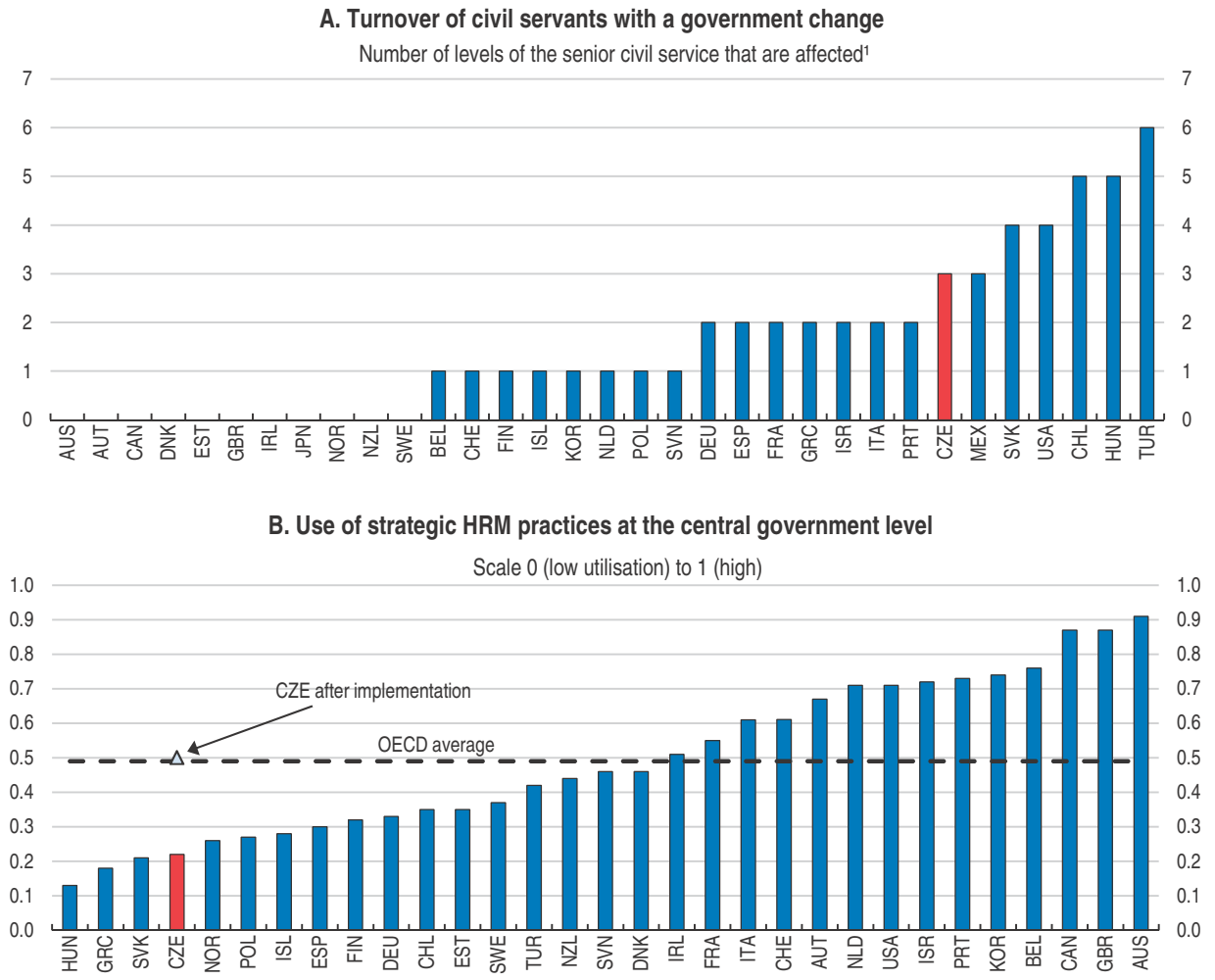
Public funds are to be leveraged through public-private partnerships (PPPs) and the Investment Plan for Europe (Juncker Plan). The Ministry of Transport plans to tender for a PPP project in 2016 to achieve faster construction and higher quality roads compared to undertaking the project directly. PPPs have been little used recently: the central government's PPP unit was disbanded in 2012 and the only active PPPs are at the municipal level (OECD, 2014b). By drawing on private sector expertise in designing and operating assets, well designed PPPs generate gains through timeliness, cost and quality (OECD, 2013a). But the abovementioned difficulties with procurement highlight the risks of corruption and wastage. Lack of capacity and planning plagued earlier PPPs (Ondráčka, 2007). It is essential that the key principles from the OECD's *Principles for Public Governance of PPPs* be applied, including: using *ex ante* value-for-money assessments; appropriately apportioning risk; concentrating expertise centrally and ensuring the budgetary process is transparent. If these conditions cannot be met, direct public investment would likely be more effective and efficient. Almost 50 projects worth over CZK 300 billion were initially submitted to the Investment Plan for Europe but only five agreements have been signed so far. Where eligible projects are in line with national priorities, this avenue of funding and access to technical support should be used to help leverage national funds.

Better management of human resources

In 2015, the Civil Service Act created a national civil service, which was an unfulfilled requirement of EU membership. Prior to this, employment at the central government level – almost half of general government employment in 2007 – was regulated by the general Labour Code and ethical requirements were addressed in various regulations. (Employees of sub-national governments have been subject to Act on Civil Servants of Self-governing Local Authorities since 2003.) Human resource management (HRM) policies and processes differed across central government departments and performance assessments were relatively underused (OECD, 2011b). High turnover after government changes caused discontinuity in policy implementation, depleted institutional knowledge and compromised perceptions of the public service (Figure 2.7, Panel A). The Act aims to depoliticise the public service and increase professionalism and stability, thereby improving HRM. Key changes include: specifying competitive procedures for all appointments and promotions; linking remuneration and performance assessment more closely; codifying rights and responsibilities; and facilitating whistleblowing (Box 2.3). These changes bring many HRM policies more in line with other OECD countries (Figure 2.7, Panel B).

Specific procedures for recruitment, promotion and dismissal, a more rigid organisational structure and reduced use of fixed-term contracts should reduce political interference and strengthen the career path of civil servants. Ministers will only be able to choose part of the selection panel for State Secretaries and Deputy Ministers. Vacancies are now advertised on a civil service-wide portal. However, some new requirements may

Figure 2.7. **Gaps in human resource practices were affecting the civil service**



1. The bar shows to what extent there is a change of positions at different levels of civil servants when the government changes. In the countries with no turnover, a change of government does not directly affect the employment of public servants. The exception is a small number of public servants employed on a contract, which terminates when the relevant Minister leaves the office. Data on turnover in level 5 and/or 6 are not available for Czech Republic, Hungary, Israel, Portugal, Spain and United States.

Source: OECD (2011), *Government at a Glance*; OECD calculations based on responses received from the Ministry of the Interior.

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constrain improvements in policies and practices. Barriers have been created for private-sector candidates applying to senior management positions; for example, for a director position the first two recruiting rounds must fail. This should be reconsidered. Similarly, making senior civil servants permanent in their role to bar political influence could increase rigidity too much. These effects could be mitigated by measures to encourage mobility, such as taking experience in other roles (or ministries) into account in promotion decisions, or by encouraging secondments. In Australia, Belgium and the Netherlands, competencies (knowledge, skills and behaviours) are being managed in a way that aims to increase transferability and accordingly, mobility and flexibility (OECD, 2015d).

Performance pay is now better linked to performance assessments, which have been formalised and include criteria relating to outcomes as well as behaviour. This should

improve incentives and employee engagement. This link is particularly important because performance pay is used more than in other OECD countries (OECD, 2011b). The regular component can reach up to 43% of regular pay for a high-performing employee early in their career. With bonuses, performance-related pay can theoretically reach 57% of overall compensation. For experts and managers the share can be higher. To foster confidence in the process and enhance incentives, outcomes of assessments should be transparent at each level (with sufficient confidentiality) and bonuses should also be linked to assessments. Base pay is determined by a matrix of position and experience (as in sub-national governments) and the sizeable wage penalty that emerges for tertiary-educated workers (estimated at around 30% by de Castro, Salto and Steiner, 2013) will likely continue to hamper retention of skilled staff. A penalty is common in transition countries (Lausev, 2014). While the wage penalty may fall over time, the appropriateness of compensation and conditions should be reviewed with the aim of improving retention. Denmark, for example, regularly assesses whether pay is sufficiently high to be competitive without crowding out the private sector. Non-wage measures could be expanded, for instance, through training and skill development and policies to promote gender equality (as proposed in the *Assessment and Recommendations*).

To make sure that civil servants have sufficient expertise, examinations are used in the recruitment and appointment process, training is being reformed and the role of managers is being enlarged. However, the emphasis on "fields of specialisation" accompanied by compulsory examinations risks deterring applications from outside the public sector and hindering mobility of talented individuals within the civil service. The system of training and education of staff is being reworked. Outsourcing will be reduced, the Ministry of Interior will run cross-cutting training and ministries will run specific training. In some areas, effective use of e-learning tools could help reach more employees. Managerial skills have been lacking but will be increasingly needed as the management role changes. Training should be provided to help managers fulfil their expanded responsibilities in a more uniform way with support from HRM units. Tools such as 360 degree appraisals could help identify areas for improvement. Increasing the weight of managerial skills in appointment and performance evaluations could better align incentives. Overall, the success of the new approach will depend on its implementation; it should be monitored closely to allow for ongoing improvement.

The transition period has inevitably involved significant change, increased administrative burden and uncertainty. One concern is the considerable movement of personnel and positions ahead of the fixing of positions on 1 July 2015. In addition, the need to pass the Act quickly (to secure EU funding for the 2014-20 programming period) meant that many accompanying policies and guidelines were not finalised. Consequently, there has been uncertainty about how to comply with the Act in some practical situations and insufficient HRM expertise within ministries meant the burden on management increased sharply. The first evaluation of the Act is scheduled for 2016. It should include outcomes, such as staff engagement, hiring, turnover, as well as an assessment of human resource capacities within ministries. It should propose amendments to the Act, regulations and processes where necessary and identify where HRM skills need to be increased. An independent expert evaluation should be scheduled for 3-5 years' time to consider the effects of the reform and suggest improvements. Legislation to improve whistleblower protection, as envisaged in the Act, should be passed swiftly.

These changes to stabilise the civil service come as other countries are moving towards greater flexibility within departments and allowing positions to change over time (OECD, 2015d). While the new Act specifies processes and rules to achieve consistent quality, these changes could also increase rigidity and administrative burden. The public administration unit within the Ministry of Interior should adopt a more forward-looking focus to identify upcoming challenges such as demographic change and future skill requirements and work with ministries to adjust to these. Retirements could, for example, be used to adjust the staff profile over time.

Box 2.3. **The new Civil Service Act**

The Civil Service Act was adopted on 6 November 2014 and became effective on 1 January 2015. It regulates the organisation of civil service, the legal status of civil servants, their remuneration and other procedures.

- **Coverage:** The Act applies to civil service employees of ministries and most other state administration bodies. It does not include Members and Deputy Members of the Government (and their staff), top management of some independent offices (e.g. the Energy Office), defence force employees or employees of state administration bodies who do not perform "state service" (e.g. personal assistants and IT technicians in ministries).
- **Administration:** Overall co-ordination is carried out by a separate section of the Interior Ministry, which is controlled by the Deputy Interior Minister for State Administration who is appointed by the Government.
- **Organisational structure:** For each ministry the number of staff in managerial and non-managerial positions and the overall wage bill is approved annually by a Government Resolution. Each ministry's organisational chart is approved annually by its State Secretary. Each position has a qualification requirement, in terms of education and "field(s) of specialisation". The use of fixed-term contracts has been narrowed to specific circumstances. Positions can be made redundant.
- **Recruitment, promotion and dismissal:** Recruitment and promotion is through a competitive process, with a committee of three people and written documentation of each stage. There are separate procedures and criteria for top management. There are two obligatory entrance examinations. The general exam tests knowledge of the activities of state, rights, responsibilities, ethics and the underlying legislation. The second exam verifies competence in the "field(s) of specialisation", even for senior management.
- **Performance management and remuneration:** The Act introduces annual assessments for all civil servants. They cover fixed criteria in the areas of: (i) knowledge and skills (e.g. communication, co-operation, leadership); (ii) performance of state services in terms of accuracy, speed and independence; (iii) compliance with legislative obligations; and (iv) professional development. The assessments will determine performance pay and also include goal-setting for personal development. The Act also defines basic parameters for continuous professional development.
- **Whistleblowing:** The Act requires additional legislation to be prepared to facilitate whistleblowing by providing civil servants with adequate protection.
- **Transitional arrangements:** Positions were fixed on 1 July 2015. All senior civil servants must pass a review process after which they keep their current positions. The process should be completed by mid 2017.

Focussing on performance to evaluate and reinforce improved processes

Performance monitoring and performance-based budgeting are still little used. Only a small fraction of line ministries use elements of performance-based budgeting process. Practices vary at the sub-national level. Unlike in most OECD countries, outputs and outcomes are not included in budget submissions or documentation and performance budgeting is optional (even for line ministries). Existing performance indicators are not evaluated, benchmarking is little used and the Supreme Audit Office has repeatedly highlighted the risks of insufficient monitoring and evaluation leading to poor project selection and failure to correct emerging problems (SAO, 2015b).

Recent steps to increase the publication of data have been in the right direction. Key costs for each ministry and budgetary unit – wages, operating costs and material costs – now feed into the preparation of the state budget. Large datasets that have been made available as part of the Open Government Partnership have helped to increase transparency and some municipalities, NGOs and academia to carry out benchmarking and other evaluation exercises. There is also monitoring of "programme financing" for state organisational units and the information collected to monitor EU programmes which is used by line ministries. These tools should be extended to include investment grants and subsidies. The Supreme Audit Office is also increasingly focussing on performance aspects in its audits – a trend seen in many OECD countries; however, its audits are limited by its own resources and its authority, which does not extend to regional and municipal government or state-owned companies. The legislation to extend these powers that is with the Parliament should be passed and additional resources allocated to this function.

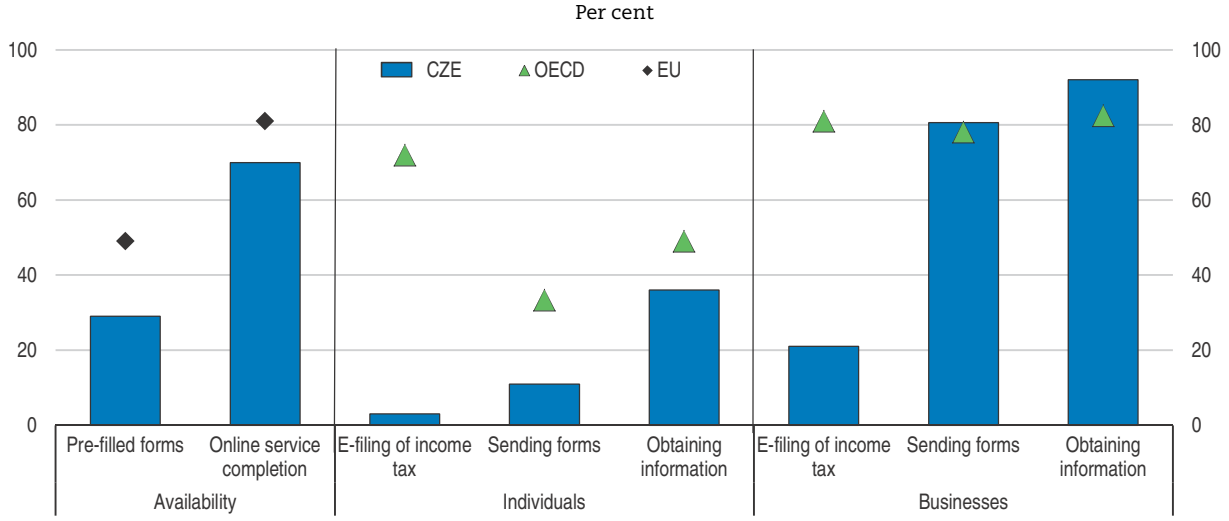
The e-Government programme offers an opportunity to escape sectoral silos and adopt a whole-of-government approach to performance measurement and evaluation processes. The focus of the e-Government programme has been on creating portals for accessing information and interacting with the government (Box 2.4). To the extent that data exist, they are typically fragmented and unpublished, as is the case in healthcare and education (OECD, 2014e; Shewbridge et al., 2016). In general, data provision needs to expand more uniformly and be more outcome-focussed, perhaps with the help of the Czech Statistics Office. The Swedish system of measuring healthcare outcomes is a successful example of how to overcome the difficulties of monitoring a highly decentralised network (OECD, 2014e). The Norwegian KOSTRA system provides an example of best-practice in collecting and publishing information on local government performance. Its introduction has benefited central and sub-national governments and proved to be a useful tool for municipalities themselves. As well as informing policy-makers, publication of performance indicators and benchmarking exercises would help to make regional and municipal governments more accountable to their residents, improve decision-making and drive service improvements.

For the successful roll-out of e-Government projects, deficiencies in co-ordination, targets, supervision and evaluation that have beset earlier e-Government initiatives will need to be overcome (SAO, 2015c; Spacek, 2015). The experience of Estonia – a leader in e-Government – highlights the importance of interoperability facilitating information-sharing across government departments (OECD, 2015e). It is crucial to engage all stakeholders and improve co-ordination, as suggested by the Supreme Audit Office. Performance monitoring of the indicators that are developed could be by a central government unit (perhaps jointly run by Ministry of Finance and Ministry of Interior) or a

body such as the Supreme Audit Office. An OECD Public Governance Review could help implement a well co-ordinated system of performance monitoring, benchmarking and e-government drawing on best practices.

There is also considerable scope to improve the provision of e-Government services. Take-up of online government services appears to have stalled and for individuals, it is much lower than in other EU countries (Figure 2.8). Rates of e-filing of taxes are among the lowest in the OECD. Large gaps have been found in all key aspects of e-Government: user centricity; transparency of service delivery and personal data involved; cross-border mobility; and enablers such as single sign-on (European Commission, 2015b). It is important to ensure the framework conditions such as security and privacy are sound. Interoperability has hindered the use of e-Government services by the public sector and needs to be addressed. The UK Government Digital Service Team provides an example of a nimble, user-focussed approach to improving ICT use in the public sector. It was established as a small team to work with government to simplify public services, provide data and provide tools for staff and ultimately led a transformation of online data services (OECD, 2015e). But as with other projects, continuous monitoring and evaluation is required to control costs and keep processes on target.

Figure 2.8. **There are gaps in the usage and availability of some e-government services**



Note: Data for individuals are for 2014, data for firms are for 2013, data for availability are for 2015. Extent of data in pre-filled forms is normalised. Online service completion rate is the share of the steps in defined life events that can be completed online.
Source: OECD (2015), Government at a Glance database; OECD (2015), *Tax Administration 2015: Comparative Information on OECD and Other Advanced and Emerging Economies*, OECD Publishing, Paris; European Commission, Digital Market Scoreboard.
StatLink http://dx.doi.org/10.1787/888933364819

Realising the benefits of decentralisation

Czech local governments have responsibility for delivery of some key government services. Overall, sub-national spending accounts for just over one-quarter of general government expenditure, close to the average unitary OECD country. Spending is concentrated in education, economic affairs (particularly transport), and "other" spending (notably waste and waste water treatment) (Figure 2.9). In health, most spending is by social security funds but regions are responsible for hospitals and municipalities for primary care. Overall, municipalities have greater spending responsibilities than regions,

Box 2.4. **E-Government tools in the Czech Republic**

The Strategic Framework for the Development of the Public Administration involves implementing a "digital by default" policy. This in turn requires all public administration clients to have an electronic identity, addressing cybersecurity concerns, and linking up databases to enable pre-filling of forms. The International Competitiveness Strategy also lays out targets related to e-Government and ICT modernization in the public sector. Existing tools include:

- Data boxes: repositories for storing electronic communications between citizens or companies and the state, between citizens and companies and between public authorities.
- Basic Registry: comprises the register of inhabitants, the business registry (including public authorities), the land registry, and the registry of competency of public administration offices.
- CzechPOINT: a service that allows registered users to obtain an extract from the Basic Registry. The service is also available at some municipal offices, post offices, notary offices and other public offices.
- Public administration portal: offers centralised information for individuals, businesses and public bodies. Includes an "open data catalogue" so public bodies can publish datasets with standardised metadata and documentation in a centralised location.
- Portals for procurement: Contracting authorities must publish tender notices above the national threshold on the e-Procurement system. All levels of government must publish all public tenders and awards on the e-Tenders portal. The portal on public contracts and concessions contains: legislation; links to the electronic marketplace; information on centralised procurement; e-Learning on public procurement; technical assistance; and information such as annual procurement reports.
- Electronic portal of local self-governments (ePUSA) and Towns and Communities Online Portal (TCOP): contain an up-to-date database of basic information for local governments and their activities.
- Electronic identification: electronic signatures (from three recognised providers) are valid for communicating and transacting with the public administration.

Source: Ministry of Regional Development; Ministry of Interior; European Commission (2016), "e-Government in the Czech Republic", Joinup e-Government factsheet, January 2016, *https://joinup.ec.europa.eu/sites/default/files/ckeditor_files/files/eGovernment%20in%20Czech%20Republic%20-%20February%202016%20-%20v2_00.pdf*.

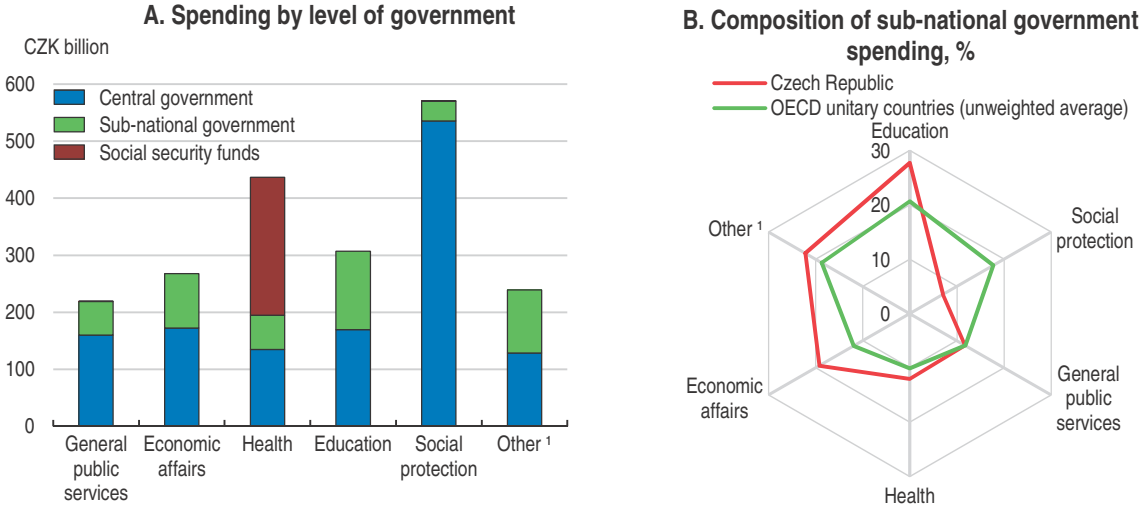
being responsible for education up to lower secondary school, social services including housing, energy, water infrastructure and waste services. Yet, despite sizeable sub-national government spending in key policy areas, discretionary powers of the sub-national governments are much more limited (OECD, 2006; Table 2.4). The funding structure is also complex, which together with many earmarked grants, likely reduces efficiency (Bergvall et al., 2006).

The current territorial division is fragmented and complicated

The country is divided into 14 regions and over 6 200 municipalities, with Prague having special status as a municipality and a region. The average population size of municipalities and regions – 1 686 and 754 000, respectively, in 2016 – are among the smallest in the OECD (Figure 2.10). Around three-quarters of municipalities have less than 1 000 residents, one-quarter have less than 200 residents and 7% have less than 100 residents. The three metropolitan areas – Prague, Brno and Ostrava – are among the most fragmented in the OECD when defined on a functional basis (Figure 2.11). The 1993 Constitution provides substantial independence to these forms of self-government. In contrast to other OECD countries, where the number of municipalities is declining, the number has been stable since the late 1990s, partly because incentives to merge are weak

Figure 2.9. **Sub-national government spending is concentrated in a few functions**

2014, current prices



1. Comprises: public order and safety, defence, environment protection, housing and community amenities, recreation, culture and religion.

Source: OECD National Accounts database; OECD (2016), Subnational Governments in OECD Countries: Key Data (brochure), OECD, Paris, *www.oecd.org/regional/regional-policy* Database: *http://dx.doi.org/10.1787/05fb4b56-en*.

StatLink http://dx.doi.org/10.1787/888933364827

Table 2.4. **Scope for sub-national discretion and autonomy**

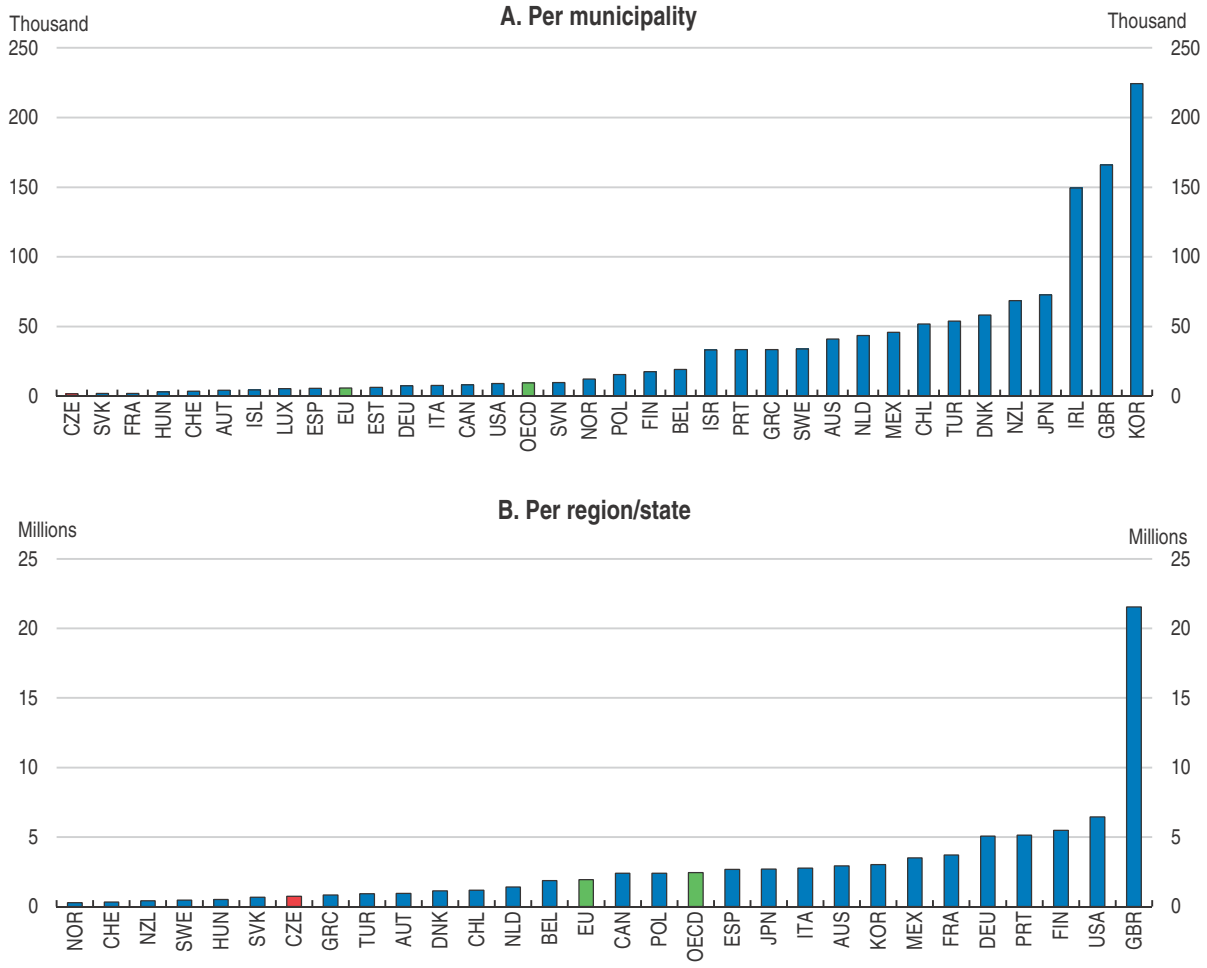
Main areas of discretion	Central government control	Autonomy over revenues
Education		
Provision of early childhood education (municipalities) Openings, maintenance and closure of primary to lower secondary schools (municipalities) Upper secondary school closures (regions). Some aspects of human resources but most is delegated to schools	Sets national education strategy, per capita financing and standardised tests Provides building grants	Funding is generally based on number of students and earmarked. Teacher salaries for basic education are paid by central government to regions then to schools, bypassing municipalities. There are no user charges.
Economic affairs		
Secondary (regions) and local roads (municipalities). Public transport	Sets technical standards for roads and prices for public transport	Funding is generally earmarked. Control over public transport fares is constrained by centrally set ranges.
Health		
Opening and closing of hospitals (regions) Opening primary health care (municipalities) Staffing levels	Determines treatment covered and the cost to insurance funds Provides investment grants Sets nation-wide pay	Funding is through transfers but investment grants are earmarked There are some small user charges.
Social protection		
Administration of social benefits on behalf of central government (municipalities) Level and quality of public housing (municipalities)	Sets parameters for social benefits There is no national definition of social housing but a national policy is planned	Transfers are received for costs of administering benefits and not earmarked. There are limited user charges. Housing investment grants are earmarked.
Utilities		
Water and waste management (municipalities with extended powers)	Sets standards following EU requirements Sets part of water price	User charges are an important source of revenue.

Source: OECD (2006), "Ensuring Fiscal Sustainability: Motivating Regional and Municipal Governments", in *OECD Economic Survey of the Czech Republic*, OECD Publishing, Paris; responses from the Czech authorities.

(OECD, 2011a, 2006). Starting a new municipality requires at least 1 000 residents. Municipal governments are traditionally viewed more favourably than regional or national governments (Freedom House, 2015). However, there are a range of costs associated with very small government units, as discussed in OECD (2006) and below.

Figure 2.10. **Czech municipalities and regions are among the smallest in the OECD**

Average number of inhabitants



Note: Average calculations are based on estimated population data as of 2015 or 2016 for most countries. Data for OECD and EU are unweighted averages.

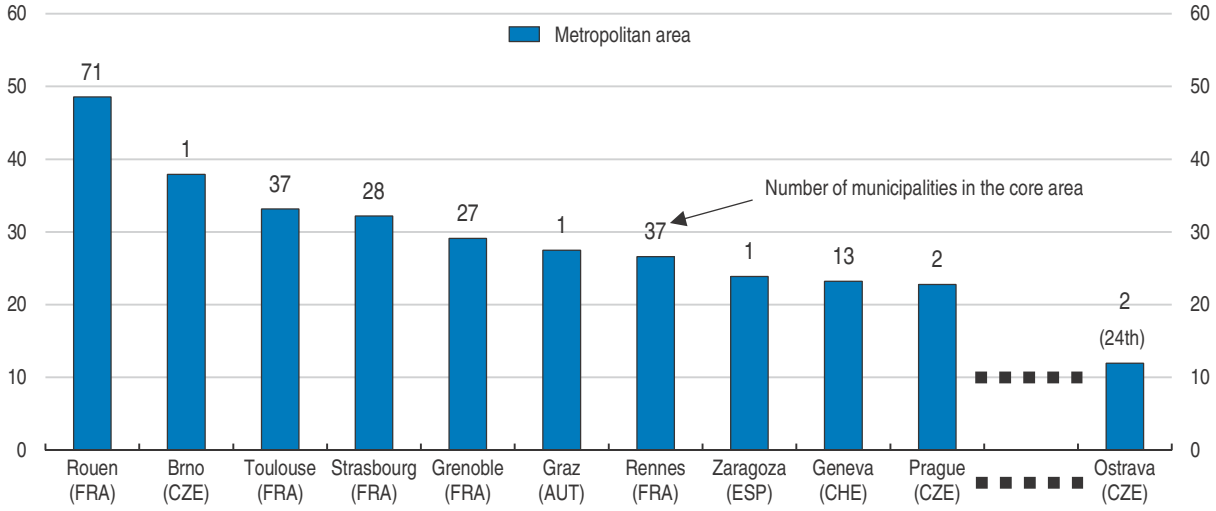
Source: OECD (2016), Subnational Governments in OECD Countries: Key Data (brochure), OECD, Paris, *www.oecd.org/regional/regional-policy*. Database: *http://dx.doi.org/10.1787/05fb4b56-en*.

StatLink http://dx.doi.org/10.1787/888933364502

Changes in the early 2000s led to further fragmentation. Regions were created in 2001. Then in 2003, the responsibilities of the 76 "districts" (between regions and municipalities) were largely passed to 205 "municipalities with extended powers". These municipalities perform functions for surrounding municipalities, so that all municipalities not designated as having extended powers are attached to one. Delegated functions performed on behalf of the central government (for example, child protection and issuing passports) are associated with additional funding and smaller municipalities also contract some functions to them (discussed below). But many other municipalities perform some but not all of the delegated functions (Table 2.5). This complicated arrangement deconcentrates

Figure 2.11. **Czech cities are among the most territorially fragmented in the OECD**

Number of municipalities per 100 000 inhabitants in the most fragmented OECD cities and Ostrava, 2014



Source: OECD Cities database, *http://dotstat.oecd.org/Index.aspx?DataSetCode=CITIES*.

StatLink http://dx.doi.org/10.1787/888933364834

expertise, increases the possibility of corruption, particularly in very small municipalities, and means that citizens may need to go to multiple offices to complete some processes (Ministry of Interior, 2012). Moving delegated functions to the 205 municipalities with extended powers (as proposed by the Ministry of Interior in 2012) would streamline the system and increase efficiency. The reassignment of functions would need to be accompanied by appropriate changes in funding arrangements.

Another source of administrative complexity is the incomplete transition from the earlier system of territorial division (under the Territorial Division Act of 1960) to the current system. Some data are still collected at the district level, which is inconsistent with the system of municipal borders and hampers performance monitoring and accountability. Some cities are split by different jurisdictions. This unnecessarily adds to costs and reduces the coherence of the public administration. It should be addressed as planned under the Strategic Framework of the Development of the Public Administration. Tasks and data at the district level should be reallocated in a way that facilitates comparison of costs and results to promote benchmarking.

Mergers are politically unpopular but voluntary co-operation between municipalities is common and has a long history. Three types of co-operation are permitted: (i) contracts for performing certain functions; (ii) voluntary associations of municipalities (VAMs); and (iii) formation of "mutual-interest associations of legal persons" (Sedmihradská, 2010). Ninety per cent of municipalities participate in some form of co-operation (Swiandiwicz, 2010). Contracts are used extensively to delegate some services that municipalities are required to provide, typically to the municipality with extended powers: in 2012 there were 5 784 contracts (Ministry of Interior, 2014). Responsibilities transferred include administration as well as services such as healthcare and education. While this is very flexible and has increased efficiency, it adds to complexity and has proved difficult to monitor. VAMs are the most significant type of co-operation (Box 2.5). They are very diverse but most commonly related to infrastructure and transportation (Sedmihradská, 2010). The attraction of grants or subsidies has been an important driver, either offered by the central

Table 2.5. **Distribution of municipalities by key functions performed**

Categories	Number of municipalities	Share (%)
Basic village	5 004	80.1
Municipalities with some delegated powers	1 036	20.7
– with Registry Office	623	10.0
– with Building Authority	11	0.2
– with Registry Office and Building Authority	219	3.5
– with municipal authority but not extended competence	183	2.9
Municipalities with extended competence	205	3.3
Prague	1	0.0
Total	**6 246**	**100.0**

Note: Further breakdown is possible based on municipalities conducting "vidimus" or those with the CzechPOINT. Almost 2 000 other municipalities have CzechPOINT but not the other functions.
Source: Table 4 of Ministry of Interior (2012), "Analysis of the performance of State administration in municipalities with a basic range of delegated scope (with design solutions)".

government or when EU operational programmes imposed co-operation (Dvořáková and Strolený, 2011; Dabrowski, 2014).

Although co-operation is common and flexible, it does not overcome all the problems of fragmented municipal government. Formation costs make co-operation especially costly for small municipalities and in cases where a number of municipalities are needed to make a project viable. The ongoing viability of a given association or agreement is often dependent on the mayor and local administration (Sedmihradská, 2010; Perlín, 2006). VAMs do not always include adjacent municipalities. Consequently, they may not be formed where they are most needed. Maps published by the Institute for Spatial Development suggest that the coverage of micro-regions in Central Bohemia around Prague has fallen, even though this is where the benefits of co-operation could be greatest. To make the system of VAMs more effective, assistance and financial incentives should be provided to motivate co-operation where the gains are largest. A unit should be established in the central government to monitor and facilitate co-operation, as proposed by Sedmihradská (2010), with additional support in their formation from regional governments and the two representative associations of municipalities.

Co-operation is more tractable at the regional level. Most of the administrative regions are too small to draw on EU structural funds alone so groupings of regions were created to access EU funds. Co-operation is likely helped by the shorter history of these groupings and their regular interactions. Over time, the Association of Regions has developed into a formal institutional structure comprising representatives from all regions and facilitates the accumulation of expertise and trust. The new system of standing conferences for EU-funded programmes will also build co-operation between regions, and between regions and other levels of government. This system should be used as a model for improving co-ordination of projects and all cross-cutting policies, as is the case in Austria, for example.

Better matching size and function to overcome fragmentation

The costs of small units of government to public service delivery include the loss of economies of scale and scope and as well as insufficient capacity due to difficulties attracting and retaining skilled staff. International evidence suggests that there can be efficiency gains up to populations of around 10 000 to 20 000, mostly driven by capital intensity (Holzer et al., 2009; OECD, 2014d). Labour-intensive services are considered more

Box 2.5. **Voluntary associations of municipalities (VAMs)**

VAMs vary in nature, purpose and membership. They may be established as joint stock companies (which can invest in another body alongside private companies) or public bodies. They can have a single purpose (e.g. an investment project) or ongoing provision of a service (e.g. waste removal). Funding can come from members, user charges, or grants or they can be established without funding. There are 743 active VAMs, of which one-third are located in Central Bohemia (around Prague) and South Moravia (which includes Brno). Two examples of successful but very different associations are:

- **Ongoing VAM providing services:** The Water Management Association of West Bohemia was established in 1993 when water infrastructure was transferred to municipalities. Forty municipalities joined together, transferring their infrastructure to the association. The Association became one of the main shareholders of the water company when it was privatised in 1994. The number of municipalities in the Association has more than doubled over time.
- **Temporary VAM to achieve a single project:** Pocidlini Municipal Association was created in 1998 by three municipalities to connect to the gas supply because they were individually too small for the company to construct the infrastructure. The Association has no employees: individual municipalities carried out or commissioned most of the functions for the project and the accountant of the largest municipality performs accounting work with costs reimbursed.

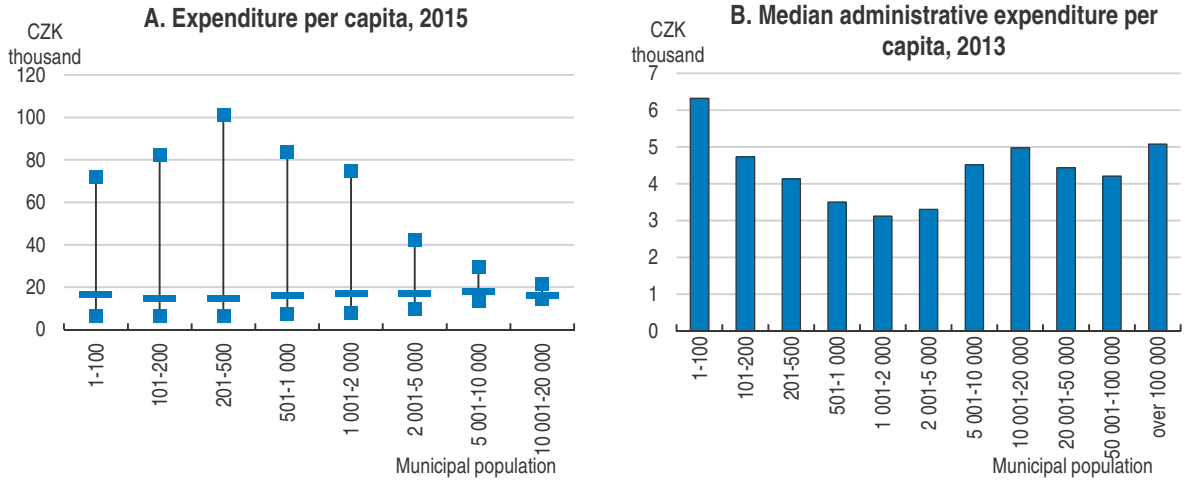
Source: www.municipal-cooperation.org; OECD (2015), *Governing the City*, OECD Publishing, Paris.

easily scaled but at very small sizes these services can also suffer. In Switzerland, for example, municipalities with less than 500 residents were found to have higher costs and lower quality services (Ladner and Steiner, 2003). There is evidence from Spain that costs were 20% higher in municipalities with 1 000 residents than those with 5 000 (Solé-Ollé and Bosch, 2003).

Estimating the efficiency of Czech municipalities is hampered by data constraints and significant differences in the activities of municipalities. Šťastná and Gregor (2015) find that among Czech municipalities with extended powers, smaller municipalities are *more* cost-efficient than larger municipalities. However, these municipalities all have over 2 700 residents, placing them above the threshold where overheads affect even labour-intensive activities. It is also possible that the increasing cost reflects a greater range of services that are not measured or differences in quality. Using expenditure as a proxy for cost for the other 6 000 municipalities with lesser functions reveals a slight increase in median per capita spending up to 10 000 residents (Figure 2.12, Panel A). But there is considerable variation for small municipalities, and this variance is higher in the same analysis for Finland (which also has many small municipalities) (OECD, 2014d). More pertinently, data on administrative expenditure per capita reveal that the median per capita cost declines up to a population of 1 000-2 000 (Figure 2.12, Panel B). This U-shape is consistent with the international evidence that overhead costs affect the efficiency of very small municipalities. It also leaves small municipalities with smaller financial resources for other services.

It appears that services could be improved by scaling up, reducing duplication and achieving economies of scope. Administrative costs claim a higher share of government current health expenditure than in most other OECD countries (OECD Health database).

Figure 2.12. **Relationship between cost of public services and municipality size**



Note: Panel A excludes the 205 municipalities with extended powers. The thick horizontal lines show the median level of expenditure per capita and extreme values are the 2nd and 98th percentiles. Panel B shows median expenditure for all municipalities. Data are based on national budgetary definitions.

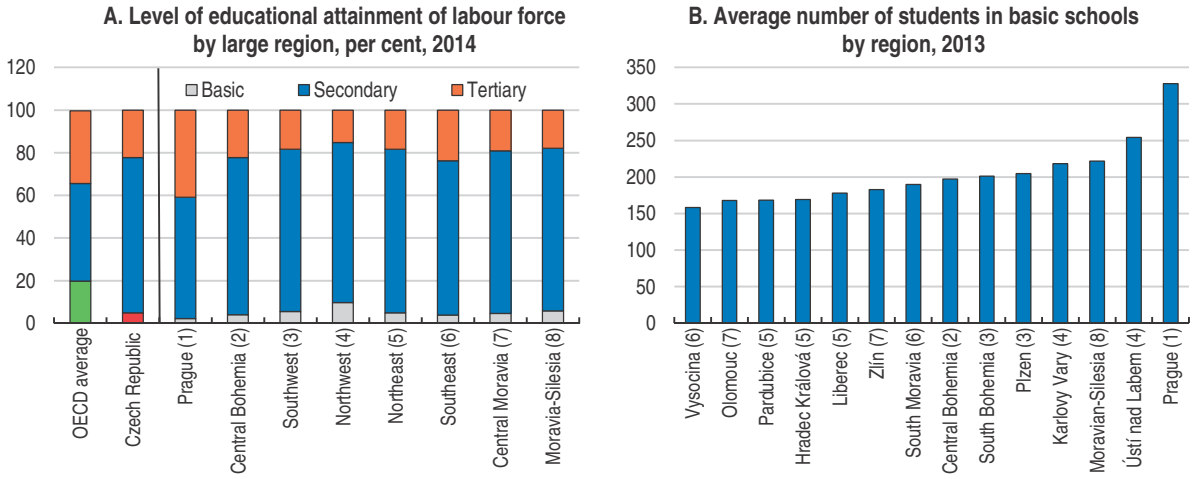
Source: Ministry of Finance CR MONITOR, *http://monitor.statnipokladna.cz*; Czech Statistical Office; Rozpočet Obce; OECD calculations.

StatLink http://dx.doi.org/10.1787/888933364844

Dutu and Sicari (2016) also find more scope to increase efficiency than most other countries, which is in line with the *2011 Economic Survey* and the *OECD Review of Healthcare Quality* (OECD, 2014e, 2011a). Educational attainment is consistently high across regions and PISA test scores are near the OECD average despite lower spending per student (PPP-adjusted) (Figure 2.13, Panel A). But the large number of small schools points to potential gains from scale and scope: around 60% of schools have less than 200 students, a problem which extends beyond rural areas (Shewbridge et al., 2016). On average school sizes are smaller in regions that have more municipalities (Figure 2.13, Panel B). This likely reflects political economy difficulties with school closures in municipalities, which may be exacerbated by links between the tax allocation and number of students (discussed below). Decisions taken over larger schooling districts would better internalise gains from pooling teachers and facilities. Monitoring – and consequently performance – would also be improved, particularly since the school inspectorate only undertakes inspections every six years on average (Shewbridge et al., 2016).

Small administrative units compound co-ordination problems by spreading expertise more thinly. This is especially a problem in specialised areas such as investment projects, procurement and quality management (Ministry of Interior, 2012, 2014; Dvořáková and Strolený, 2011). It may be adding to large differences in municipal investment per capita: in 2013-15, median investment per capita was around 20% lower in municipalities with less than 1 000 residents compared to those with 1 000-5 000 residents, and more fragmented regions had more variation in investment. Efforts to increase capacity and support include training, e-learning and a web platform for exchanging good practices, for example under the "Smart Councillor" and "Accountable Councillor" programmes. But very small municipalities – like those with a part-time mayor – will remain stretched. Jetmar (2015) finds the demand is strongest for assistance with grants and procurement. The competency centres proposed above would help with technical procurement. Centres of shared specialist services with teams of professionals are being piloted on a voluntary

Figure 2.13. **Educational attainment is consistently good but the system could be organised more efficiently**



Note: Large regions (TL2 level) encompass several small regions (TL3 level). The numbers in parentheses show which larger region the small regions in Panel B belong to. Basic (or elementary) education includes primary and lower secondary education. OECD average is an unweighted average of countries with available data for 2013 or 2014.
Source: OECD Regional Statistics database; Shewbridge et al. (2016), *OECD Reviews of School Resources: Czech Republic*, OECD Publishing, Paris, *forthcoming*.

StatLink http://dx.doi.org/10.1787/888933364517

basis and, if successful, should be expanded to form a country-wide network. Allowing more variation in pay for specialised roles and including sub-national government employees in the civil service education system could support skill accumulation.

A multi-pronged approach is needed to generate larger functional sizes of municipalities, as shown by other countries' experiences (Box 2.6). Mergers may be a first-best solution but they are politically difficult to achieve. They should nevertheless be supported more, as has been proposed in earlier OECD *Economic Surveys*. Financial incentives may be partly funded by efficiency gains. However, in other countries mergers have often raised output quality or accountability rather than lowering costs (Slack and Bird, 2013). This means that financial incentives should be well targeted and reinforced by non-financial incentives, such as greater autonomy for larger municipalities. Demonstrating the potential improvements to services may help generate public support; this would be aided by publishing indicators of municipal performance, such as outcomes of services and efficiency of service provision. Initially efforts to promote mergers could be focused on more urban areas, where local identity may be less strongly connected to the municipality and where fragmentation is more problematic, as discussed below. Small merged municipalities could maintain a sub-municipal status as in Korea, the United Kingdom, New Zealand, Ireland and Portugal (OECD, 2016). Regions or the Ministry of Regional Development could help municipalities understand the financial case for a merger; in Switzerland this is a free service provided by cantons. Regions could also act as a mediator, as in the Netherlands (OECD, 2014f).

Given that progress in voluntary mergers is likely to be slow, other means should also be used to secure a larger population size in the delivery of key services. One possibility is to establish a minimum size for provision of services that would yield gains from economies of scale and scope, or from planning over a larger population. Minimum standards could be established to generate joint provision, such as setting a minimum

school size. Alternatively, financial incentives could be used but would need to be sufficiently strong. Hungary and Italy require small municipalities to co-operate in activities such as administration and some services, respectively. Successful co-operation may build trust that leads to voluntary merger later. Consideration should be given to circumstances where mergers should be compulsory; for example, following insolvency and when a municipality requires an administrator because there were no candidates at the election, as was the case in 12 municipalities at the last election.

Nonetheless, many functions will likely remain with small municipalities. The functions carried out by very small municipalities should be reduced in a more systematic way than the current network of contracts and ad hoc agreements. This is particularly important where municipal populations are in trend decline. One possibility would be to transfer demanding responsibilities – such as health, education and social services – to the municipality with extended powers when a municipality is below a certain size. Better collection of cost data would help ensure that financial arrangements were fair. The minimum size that triggered transfer of responsibilities could be higher if greater support was available to small municipalities, through centres of shared services or further development of e-Government tools that raised the quality of service provision.

Specific solutions are needed in metropolitan areas – Prague, Brno and Ostrava – that have expanded to include hundreds of municipalities beyond the city core. As families moved out of the high-density core, they created new demands on these areas for services like childcare and transportation. Land use changes also have knock-on environmental effects including to flooding risks. The large number of governments hampers coherent and strategic policy-making and therefore planning of land use and transport. These borders also create mismatches between users of services and local taxpayers. A growing body of evidence suggests that fragmentation erodes the agglomeration benefits of cities that are gained through learning, specialisation and deeper labour markets (Bartolini, 2015; Ahrend et al., 2014; OECD, 2015g). Estimates for OECD countries from Bartolini (2015) imply that halving the average degree of fragmentation in urbanised regions could increase the pace of annual growth in GDP per capita by 4%. One mitigating factor is that the core metropolitan areas are not fragmented (Figure 2.11). Yet even with half as many municipalities, Prague and Brno would remain more fragmented than the average OECD metropolitan area.

In all three Czech metropolitan areas, governance bodies (e.g. jointly owned companies) run integrated transport systems, successfully overcoming municipal and regional borders. Metropolitan governance bodies are increasingly being used in OECD countries to offset municipal fragmentation. Ahrend et al. (2014) find that these bodies typically halve the cost that fragmentation imposes on labour productivity. In the Czech case, the focus should be on improving co-ordination of land use planning, including to address urban sprawl resulting from inadequate co-ordination. Even expanding the transport system is complicated when it crosses through municipalities. In 2014 the City of Prague proposed a strategic plan for the metropolitan area but it does not appear to involve significant co-operation with the municipalities in Central Bohemia. Prague's Institute for Planning and Development could be extended to the full metropolitan area and include all stakeholders. Similar arrangements should be established in Brno and Ostrava. Effective governance arrangements would set out co-ordinated land use plans for the cities' development and co-ordinate processes such as building permits. Strategic planning would also help prepare for future challenges, such as in Ostrava, where the population is

Box 2.6. **Other OECD countries' experiences in overcoming territorial fragmentation**

Incentivising or mandating mergers

- In Denmark mergers scaled up each level of government. Realigned responsibilities and financing changes drove a bottom-up process of amalgamation after a lower size limit of 20 000 had been imposed. The number of municipalities fell from 271 to 98 in 2007. At the same time, 13 counties were replaced by 5 regions.
- In Greece the number of municipalities was reduced from 1 033 to 325 in 2011. The new municipalities received more competencies and resources. The number of municipal companies was also expected to fall (from 6 000 to 2 000). Concurrently, 54 departments were replaced by 13 regions, including two metropolitan regions.
- France is undertaking major territorial reforms. Incentives are available to small municipalities who merge and shift their powers to "communities of municipalities". The minimum size of communities will increase. Inter-municipal co-operation is mandatory in some cases, but grants also provide incentives. Compulsory mergers were imposed on regions. "Urban communities" were imposed on three metropolitan areas.
- The Styria region contained one-third of Austria's small municipalities with under 1 000 inhabitants until reforms in 2010 that almost halved the number of municipalities. Aims included synergies in service provision, better spatial planning and future stability. Around 80% of municipalities merged voluntarily. The region also established a fund for voluntary mergers, in addition to existing national financial incentives.

Assistance from other parts of government

- In Switzerland cantons encourage mergers with financial incentives and some cantons grants for evaluating a potential merger. Cantons also provide technical assistance, including free evaluations of the financial implications of mergers. The number of municipalities has declined by 263 since 2000. Cantons also provide financial incentives for co-operation in investment projects.
- In the Netherlands provincial governments have a role as moderators in mergers of municipalities. They evaluate merger proposals before formally sending them to the central government to enact. There is also a temporary merger grant for municipalities' "friction costs" paid over five years.

Mandating joint service provision

- In Italy municipalities with less than 5 000 inhabitants must provide basic functions using municipal unions and need to share resources using group purchasing.
- In Hungary joint delivery through micro-regions was compulsory for some public services, including education, social services and healthcare. However, some municipalities chose to merge rather than form an association. Reforms implemented since 2010 have changed the territorial organisation, transferred some responsibilities (e.g. in education and health) to the central government and required that municipalities with less than 2 000 residents share their administrative offices (while maintaining their own mayor).

Source: Various sources compiled by OECD: OECD (2014), "Multi-level governance challenges in the Netherlands", in OECD, *OECD Territorial Reviews: Netherlands 2014*, OECD Publishing, Paris; OECD (2014), *OECD Regional Outlook*, OECD Publishing, Paris; OECD (2015), *OECD Economic Surveys: France*, OECD Publishing, Paris; OECD (2015), *Hungary: Reforming the State Territorial Administration, OECD Public Governance Reviews*, OECD Publishing, Paris; Dexia (2012), *Subnational Public Finance in the European Union*; Council of Europe (2015a), "Local and regional democracy in Greece", *Congress of Local and Regional Authorities Report*, No. CG/2015(28)8, Strasbourg; Council of Europe (2015b), "New Forms of Local Governance", *Congress of Local and Regional Authorities Explanatory Memorandum*, No. CPL/2015(29)4FINAL, Strasbourg.

in trend decline, and to provide more equal access to public services such as childcare and transport.

Using revenue decentralisation with performance indicators to improve service delivery

Sub-national governments are mostly financed through a mix of shared taxes (personal and corporate income tax and VAT) and grants and transfers from the central government. A little over 60% of municipalities' revenue is from taxes, while for regions over 60% of revenue is from grants and transfers (Table 2.6). Compared to other OECD countries, sub-national governments have relatively little autonomy over revenues. Local governments' raise just 1.2% of total tax revenue – the smallest share in the OECD. This makes Czech regions and municipalities much more reliant on revenue from the central government, through shared taxes, grants and transfers. Shared taxes are distributed according to the formulae discussed below, while grants and transfers are generally earmarked. Municipalities have more revenue from their own sources than regions, including recurrent taxes on immovable property, user charges and also property income (from infrastructure). However, their autonomy over property tax is limited by centrally determined restrictions, as are some user charges.

Table 2.6. **Structure of sub-national government revenue**

	Regions (excl. Prague)	Municipalities (excl. Prague)	Prague
Tax revenue	**34**	**62**	**65**
Shared taxes (income tax and VAT)[1]	34	48	58
Recurrent tax on immovable property	0	5	1
Income tax from own companies	0	2	2
User fees and charges	0	7	4
Non-tax revenue	**66**	**38**	**35**
Transfers and grants	63	23	27
Of which:			
– Investment	*6*	*12*	*2*
– Non-investment	*57*	*10*	*25*
Other revenue (including asset sales)	3	16	9
Memo item:			
Total revenue (CZK, billion)[2]	146	203	70

1. Shared taxes are: personal income tax; personal income tax withheld; corporate income tax; tax on self-employed income; and value-added tax.
2. Based on national budgetary definitions.

Source: Czech Statistical Office; OECD calculations.

Recurrent tax on immovable property is currently relatively low, at 0.7% of general government tax revenue, compared to the OECD average of 3.3%. Moreover, it accounted for 2% of consolidated sub-national government revenue in 2013, compared to 9% on average in the OECD. This is partly because most municipalities do not impose tax rates above the minimum level, even though they have the power to charge up to five times more. Increasing the relative role of recurrent taxation on immovable property would increase the share of municipal revenues that are directly controlled and could form part of a growth-enhancing tax reform, as recommended in earlier *Economic Surveys* but changing the system has been difficult (OECD, 2006, 2011a). Nonetheless, it should be pursued and could also help drive improvements in public service provision by strengthening the link

between taxation and services (OECD, 2015h). Most importantly, the calculation should be based on the property's value, rather than size, with these values regularly updated, as in most OECD countries. A co-ordinated reform may help overcome political economy issues at the local level. To avoid unintended consequences such as urban sprawl, changes should be combined with land-use planning instruments such as controls over zoning (Blöchliger, 2015). Measures such as tax deferrals for seniors could be used to mitigate the burden on liquidity-constrained households.

The formula for allocating shared taxes has been the subject of much debate. The shares for regions and municipalities overall are set annually; for 2016, the shares are around one-tenth and one-fifth, respectively (Table 2.7). Each individual region's share is set in the legislation. The calculation for municipalities is more complicated but the population size is the main determinant. There is a link to activity (to shares of employees and entrepreneurs) but it affects less than 1% of the shared revenue pool. The link to the number of entrepreneurs will be cancelled from 2017, partly due to administrative problems. The link to employment income could be strengthened to increase the incentives to improve efficiency and grow the tax base. Given the degree of municipal fragmentation and the need for more inter-municipal co-operation, it may be better to measure activity in the 205 municipal groupings, or even regions. If the link was increased substantially, explicit fiscal equalisation grants based on differences in revenue-raising capacity should then be used to address concerns about horizontal equity more efficiently, with the degree of equalisation chosen based on national preferences. Such grants should be based on a few core indicators that are immune to manipulation, and periodically reviewed (OECD, 2015h).

Table 2.7. **Summary of distribution of shared taxes to sub-national governments for 2016**

	Regions	Municipalities	*Memo: Total revenue, 2014, CZK bln*
Tax share distributed to sub-national government as a percentage of revenue raised			
• Value-added tax	8.92	20.83[1]	*319*
• Corporate income tax	8.92[2]	23.58[2]	*155*
• Personal income tax	8.92	25.08 (1.5% is distributed according to the location of employees)	*133*
• Income tax on the self-employed	5.35	44.15 (30% is distributed according to the residence of the self-employed)[1]	*3*
• Personal income tax withheld	8.92	23.58	*14*
Distribution within sub-national government			
	Each region's share is set in legislation	Each municipality's share: 0.80 x coefficient of gradual transition x population[3] 0.10 x municipality's share of population 0.07 x municipality's share of students in municipal-run schools 0.03 x municipality's cadastral share	

1. From 2017 the 30% share will be cancelled and municipalities' share of VAT revenue will be increased to 21.4%.
2. In addition, income tax paid by regionally and municipally owned companies is returned.
3. The coefficient ranges from 1.0 (for municipalities with less than 50 residents) to 1.3663 (for municipalities over 30 000 residents). Prague, Plzen, Brno and Ostrava are treated differently.

Source: OECD Revenue Statistics database; Ministry of Finance (2015), "Schéma rozdělení rozpočtového určení daní v roce 2016" [Partitioning scheme for budgeted tax 2016].

The vast majority of grants and transfers to sub-national governments are earmarked, notably for education and investment spending. Earmarking is generally associated with lower efficiency, particularly when the grants do not require matched funding (Bergvall et al., 2006). According to the OECD Fiscal Decentralisation database, 91% of grants were non-matching earmarked grants in 2010, and the remainder were earmarked but required matched funding. Earmarking also limits governments' ability to adjust service provision to local needs. In education, transfers for direct costs (to regions and from regions to municipally run schools) are made on a per student basis but do not adequately reflect costs and do not encourage efficiency (Shewbridge et al., 2016). Part of the regions' revenues earmarked for education is for municipally-run schools, which complicates administration and assessment of the system (*ibid*.). There is substantial scope to shift toward greater use of block grants, which would encourage innovation and efficiency gains. To safeguard performance this should be accompanied by greater use of benchmarking, including measures of quality, and minimum service levels. By increasing fiscal autonomy, spending on growth-enhancing projects such as infrastructure investment may increase (Kappeler et al, 2013).

As part of the Strategic Framework for the Public Administration, transfers to municipalities for performing delegated administrative functions are being reviewed. These transfers are currently based on the service performed and the municipality's size. Municipalities with extended powers receive an additional transfer that is also a function of its size relative to the rest of its administrative area. However, there is little relationship between the cost of service provision and the transfers being made for these services. There is also no allowance for the possibility of declining marginal costs as municipal size rises (even for services such as a population register). The formula should be reformed to better reflect cost, accompanying the streamlining of responsibilities proposed above.

Strengthening the macro-fiscal framework

The financial management of Czech sub-national governments has been fairly sound, with sub-national debt totalling just 4% of GDP in 2014 or 7% of total debt, compared to 11% on average in other unitary countries (OECD Government at a Glance database). Although debt has increased in nominal terms, it has been broadly in line with GDP growth. Debt is concentrated in the four largest cities and the median municipal debt level was around CZK 3 500 per capita (EUR 130) in 2015 (based on the national definition). Regional governments are more indebted; the average debt per capita across regions is CZK 19 200 and Prague has the highest debt per capita (CZK 32 100). The Ministry of Finance monitors the indebtedness of all sub-national governments and issues warnings about those at risk of insolvency. However, there is currently no binding rule about budget balances or debt, except that bond issuance must be approved (which does not affect small municipalities). Indebtedness is not considered a risk to the economy, but some, mostly small, municipalities are heavily indebted (Table 2.8). Only three municipalities are considered to be at high risk of insolvency (Ministry of Finance, 2015). The 2014-20 EU programming period may see sub-national governments making greater use of debt to fund the co-financed parts of projects, particularly since banks are promoting loans more actively and interest rates are unusually low.

The planned fiscal framework includes an explicit debt ceiling for local government (see *Assessment and Recommendations*). When debt (using the national accounts definition) reaches 60% of income averaged over the previous four years, the Ministry of Finance will

Table 2.8. **Indebtedness is low in most municipalities**

2015

Population	Number of municipalities	Distribution of debt to assets ratio (%)			Distribution of debt to income ratio (%)		
		Median ratio	75th percentile	95th percentile	Median ratio	75th percentile	95th percentile
0-200	1 456	1	4	19	7	22	110
201-500	1 998	3	8	27	14	45	130
501-1 000	1 361	4	10	30	25	57	149
1 001-5 000	1 161	6	10	24	32	61	134
5 001-10 000	141	6	11	21	35	52	104
Over 10 000	131	7	11	17	41	57	96

Note: Data are based on national budgetary definitions.
Source: OECD calculations based on data from Ministry of Finance CR MONITOR, *http://monitor.statnipokladna.cz*

divert transfers towards debt repayment. The appropriate level is difficult to determine and would depend on factors that vary considerably, such as vulnerability to macroeconomic shocks and history of fiscal prudence (based simulations by Fall et al. (2015) for general government debt). A debt brake could complement the ceiling by slowing the accumulation of debt, thereby preventing the painful adjustments required at the ceiling. One unresolved issue in the announced framework is the situation of those municipalities with debt burdens at risk of insolvency. To avoid creating moral hazard, they should not be bailed out. A second issue is that future changes by the central government to tax policy or the funding formulae could have large implications for municipalities close to the ceiling. Guidelines should be provided about the policy response in this situation. An important *ex ante* measure is to grant the Supreme Audit Office powers to review sub-national governments (as recommended above).

Recommendations to enhance public sector effectiveness and efficiency

Enhancing the effectiveness of public administration

- Further improve tools and rules to increase use of joint procurement by public entities. Increase auditing throughout the process and monitoring of processes and outcomes.
- Establish specialist competency centres to help public bodies and local governments with technical procurement contracts.
- Designate responsibility for the co-ordination and prioritisation of investments on the basis of the highest social return. Evaluate investment needs in a standardised way across sectors and use cost-benefit analysis for all large projects.
- Increase monitoring and accountability throughout the investment cycle, from project selection through to ex post evaluation.
- Use and publish standardised performance indicators for publicly funded activities at all levels of government. Increase the use of benchmarking.
- Extend the national and regional standing conferences for EU-funded projects to all significant investment projects and cross-cutting public policies.
- Give the Supreme Audit Office powers to audit all public bodies and local government.
- Review the implementation of the Civil Service Act, including the capacity of human resources units, the overall remuneration system and conditions and staff engagement.
- Introduce conflict of interest disclosures and create a register of private interests for officials involved in procurement.

Recommendations to enhance public sector effectiveness and efficiency *(cont.)*

Realising the benefits of decentralisation

- Establish framework conditions which help municipalities to reap the benefits from joint service provision, while building support for mergers.
- Increase incentives and technical support for mergers.
- Increase local capacity through technical assistance and supporting shared services centres. Consider establishing a minimum size required for carrying out certain municipal functions.
- Reduce the share of grants and transfers that are earmarked and ensure adequate service standards are maintained by monitoring performance.
- Simplify the system of territorial administration by completing the transition from the system of districts and streamlining delivery of delegated functions at municipal level.
- Increase incentives in local government revenues to grow local economies. Use a fiscal equalisation component to adjust for differences in revenue-raising capacity.
- Proceed with plans to introduce a debt rule for local governments.

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