



Brussels, 26.2.2016
SWD(2016) 73 final

COMMISSION STAFF WORKING DOCUMENT

Country Report Czech Republic 2016

This document is a European Commission staff working document. It does not constitute the official position of the Commission, nor does it prejudge any such position.

CONTENTS

Executive summary	1
1. Scene setter: Economic situation and outlook	4
2. Structural issues	12
2.1. Tax system and tax burden	12
2.2. Fiscal framework and long-term fiscal sustainability	15
2.3. Labour market and education	19
2.4. Competitiveness	25
2.5. Long-term growth drivers and resource efficiency	32
A. Overview Table	40
B. MIP scoreboard	43
C. Standard Tables	44

LIST OF TABLES

1.1. Key economic, financial and social indicators	11
B.1. The MIP scoreboard for Czech Republic	43
C.1. Financial market indicators	44
C.2. Labour market and social indicators	45
C.3. Labour market and social indicators (contd)	46
C.4. Structural policy and business environment indicators	47
C.5. Green growth	48

LIST OF GRAPHS

1.1. Real GDP growth & components	4
1.2. Nominal GDP per capita as a % of EU-28	4
1.3. Potential GDP growth & drivers	5
1.4. Harmonised index of consumer prices (HICP) & contributions	6
1.5. Labour market developments	6
2.1.1. VAT gap as a % of VAT theoretical tax liability (2013)	12
2.1.2. Composition of the tax wedge in 2014 (single earners at 100 % of the average wage)	13
2.1.3. Taxes as a % of total tax revenue (2005-2014)	13
2.2.1. Projected ageing-related public expenditure (% of GDP)	16
2.2.2. Projected average pension benefit as a proportion of average wage	16

2.2.3.	Potential to improve life expectancy at existing healthcare expenditures	17
2.3.1.	Labour market indicators	19
2.3.2.	Trends in labour costs and components	19
2.3.3.	Unemployment by educational attainment	20
2.3.4.	Employment impact of motherhood (2013)	21
2.3.5.	Enrolment of children up to three years old in formal childcare (2014)	22
2.3.6.	At-risk-of-poverty (AROPE) rate and its components	22
2.3.7.	Salary cost of teacher per student by level of education (2014)	24
2.4.1.	Breakdown of external position (current and capital accounts)	25
2.4.2.	Export market share (EMS) breakdown	25
2.4.3.	Real effective exchange rate (2008 = 100)	26
2.4.4.	Unit labour costs in the manufacturing sector (2008 = 100)	26
2.4.5.	Contribution of selected reforms to total GDP after five and ten years	27
2.4.6.	Selected indicators from the World Bank Doing Business Report (2015-2016)	28
2.4.7.	Performance indicators of public procurement in the Czech Republic (2015)	30
2.5.1.	Trend in total, business and public R&D intensity (2000-2014)	32
2.5.2.	Gross domestic expenditure on R&D by source of funding — change in proportion (2010-2014)	33
2.5.3.	Proportion of public-private publications vs number of patents (selected EU Member States)	33
2.5.4.	Quality of infrastructure index (2015)	34
2.5.5.	Road investment (% of GDP)	35
2.5.6.	Gross energy consumption divided by GDP (kilogram of oil equivalent per EUR 1000 of output)	36
2.5.7.	Proportion of renewables in energy sources in the Czech Republic	36

LIST OF BOXES

1.1.	Investment challenges	8
1.2.	Contribution of the EU budget to structural change	10
2.5.1.	Sectoral developments in energy intensity in the Czech Republic	38

EXECUTIVE SUMMARY

This country report assesses the Czech Republic's economy in the light of the Commission's Annual Growth Survey published on 26 November 2015. The survey recommends three priorities for the EU's economic and social policy in 2016: re-launching investment, pursuing structural reforms to modernise Member States' economies, and responsible fiscal policies.

The Czech Republic has experienced a strong economic rebound over the last two years. In 2014, the economy emerged from a prolonged period of low growth in the aftermath of the global financial crisis, followed by two years of recession. The rebound has largely been driven by domestic demand. Real GDP growth is expected to have reached 4.5 % in 2015, according to the Commission 2016 winter forecast. This is partly due to strong growth in public investment, with the Czech authorities trying to catch up on their drawdown of EU funds from the 2007-2013 programming period. An expected fall in public investment should contribute to slower GDP growth in 2016 but a pickup is expected in 2017. Risks to this forecast are on the downside, however, with the highly-open Czech economy particularly vulnerable to lower than expected world or euro area demand. There has been a marked improvement in the government's finances, with the general government deficit expected to fall to 1.1 % in 2016 and government debt remaining well below 60 % of GDP.

The recovery has given rise to significant improvements in the labour market, while poverty and social exclusion remain among the lowest in the EU. Unemployment fell to 4.9 % in the third quarter of 2015, one of the lowest rates in the EU, and youth and long-term unemployment also fell. The employment rate reached 75.1 % in the third quarter of 2015, well above the EU average of 70.6 %, as more workers were drawn into the labour market. However, the population of working age is projected to fall in the coming years. Social transfers, excluding pensions, play an important role in reducing poverty and the pension system is relatively successful in preventing old-age poverty.

Higher GDP growth is leading to a resumption of the economic convergence process vis-à-vis the EU. The convergence of the Czech economy had stalled over the last decade, with relative GDP

per capita remaining around 20 % below the average EU level. The pace of convergence in the coming years is expected to be slower than in the pre-crisis period, reflecting lower potential growth. Given the labour market constraints that are expected to emerge in the coming years, the Czech Republic faces a challenge in increasing its potential growth rate and accelerating the convergence process.

The Czech Republic is highly integrated into global value chains and evidence points to recent competitiveness gains. The real effective exchange rate has depreciated since 2008 and wage developments have been moderate. While the proportion of high-tech products in Czech exports is high, this is largely due to the presence of foreign-owned firms, particularly in the automotive sector. Evidence points to a weak integration of domestically-owned firms in global value chains.

Impediments in the research and innovation system act as a barrier against a transition towards a more diversified, innovation-driven economy. The research and innovation system generates weak outcomes. Links between research institutes and enterprises also remain weak, limiting the ability of the R&D system to respond to the needs of the economy. Inefficiencies in the business environment act as an impediment to innovation and private-sector investment, although the authorities have been taking measures to address this, such as by making it significantly easier to set up a business.

Overall, the Czech Republic has made some progress in addressing the 2015 country-specific recommendations. There are ongoing efforts to tackle VAT fraud and new measures are expected to be introduced in 2016. The Contract Register Act was adopted in 2015, representing an improvement in the transparency of public procurement. The long-delayed higher education reform was adopted by the Chamber of Deputies in January 2016. Elements of the government's anti-corruption plan have been adopted, although others remain at a preliminary stage. Some progress has also been made in improving the cost-effectiveness and governance of healthcare and in improving the availability of affordable childcare. However, limited progress has been made in other areas, such as ensuring adequate training for teachers or

in increasing the participation of disadvantaged groups in mainstream education. No progress has been made in simplifying the tax system and there was limited progress in shifting taxation away from labour.

Regarding the progress in reaching the national targets under the Europe 2020 Strategy, the Czech Republic has either reached or is making good progress towards its targets on employment, R&D investment, tertiary education and reducing early school leaving, while more effort is needed on energy efficiency and on the reduction of its population at risk of poverty or social exclusion.

The main findings of the analysis in this report, and the related policy challenges, are as follows:

- **The rate of tax evasion is high and there are high costs associated with tax compliance.** Tackling the problem of tax evasion, particularly for VAT, is high on the policy agenda, but progress is slow. In contrast, no measures are planned to reduce the relatively high costs associated with paying taxes or to simplify the tax system. High employer social contributions contribute to an overall high level of taxation on labour and diversification into other areas, such as property taxes, is limited.
- **The fiscal framework is weak and the long-term sustainability of public finances remains a challenge.** The Czech Republic has one of the weakest fiscal frameworks in the EU. A long-delayed reform to address shortcomings is still awaiting ratification by parliament. The projected increase in public expenditure on healthcare and pensions poses a challenge to the long-term sustainability of public finances. Furthermore, recent proposals to amend provisions of the pension system would, if implemented, lead to a deterioration of public finances in the long term. In healthcare, indicators of inpatient and outpatient care utilisation point to unnecessary consumption of goods and services and inefficiencies in the allocation of resources in the hospital sector.
- **In the context of an ageing population and a contraction of the working age population, employment growth will increasingly depend on higher participation of under-represented groups.** These include women with young children, low-skilled workers and members of the Roma community. The labour market participation of women with young children is hampered by the limited use of flexible working-time arrangements and a persistent lack of affordable and quality childcare services, although some measures have been taken in recent years to address this shortage. Increasing the participation of vulnerable groups could contribute to further reductions in poverty and social exclusion.
- **While educational outcomes and skills levels are relatively strong, inequalities in the education system and the low attractiveness of the teaching profession represent a barrier to improving the quality of human capital.** Inequalities also hamper labour market outcomes for disadvantaged groups, in particular members of the Roma community.
- **Cost competitiveness has improved in recent years but non-cost factors, such as inefficiencies in the business environment and weaknesses in public administration, weigh on the overall competitiveness of the Czech economy.** The Czech Republic currently has one of the lowest shares of e-government users in the EU. There is evidence of a high level of regulatory restrictiveness in certain professional services, which further weighs on the efficiency of the business environment. Many of the key elements of the 2015 anti-corruption plan have yet to be adopted.
- **Public procurement practices are not in line with EU best practice, partly due to a lack of sufficient training for procurement practitioners.** The public sector relies heavily on non-competitive procedures, with a limited ability to attract bidders and an excessive use of the 'lowest price' criterion for awarding contracts. There is also limited use of aggregated purchasing of goods across public sector institutions. While the adoption of the Contract Register Act improves the transparency of public procurement, further progress in this area would enhance the overall

efficiency and transparency of public administration.

- **Reducing barriers to investment would contribute to closing the convergence gap at a faster pace.** Barriers include a high regulatory and administrative burden and bottlenecks in the implementation of transport infrastructure projects.
- **There has been a significant increase in R&D investment in recent years but outcomes remain weak and there are concerns about the sustainability of R&D infrastructure.** Reforms to the funding and evaluation systems in the R&D system have not progressed, undermining governance in this key sector.
- **The transport infrastructure and energy efficiency gaps vis-à-vis the EU remain wide.** The road network in particular underperforms compared with other EU countries, although higher investment in 2014 and 2015 is likely to have closed this gap somewhat. The energy and carbon intensity of the Czech economy remains high.

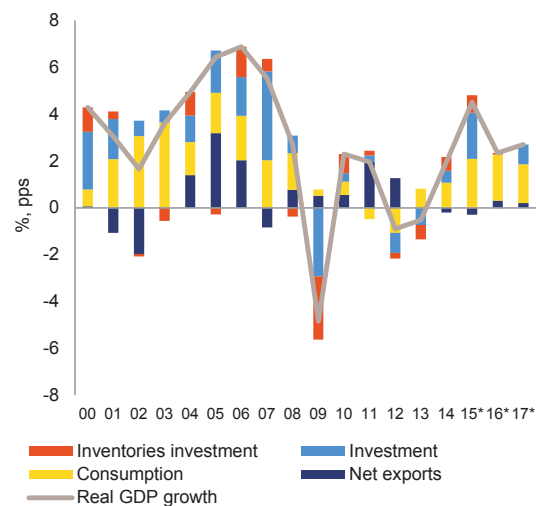
1. SCENE SETTER: ECONOMIC SITUATION AND OUTLOOK

Growth performance

The Czech economy has rebounded from the 2012/13 recession and real GDP growth is expected to have reached 4.5 % in 2015. While this reflects a rebound in domestic demand, it is also partly due to temporary factors. In particular, public investment is expected to have grown strongly on the back of increased drawing of funds available under the previous programming period of EU funding. A large build-up of inventories, partly resulting from legislative changes related to the pre-stocking of tobacco products, is also expected to have contributed to the acceleration in GDP growth. The abatement of these temporary factors is expected to cause real GDP growth to fall to 2.3 % in 2016. However, in the context of strong household consumption and strengthening investment, the underlying dynamics of the economy are expected to remain strong and real GDP growth is forecast to increase to 2.7 % in 2017. Risks to this forecast are mainly on the downside, with the highly-open Czech economy particularly vulnerable to lower than expected world or euro area demand.

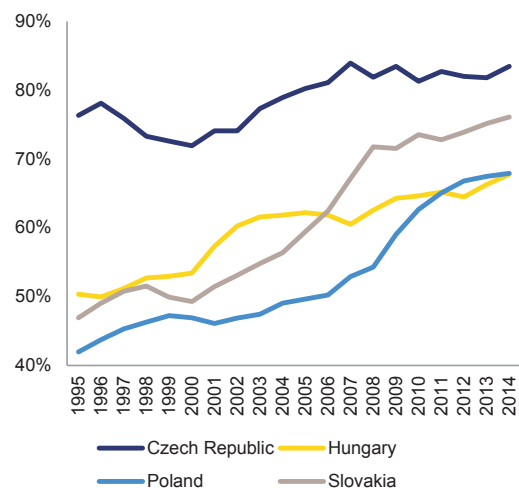
Higher rates of GDP growth have given rise to a resumption of the convergence process towards average EU income levels. However, as shown in Graph 1.2, these gains only compensate for losses in relative income levels in recent years, which were largely due to the weak growth performance of the Czech Republic in the years following the financial market crisis. Overall, relative GDP per capita of the Czech Republic has stagnated over the last decade, remaining around 20% below the EU level. In contrast, other Member States in the region have continued to converge, albeit from a lower starting point.

Graph 1.1: Real GDP growth & components



Source: Eurostat, European Commission 2016 winter forecast

Graph 1.2: Nominal GDP per capita as a % of EU-28

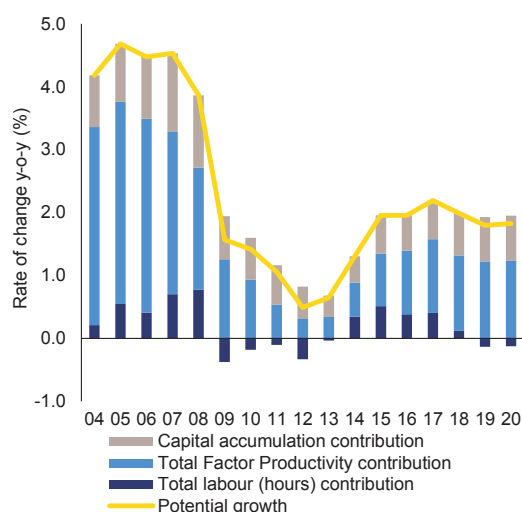


(1) Adjusted for purchasing power parity

Source: Eurostat, European Commission

Potential growth has started to recover but remains below pre-crisis levels. Demographic constraints, arising from the ageing of the population, will limit the contribution of labour to potential growth in the coming years (Graph 1.3). Improving capital accumulation and total factor productivity will, therefore, be the two main channels for increasing potential growth. Such an increase would help strengthen the economic convergence process.

Graph 1.3: Potential GDP growth & drivers



Source: European Commission

Investment

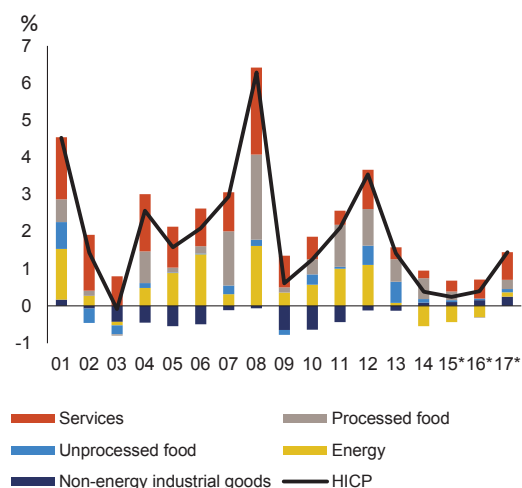
Investment has started to contribute positively to real GDP growth following several years of negative contributions. Because of significant reductions in the context of fiscal consolidation, public sector investment made a negative contribution to real GDP growth in the years 2010 to 2013. It has subsequently rebounded, rising by CZK 25.5 billion (0.6 % of GDP) in 2014. The increase in public investment in 2015 is expected to have been particularly big; the Commission 2016 winter forecast projects it at CZK 64 billion (1.4 % of GDP), mainly due to increased drawing of EU funds.

Despite the expected buoyancy of private investment in 2016, investment growth overall is expected to be close to zero due to a projected fall in public investment of CZK 48 billion (1 % of GDP). The projected fall in public investment is mainly due to an expected slowdown in the drawdown of EU funds at the start of the new programming period. In contrast, private investment growth is expected to remain buoyant in 2016, in the context of a housing investment recovery as rising disposable incomes drive demand higher. With private investment growth remaining strong and public investment growth recovering, real investment growth of 3.3 % is expected in 2017. Recent trends in investment activity and barriers to investment are discussed in

Box 1.1, while some sector-specific challenges are discussed in Section 2.5.

Inflation

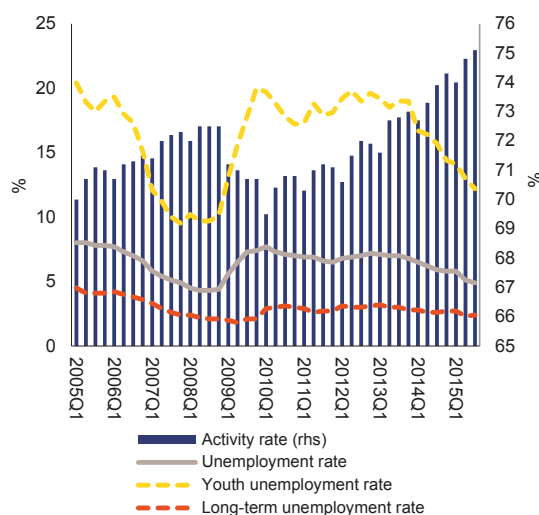
Negative price shocks, in particular related to energy and food prices, have contributed to low inflation rates in recent years. Inflation, as measured by the harmonised index of consumer prices (HICP) rate, was 0.3 % in 2015, slightly lower than in 2014, and is expected to start moving back towards the Czech National Bank's (ČNB) inflation target of 2 % only in 2017 (Graph 1.4). Internal inflationary pressures, in particular from prices in the services sector, are expected to be a main driver of higher inflation in the coming years. Risks to this outlook are broadly balanced and are mainly related to developments in commodity prices. In the current low-inflation environment, the Czech National Bank has maintained official interest rates at a low level. An exchange rate floor vis-à-vis the euro was introduced in November 2013 and the Czech National Bank has stated that it will not discontinue the use of this instrument before 2017, although it considers it likely that the commitment will be discontinued in the first half of 2017.

Graph 1.4: **Harmonised index of consumer prices (HICP) & contributions**

Source: Eurostat, European Commission 2016 winter forecast

Labour market

Economic recovery in the Czech Republic has given rise to strong employment growth and falling unemployment. This was particularly the case in 2015, with unemployment falling to 4.9 % in the third quarter and employment increasing by 1.2 pps. compared with one year earlier (Graph 1.5). Long-term and youth unemployment remain low compared with EU averages (2.4 % and 12.2 %, respectively, in the third quarter of 2015). Employment growth in the coming years is expected to be limited by the ageing of the population. As discussed in Section 2.3, increased participation of groups that currently have lower representation on the labour market, such as women with young children, the disabled and members of the Roma community, would contribute to increasing the participation rate. The unemployment rate is already below its long-term average and is not expected to fall much further. Tight labour market conditions are expected to give rise to higher wage growth in the coming years, with annual growth of nominal compensation per employee expected to rise from 2.4 % in 2015 to 3.6 % in 2016 and 2017.

Graph 1.5: **Labour market developments**

Source: Eurostat

Financial sector

The largely foreign-owned banking sector appears stable, both from a capital and a liquidity perspective. Czech banks have steadily increased their capital buffers since 2008, indicating a high ability to withstand loan losses. At the same time, the ratio of non-performing loans has remained quite stable despite sound growth in the denominator (total loans). A 40 basis point uptick in the ratio in 2014 was due to a one-off reclassification. In its most recent round of bank stress tests, the Czech National Bank found that the banking sector's capital ratio (on aggregate) would remain above the regulatory threshold in an adverse scenario. The results of the stress tests also pointed to the Czech banking sector's high degree of resilience to liquidity shocks.

Credit flows have generally been subdued in recent years but there are signs of acceleration in bank lending activity. While remaining positive, private-sector credit flows were subdued in the years following the financial crisis, reaching just 1.8 % of GDP in 2014. More recent monthly data suggests an acceleration of credit flows, with total bank lending increasing by 8.1 % year-on-year in November 2015. Year-on-year growth in housing loans increased to 7.6 % in the same period. This reflects the higher confidence of households to enter the housing market, on the

back of strengthening wage growth and low interest rates. Renewed housing market activity is also reflected in rising house prices, after several years of decline, and higher investment in house construction.

increases in pensions in 2015 and 2016. Expenditure on long-term care is following a similar rising pattern as that of pensions, albeit from a comparatively low level (0.7 % of GDP in 2013).

Public finances

The general government deficit is projected to fall in 2016, although the structural balance should decline less because of a positive and widening output gap. According to the Commission 2016 winter forecast, the nominal deficit is expected to have improved to 1.6 % of GDP in 2015. Cash-based data point to an overachievement of the state budget due to better than expected tax collection, mainly of corporate taxes. VAT revenue grew sluggishly after the introduction of a third (lower) tax bracket for selected products. Higher spending was driven by government co-financing of investment, boosted by higher absorption of available EU funds. The headline deficit is expected to fall to 1.1 % of GDP in 2016, mainly driven by an expected sharp decline in public investment spending. Increased government consumption, especially in the public wage bill, is expected to give rise to increased current expenditure. A strong focus on fighting tax evasion by the Czech authorities could contribute to improved tax collection over the coming years. In 2015, the structural deficit increased substantially (by around 0.8 pps.), but is expected to start declining this year. The debt-to-GDP ratio remains well below the 60 % threshold laid down in the Treaty and is forecast to continue declining over the next two years.

Trends in healthcare and pension expenditure represent risks for the long-term sustainability of public finances. Healthcare expenditure is projected to increase from 5.7 % of GDP in 2013 to 6.7 % in 2060 (Ageing Report 2015). The cost-effectiveness of the health sector remains a challenge although measures taken recently by the authorities go in the right direction. The healthcare sector performs well for accessibility of care. The risk related to pension expenditure is less pronounced, with public pension expenditure projected to increase from a level of 9 % in 2013 to 9.7 % of GDP in 2060. The adequacy of pensions is set to deteriorate somewhat, despite a revision of the pension indexation system to fully reflect the growth in prices and extraordinary

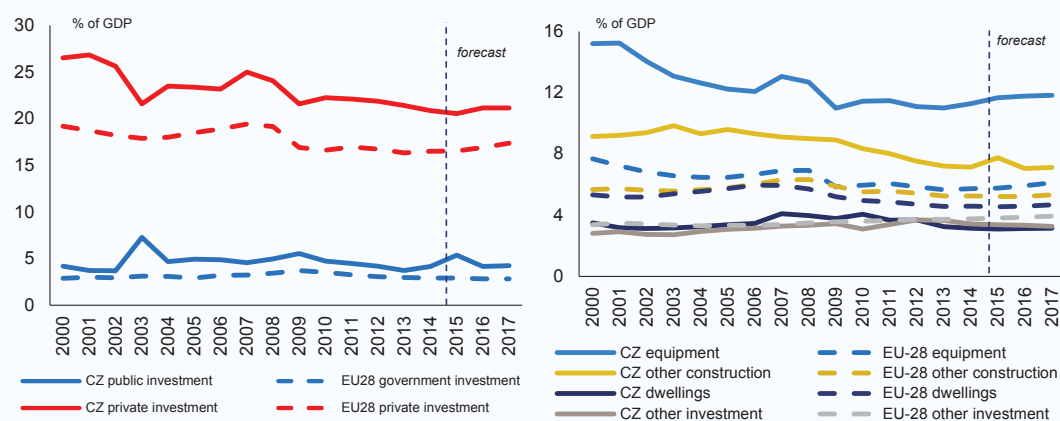
Box 1.1: Investment challenges

Macroeconomic perspective

Total investment in the Czech Republic throughout the 2000s has accounted for a higher proportion of GDP than in the EU and in many other convergence countries (Graph 1a). This has mainly been driven by private investment, reflecting strong inflows of foreign direct investment. The retraction of investment after the crisis led to a drop in both public and private investment, with public investment in particular falling quite significantly during the period of fiscal consolidation (2010-2013). Investment remains below the EU average in per capita terms and is increasingly concentrated in the capital region. In the coming years, investment is expected to develop in line with GDP growth, following a spike in 2015 due to an expected high rate of drawdown from EU funds.

A breakdown of investment by components highlights equipment as the strongest driver of investment in the Czech Republic, reflecting the significant weight of manufacturing in total output. Investment in equipment fell quite sharply in the wake of the financial market crisis and stayed flat in the following years (Graph 1b). Investment in construction other than dwellings has suffered a more long-term decline, although stabilisation is forecast in the coming years. The spike in investment in other construction in 2015 reflects a significant increase in investment in transport infrastructure, co-funded by EU funds.

Graph 1: Investment and its components as a share of GDP, the Czech Republic and European Union



(1) Forecasts for 2015-2017 based on a no-policy-change assumption

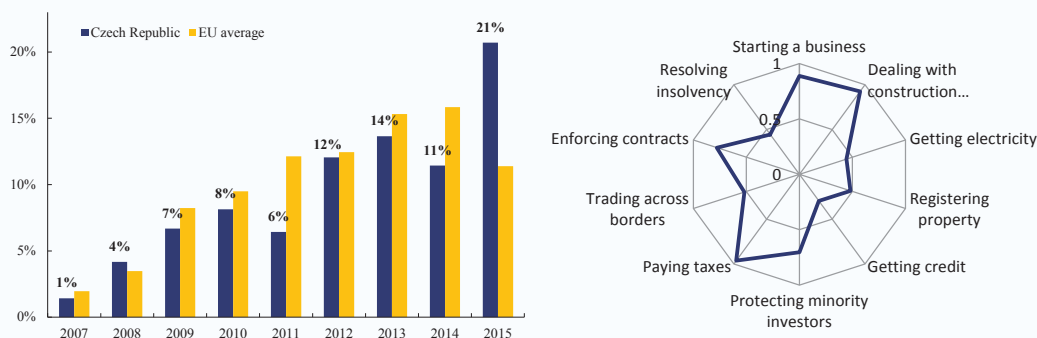
Source: European Commission (AMECO and European Commission 2016 winter forecast)

From the beginning of the previous programming period of EU funds, the absorption rate of the Czech Republic was generally lagging behind the EU average. While absorption rate (ratio of actually paid funds over total allocation) in most EU countries peaked around 2013-2014, the Czech Republic is on track to have its strongest rate of absorption in the final year of the programming period (Graph 2). However, a volatile absorption profile raises concerns about bottlenecks in utilisation of funds and efficiency in the implementation of EU co-financed projects. In 2015, the European Commission paid EUR 5.3 bn to the Czech authorities, which represents more than 20 % of the total EU allocation of the 2007-13 programming period.

(Continued on the next page)

Box (continued)

Graph 2: Absorption rate of EU funds and ease of doing business



(1) The absorption of EU funds refers to the 2007-2013 programming period.

(2) For each Doing Business indicator, the Czech Republic is ranked against other Member States (0 = best performer; 1 = worst performer).

Source: European Commission and World Bank

Assessment of barriers to investment and ongoing reforms

The Commission recently published country-specific profiles highlighting barriers to investment in each Member State ⁽¹⁾. This box complements the findings of the profile for the Czech Republic.

Investment is hampered by regulatory barriers and a high administrative burden (Section 2.4). The annual reports of pertinent domestic authorities highlight barriers such as lengthy procedures for issuing land-use permits and delays related to complaint procedures at the anti-monopoly office. The efficiency of the business environment is affected by impediments such as the high costs associated with paying taxes, the low availability of on-line public services and a lack of predictability of legislation. Nevertheless, some progress in reducing these barriers has been made in recent years. In the construction sector, permitting procedures are complex and lengthy, often leading to delays.

Public procurement procedures are not in line with EU best practice (Section 2.4). There is a significant incidence of non-competitive procedures and substantial reliance on the lowest price criterion. Corruption is perceived as having repercussions on the functioning of public tenders and on the quality of public administration more generally, although there has been some progress in this area. Inefficiencies and high turnover in public administration affect the allocation of public funds.

Investment in R&D has increased substantially but outcomes from this sector remain weak (Section 2.5). The Czech research system is currently in the process of implementing long-delayed but substantial governance reforms. Links between research institutions and the private sector remain weak.

Sector-specific issues include a need to improve transport infrastructure and energy efficiency (Section 2.5). There has been an increase in public investment in transport but gaps remain. Frequent changes to renewables support schemes in the energy sector affect their stability and credibility.

¹ See 'Member States Investment Challenges', SWD(2015) 400 final/2:
(http://ec.europa.eu/europe2020/pdf/2016/ags2016_challenges_ms_investment_environments_en.pdf).

Box 1.2: Contribution of the EU Budget to structural change

The Czech Republic is an important beneficiary of European Structural and Investment Funds (ESIF) and will receive about EUR 24 billion for the period 2014-2020. This is equivalent to 2.0% of GDP annually and 46% of the expected national public investment in areas supported by the ESI funds.

A number of reforms were passed as ex-ante conditionalities in areas to benefit from the Funds to ensure successful investments, notably in social inclusion, education and public administration. Reforms in areas such Next Generation Access broadband deployment, waste management and the water sector are still pending, along with a number of other actions plans, and to be completed by end-2016. Where ex-ante conditionalities are not fulfilled by end 2016, the Commission may suspend interim payment to the priorities of the programme concerned.

The programming of the Funds focuses on priorities and challenges identified in the context of the European Semester. For instance, some 80 % of the overall ESF allocation matches country specific recommendations of recent years. The ESIF allocation for the Czech Republic is concentrated on addressing a number of key issues, including: research and innovation, business environment, development of ICT, shift to low carbon economy, employment, social inclusion, education, improved access to health and social services and improved public administration. The Czech Republic also benefits from the Youth Employment Initiative (YEI) to support young people to find their way to the labour market, get involved into traineeship projects or continue their education. Regular monitoring of implementation includes reporting in mid-2017 on the contribution of the funds to Europe 2020 objectives and progress in addressing relevant structural reforms to maximise the use of EU financing (notably, in research and innovation, TEN-T network, health, education and childcare).

Financing under the new European Fund for Strategic Investments (EFSI), Horizon 2020, the Connecting Europe Facility and other directly managed EU funds would be additional to the ESI Funds. Following the first rounds of calls for projects under the Connecting Europe Facility, the Czech Republic has signed agreements for EUR 254 million for transport projects. For more information on the use of ESIF in the Czech Republic, see: <https://cohesiondata.ec.europa.eu/countries/CZ>.

Table 1.1: Key economic, financial and social indicators

	2003-2007	2008	2009	2010	2011	2012	2013	2014	forecast		
									2015	2016	2017
Real GDP (y-o-y)	5.5	2.7	-4.8	2.3	2.0	-0.9	-0.5	2.0	4.5	2.3	2.7
Private consumption (y-o-y)	4.9	2.9	-0.7	1.0	0.3	-1.5	0.7	1.5	2.9	2.8	2.7
Public consumption (y-o-y)	1.2	1.1	3.0	0.4	-3.0	-1.8	2.3	1.8	3.5	3.3	1.9
Gross fixed capital formation (y-o-y)	6.3	2.5	-10.1	1.3	1.1	-3.2	-2.7	2.0	7.9	0.0	3.3
Exports of goods and services (y-o-y)	16.4	4.2	-9.8	14.8	9.3	4.3	0.0	8.9	7.2	6.0	5.8
Imports of goods and services (y-o-y)	14.4	3.2	-11.0	14.9	6.7	2.7	0.1	9.8	8.2	6.1	6.0
Output gap	2.7	4.6	-2.0	-1.2	-0.3	-1.7	-2.9	-2.3	0.0	0.4	0.8
Potential growth (y-o-y)	4.2	3.9	1.6	1.4	1.1	0.5	0.7	1.4	2.1	2.0	2.2
Contribution to GDP growth:											
Domestic demand (y-o-y)	3.9	2.3	-2.7	0.9	-0.2	-1.9	0.1	1.6	4.1	2.0	2.5
Inventories (y-o-y)	0.4	-0.4	-2.7	0.8	0.2	-0.2	-0.6	0.6	0.7	0.1	0.0
Net exports (y-o-y)	1.2	0.8	0.5	0.5	1.9	1.3	0.0	-0.2	-0.3	0.3	0.2
Contribution to potential GDP growth:											
Total Labour (hours) (y-o-y)	0.3	0.8	-0.4	-0.2	-0.1	-0.3	0.0	0.3	0.5	0.4	0.4
Capital accumulation (y-o-y)	0.9	1.1	0.7	0.7	0.6	0.5	0.3	0.4	0.6	0.6	0.6
Total factor productivity (y-o-y)	3.0	1.9	1.3	0.9	0.6	0.4	0.4	0.6	0.9	1.1	1.2
Current account balance (% of GDP), balance of payments	-3.5	-1.9	-2.3	-3.6	-2.1	-1.6	-0.5	0.6	.	.	.
Trade balance (% of GDP), balance of payments	1.4	2.1	3.7	3.0	3.9	5.0	5.8	6.9	.	.	.
Terms of trade of goods and services (y-o-y)	-0.4	-1.3	2.0	-2.0	-1.5	-0.6	1.2	1.5	0.4	0.5	0.0
Capital account balance (% of GDP)	0.1	0.6	1.3	1.0	0.3	1.3	2.0	0.8	.	.	.
Net international investment position (% of GDP)	-27.9	-38.2	-44.0	-46.1	-45.3	-46.1	-41.6	-35.7	.	.	.
Net marketable external debt (% of GDP) ¹	17.1	10.6	9.0	7.9	8.1	9.7	12.7	16.4	.	.	.
Gross marketable external debt (% of GDP) ¹	28.9	34.5	36.7	39.8	41.4	43.2	49.5	50.0	.	.	.
Export performance vs. advanced countries (% change over 5 years)	68.1	70.3	37.8	20.4	17.2	6.9	-1.1	1.49	.	.	.
Export market share, goods and services (y-o-y)	9.8	4.1	1.0	-5.1	0.3	-4.0	-1.2	5.4	.	.	.
Net FDI flows (% of GDP)	-4.2	-0.9	-1.0	-2.4	-1.2	-3.0	0.2	-3.1	.	.	.
Savings rate of households (net saving as percentage of net disposable income)	6.3	6.3	8.5	7.6	5.9	6.2	5.5	5.7	.	.	.
Private credit flow (consolidated, % of GDP)	5.1	9.1	0.8	2.6	2.0	2.8	4.4	1.8	.	.	.
Private sector debt, consolidated (% of GDP)	50.4	63.7	66.0	68.1	68.6	71.0	74.1	72.7	.	.	.
of which household debt, consolidated (% of GDP)	16.9	25.8	28.6	29.0	30.0	31.1	31.5	31.3	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	33.5	37.9	37.4	39.1	38.6	39.9	42.6	41.4	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	-2.4	-3.1	1.0	-0.7	-1.9	-0.9	0.4	-0.7	-1.2	-2.4	-2.4
Corporations, gross operating surplus (% of GDP)	29.1	30.2	29.1	28.9	29.0	28.5	28.7	30.7	31.0	30.5	30.5
Households, net lending (+) or net borrowing (-) (% of GDP)	1.7	1.2	2.7	1.9	1.8	3.7	1.8	2.4	2.9	2.8	2.7
Deflated house price index (y-o-y)	5.9	7.7	-4.7	-2.2	-1.6	-3.6	-0.7	1.8	.	.	.
Residential investment (% of GDP)	3.5	4.0	3.8	4.1	3.7	3.7	3.3	3.2	.	.	.
GDP deflator (y-o-y)	1.9	2.0	2.6	-1.5	-0.2	1.4	1.4	2.5	0.9	1.0	1.3
Harmonised index of consumer prices (HICP, y-o-y)	1.8	6.3	0.6	1.2	2.1	3.5	1.4	0.4	0.3	0.4	1.4
Nominal compensation per employee (y-o-y)	6.3	4.1	-0.6	3.3	2.8	1.7	-0.3	1.5	2.4	3.6	3.6
Labour productivity (real, person employed, y-o-y)	4.6	0.5	-3.1	3.4	2.2	-1.3	-0.8	1.4	.	.	.
Unit labour costs (ULC, whole economy, y-o-y)	1.7	3.5	2.6	0.0	0.6	3.1	0.6	0.1	-0.9	1.4	1.0
Real unit labour costs (y-o-y)	-0.2	1.5	0.0	1.4	0.8	1.7	-0.8	-2.3	-1.8	0.4	-0.3
Real effective exchange rate (ULC, y-o-y)	3.2	11.7	-5.4	2.9	2.9	-2.6	-2.6	-6.3	-3.0	1.6	.
Real effective exchange rate (HICP, y-o-y)	2.1	14.9	-3.7	1.2	2.0	-2.8	-2.3	-5.2	-0.6	2.1	-0.6
Tax wedge on labour for a single person earning the average wage (%)	23.3	23.6	22.3	22.5	23.0	22.9	22.8	23.1	.	.	.
Tax wedge on labour for a single person earning 50% of the average wage (%)	18.9*	14.5	13.5	13.9	14.8	14.7	14.5	15.2	.	.	.
Total Financial Sector Liabilities, non-consolidated (y-o-y)	10.1	7.1	1.4	4.0	2.9	7.1	7.3	6.6	.	.	.
Tier 1 ratio (%) ²	.	16.3	17.2	19.1	18.4	15.9	14.9	15.4	.	.	.
Return on equity (%) ³	.	15.6	14.4	11.5	8.5	8.6	3.6	7.7	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (4)	.	.	.	.	.	.	.	.	.	.	.
Unemployment rate	7.3	4.4	6.7	7.3	6.7	7.0	7.0	6.1	5.1	4.8	4.7
Long-term unemployment rate (% of active population)	3.8	2.2	2.0	3.0	2.7	3.0	3.0	2.7	.	.	.
Youth unemployment rate (% of active population in the same age group)	17.1	9.9	16.6	18.3	18.1	19.5	18.9	15.9	12.6	.	.
Activity rate (15-64 year-olds)	70.1	69.7	70.1	70.2	70.5	71.6	72.9	73.5	.	.	.
People at-risk poverty or social exclusion (% total population)	17.8	15.3	14.0	14.4	15.3	15.4	14.6	14.8	.	.	.
Persons living in households with very low work intensity (% of total population aged below 60)	8.8	7.2	6.0	6.4	6.6	6.8	6.9	7.6	.	.	.
General government balance (% of GDP)	-3.0	-2.1	-5.5	-4.4	-2.7	-4.0	-1.3	-1.9	-1.6	-1.1	-1.0
Tax-to-GDP ratio (%)	34.2	33.1	32.1	32.6	33.7	34.2	34.9	34.3	34.2	34.6	34.6
Structural budget balance (% of GDP)	.	.	.	-4.1	-2.6	-1.5	0.1	-0.7	-1.5	-1.2	-1.3
General government gross debt (% of GDP)	28.1	28.7	34.1	38.2	39.9	44.7	45.2	42.7	40.9	40.7	40.1

(1) Sum of portfolio debt instruments, other investment and reserve assets.

(2,3) Domestic banking groups and stand-alone banks.

(4) Domestic banking groups and stand-alone banks, foreign (EU and non-EU) controlled subsidiaries and foreign (EU and non-EU) controlled branches.

(*) Indicates BPM5 and/or ESA95

Source: European Commission, 2016 winter forecast; ECB

2. STRUCTURAL ISSUES

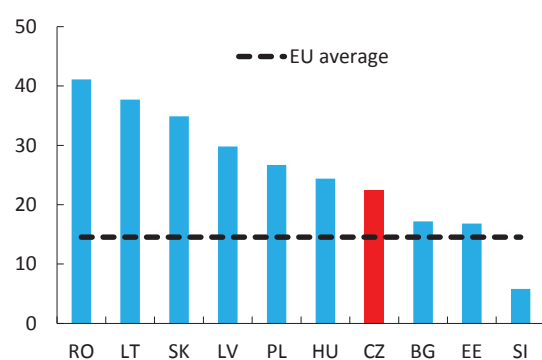
This section provides an analysis of the main structural economic and social challenges for the Czech Republic. Focusing on the policy areas covered in the 2015 country-specific recommendations, this section analyses issues related to tax evasion, inefficiencies in the tax system, the long-term sustainability of public finances, labour market and social policies, the education sector, competitiveness, inefficiencies in the business environment, public administration and sectoral investment challenges.

2.1. TAX SYSTEM AND TAX BURDEN

Available evidence points to a relatively high incidence of tax evasion in the Czech Republic.

Tax evasion in the area of VAT can be assessed using the VAT compliance gap ⁽¹⁾. From a cross-country perspective, the VAT compliance gap in the Czech Republic remains well above the EU average of 15 %, suggesting further scope for improvement (Graph 2.1.1). Over a longer period of time (2009-2013), the VAT compliance gap shows no particular downward or upward trend. However, compared with regional peers, the gap is not particularly high.

Graph 2.1.1: VAT gap as a % of VAT theoretical tax liability (2013)



(1) According to the methodology, the VAT compliance gap arises not only as a result of tax evasion, but it also captures non-payments due to bankruptcy, filing errors and other phenomena that affect VAT-related payments.

Source: CPB/Center for Social & Economic Research 2015

In 2016, the Czech authorities are introducing several new measures to tackle tax evasion. The two flagship measures are VAT control statements and electronic recording of sales. The VAT control statement requires businesses to file a new tax form recording all VAT-related transactions. This

would provide the means for the Tax Administration to match transactions between suppliers and buyers, facilitating faster detection of fictitious invoices. Electronic evidence of sales is a more general measure, covering both VAT and direct taxes. This initiative requires all entrepreneurs to transmit their sales figures to the Tax Administration in real time. The electronic evidence of sales was adopted by the Chamber of Deputies in February 2016, with implementation currently expected to start in late 2016. The Czech authorities plan to phase in sales evidence for all entrepreneurs within 18 months after its adoption. These measures are part of a stronger focus on tax evasion and, as a whole, could contribute to an improvement in tax collection.

The high costs associated with tax compliance impinge on the efficiency of the business environment.

According to the OECD Tax Administration Report 2015, the costs of tax collection in the Czech Republic are relatively high ⁽²⁾. At the same time, according to the latest Paying Taxes Report ⁽³⁾, the number of hours spent by a sample, medium-sized firm to prepare, file and pay taxes (especially labour taxes) is high and has not significantly improved in recent years. Time to comply with tax requirements in the Czech Republic is more than double the EU average, although it is likely that the methodology used to produce this indicator does not fully capture recently-introduced measures to improve the efficiency of the tax system. Pre-filing services offered by the tax authorities are limited, despite being cited by the Czech authorities as a priority. Taxpayers' make limited use of systems to e-file tax returns although some progress has been made

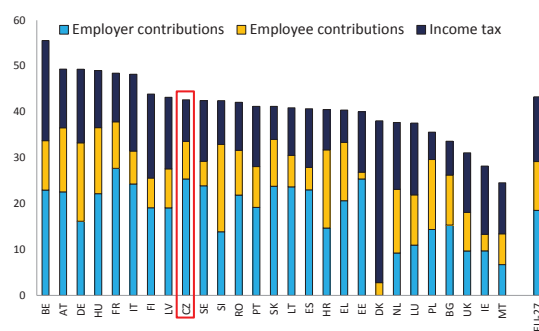
⁽²⁾ Tax Administration 2015 Report (<http://www.oecd.org/ctp/administration/tax-administration-23077727.htm>).

⁽³⁾ World Bank and PwC - Paying Taxes 2016 Report, (<http://www.doingbusiness.org/reports/thematic-reports/paying-taxes>).

⁽¹⁾ The compliance gap has two components. The assessment gap captures the difference between the potential tax and the assessed amount of tax due. The collection gap captures the difference between the amount of tax assessed as due and the actual collection.

on VAT, which should become fully electronic in 2016. However, challenges with regards to the ease of paying taxes persist. While the policy focus remains on increasing the efficiency of tax collection, efforts to simplify the tax system have been postponed. In addition, several features of the Czech Republic's tax system can be used in structures of aggressive tax planning ⁽⁴⁾. In particular, the absence of anti-abuse rules can create an attractive environment for certain aggressive tax planning structures ⁽⁵⁾.

Graph 2.1.2: **Composition of the tax wedge in 2014**
(single earners at 100 % of the average wage)

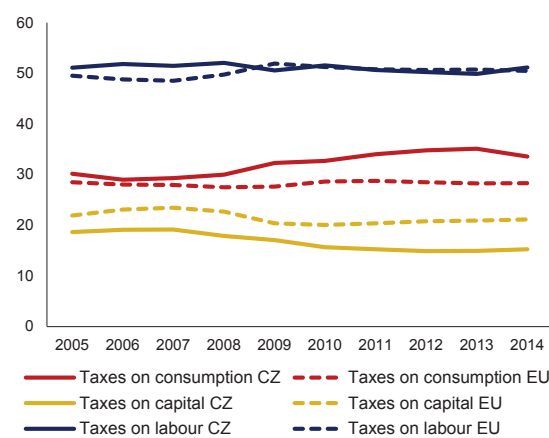


Source: European Commission

The relatively high level of taxation on labour in the Czech Republic is marked by very high employer social contributions. The implicit tax rate on labour ⁽⁶⁾ stood at 39.9 % in 2014 compared with an EU average of 36.4 %. Substantial employer social contributions account for a high share of this. The high level of taxation may contribute to reducing the labour market participation of certain income groups. In particular, the employment rate of low-skilled

workers is much lower than for other skills groups (see section 2.3). The tax wedge ⁽⁷⁾ on labour for low-income earners (a single worker earning 50 % of the average wage) was 36.7 % in 2014, above the GDP-weighted EU average by 3 percentage points. However, refundable child allowances substantially decrease the tax wedge for those with children (it stood at 16.9 % for a parent with two children earning 50 % of the average wage in 2014). The tax wedge for average income earners (Graph 2.1.2) also suggests that employer contributions are as high compared to EU average. Recent initiatives, including lower taxation for working pensioners and the proposed introduction of tax credits for families, are likely to contribute to lower labour taxation. The differences in the tax burden of self-employed and employees remain a persistent feature of the Czech tax system, despite a recent cap on flat-rate expenses for the self-employed.

Graph 2.1.3: **Taxes as a % of total tax revenue (2005-2014)**



Source: Eurostat

⁽⁴⁾ For an overview of the most common structures of aggressive tax planning and the provisions (or lack thereof) necessary for these structures to work, see Ramboll Management Consulting and Corit Advisory (2016), 'Study on Structures of Aggressive Tax Planning and Indicators', European Commission Taxation Paper n°61. The country-specific information provided in the study gives the state of play as at May/June 2015.

⁽⁵⁾ For example, there is no rule which links tax deductions for interest to the tax treatment in the creditor Member States; there is lack of controlled foreign companies rules; and rules to counter a mismatch in tax qualification of Czech companies/partnerships and those of a foreign state are lacking.

⁽⁶⁾ The implicit tax rate is a measure of effective (average) tax burden on labour. It is calculated as the ratio of all taxes and social contributions levied on employment income to total compensation of employees.

There is some scope to diversify revenues from less distortionary taxes, with property taxes a possible candidate, while consumption taxes are somewhat above the EU average. Revenues from recurrent property taxes remain among the lowest in the EU at 0.2 % of GDP in 2014, with the property value used for tax purposes currently not linked to real market values ⁽⁸⁾. Revenues from

⁽⁷⁾ The difference between the total cost of an employee's wages to a company and the employee's take-home pay.

⁽⁸⁾ Tax Reform in EU Member States 2015, (http://ec.europa.eu/economy_finance/publications/eeip/ip008_en.htm).

taxes on consumption, which are relatively growth-friendly, have consistently been above the EU average as a proportion of total tax revenues (Graph 2.1.3). Additionally, the gap has been widening in the period of 2007-2013, pointing to a stronger emphasis on consumption taxes in the Czech Republic. Recently introduced higher taxes on gambling and lotteries from 2016 are also likely to increase revenues from consumption taxes.

2.2. FISCAL FRAMEWORK AND LONG-TERM FISCAL SUSTAINABILITY

Fiscal framework

The fiscal framework in the Czech Republic is among the weakest in the EU. Despite the existence of key features, such as medium-term budgetary planning and nominal expenditure ceilings, the framework remains weak. An assessment based on the fiscal rules index ⁽⁹⁾ confirms the position of the Czech Republic amongst the weakest performers in the EU. Fiscal plans can be subject to various revisions throughout the budgetary process that may result in a pro-cyclical fiscal policy. Expenditure ceilings suffer from limited coverage outside of central government, leaving municipalities in particular excluded from medium-term budgetary targeting. Fiscal documentation is not entirely robust and does not benefit from independent scrutiny. For example, the macroeconomic forecasts of the Ministry of Finance, which underpin budgetary planning, are currently not submitted to independent verification. The Czech Republic is currently one of the very few Member States that still lack a dedicated independent fiscal institution with responsibility for assessing compliance with fiscal rules and which could contribute to enhancing transparency of public finances. Based on the identified shortcomings of the fiscal framework, there appears to be scope for improvement in enforcement and monitoring.

A long-delayed reform addressing the main weaknesses of the current fiscal framework was approved by the government in February 2015, but its ratification by the Parliament is still pending. The package should transpose into national legislation Council Directive 2011/85/EU on budgetary frameworks but it is severely delayed (the transposition deadline for Member States was the end of 2013). The proposed reform envisages strengthening expenditure limits and directly linking them to the medium-term budgetary objective of -1 % of GDP in structural terms. It obliges the government to adopt a budget ⁽¹⁰⁾ that would safeguard long-term sustainable public

finances, i.e. reaching a balanced budget as specified in the Stability and Growth Pact. Additionally, it also introduces a debt rule for general government, which would be activated once public debt breaches the 55 % of GDP threshold. Specific provisions for municipalities should ensure a prudent level of indebtedness, limiting debt to 60 % of average municipal revenues. Finally, the package creates an independent fiscal council and provides for reporting that is more credible and transparent. In addition, an expert forecasting body should verify the Ministry of Finance's macroeconomic and fiscal projections. The reform is envisaged to be formally implemented in a new constitutional law as well as an amended common law. A comprehensive assessment of the reform will, therefore, only be possible following its final adoption by the parliament.

Long-term sustainability of public finances

The long-term sustainability of public finances continues to represent a challenge in the Czech Republic. The Commission's long-term sustainability gap indicator ⁽¹¹⁾ (S2 indicator) identifies the Czech Republic as being at medium risk with respect to the long-term sustainability of public finances. This is primarily due to the projected impact of age-related public spending mainly in healthcare but also in pensions, since both are considered to be a long-term challenge given the Fiscal Sustainability Report ⁽¹²⁾ assessment (Graph 2.2.1). The public debt-to-GDP ratio, on the other hand, stood at 40.9 % in 2015, based on the Commission 2016 winter forecast, well below the Treaty threshold value of 60 % and below the projected EU average of 87.2 %.

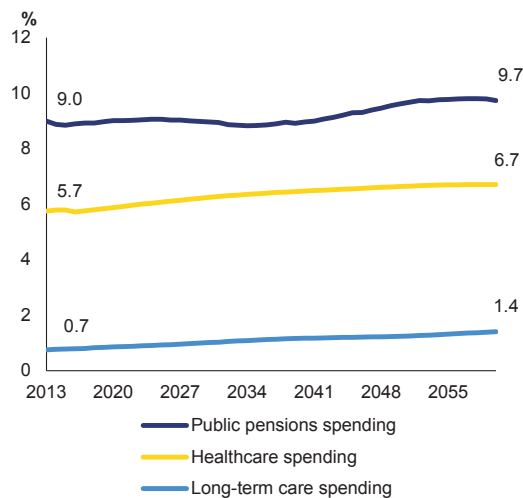
⁽⁹⁾ For more information, see the fiscal governance database set up by the Commission (http://ec.europa.eu/economy_finance/db_indicators/fiscal_governance/index_en.htm).

⁽¹⁰⁾ This refers to the budgetary documents approved by the government, i.e. the state budget, the budgets of state funds and the medium term outlook. On top of that, health insurance companies and municipalities would need to have a balanced budget.

⁽¹¹⁾ The S2 indicator determines the upfront structural adjustment required to have gross public debt over GDP stabilising over an infinite horizon. Based on the Commission 2016 winter forecast, the overall required adjustment of 3.2 pp of GDP stems mainly from the projected public spending on healthcare and long-term care (1.3 pps.) and on pensions (0.6 pp.).

⁽¹²⁾ European Commission, 'Fiscal Sustainability Report 2015' (http://ec.europa.eu/malta/news/fiscal-sustainability-report-2015_en).

Graph 2.2.1: Projected ageing-related public expenditure (% of GDP)



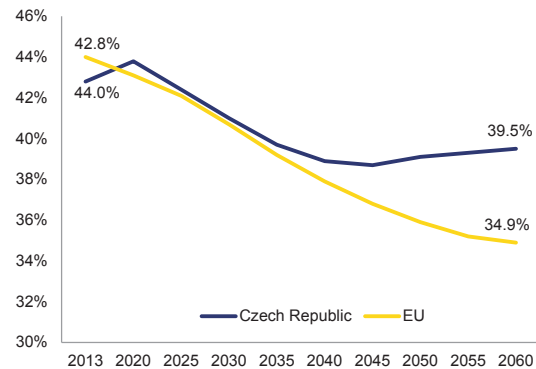
(1) Refers to the baseline scenario.

Source: European Commission Ageing Report 2015

The adequacy of pensions is set to deteriorate somewhat in long-term projections (up to 2060) despite a revision of the pension indexation system to fully reflect the growth in prices and an extraordinary increase in pensions⁽¹³⁾. The size of the aggregate pension benefit of an average pensioner — compared with the average gross wage — is projected to decline from 42.8 % in 2013 to 39.5 % in 2060. This is due to the fact that the currently legislated indexation system for pensions leads to a lower growth rate of the average pension compared with the average gross wage. At the same time, the average size of newly granted pension benefits is projected to remain flat compared with the average wage over the forecast horizon (32.2 % in 2013 against 33.7 % in 2060).

⁽¹³⁾ The former system of indexation assumed an indexation of one third of the growth in consumer prices and one third of the growth in real wages. The new system is based on the full impact of growth in consumer prices plus one third of the growth in real wages. Pensions rose by 1.8 % in 2015, which was more than suggested by the current indexation formula.

Graph 2.2.2: Projected average pension benefit as a proportion of average wage



Source: European Commission 2015 Ageing Report

The statutory retirement age in the Czech Republic is currently at a comparatively low level and is legislated to increase quite slowly at an infinite horizon⁽¹⁴⁾. In most Member States, the statutory retirement age for men is set to reach 65 by 2020, while it is expected to reach only 63 years and 8 months in the Czech Republic. It is also expected to remain below the EU (population-weighted) average after 2030. A draft law on the pensionable age and the time spent in retirement is in preparation and planned to enter into force in 2018 at the latest. Currently two revisions to the current system are under discussion, neither of which would raise the existing comparatively low statutory retirement age. The first concerns a cap at 65 years for the statutory retirement age. This cap would worsen the sustainability gap since it would lead to an increase in pension expenditure. Second, the Expert Committee on Pension Reform has proposed a regular review mechanism for the pensionable age, starting no later than 2019. Regular reviews should ensure that, on average, all workers spend a quarter of their life in retirement. However, the mechanism is not automatic and may fail to improve the predictability of the pension system.

Other adopted or planned measures could create challenges for the predictability and sustainability of pensions. In February 2016, pensioners received an additional top-up of CZK 1 200, with an estimated budgetary impact of

⁽¹⁴⁾ The current legislation assumes a limitless increase in the statutory retirement age, which implicitly takes into account the rise in life expectancy.

CZK 3.5 billion (0.1 % of GDP). Furthermore, the proposal to legislate a leeway for the government to adjust the indexation mechanism more flexibly in the future was adopted by the government in February 2016. This would allow the government to decree changes to the pension system instead of adopting a new law, which goes against previous legislative changes to limit ad hoc increases that could be linked to the political cycle.

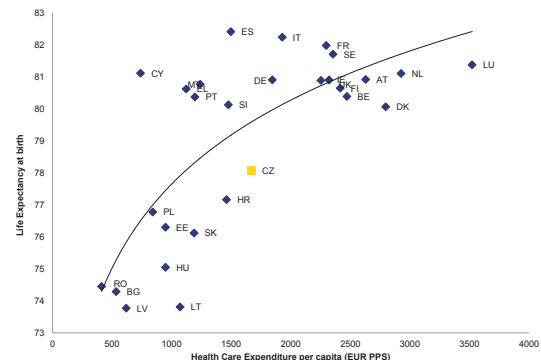
A recent reform of the private pension pillar aims at increasing its attractiveness to savers and raising private retirement savings. The main features of the reform include an expansion of tax allowances both for employees and employers, an income tax exemption on pension benefits that are paid out over more than 10 years, and the removal of age limits, where the aim is to allow parents to save on behalf of their children. The changes are designed to help increase the adequacy of pensions. However, their potential may be limited since they are geared mainly towards high-income savers and their effectiveness may be constrained by the low level of average monthly savings.

The Czech healthcare sector performs well in terms of accessibility of care. The general indicators of population's health have been improving. Between 2005 and 2013, healthy life years increased by more than 4 years and life expectancy by more than 2 years for both sexes. Still, lifestyle related factors are likely to be having considerable effects on health status ⁽¹⁵⁾. In comparison with other Member States, the Czech Republic ranks quite well for access to health care, especially for the relatively low unmet medical needs due to accessibility issues (i.e. cost, distance and time of access.)

The projected increase in long-term healthcare spending is a matter of concern. While public healthcare expenditure is comparatively low (5.7 % of GDP compared with the EU average of 6.9 % in 2013), it is projected to grow by 1 percentage point in the long-term (Graph 2.2.1). There also appears to be scope to improve health

outcomes by raising the cost-effectiveness of healthcare expenditure (Graph 2.2.3).

Graph 2.2.3: **Potential to improve life expectancy at existing healthcare expenditures**



(1) The methodology developed in the Macelli report has been applied to 2012 data

(2) The relationship between the life expectancy and the healthcare expenditure in the graph cannot be perceived as a causal relationship but as a statistical correlation. The healthcare outcomes also depend on factors other than healthcare expenditure.

Source: Heijink R. et al. (2015). Comparative efficiency of health systems corrected for selected lifestyle factors (Macelli report)

The Czech Republic faces challenges in improving the governance and cost-effectiveness of the healthcare system. Indicators point to inefficiencies for both inpatient ⁽¹⁶⁾ and outpatient services. Although some progress has been observed in recent years, indicators of inpatient care utilisation point to a hospital-centred system ⁽¹⁷⁾, which is generally more costly than one based on outpatient services. Even if necessary data are collected, they do not seem to be used effectively for the planning of inpatient care capacities and the rationalisation of acute care beds. As regards hospital financing, there is scope to upgrade the existing reimbursement system ⁽¹⁸⁾

⁽¹⁵⁾ Pure alcohol consumption in the Czech Republic was 11.5 litres per person over 15 (OECD Health Statistics, 2013). Prevalence of obesity among adults related to 21 % of population (OECD Health Statistics, 2010). The proportion of daily smokers aged 15+ in the population was 22.2 % (OECD Health Statistics, 2013).

⁽¹⁶⁾ J. Votápková P. Žilová (2015), 'Health care efficiency in the Czech Republic - Evidence for inpatient care' (<http://ies.fsv.cuni.cz/sci/publication/show/id/5260/lang/cs>)

⁽¹⁷⁾ The number of acute care beds per 100 000 people in the Czech Republic (436.9) was well above the EU average (355.2) in 2013. The average length of stay in all types of hospitals in the Czech Republic was 9.4 days compared with 8.1 for the EU in 2013. In the case of acute care hospitals, the length of stay has shortened in recent years to 6.6 and was only slightly above the EU average (6.3) in 2013.

⁽¹⁸⁾ Diagnosis-related groups system, (DRG) i.e. one for classifying patient care by relating common characteristics such as diagnosis, treatment, and age to an expected consumption of hospital resources and length of stay. Its

in hospitals in order to increase the efficiency of the hospital sector, since it currently suffers from a number of drawbacks ⁽¹⁹⁾. In order to provide for a more efficient allocation of resources, the ‘diagnosis-related group’ project formally commenced in January 2015. However, its outcomes will only be used for financing in 2018 at the earliest. As for outpatient care, the very high number of visits per capita per year (11.1 compared with the 6.9 on average in the EU in 2013) indicates a limited role of general practitioners as gate-keepers. Options to strengthen outpatient care coordination, improve the gate-keeping role of practitioners and to limit unnecessary consumption have not been sufficiently explored. Conversely, fees in the outpatient sector were eliminated in 2015, leading to an increase in the consumption of services.

morbidity instead of gender and age characteristics.

A number of measures aimed at improving the cost-effectiveness and governance of the healthcare sector, based on the priorities in the Government’s manifesto and the National Strategy for Health 2020, are in various stages of implementation. The introduction of centralised public procurement for selected pharmaceuticals was launched in 2015 and the Commission for Accessing the Placement of Medical Devices also became operational. A complete and compulsory disclosure of contracts between health insurers and providers entered into force in 2016, which should increase the transparency of the Czech healthcare system and boost competition among healthcare providers. Additionally, selected public hospitals will be transformed into non-profit entities, with the aim of enhancing management of key hospitals in the country. There are also plans to replace the non-transparent process of determining the reimbursement of medical devices with a new system. Finally, the government also plans to change the system of allocation of health premiums among insurance funds, based on

purpose is to provide a framework for specifying case mix and to reduce hospital costs and reimbursements. (<http://www.ncbi.nlm.nih.gov/mesh?term=DRGs>).

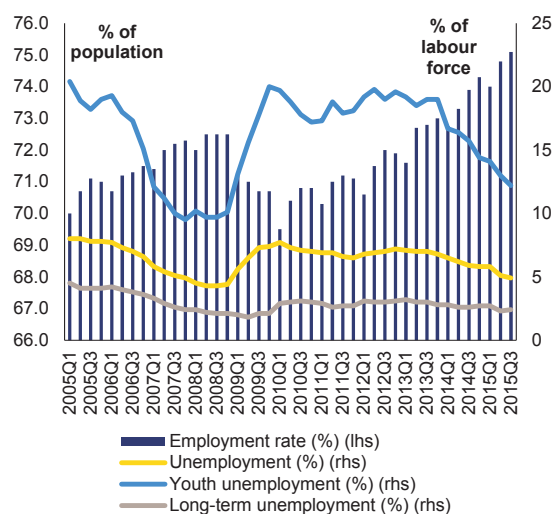
⁽¹⁹⁾ See Votápková, Žilová. Major problems of the system include: individual payment rates; small sample of reference hospitals to set the optimal cost of cases; insufficient homogeneity within DRG groups; and upcoding.

2.3. LABOUR MARKET AND EDUCATION

Labour market

The labour market situation in the Czech Republic continues to improve in an environment of robust economic growth. The unemployment rate (15-74) has fallen further, to 4.9 % in the third quarter of 2015 (Graph 2.3.1), and is currently among the lowest in the EU. The youth unemployment rate has also dropped further, reaching 12.2 % in the third quarter of 2015 compared with a high of almost 20 % in the last quarter of 2012. The long-term unemployment rate has also fallen, standing at 2.4 % in the third quarter of 2015. The unemployment rate of low-skilled workers remained stable at 21.9 % in the third quarter of 2015. Over the past five years, the employment rate has risen steadily, mainly driven by a rise in the employment rate of women. The total employment rate (20-64) reached 75.1 % in the third quarter of 2015, well above the EU average of 70.6 %.

Graph 2.3.1: Labour market indicators



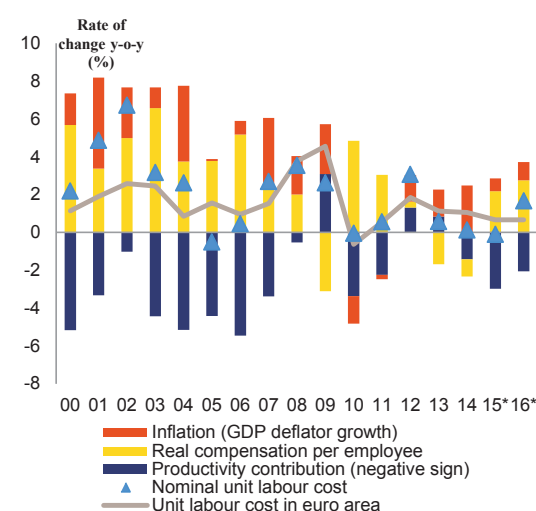
Source: Eurostat

Wage and labour costs have grown moderately, aiding competitiveness. In 2014, nominal wage growth was moderate and remained below the level that could be predicted based on economic fundamentals, such as developments in prices, unemployment and productivity⁽²⁰⁾. Furthermore, as shown in Graph 2.3.2, it has largely been offset by positive productivity growth, with the result

⁽²⁰⁾ Arpaia and Kiss, Analytical Web Note 2/2015 'Benchmarks for the assessment of wage developments', European Commission, Spring 2015.

that unit labour costs have remained relatively stable, thus aiding competitiveness (see Section 2.4). However, according to the Commission 2016 winter forecast, the growth rate of unit labour costs is expected to accelerate somewhat in 2016.

Graph 2.3.2: Trends in labour costs and components



Source: AMECO

Further increases in the employment rate, in particular for underrepresented groups, are needed in order to support sustained growth and to cope with the demographic challenge related to population ageing. Between 2015 and 2020, the working age population (15-64) is forecast to fall from 7.11 million to 6.82 million and the old age dependency rate is estimated to rise from 26.6 % to 31.3 %. These developments are expected to further increase age-related healthcare and long-term care costs. A rise in the labour market participation of the most underrepresented groups, such as low-skilled, Roma, young workers and mothers with young children, would contribute to the financial sustainability of the social security system, as well as increasing their opportunities to raise their income and improve their skills.

Vulnerable groups

While low-skilled workers represent a small proportion of the labour force, they and members of the Roma community are among the most vulnerable groups. The Czech Republic

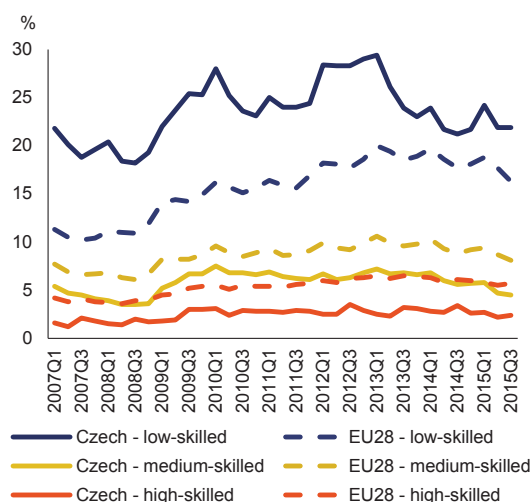
generally enjoys a skilled workforce ⁽²¹⁾. Low-skilled workers represent only 7.1 % of the population of working age (20-64) in 2014, one of the lowest shares in the EU, where the average is 23.4 %. However, their employment rate has been persistently low. In the third quarter of 2015, only 40.6 % of low-skilled workers were employed, compared with 76.3 % of the medium-skilled and 82.6 % of the high-skilled ⁽²²⁾. This is also far below the EU average employment rate for low-skilled workers, which stood at 53.4 % in the third quarter of 2015. Furthermore, the unemployment rate of low-skilled workers in the third quarter of 2015 was high, at 21.9 % (Graph 2.3.3), and they represent one quarter of the long-term unemployed. The unemployment rate is even more pronounced for young low-skilled workers, standing at 34.7 % in the third quarter of 2015. The employment rate of members of the Roma community, who are often also low-skilled, is also considerably lower (38 %) than the overall employment rate ⁽²³⁾, while their unemployment and long-term unemployment rates are comparatively high (27 % and 12 % respectively).

Youth and long-term unemployment, and unemployment of people with disabilities, remain a concern. Whereas youth unemployment (15-24) has fallen rapidly in the last two years, to reach 12.2 % in the third quarter of 2015 (compared with an EU average of 20.1 %), there are large differences between educational groups. The trend in long-term unemployment is positive, with long-term unemployment having reached only 2.4 % in the third quarter of 2015. However, its share in total unemployment is increasing, reaching 48.5 % in the third quarter of 2015. The latest data available (2013) show a significant self-reported unemployment gap of 15.8 pps. between people with and without disabilities ⁽²⁴⁾.

The current system of labour taxation may create disincentives to work for low wage earners. As discussed in Section 2.1, the tax wedge is high as a result of generally high employer social contributions. In particular, the tax wedge for low-wage earners is above the EU average.

The outreach capacities of public employment services, together with appropriate and well-targeted active labour market policies, will be crucial for increasing the labour market participation of vulnerable groups. This in particular concerns individualised services for Roma and young unemployed, with specific consideration for non-registered young people who are not in employment, education or training, who risk being excluded from the Youth Guarantee. A comprehensive performance measurement system in public employment services could help to increase the effectiveness of active labour market policies.

Graph 2.3.3: **Unemployment by educational attainment**



Source: Eurostat

⁽²¹⁾ Skills mismatches in Czech Republic (IDEA CERGE-EI) (http://idea.cerge-ei.cz/files/IDEA_Study_10_Skills_Mismatches/IDEA_Study_10_Skills_Mismatches.html).

⁽²²⁾ ISCED 0-2, ISCED 3-4 and ISCED 5-8 levels, respectively.

⁽²³⁾ Data from Roma Inclusion Index 2015 (http://www.romadecade.org/cms/upload/file/9810_file1_roma-inclusion-index-2015-s.pdf).

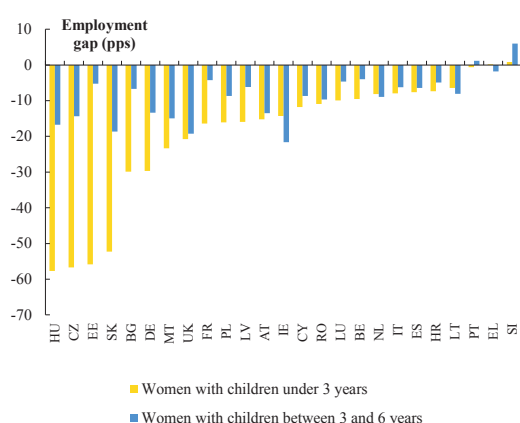
⁽²⁴⁾ EU-SILC 2013; only EU-SILC data are available, Labour Force Survey does not provide data on people with disabilities. Note that these two surveys are not comparable.

Labour market participation of women

Despite a generally high level of female employment, their employment rate is low at both ends of the age spectrum. At the upper end, the employment rate for older women (60-64 years) was only 19.8 % in 2014, whereas for men it stood at 45.7 %. This gap reflects differences in the standard retirement ages for men and women,

which are expected to narrow in the future as the standard retirement age for women is being raised to be in line with that for men ⁽²⁵⁾. At the lower end of the age range, gender employment gaps are especially large for young women, reflecting the widespread use of long parental leave and considerable work disincentives for women with young children (discussed below). The employment gap between women with and without children is particularly high for women whose youngest child is below three years old (over 56 pps.) while it diminishes sharply for women with older children (less than 15 pps.) (Graph 2.3.4). This demonstrates relatively good opportunities for women to return to work when their youngest child reaches the age of three, the age when most children are admitted to public kindergartens.

Graph 2.3.4: **Employment impact of motherhood (2013)**



1) Difference in percentage points between employment rate of women (aged 20-49) with and without children.
Source: Eurostat (Labour Force Survey microdata)

The low labour market participation of mothers with young children is, to a considerable extent, due to a persistent lack of quality childcare facilities (in particular for children up to 3 years old) and low use of flexible working arrangements. While anecdotal evidence points to cultural factors encouraging mothers to stay at home with their young children, the availability of affordable childcare for children younger than three years old is extremely limited and constitutes a barrier to women's participation in the labour

market ⁽²⁶⁾. In 2014, only 2 % of children under three years old were in formal childcare, compared with the Barcelona target of 33 % for this age group and the EU average of 27 % (Graph 2.3.5). Enrolment in kindergartens (in principle, for children older than three years) is higher but shows regional variation. Parents can take parental leave until the child's third birthday and are entitled to a fixed parental benefit, which they can receive until the child is four years old. This benefit can be combined, to a certain extent, with income from work. The payment of the parental benefit is conditional on parents not using a publicly funded early childhood education and care service for more than 45 hours a month. This clearly creates disincentives for mothers with young children to stay in employment, in a context where flexible working arrangements are not popular. The take-up of part-time jobs is low, with only 9.4 % of all employed Czech women working part-time in 2014 (compared with an EU average of 31.7 %). Even though labour market legislation provides for flexibility in contractual arrangements, flexibility in working hours is one of the lowest in the EU. Only 16 % of Czech workers feel able during working hours to take an hour or two off in order to take care of personal or family matters ⁽²⁷⁾. Breaks in employment due to childbearing penalise women financially in the long term (the Czech gender pay gap was along the highest in the EU in 2013, at 22.1 %) and contribute to higher gender inequalities.

Some steps have been taken to address the persistent lack of quality childcare facilities.

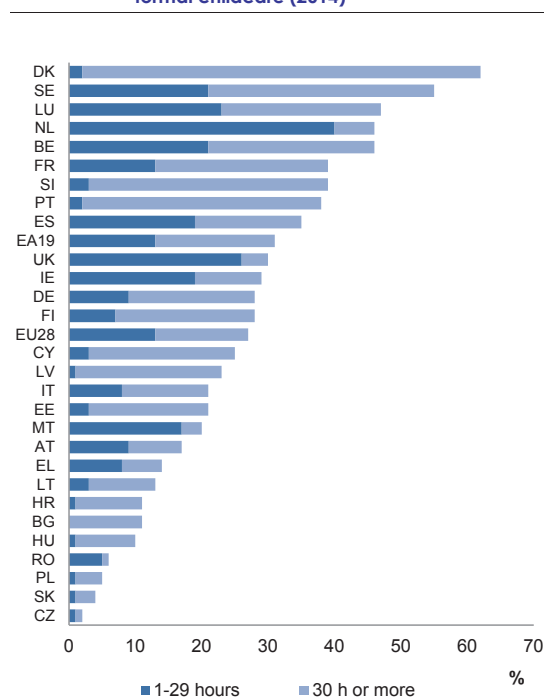
The Ministry of Labour and Social Affairs has presented a pilot project, to start in early 2016, to support 'mini-nurseries' (i.e. groups of up to four children of six months to four years of age) to be opened by municipalities or non-governmental organisations in the three regions with highest demand (Prague, Central Bohemia and South Moravia). This pilot project has a budget of CZK 50 million and is co-financed under the European Social Fund. Another upcoming call for projects on child groups is to be co-financed under

⁽²⁶⁾ OECD (2012) 'Close the gender gap: act now'. The report demonstrates that women's employment can be boosted by investment in childcare facilities.

⁽²⁷⁾ Gender Equality Index 2015 (<http://eige.europa.eu/rdc/eige-publications/gender-equality-index-2015-measuring-gender-equality-european-union-2005-2012-report>).

the European Social Fund, with CZK 118 million available for Prague and CZK 882 million for other regions. In October 2015, the Fund for the Development of the Capacities of Kindergartens and Primary Schools, set up by the Ministry of Education, Youth and Sports, announced the next in the series of calls for projects to increase and modernise the capacities of pre-school and primary school education in 2016, with co-financing from the European Regional Development Fund's Integrated Regional Operational Programme. Previous calls amounted to CZK 400 million and it is expected to spend CZK 1.5 billion to this end until 2021.

Graph 2.3.5: **Enrolment of children up to three years old in formal childcare (2014)**



(1) Data for Ireland refer to 2011; the value for Portugal for the variable Children up to three years of age, 1-29 hours, refers to 2011.

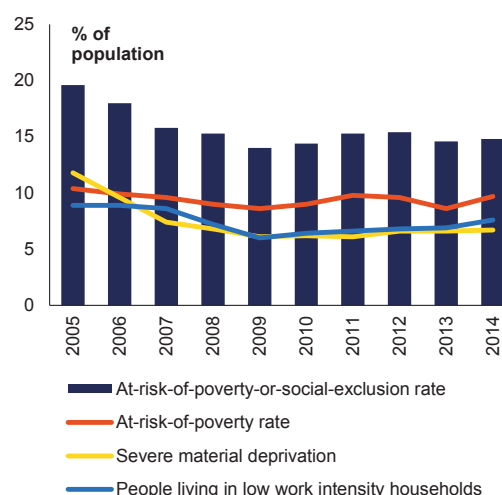
Source: EU SILC (Female Labour Force Participation fiche)

Social protection

Poverty and social exclusion in the Czech Republic are among the lowest in the EU. Social transfers, excluding pensions, have a significant impact on reducing poverty. The pension system is also relatively successful in preventing old-age poverty: 10.7 % of Czechs aged 65+ are at risk of poverty or social exclusion, versus an EU average of 19.9 %. In 2014, the Czech Republic recorded

the lowest level of people at risk of poverty or social exclusion in the whole EU (14.8 % versus 24.4 %, respectively). The number of people at risk of poverty or social exclusion has fallen by 34 000 since 2008, reaching 1 532 000 in 2014 (Graph 2.3.6). The updated target on the reduction of the population at risk of poverty or social exclusion has been made more ambitious, with the ambition to reduce it by 100 000 by 2020.

Graph 2.3.6: **At-risk-of-poverty (AROPE) rate and its components**



Source: Eurostat

Education & skills

Educational outcomes and the employability of school and higher education graduates are generally good ⁽²⁸⁾, but student socioeconomic backgrounds strongly influences these outcomes. This is demonstrated by the results of the 2012 OECD Programme for International Student Assessment (PISA) ⁽²⁹⁾. The low educational and employment outcomes of disadvantaged groups is a particular concern, not

⁽²⁸⁾ Part of the relatively positive overall educational outcomes and employability of graduates can be explained by the high proportion of students in vocational education and training, with 74 % of all students in upper secondary education. This educational model corresponds with the structure of the Czech economy, with a large proportion of employment in manufacturing (28 %).

⁽²⁹⁾ OECD, PISA 2012 results: 'What Students Know and Can do', Student Performance in Mathematics, Reading and Science (Volume I), (<http://www.oecd.org/pisa/keyfindings/pisa-2012-results.htm>)

only for the employment and social inclusion of this group but also in the context of the forecast increase of the old-age dependency rate facing the Czech Republic.

An estimated 40 % of Roma children receive education in de facto segregated schools and six times more Roma children are being placed in so-called practical schools with lower learning standards than children from the rest of the population ⁽³⁰⁾. The PISA results confirm the impact on future educational outcomes of low participation in early childhood education and care. The participation of children from marginalised communities has been estimated at 26 % by the European Agency for Fundamental Rights ⁽³¹⁾. Strategic documents and new legislation were adopted in 2015, after wide consultations with stakeholders, with a view to reducing inequalities by ensuring individual support to pupils with special educational needs in mainstream education, with a progressive implementation from September 2016. The planned improvements to early childhood education and care facilities (see above), together with targeted efforts such as direct work with families, could boost the participation of socially disadvantaged children and contribute to improved educational outcomes. The parliament is currently discussing draft amendments to the Education Act (approved by the government in September 2015) proposing to extend compulsory education to the last year of pre-school education and to ensure the entitlement to a place for younger children. Sufficient financial allocations, appropriate communication, suitable and timely teacher education and an optimal use of existing expertise will be essential for these new measures to bring the expected results, in particular in the absence of a pilot phase for the new 2015 legislation.

The early school leaving rate remains among the lowest in the EU (5.5 % in 2014) but

regional disparities are significant and the rate has increased since 2010 (from 4.9 %). Of particular concern is the estimated 72 % of Roma children who leave school early, which significantly impacts their future labour market performance. Children with disabilities are also more at risk of leaving school early. There is a gap of 11.6 percentage points between the early school leaving rate of children with and without disabilities (EU-SILC 2013).

The attractiveness of the teaching profession remains a challenge for maintaining educational outcomes and improving inclusiveness in mainstream education. Low pay is one of the factors that make teaching unattractive as a profession (Graph 2.3.7) and the teacher population is ageing ⁽³²⁾. The 2013 OECD Teaching and Learning International Survey showed that the proportion of teachers taking part in professional development activities related to teaching mixed groups and inclusive education is among the lowest of surveyed countries ⁽³³⁾. The Long-Term Plan for Education 2015-2020 and the Action Plan for Inclusive Education 2016-2018 envisage support for teachers with respect to inclusive education and lay down standards for teachers in this area. These measures will be largely co-financed through the European Structural and Investment Funds. Although implementation has been postponed, a new career system for teachers and pedagogical staff is also being developed with a view to increasing the attractiveness of the profession. For the new system to produce tangible results, sufficient additional financial means to meet the cost of increased salaries will be essential. Plans for the period after 2016 remain unclear at this stage. The increased budget for education for 2016 contributed to increasing teacher salaries by 3.3 % from November 2015. However, this is equal to the increase planned for most public employees

⁽³⁰⁾ Data are sourced from the Decade of Roma Inclusion Secretariat Foundation, Roma Inclusion Index 2015. In September 2014, the Commission launched infringement proceedings against the Czech Republic concerning the discrimination of Roma children in education, in breach of Directive 2000/43/EC on Racial Equality.

⁽³¹⁾ European Union Agency for Fundamental Rights (2014), 'Roma survey — Data in Focus: Education: the situation of Roma in 11 EU Member States' (http://fra.europa.eu/sites/default/files/fra-2014_roma-survey_education_tk0113748enc.pdf).

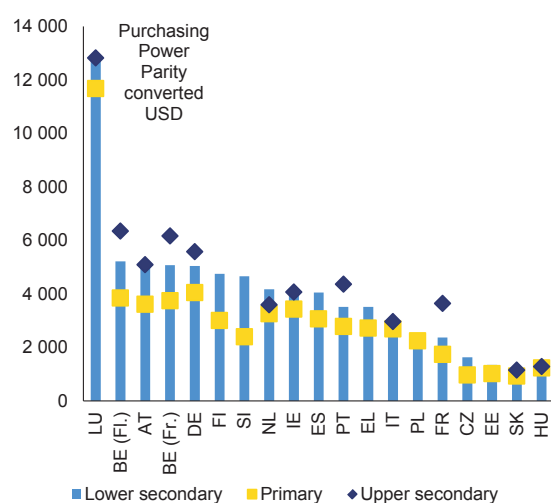
⁽³²⁾ The ratio of primary and lower secondary teachers' salaries to the earnings of full-time workers with similar educational attainment are the lowest among OECD and partner countries. The country is among those with the highest rates of teachers above 50 years in upper-secondary education. See OECD at a Glance 2015 (http://www.keepeek.com/Digital-Asset-Management/oecd/education/education-at-a-glance-2015_eag-2015-en#page4).

⁽³³⁾ OECD, 'TALIS 2013 Results: An International Perspective on Teaching and Learning', OECD Publishing (<http://www.oecd.org/edu/school/talis.htm>).

and below those in some other sectors, such as health. Despite this increase, the attractiveness of the profession may remain low compared to those requiring equivalent levels of qualifications. There are no long-term commitments to increase teachers' remuneration at this stage.

higher education institutions in order to use more output indicators linked to quality and labour market relevance, which would also increase efficiency in the use of resources. If sufficiently recognised by employers, future profession-oriented programmes are likely to contribute to improving the efficiency of the system and reducing the drop-out rate.

Graph 2.3.7: **Salary cost of teacher per student by level of education (2014)**



Source: OECD Education at a Glance 2015

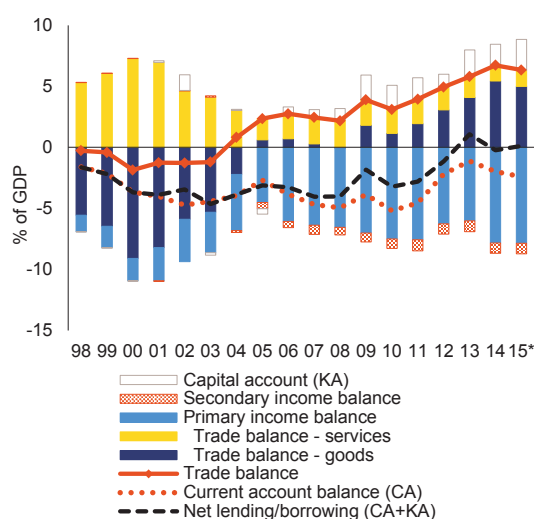
The level of public expenditure on tertiary education as a percentage of GDP is among the lowest in the EU. Expenditure in 2013 amounted to 0.6 % of GDP, excluding R&D. The tertiary education attainment rate stood at 28.2 % in 2014, compared with an EU average of 37.9 %. The proportion of students in profession-oriented bachelor programmes is small and getting smaller. Less than half of the bachelor studies started in 2012 are expected to be successfully completed. This delays an increase in the attainment rate and gives rise to losses in resources. The long-awaited higher education reform was adopted by the Chamber of Deputies in January 2016, after long consultations with higher education institutions. The main objectives of this reform are to raise the standard of accreditation — notably by setting up an independent accreditation authority and enabling institutional accreditation — and internal quality assurance, and to support the diversification of programmes offered, with a view to increasing profession-oriented programmes. Reform of the funding system for higher education is still to be adopted. The Czech authorities are working to improve the quality-based funding of

2.4. COMPETITIVENESS

External competitiveness

Over the last decade, the Czech Republic has recorded a trade balance surplus and a primary income balance deficit. This reflects the structure of the Czech exporting sector, with foreign-owned firms repatriating the profits of their Czech-based units. This situation gives rise to a negative net international investment position. As discussed in the 2015 Alert Mechanism Report, this situation requires sustained trade surpluses in order to finance the primary income deficit and safeguard external sustainability. It is, therefore, important for the Czech Republic to maintain competitiveness. In this respect, there have been positive developments in recent years, with the trade balance on a generally rising trend, mainly driven by exports of goods (Graph 2.4.1). In contrast, the balance of the current account fell slightly in 2014, mainly due to higher primary income outflows, a trend that is expected to have continued in 2015.

Graph 2.4.1: Breakdown of external position (current and capital accounts)



Source: Eurostat (national account data)

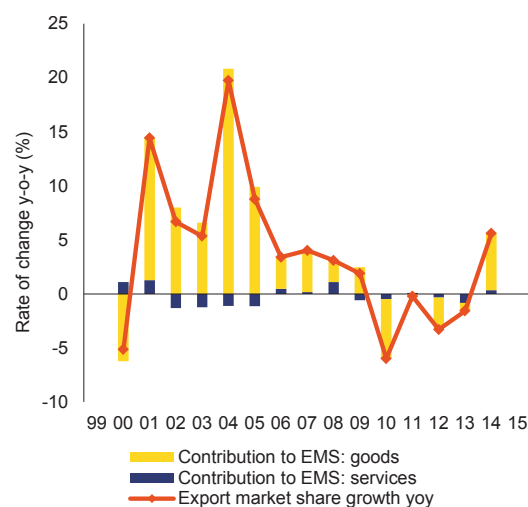
The Czech Republic has a high proportion of high-tech products in its exports and is highly integrated into global supply chains. Exports from the Czech Republic have one of the highest foreign value-added contents of among Member States ⁽³⁴⁾. This reflects the high weight of foreign-

⁽³⁴⁾ See OECD (2013), 'Interconnected Economies: Benefiting from Global Value Chains' (http://www.oecd-ilibrary.org/science-and-technology/interconnected-economies_9789264189560-en).

owned exporting firms in the manufacturing sector, which tend to import their intermediate inputs. In contrast, intermediate goods produced by Czech firms are not heavily used as inputs in international production.

Recent indicators point to competitiveness gains. An indicative measure of a country's competitive position is its ability to participate in the expansion of world trade. Graph 2.4.2 shows changes in the Czech Republic's export market share since 2000. Significant gains in the pre-crisis period have been somewhat offset by losses during the four years since 2010, in line with the experience of a majority of Member States. There was, however, a large gain in market share in 2014 driven by exports of goods and, to a lesser extent, by services.

Graph 2.4.2: Export market share (EMS) breakdown



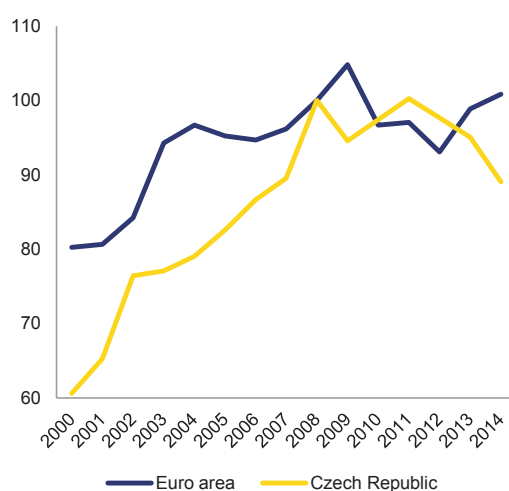
Source: Eurostat

Recent positive developments in price competitiveness are partly explained by exchange rate movements. Graph 2.4.3 shows the real effective exchange rates of the Czech Republic and the euro area since 2000 (based on 2008 levels) ⁽³⁵⁾. Reflecting the economic convergence process, prior to 2008, the Czech Republic's real effective exchange rate appreciated

⁽³⁵⁾ The effective exchange rate is an index that shows developments in a currency's strength relative to the currencies of trading partners, on a trade-weighted basis.

more strongly than that of the euro area. This probably contributed to the smaller gains in export market share in the years immediately preceding the financial market crisis. In contrast, the Czech real effective exchange rate has on the whole depreciated since 2008. In particular, there was a sharp depreciation in 2013-2014, driven initially by the adoption of an exchange rate floor vis-à-vis the euro by the Czech National Bank in late 2013 and, subsequently, by the depreciation of the euro against the US dollar and other major currencies in 2014. This movement in the Czech rate is likely to have contributed to the gains in export market share in 2014. If the Czech real effective exchange rate were to begin appreciating again in the coming years, this could reduce the price competitiveness of the Czech economy. At the same time, it would make it more affordable for domestic firms to invest in foreign-sourced, productivity-enhancing technology and to reduce input costs.

Graph 2.4.3: Real effective exchange rate (2008 = 100)

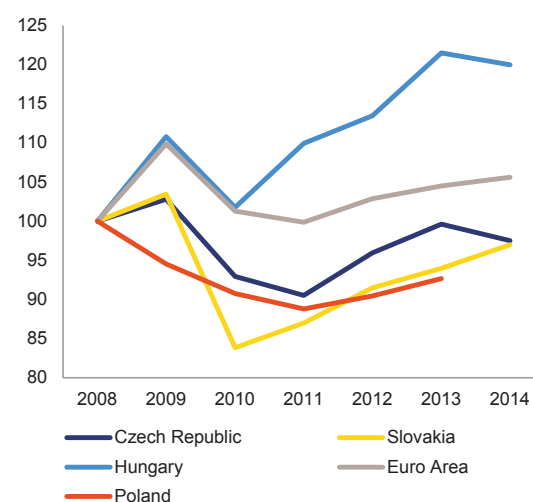


Source: European Commission

Moderate growth of unit labour costs has also contributed to improved price competitiveness, as discussed in Section 2.3. Graph 2.4.4 shows recent developments in nominal unit labour costs in the manufacturing sectors of the Czech Republic, other countries in the region (Slovakia, Poland and Hungary) and the euro area. These data show that wage developments in the export-oriented manufacturing sector of the Czech Republic, compared with the euro area, have been moderate since the start of the crisis. Furthermore,

developments have largely been in line with those of regional peers, with the exception of Hungary. The most recent development (2014) goes in the opposite direction of neighbouring Slovakia, which maintained an appreciating trend. According to the Commission 2016 winter forecast, the growth rate of unit labour costs is expected to accelerate to 1.4 % in 2016, reflecting higher wage growth amid tight labour market conditions. This is somewhat higher than projections for Poland (0.7 %) and Slovakia (1.1 %) but lower than for Hungary (2.7 %).

Graph 2.4.4: Unit labour costs in the manufacturing sector (2008 = 100)



(1) Data for Poland are not available for 2014

Source: European Commission

Competition and regulation in the services sector

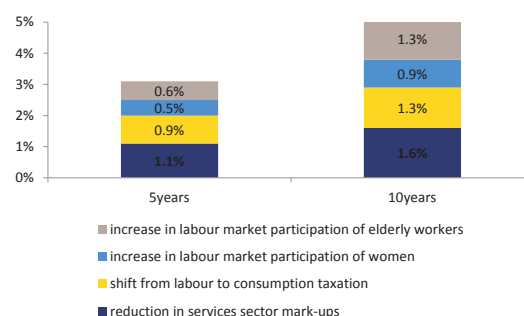
Despite indications of competitive business dynamics in Czech professional services, the level of regulatory restrictiveness is comparatively high. The rate of firm creation and destruction in the Czech Republic is not different from the one observed in the rest of the EU. The aggregate churn rate (defined as the sum of birth and death rates of firms expressed as a percentage of the total number of active firms) in professional services stood at 21.7 % in 2012, the latest year for which data are available, against an EU average of 20.0 %. However, there is some evidence of

regulatory restrictiveness ⁽³⁶⁾. This holds in particular for three out of four individual professional service sectors (architects, engineering and the legal professions), for which barriers to entry and conduct are indicated as higher than the EU average. In this context, the Czech Republic submitted an action plan to the Commission in January 2016, outlining concrete measures to improve access to regulated professions. However, the action plan concludes that there is limited need to reduce entry barriers for professional services in order to ease access. Empirical evidence shows a strong link between the level of regulation and mark-ups ⁽³⁷⁾. The OECD's product market regulation sectoral indicators for 2013 also report a comparatively high or average level of regulatory burden for electricity, aviation and road transport sectors.

Mark-ups for most services in the Czech Republic are around the EU average but lowering them could boost growth. While estimated mark-ups in rail and road transport, communication, energy and retail were broadly in line with EU averages in 2013, they slightly exceeded the EU averages in professional services and airline transport. Gross operating rates ⁽³⁸⁾ were relatively low compared with those in the EU, with the exception of accommodation and food services, and the information and communication sector. Empirical evidence suggests that reducing mark-ups would increase output and demand for all factors of production. Such a reduction in mark-ups could be achieved by lifting regulatory and administrative barriers, through antitrust policy and by enhancing business

models in natural monopolies. Assuming that mark-ups were substantially reduced, closing the gap with the average of the three best performing Member States by half, econometric-based results suggest that the country's GDP would be boosted by up to 1.1 % within 5 years (Graph 2.4.5) ⁽³⁹⁾.

Graph 2.4.5: **Contribution of selected reforms to total GDP after five and ten years**



(1) It is assumed that all Member States undertake reforms that close their structural gaps against the average of the three best performing EU Members by half.

Source: Janos Varga, Jan in 't Veld, "The potential growth impact of structural reforms in the EU: a benchmarking exercise".

Business environment

Administrative and regulatory barriers continue to weigh on the efficiency of the business environment in the Czech Republic. The 2015-2016 World Bank Doing Business Report points to several areas of particular concern, including dealing with construction permits and paying taxes. The quality of public administration also weighs on the efficiency of the business environment, as discussed below. As for paying taxes, both the Paying Taxes Report 2016 and the OECD's Tax Administration Report 2015 highlight the high costs associated with tax compliance (as discussed in Section 2.1). Such inefficiencies in the business environment increase the costs associated with running a business and create disincentives for the creation of new businesses, thus weighing on private-sector investment.

⁽³⁶⁾ The overall assessment indicator stood at 2.7 in 2015, slightly above the EU average of 2.3. (<http://ec.europa.eu/DocsRoom/documents/13328/attachments/1/translations/en/renditions/native>).

⁽³⁷⁾ Mark-ups are defined as a difference between the cost and the selling price of a good or service. Mark-ups in the professional services and airline transport were estimated at 18 % vs. 16.6 % of EU average and 11 % vs. 8.6 % of EU average respectively. See:

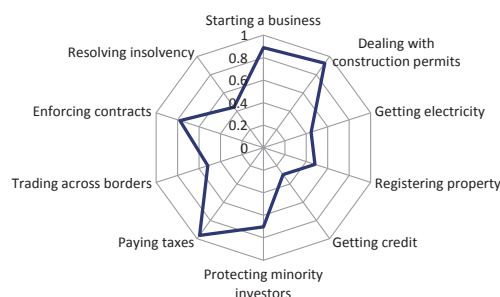
Anna Thum-Thysen, Erik Canton, 'Estimation of service sector mark-ups determined by structural reform indicators' (http://ec.europa.eu/economy_finance/publications/economic_paper/2015/ecp547_en.htm); and

Janos Varga, Jan in 't Veld, 'The potential growth impact of structural reforms in the EU. A benchmarking exercise' (http://ec.europa.eu/economy_finance/publications/economic_paper/2014/ecp541_en.htm).

⁽³⁸⁾ The gross operating rate is defined as the ratio of gross operating surplus to turnover and is used as an additional indicator for profitability.

⁽³⁹⁾ See reference to Janos Varga, Jan in 't Veld (above). The simulation in this paper consists of a reduction of half the difference between mark-ups in the Czech Republic and the average of the three best performers in the sample of EU countries.

Graph 2.4.6: **Selected indicators from the World Bank Doing Business Report (2015-2016)**



(1) For each indicator, the Czech Republic is ranked against other EU Member States (0 = best performer; 1 = worst performer).

Source: World Bank, European Commission

The Czech Republic is making efforts to reduce administrative burdens on businesses and some progress has been achieved. In particular, following implementation of the Business Corporations Act, the Czech Republic has made it easier to start a business by substantially reducing the minimum capital and paid-in capital requirements. Access to credit has been improved by the adoption of a new legal regime on secured transactions that allows the registration of receivables at the collateral registry and permits out-of-court enforcement of collateral. Enforcing contracts was also made easier by amending the civil procedures code and modifying the monetary jurisdiction of courts⁴⁰. Furthermore, the government's International Competitiveness Strategy has identified 78 measures that would contribute to a reduction of administrative burdens. These includes measures in areas such as the computerisation of public administration, the digitisation of forms, and efforts to share information between government agencies in order to avoid duplication. So far, 60 of these 78 measures have been implemented. A further assessment of the administrative burden on businesses is planned to be carried out in 2016. Operational programmes co-funded from the European Structural and Investment Funds (ESIF) in the new programming period (2014-2020) will include increased funding to support improvements in the business environment, such as providing funding to set up new financial instruments for businesses in early (seed) phases of

their development. As noted in Section 2.5, there is currently a lack of availability of seed and venture capital in the Czech Republic.

The low availability of quality on-line public services acts as a barrier to improving the efficiency of the business environment. The Czech Republic has one of the lowest shares of e-government users in the EU. In 2015, only 12 % of internet users sent forms to the public administration online, compared with an EU average of 32 %⁽⁴¹⁾. The low use of online public services reflects deficiencies in the supply of such services⁽⁴²⁾. For instance, in the Czech Republic, on average only 70 % of the steps in a standard interaction with the public administration can be performed entirely online, compared with an EU average of 81 %. Furthermore, online services do not take full advantage of technological possibilities to improve the user experience. As an example, the Czech Republic receives a low score (29/100 compared with an EU average of 49) for an indicator of the pre-filling of forms with information about the user that is already known to the public administration; this puts the level of sophistication of its services among the lowest in the EU. There are significant allocations envisaged under operational programmes co-funded from the ESI funds to finance the development of e-government services.

Public administration

A number of indicators point to significant weaknesses in public administration in the Czech Republic. The World Economic Forum's 2015 Global Competitiveness Report highlights inefficient government bureaucracy and corruption as the most problematic factors for doing business. The problem of corruption is also highlighted in the World Bank's 2015 Worldwide Governance Indicators. Public procurement remains a particular concern (as discussed below). According to the most recent European Commission Business Attitudes Towards Corruption Report (2015),

⁽⁴¹⁾ Digital Economy and Society Index 2016 (ec.europa.eu/digital-agenda/desi), Digital Agenda Scoreboard (ec.europa.eu/digital-agenda/digital-agenda-scoreboard).

⁽⁴²⁾ While it is possible that demand-side factors also play a role, digital skills and the level of internet connectivity in the Czech Republic are in line with the EU average: (<http://ec.europa.eu/digital-agenda/desi>).

⁴⁰ 2015-2016 World Bank Doing Business Report.

which reports on the level of corruption perceived and experienced by businesses operating in Member States, 41 % of businesses that had recently participated in a public tender reported that corruption had prevented them from winning the tender. At the same time, perceptions of the level of corruption in the public service have eased in recent years, with the Czech Republic moving up 16 places in Transparency International's Perceptions of Corruption Index in the last two years (to reach 37th place in 2015).

The Civil Service Act entered into force on 1 January 2015, followed by its implementing acts in July 2015. The acts provide a legal framework for the civil service at the national level based on four key elements: core values; stability of public administration; transparent recruitment; and a fair and just remuneration. They represent a major step forward, in line with the commitment set out by the Czech Republic in the Partnership Agreement, which covers support from European Structural and Investment Funds. The process of making the Czech public administration more professional and transparent is, therefore, ongoing and the performance of the Czech national authorities in effectively implementing the Civil Service Act will need to be monitored in the coming years.

Some progress has been made in adopting the legislative and non-legislative measures contained in the 2015 anti-corruption plan. This plan forms part of the government's anti-corruption strategy for the years 2015 to 2017, which was approved by the government in December 2014. An Anti-Corruption Council was set up in July 2014 as an advisory body to the government, with representation by stakeholders. The updated anti-corruption plan includes a package of legislative and non-legislative measures aimed at improving the efficiency, independence and transparency of public administration. Progress can be seen with the adoption of the Contract Register Act, for example, which will bring more transparency to public procurement and the management of public assets (see below). There is also evidence of an increased effort to prosecute cases of corruption, with an increase in the number of convictions for bribery over the period 2011-2013 (from 64 to 91)

(⁴³). At the same time, some of the measures are difficult to enforce and have limited impact. For example, the mechanism for enforcement in the Act on conflict of interest is not effective as the rules — often concerning high level public officials — are enforced by local authorities that may be hesitant to impose sanctions. Some important pieces of legislation have not yet been adopted, including an amendment to the act on conflict of interest and a new act regulating the financing of political parties (⁴⁴). Moreover, the preparation of a new act on the management and control of public finances and a law governing the appointment of members of supervisory boards of state-controlled enterprises have been slowed down, while work on a thorough system of protection for whistle-blowers is still at a preliminary stage. The 2015-2017 Strategy also referred to the need to strengthen transparency in the legislative process in order to minimise the scope for hidden lobbying. This call remains unaddressed. Overall, although the government has set up a dedicated structure for the development of anti-corruption policies, a number of planned measures remain unimplemented, are repeatedly postponed to the next action plan and the enforcement and impact of some of the adopted measures is rather limited.

Public procurement

Public procurement in the Czech Republic remains out of line with EU best practice, partly due to a lack of appropriate training of procurement practitioners and insufficient emphasis on quality criteria when awarding contracts. This is illustrated by the fact that Czech contracting authorities award 19 % of contracts by negotiated procedure without publishing a call for tender, compared with a best practice EU median value of 5 % (Graph 2.4.7). In 2015, the Czech

(⁴³) European Commission, collection of official data on corruption offences, see: <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=21215&no=2>).

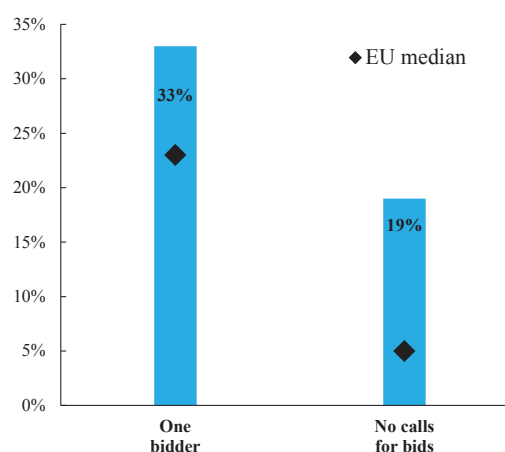
(⁴⁴) The act on the conflict of interest, currently in the Chamber of Deputies, will introduce a new centralised register of declarations and a user-friendly online platform. The register will be managed by the Ministry of Interior. The act regulating the financing of political parties is currently also in the Chamber of Deputies. A new office is planned to be set up to oversee the funding of political parties and potentially to impose penalties. It can also set limits for campaign spending. This act is based on recommendations from the Group of States Against Corruption (GRECO).

Republic was among the EU Member States making the highest use of such procedures, in contrast with the performance of regional peers such as Poland, where the use of negotiated procedures declined from 17 % in 2009 to 5 % in 2015. Furthermore, the Czech Republic experienced a significant drop in interest of companies in public contracts. In 2015, 33 % of public contracts received only one bid, compared with 19 % the year before. Over 85 % of purchasing is awarded solely on the basis of the lowest price criterion ⁽⁴⁵⁾, up from 57 % in 2009. These shortcomings are acknowledged by the Czech authorities ⁽⁴⁶⁾ but have not been addressed: no central authority conducts large-scale support and training, which would be needed in order to change deep-rooted procurement practices. On the other hand, positive steps to promote a sufficient level of information about public procurement include the Info-forum platform, containing specific support in the form of questions and answers ⁽⁴⁷⁾.

The Contract Register Act, a key anti-corruption law, was approved by the Parliament in November 2015 ⁽⁴⁸⁾. The contract register will oblige contracting parties to publish all public contracts, with the penalty that contracts will otherwise become invalid. Evidence from Slovakia ⁽⁴⁹⁾ — which adopted a central contract register in 2011 — points to increased media attention and public interest when such registers are put into operation. The approved version of the Czech register includes some exceptions for certain central state institutions, small municipalities and publicly traded state-owned enterprises. The register should be fully implemented in mid-2017. Furthermore, the government agreed to establish a working group for transparent public procurement.

Aggregated procurement in the Czech Republic is seldom used. Czech public buyers are not benefiting from economies of scale and suffer from an unnecessary administrative burden. Steps have been taken to address this issue, such as the adoption of common principles for centralised procurement ⁽⁵⁰⁾ and the introduction of a centralised system by the Ministry of Finance, but such centralised systems still need to be fully rolled out to the public sector. Furthermore, the plans cover only aggregation by central government, not by municipalities or sectoral bodies such as hospitals and schools.

Graph 2.4.7: **Performance indicators of public procurement in the Czech Republic (2015)**



Source: EU Single Market Scoreboard 2015, see: (http://ec.europa.eu/internal_market/scoreboard/)

A forthcoming amendment to the Public Procurement Act — transposing the relevant EU Procurement Directive 2014/24/EU — should address existing bottlenecks. The act is currently being discussed in the Chamber of Deputies and should lower the administrative burden on firms and reduce the time necessary to participate in public procurement. Furthermore, an act on management and control of public finances, which could boost responsibility for public procurement procedures, is also under preparation. As regards electronic procurement, the national electronic tool, a state-owned procurement platform intended to facilitate e-procurement procedures, was recently launched and the e-procurement strategy 2016-2020 has been

⁽⁴⁵⁾ The poor score may also be an indication of audit procedures, where fear of review and control mechanisms and/or complaints from unsuccessful tenderers may contribute to the low usage of qualitative criteria.

⁽⁴⁶⁾ Výroční zpráva o stavu veřejných zakázek za rok 2014, Ministerstvo pro místní rozvoj, 2015, p. 34, p. 55-59.

⁽⁴⁷⁾ Ministry for Regional Development (<http://www.portal-vz.cz/cs/Spoluprace-a-vymena-informaci/Info-forum>).

⁽⁴⁸⁾ Zákon č. 340/2015 Sb.

⁽⁴⁹⁾ Transparency International Slovakia, 'Not in force until published online', 2015.

⁽⁵⁰⁾ Usnesení vlády č. 24/2016.

adopted ⁽⁵¹⁾. Usage of this platform is currently on a voluntary basis so the benefits cannot yet be fully exploited.

⁽⁵¹⁾ Government Resolution Nr. 25/2016.

2.5. LONG-TERM GROWTH DRIVERS AND RESOURCE EFFICIENCY

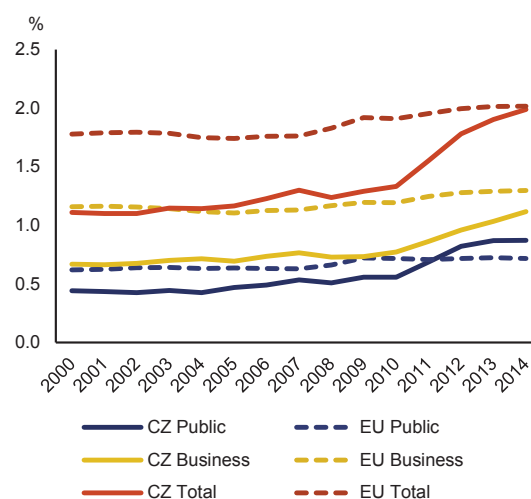
Research & Development

R&D intensity has significantly increased in recent years but there are concerns over the efficiency of public R&D spending. Total R&D intensity reached 2.0 % of GDP in 2014 (Graph 2.5.1), equal to the EU average. Based on the annual average growth rate between 2007 and 2014, the Commission projects total R&D intensity to reach 2.9 % of GDP in 2020 ⁽⁵²⁾, only slightly below the EU target of 3.0 %. Public R&D intensity has increased strongly since 2010, with a significant contribution from EU funds, but has stagnated at 0.9 % in the last two years. The Europe 2020 target of increasing public R&D expenditure is set at 1 % of GDP for the Czech Republic and, despite the recent stagnation, this target is still achievable. At the same time, there are concerns over the sustainability of recent investments in R&D infrastructure. For instance, some infrastructure projects do not appear to be part of a well-designed strategy that ensures an effective R&D ecosystem. There are risks that a number of these projects will not comply with the rules of sustainability, which could mean that they become ineligible for EU funding ⁽⁵³⁾. The sustainability of increasing R&D intensity will depend on the development and maintenance of a solid governance framework in the research and innovation system.

⁽⁵²⁾ See "Research and Innovation performance in the EU: Innovation Union progress at country level 2014" http://ec.europa.eu/research/innovation-union/pdf/state-of-the-union/2014/iuc_progress_report_2014.pdf.

⁽⁵³⁾ Findings of the Supreme Audit office on this topic from January 2016, <http://www.nku.cz/cz/media/vybudovani-padesatky-vedeckych-center-stalo-36-miliard-korun--jen-v-prvnich-peti-letech-fungovani-prijdou-stat-na-dalsich-24-a-pul-miliardy-id8059/>.

Graph 2.5.1: Trend in total, business and public R&D intensity (2000-2014)

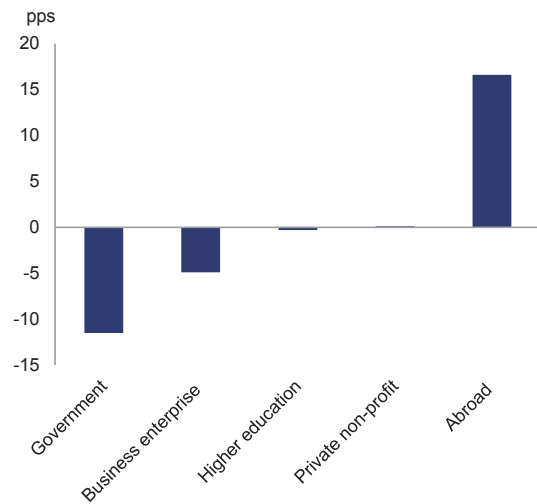


Source: Eurostat

The increase in R&D expenditure between 2010 and 2014 has largely been funded by foreign-owned firms and EU funds. Graph 2.5.2 shows the change in the proportion of funding of domestic R&D expenditure by source of funding. All domestic sources of funding have either decreased or maintained their share of funding of R&D expenditure over this period. However, the rate of funding sourced from abroad, which constitutes funding from foreign-owned firms and EU funds, has significantly increased (+16.6 pps.). Furthermore, the proportion of business enterprise expenditure on R&D by foreign-owned firms stood at 55 % in 2013 and was concentrated in the automotive industry ⁽⁵⁴⁾. Enhancing the ability of domestically owned enterprises to benefit from technological spillovers from foreign owned companies remains a challenge for the national research and innovation system. As noted in Section 2.4, domestically-owned enterprises are currently not well integrated into global value chains.

⁽⁵⁴⁾ According to Pavlínek, Ženka and Žižalová (2010), 80.8 % of the overall increase in R&D expenditures between 1995 and 2007 can be attributed to Škoda and four of its first-tier suppliers.

Graph 2.5.2: **Gross domestic expenditure on R&D by source of funding — change in proportion (2010-2014)**



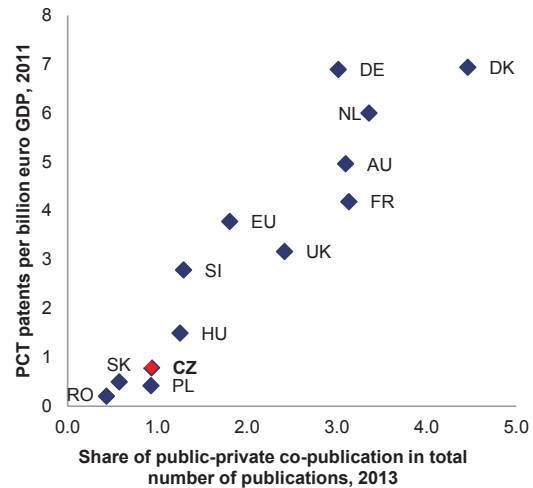
Source: Eurostat

Despite the significant increase in investment in recent years, outcomes from the R&D system remain weak. While the Innovation Union Scoreboard 2015 ranks the Czech Republic as a moderate innovator, the assessment points to a number of weaknesses. These concern the capacity to generate intellectual property rights, the international competitiveness of the science base, and access to finance (venture capital in particular)⁽⁵⁵⁾. The level of public-private co-publications remains low compared with the EU average, pointing to a low level of synergies between public and private R&D. A relatively low capacity for new product innovation, approximated by the number of patents filed⁽⁵⁶⁾, also points to weak outcomes from the R&D system (Graph 2.5.3).

⁽⁵⁵⁾ In November 2015, the Czech Government approved the re-launch of a plan to establish the National Innovation Fund. This will be a seed fund to support start-ups and the commercialisation of R&D. It is expected to start operating in 2017.

⁽⁵⁶⁾ This indicator measures the number of patent applications filed under the PCT, at international phase, designating the European Patent Office (EPO). Patent counts are based on the priority date and the inventor's country of origin.

Graph 2.5.3: **Proportion of public-private publications vs number of patents (selected EU Member States)**



Source: European Commission, Innovation Scoreboard, 2015

The Czech research system is currently in the process of implementing long-delayed but substantial governance reforms, particularly with respect to evaluation and funding. The existing funding mechanism is fragmented, with insufficient coordination between relevant bodies and an unclear division of responsibilities and priorities. A comprehensive evaluation framework, with links to funding, is being developed based on the IPN Metodika project⁽⁵⁷⁾. As outlined in the National Strategy for R&D (2016-2020), adopted by the Governmental Council for R&D in November 2015, the envisaged system should bring the evaluation framework closer to international best practice, including factors such as the level of international cooperation and the relevance of research. The timeline for introducing the reformed evaluation and funding systems remains uncertain, however, and it will not occur before 2017. The European Structural and Investment Funds will finance a number of major projects to improve the overall environment for R&D, including the new system of evaluation and financing of research institutions and projects aimed at the strategic management of R&D institutions.

⁽⁵⁷⁾ See: <http://metodika.reformy-msmt.cz/en/>

There have been limited efforts to increase links between academia and the business community.

These links are weakened by an evaluation framework for public research institutions that does not take into account the level of cooperation with business and focuses only on research excellence. However, there are a number of initiatives to encourage such links, such as support from the European Structural and Investment Funds and from the competence centres programme, which are financed from domestic sources ⁽⁵⁸⁾. The Strategy for R&D Information Systems, adopted by the Government in January 2016, is a first step towards evaluating cooperation between academia and enterprises and to target funding ⁽⁵⁹⁾. Such initiatives are expected to have a major impact on the research and innovation system in the Czech Republic.

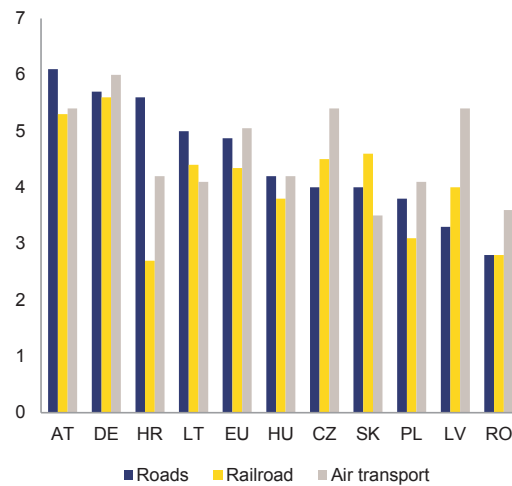
Transport infrastructure

Improving the quality of transport infrastructure, in particular the road and rail networks, remains a challenge. The Czech Republic has one of the least dense motorway networks in the EU (9.5 km per 1 000 km² against an EU average of 21.5 km in 2012, although recent investments are likely to have increased this figure). The low quality of the network is reflected in the World Economic Forum's quality of infrastructure index (2015), which is based on users' level of satisfaction with transport infrastructure (Graph 2.5.4). The indicator for the quality of road infrastructure is significantly below the EU average (4.0 for the Czech Republic vs an EU average of 4.9), although there has been an improvement since 2014, when it stood at 3.7. The density of the rail network is very high (120 km per 1 000 km² against 55.9 km in the EU in 2013). However, the network requires substantial modernisation, with just 34 % of lines electrified compared with 54 % in the EU overall in 2013. Furthermore, there is a lack of high-speed railway connections and poor cross-border connections.

⁽⁵⁸⁾ Running for the period 2012-2019, the Competence Centres Programme aims to support the establishment and operation of centres for research, development and innovation in fields that show potential for innovation and application.

⁽⁵⁹⁾ Strategy for R&D Information Systems is available at: <http://www.vyzkum.cz/FrontClanek.aspx?idsekce=766910>

Graph 2.5.4: Quality of infrastructure index (2015)



(1) The selected indicators are the indexes of satisfaction with respect to road, rail and air transport infrastructure quality, which are part of the World Economic Forum Global Competitiveness Report (1 = extremely underdeveloped / among the worst in the world; 7 = extensive and efficient / among the best in the world) (2014-15 weighted average). The results are based on the Executive Opinion Survey.

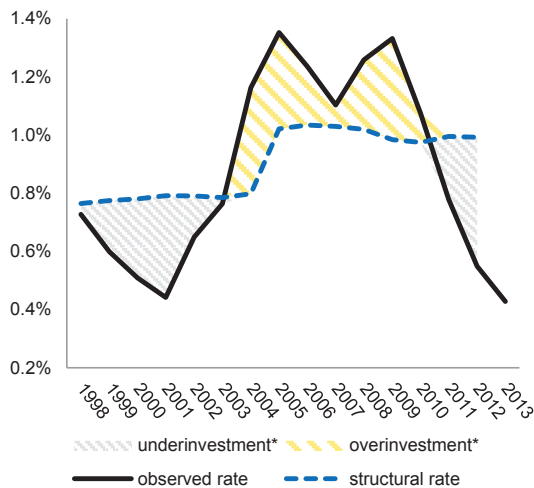
Source: World Economic Forum

Investment in transport has been inadequate in recent years, although there was a pick-up in 2014 and this is expected to have advanced further in 2015. Public investment in transport infrastructure fell substantially between 2008 and 2013, from EUR 3.3 billion in 2008 to EUR 2.0 billion in 2013, and stood at 0.6 % of GDP in 2013 ⁽⁶⁰⁾. Compared with the EU average of 0.8 % of GDP, this placed the Czech Republic among the Member States with the lowest level of investment in transport infrastructure. In road transport, for example, this has created a significant investment gap vis-à-vis a model-based estimate of investment needs (Graph 2.5.5). While more up-to-date figures on transport infrastructure investment are not currently available, public investment increased considerably in 2014 (17 % in nominal terms) and a large proportion of this is probably related to investment in transport infrastructure. According to the Commission 2016 winter forecast, public investment is expected to have increased further by 36 % in 2015, as confirmed by the effort on the part of the Czech

⁽⁶⁰⁾ These data refer to investment and maintenance spending on transport infrastructures (road, rail, sea ports and airports) as % of GDP.

authorities to increase their drawing of EU funds available under the previous programming period, which represented the main source of funding. At the same time, there are a number of bottlenecks that can reduce the absorption capacity on transport infrastructure projects. As discussed in the 2015 country report, these include lengthy procedures for issuing building and land-use permits and delays related to complaint procedures at the anti-monopoly office. Inefficiencies in public procurement procedures can also give rise to delays in public investment projects (see Section 2.4).

Graph 2.5.5: Road investment (% of GDP)



(1) Overinvestment and underinvestment correspond to the difference between the observed investment rate and a model predicted rate, and which accounts for sectoral and macroeconomic factors.

Source: European Commission, updated data of 'Infrastructure in the EU: Developments and impact on growth', European Economy, Occasional Papers, No 203.

Energy efficiency and renewables

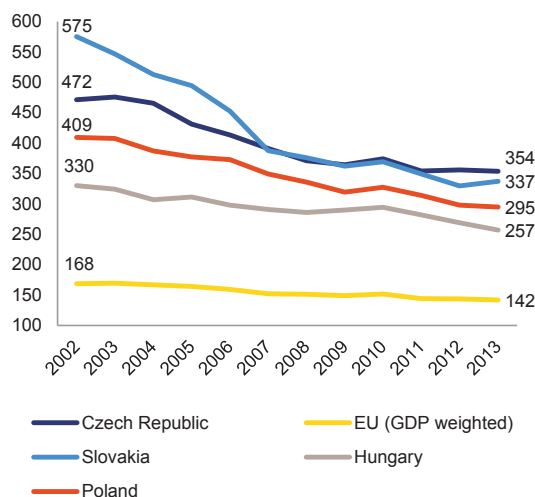
The energy and carbon intensity of the Czech economy remains high, despite a fall in recent decades. In 2013, the Czech economy used 2.5 times more energy ⁽⁶¹⁾ to produce a unit of output than the EU average and the country also stands out in comparison with neighbouring countries

⁽⁶¹⁾ In the following analysis, energy intensity is used as proxy for energy efficiency, under some caveats. Energy intensity is defined as the amount of energy needed to produce one unit of GDP. This measure smooths the effect of economic slowdowns (which automatically lead to lower energy consumption) and allows a decoupling of energy consumption and output growth.

(Graph 2.5.6) ⁽⁶²⁾. This is mainly due to the significant role of industry in the economy (manufacturing accounted for around 25 % of total value added in 2014 compared with around 15 % in the EU). In aggregate terms, primary energy consumption in the Czech Republic reached 38.6 Mtoe and final energy consumption was at 23 Mtoe in 2014 against the 2020 targets of 39.6 Mtoe and 25.3 Mtoe, respectively. The trend in the period 2005-2013 was declining and should it persist up to 2020 the country would meet its indicative national targets for energy efficiency. However, there are indications from the period 2014-2015 that energy savings are not progressing in line with the National Energy Efficiency Action Plan. Therefore, the fast and efficient roll out of projects aimed at improving energy efficiency — including those co-financed by EU funds — is essential for the Czech Republic to meet its 2020 energy efficiency target. On the other hand, the national greenhouse gas emissions target is expected to be achieved by a wide margin (an increase of 9 % in 2020 compared with 2005). However, the economy remains very carbon intensive (825 tonnes of CO₂ equivalent/ EUR million in 2013 compared to the EU average 328 CO₂ equivalent/ EUR million), with a predominance of solid fuels in the energy mix (38.9 % of gross domestic fuel consumption in 2013 compared with the EU average of 17.2 %). There is, therefore, scope to reduce energy consumption and increase competitiveness through more private investment in technologies and infrastructure that are geared towards energy efficiency. Sectoral developments in energy intensity are discussed in Box 2.5.1.

⁽⁶²⁾ 354 kilograms of oil equivalent (kgoe) / EUR 1000 compared with an EU average of 142 kgoe / EUR 1000 in 2013 (Eurostat).

Graph 2.5.6: **Gross energy consumption divided by GDP (kilogram of oil equivalent per EUR 1000 of output)**



Source: European Commission

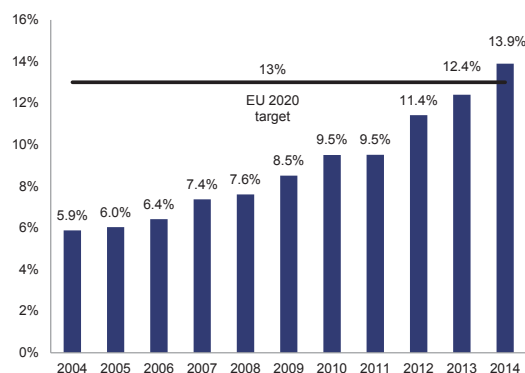
The Czech Republic is taking advantage of EU programmes to boost investment in energy-efficient infrastructure. The allocation of EU funds to improve energy efficiency in the current programming period is EUR 870 million higher than in the previous programming period, with a total budget of around EUR 2 billion (1.4 % of GDP) for the period 2014-2020. There are also other public projects in the pipeline for which co-financing by the European Investment Bank (EIB) and the Connecting Europe facility (CEF) are being considered. In the past, public programmes aimed at increasing energy efficiency were fragmented and highly cost-inefficient ⁽⁶³⁾.

The proportion of renewables in the energy mix has been increasing and this is complemented by ambitious domestic targets. The proportion of energy from renewables in gross final consumption was constantly increasing, from 5.9 % in 2004 to 13.9 % in 2014. The Czech Republic is on track to reach its 2020 renewable energy target of 13 % in gross final consumption. No explicit renewables target is set for 2030 in the State Energy Strategy

⁽⁶³⁾ For example, the 'Green savings' programme preceding the existing one saved 6.8 petajoules of energy with costs of around CZK 20 billion (EUR 725 million; 0.5 % GDP). Hence, every kWh saved cost EUR 0.39 of public funds alone. Achieving the required savings (under the Energy Efficiency Directive) with the previously achieved low savings per euro spent would require CZK 560 billion (EUR 20.3 billion; 13.6 % of GDP) of public funds alone.

approved by the government in May 2015, although indicative targets and options of a diversified energy mix of primary energy sources are specified. The share of renewables in the consumption of primary energy sources is projected to range between 17 % and 22 % by 2040. The State Energy Strategy foresees a gradual reduction in the intensity of coal in electricity generation and a substitution primarily by energy savings and, secondarily, by low-carbon energy sources (renewables and nuclear). The strategy also acknowledges that the targets on renewables warrant further investment in infrastructure and specifies future measures to this effect such as the revision of existing legislation, an update of the regulatory framework and the use of European Structural and Investments Fund. Regular monitoring by competent authorities of support schemes for renewable energy sources is essential in order to guarantee predictability for investors and the sustainability of public finances.

Graph 2.5.7: **Proportion of renewables in energy sources in the Czech Republic**



Source: European Commission

Incentives to achieve environmental objectives are low for some sectors of the economy. Progress in waste management is limited and further economic instruments are essential to reach the EU recycling target (50 %) by 2020. The landfilling rate was 56.5 % in 2013, which is still well above the EU average (24 %). The rate of tax on landfill is deemed too low to support the waste hierarchy ⁽⁶⁴⁾. The plans to abolish landfills in

⁽⁶⁴⁾ According to the 'Study on the use of economic instruments for waste prevention and management' a minimum rate of EUR 40 should be set gradually in place to start moving waste management up the waste hierarchy (<http://ec.europa.eu/environment/waste/use.htm>). The term

absence of an incineration tax from 2024 onwards are likely to boost the incineration of waste instead of recycling, hindering the achievement of the target for 2020. The Czech Republic is also one of the Member States suffering most from the impact of bad air quality, mainly because of high emissions of sulphur and dust. The number of premature deaths attributable to air pollution is over 1 500 nationally ⁽⁶⁵⁾. The ratio of environmental tax receipts to GDP has steadily declined in recent years, to 2.1 % in 2014. Furthermore, the existing air pollution tax does not generate additional incentives for abatement of pollution ⁽⁶⁶⁾.

EU funds

The absorption rate of EU funds in 2015 was much higher than in previous years. The absorption rate (including advance payments) in December 2015 for EU cohesion policy funds was around 89 % for the EU as a whole, with the Czech Republic slightly below average with 85 %. Since 2014, the Czech Republic has been monitored by the task force for better implementation, with the objective to accelerate spending of the remaining funds available in the past programming period. Slow absorption was mainly due to complex procedures, deficiencies in management and control systems, and weak administrative capacity of the bodies involved in project implementation.

Irregularities in managing EU funds are still common, such as in the areas of public procurement in health and IT. While some progress has been made in adopting measures contained in the national anti-corruption plan for 2015, several sector-specific measures included in the plan have not been followed with the deficiencies left unattended. On the other hand, the functioning of the audit authority is currently

considered to be reliable, even if shortcomings still remain in controls performed by managing authorities. This is illustrated by implementation error rates above the acceptable rate of 2 % for half of the operational programmes.

The challenge is to focus on result-oriented implementation during the new programming period and to avoid the loss of funds incurred in the previous period. Respecting the relevant legislative framework also remains important, especially given the past failures to correctly transpose the Environment Impact Assessment Directive into Czech legislation. There are, therefore, many EU co-funded projects with non-compliant environmental impact assessments. This situation has resulted in delays to infrastructure projects and poses a challenge also in terms of the eligibility of projects for EU funding, unless additional and updated assessments are carried out. In this respect, it is essential to apply a solution respecting EU law for the outdated assessments by the Czech authorities.

waste hierarchy refers to the cascading concept where preference is given to prevention followed by reuse, recycling before energy recovery and finally disposal activities such as landfilling and incineration without energy recovery.

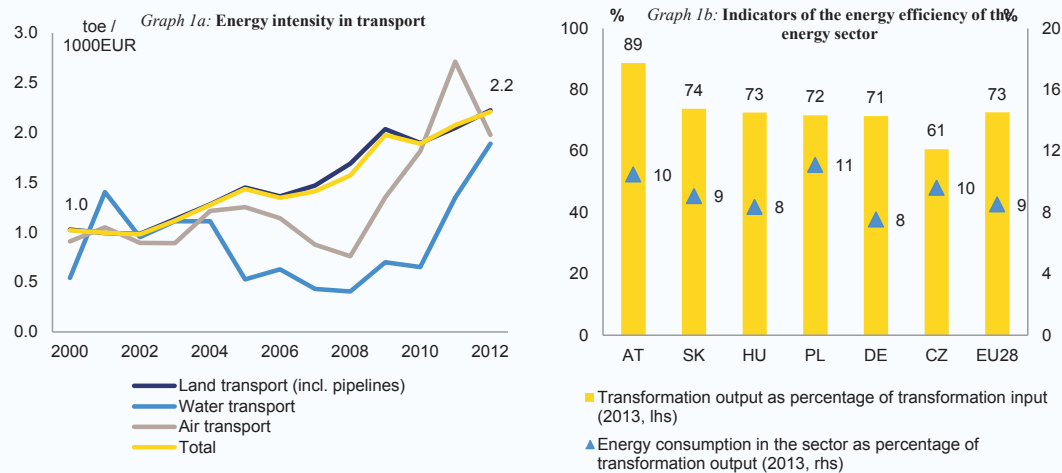
⁽⁶⁵⁾ According to data from the European Environment Agency, see: <http://www.eea.europa.eu/media/newsreleases/many-europeans-still-exposed-to-air-pollution-2015/premature-deaths-attributable-to-air-pollution>

⁽⁶⁶⁾ Study on Environmental Fiscal Reform (2014), see: http://ec.europa.eu/environment/integration/green_semester/pdf/EFR-Final%20Report.pdf

Box 2.5.1:

Sectoral developments in energy intensity in the Czech Republic

While overall energy intensity has been on a declining trend since 2000, developments have been uneven across sectors¹. A significant reduction in energy intensity (54 %) was recorded in industry², which between 2000 and 2013 accounted for 36 % of gross value added and 18 % of gross inland energy consumption in the economy. This development is partly a reflection of the high initial level and a sizeable reduction in energy consumption in sectors with the highest proportion of gross value added (Table below). Energy consumption of households (15 % of gross inland energy consumption in the economy) fell by 11.6 % between 2005 and 2013, bringing it below the EU average of gross consumption (18 %).



In contrast to industry and households, energy intensity in the transport sector (2 % of gross value added³ and 14 % of gross inland energy consumption in the economy) has been increasing, rising by some 120 % between 2000 and 2013 (Graph 1a). Rising energy intensity in transport is a result of a continuously declining trend in the gross value of this sector, with its energy consumption reaching a peak in 2008. It is important to note that part of the energy consumption of transport is due to the increasing number of private vehicles and cross-border transport (the Czech Republic had one of the highest contributions from this factor in the EU in 2013). These factors imply that the energy intensity indicator reflects the changes in energy efficiency in transport only to a limited extent.

Inefficiencies are identified in the energy sector (38 % of gross inland energy consumption) which recorded one of the biggest increases in the proportion of gross energy consumption of all Member States over the period 2000-2013 and where transformation losses are high. Transformation input increased more than transformation output with almost 40 % of energy input lost during the transformation, indicating a deterioration of the transformation process (Graph 1b). This can be partly explained by the country's heavy reliance on solid fuels in its energy mix (40 %

⁽¹⁾ Spooner, Magdalena (2016): Energy intensity and energy efficiency in the Czech Republic; Economic Briefs 7. February 2016. Brussels

⁽²⁾ For this sectoral analysis, industry includes mining and quarrying, construction and manufacturing (with the exception of the manufacture of coke and refined petroleum products) and repair and installation of machinery and equipment.

⁽³⁾ 2 % of gross value added reflects only those subsectors included in the analysis, i.e. branches H49-H51 (H52-53 are not included as the energy consumption of transport does not cover them).

(Continued on the next page)

Box (continued)

in 2012, one of the largest shares in the EU) and the low efficiency of solid-fuel power plants for which transformation losses accounted for almost 90 % of transformation input in 2012.

Table : Energy intensity and gross value added of industrial sectors				
	Energy intensity (EI) toe/1000 EUR	GVA share %	EI growth %	GVA share growth pp
	2013	2013	2000-2013	2000-2013
Metals	1,67	3%	22%	-6,0
Chemical and Petrochemical	0,65	4%	-47%	-1,3
Non-Metallic Minerals	0,63	4%	-21%	-2,1
Food and Tobacco	0,22	6%	-21%	-4,9
Textile and Leather	0,22	1%	-37%	-1,8
Paper, Pulp and Print	0,51	3%	-28%	0,1
Transport Equipment	0,06	20%	-61%	11,6
Machinery	0,06	30%	-60%	12,7
Wood and Wood Products	0,33	2%	103%	-0,7
Non-specified (Industry)	0,12	10%	-84%	3,0
<i>Total Manufacturing</i>	0,22	83%	-60%	10,6
Mining and Quarrying	0,10	2%	119%	-3,4
Construction	0,03	16%	-43%	-7,2
<i>Total Industry</i>	0,18	100%	-54%	0,0

ANNEX A

Overview Table

Commitments

Summary assessment ⁽⁶⁷⁾

2015 Country-specific recommendations (CSRs)	
<p>CSR 1: Achieve a fiscal adjustment of 0.5 % of GDP in 2016. Further improve the cost-effectiveness and governance of the healthcare sector.</p>	<p>The Czech Republic has made some progress in addressing CSR 1:</p> <p>Some progress has been made in improving the cost-effectiveness and governance of the healthcare sector. Several measures are currently at various stages of implementation. These include projects aimed at improving the efficiency of the reimbursement system in hospitals and the transformation of selected public hospitals into non-profit entities.</p>
<p>CSR 2: Fight tax evasion, simplify the tax system and implement the anti-corruption plan. Take measures to increase the transparency and efficiency of public procurement, in particular by establishing a central register of public contracts and strengthening guidance and supervision.</p>	<p>The Czech Republic has made some progress in addressing CSR 2:</p> <p>Some progress has been made in fighting tax evasion, with a particular focus on VAT. Starting in 2016, the VAT control statement was introduced while the evidence of electronic sales was adopted by the Chamber of Deputies in February 2016.</p> <p>No progress has been made in simplifying the tax system.</p> <p>Some progress has been made in implementing the anti-corruption plan. Acts on the conflict of interest and on regulating the financing of political parties are, as of February 2016, subject to discussion in the Parliament.</p> <p>Some progress has been made in increasing the transparency and efficiency of public procurement. A central register of public contracts has been set up, but guidance and supervision for public buyers have not been improved.</p>

⁽⁶⁷⁾ The following categories are used to assess progress in implementing the 2015 CSRs:

No progress: The Member State (MS) has neither announced nor adopted measures to address the CSR. This category also applies if the MS has commissioned a study group to evaluate possible measures.

Limited progress: The MS has announced some measures to address the CSR, but these appear insufficient and/or their adoption/implementation is at risk.

Some progress: The MS has announced or adopted measures to address the CSR. These are promising, but not all of them have been implemented and it is not certain that all will be.

Substantial progress: The MS has adopted measures, most of which have been implemented. They go a long way towards addressing the CSR.

Fully implemented: The MS has adopted and implemented measures that address the CSR appropriately.

<p>CSR 3: Reduce the high level of taxation levied on low-income earners, by shifting taxation to other areas. Further improve the availability of affordable childcare.</p>	<p>The Czech Republic has made limited progress in addressing CSR 3:</p> <p>Limited progress has been made in reducing the high level of taxation levied on low-income earners, by shifting taxation to other areas. A proposed amendment concerning tax credits for parents is likely to reduce the level of taxation. However, it does not directly target the low-income earners, as recommended.</p> <p>Some progress has been made in further improving the availability of affordable childcare. Under the Act on Child Groups, 61 groups had been registered by November 2015. The Education Act was amended in September 2015 introducing an obligatory year of pre-school education. The right to a place in kindergarten will be given to 4-year-old children from the 2017/2018 school year and later to 3-year-old children.</p>
<p>CSR4: Adopt the higher education reform. Ensure adequate training for teachers, support poorly performing schools and take measures to increase participation among disadvantaged children, including Roma.</p>	<p>The Czech Republic has made some progress in addressing CSR 4:</p> <p>Substantial progress has been made in adopting the higher education reform. The higher education reform was adopted by the Chamber of Deputies in January 2016.</p> <p>Limited progress has been made in ensuring adequate training for teachers, supporting poorly performing schools and taking measures to increase participation among disadvantaged children, including Roma, in mainstream education. The Long-Term Plan for Education 2015-2020 and the Action Plan for Inclusive Education 2016-2018 envisage support and standards for teachers. A new career system for teachers is being developed, although its implementation has been postponed.</p>

Europe 2020 (national targets and progress)	
<p>Employment:</p> <p>75 %</p>	<p>The employment rate continues to rise and reached 75.1 % in Q3 2015 (Eurostat).</p>
<p>R&D:</p> <p>1 % (only public expenditure)</p>	<p>Public R&D investment stalled at 0.9 % of GDP between 2013 and 2014 (Eurostat).</p>
<p>Greenhouse gas emissions:</p> <p>+ 9 % (compared with 2005 emissions, Emissions Trading target).</p>	<p>According to the latest national projections and taking into account existing measures, non-emissions trading system emissions will fall by 8% between 2005 and 2020. The target is, therefore, expected to be achieved by a margin of 17 percentage points.</p>
<p>Renewable energy target:</p> <p>13 %</p>	<p>With a renewable energy share of 13.9 % in 2014 (Eurostat), the Czech Republic is on track to meet its target for 2020.</p>
<p>Energy efficiency:</p> <p>The Czech Republic's 2020 energy efficiency target is 39.6 Mtoe expressed in primary energy consumption (25.3 Mtoe expressed in final energy consumption.)</p>	<p>The primary energy consumption in the Czech Republic reached 38.6 Mtoe and final energy consumption was at 23 Mtoe in 2014 (Eurostat). The trend in the period 2005-2013 was declining and should it persist up to 2020 the country would meet its indicative national targets for energy efficiency. However, there are indications from the period 2014-2015 that energy savings are not progressing in line with the National Energy Efficiency Action Plan.</p>
<p>Early school leaving:</p> <p>5.5 %</p>	<p>While early school leaving remains low — it was 5.5 % in 2014 (Eurostat) — it is particularly high among Roma (72 %), which calls for targeted measures.</p>
<p>Tertiary education:</p> <p>32 %</p>	<p>The tertiary attainment rate rose to 28.2 % in 2014 (Eurostat), reflecting a sharp increase over recent years (from 15.4 % in 2008) but still calling for efforts to ensure quality and labour market relevance.</p>
<p>Poverty/social exclusion:</p> <p>Reduction of 100 000 persons between 2008 and 2020.</p>	<p>The number of people at risk of poverty or social exclusion has fallen by 34 000 since 2008 (Eurostat), reaching 1 532 000 in 2014.</p>

ANNEX B

MIP scoreboard

Table B.1: **The MIP scoreboard for Czech Republic**

			Thresholds	2009	2010	2011	2012	2013	2014
External imbalances and competitiveness	Current account balance, (% of GDP)	3 year average	-4%/6%	-2.8	-2.6	-2.7	-2.4	-1.4	-0.5
	Net international investment position (% of GDP)		-35%	-44.0	-46.1	-45.3	-46.1	-41.5	-35.6
	Real effective exchange rate - 42 trading partners, HICP deflator	3 years % change	±5% & ±11%	13.6	12.0	-0.6	0.4	-3.1	-10.0
	Export market share - % of world exports	5 years % change	-6%	27.0	11.2	7.8	-4.0	-8.9	-5.0
	Nominal unit labour cost index (2010=100)	3 years % change	9% & 12%	9.1	6.2	3.2	3.6	4.2	3.8
Internal imbalances	Deflated house prices (% y-o-y change)		6%	-4.7	-2.3	-1.6	-3.6	-0.7	1.8
	Private sector credit flow as % of GDP, consolidated		14%	0.7	2.7	2.1	2.9	4.4	1.8
	Private sector debt as % of GDP, consolidated		133%	66.0	68.1	68.6	71.0	74.1	72.7
	General government sector debt as % of GDP		60%	34.1	38.2	39.9	44.7	45.2	42.7
	Unemployment rate	3 year average	10%	5.5	6.1	6.9	7.0	6.9	6.7
	Total financial sector liabilities (% y-o-y change)		16.5%	2.4	3.1	3.3	5.2	11.3	4.4
New employment indicators	Activity rate - % of total population aged 15-64 (3 years change in p.p)		-0.2%	-0.2	0.3	0.8b	1.5	2.7	3.0
	Long-term unemployment rate - % of active population aged 15-74 (3 years change in p.p)		0.5%	-1.9	0.2	0.5	1.0	0.0	0.0
	Youth unemployment rate - % of active population aged 15-24 (3 years change in p.p)		2%	-0.9	7.6	8.2	2.9	0.6	-2.2

Figures to break in times series, p: provisional

(1) Figures highlighted are those falling outside the threshold established in the European Commission's Alert Mechanism Report. For REER and ULC, the first threshold applies to euro area Member States.

Source: European Commission

ANNEX C

Standard Tables

Table C.1: **Financial market indicators**

	2010	2011	2012	2013	2014	2015
Total assets of the banking sector (% of GDP)	112.1	110.3	119.3	121.6	126.3	126.1
Share of assets of the five largest banks (% of total assets)	62.5	61.8	61.5	62.8	61.3	-
Foreign ownership of banking system (% of total assets)	89.7	92.3	86.3	94.1	87.8	-
Financial soundness indicators:						
- non-performing loans (% of total loans) ¹⁾	5.4	5.2	5.2	5.2	5.6	5.6
- capital adequacy ratio (%) ¹⁾	15.3	15.0	15.6	16.5	17.0	16.7
- return on equity (%) ¹⁾	19.7	18.3	20.4	16.2	16.5	17.4
Bank loans to the private sector (year-on-year % change)	4.2	5.9	3.4	3.8	4.5	7.2
Lending for house purchase (year-on-year % change)	6.9	7.6	5.6	5.7	5.7	8.2
Loan to deposit ratio	74.8	75.4	73.8	72.6	72.0	71.8
Central Bank liquidity as % of liabilities ²⁾	0.0	0.1	0.0	0.0	0.0	0.0
Private debt (% of GDP)	68.1	68.6	71.0	74.1	72.7	-
Gross external debt (% of GDP) ³⁾ - public	11.8	11.2	13.6	14.4	13.5	15.5
- private	22.2	22.0	24.2	34.6	35.3	33.1
Long-term interest rate spread versus Bund (basis points)*	114.1	109.9	128.7	54.2	41.3	7.9
Credit default swap spreads for sovereign securities (5-year)*	87.3	97.9	103.8	55.7	47.2	44.9

(1) Latest data Q3 2015.

(2) Latest data October 2015.

(3) Latest data September 2015. Monetary authorities, monetary and financial institutions are not included.

* Measured in basis points.

Source: IMF (financial soundness indicators); European Commission (long-term interest rates); World Bank (gross external debt); Eurostat (private debt); ECB (all other indicators).

Table C.2: Labour market and social indicators

	2010	2011	2012	2013	2014	2015 ⁽⁴⁾
Employment rate (% of population aged 20-64)	70.4	70.9	71.5	72.5	73.5	74.6
Employment growth (% change from previous year)	-1.0	-0.3	0.4	0.3	0.6	1.2
Employment rate of women (% of female population aged 20-64)	60.9	61.7	62.5	63.8	64.7	66.2
Employment rate of men (% of male population aged 20-64)	79.6	79.9	80.2	81.0	82.2	82.8
Employment rate of older workers (% of population aged 55-64)	46.5	47.7	49.3	51.6	54.0	55.3
Part-time employment (% of total employment, aged 15 years and over)	5.9	5.5	5.8	6.6	6.4	6.3
Fixed term employment (% of employees with a fixed term contract, aged 15 years and over)	8.9	8.5	8.8	9.6	10.2	10.5
Transitions from temporary to permanent employment	37.0	38.4	32.6	33.1	-	-
Unemployment rate ⁽¹⁾ (% active population, age group 15-74)	7.3	6.7	7.0	7.0	6.1	5.3
Long-term unemployment rate ⁽²⁾ (% of labour force)	3.0	2.7	3.0	3.0	2.7	2.5
Youth unemployment rate (% active population aged 15-24)	18.3	18.1	19.5	18.9	15.9	13.1
Youth NEET ⁽³⁾ rate (% of population aged 15-24)	8.8	8.3	8.9	9.1	8.1	-
Early leavers from education and training (% of pop. aged 18-24 with at most lower sec. educ. and not in further education or training)	4.9	4.9	5.5	5.4	5.5	-
Tertiary educational attainment (% of population aged 30-34 having successfully completed tertiary education)	20.4	23.7	25.6	26.7	28.2	-
Formal childcare (30 hours or over; % of population aged less than 3 years)	0.0	1.0	1.0	1.0	-	-

(1) Unemployed persons are all those who were not employed but had actively sought work and were ready to begin working immediately or within two weeks.

(2) Long-term unemployed are peoples who have been unemployed for at least 12 months.

(3) Not in Education Employment or Training.

(4) Average of first three quarters of 2015. Data for total unemployment and youth unemployment rates are seasonally adjusted.

Source: European Commission (EU Labour Force Survey)

Table C.3: Labour market and social indicators (contd)

Expenditure on social protection benefits (% of GDP)	2009	2010	2011	2012	2013	2014
Sickness/healthcare	6.1	6.0	6.0	6.1	6.0	-
Invalidity	1.5	1.5	1.4	1.4	1.3	-
Old age and survivors	8.6	8.8	9.2	9.6	9.3	-
Family/children	2.0	2.0	1.8	1.8	1.8	-
Unemployment	1.0	0.8	0.7	0.6	0.7	-
Housing and social exclusion n.e.c.	0.1	0.1	0.1	0.2	0.3	-
Total	19.5	19.5	19.5	19.9	19.6	-
of which: means-tested benefits	0.3	0.4	0.4	0.4	0.5	-
Social inclusion indicators	2009	2010	2011	2012	2013	2014
People at risk of poverty or social exclusion ⁽¹⁾ (% of total population)	14.0	14.4	15.3	15.4	14.6	14.8
Children at risk of poverty or social exclusion (% of people aged 0-17)	17.2	18.9	20.0	18.8	16.4	19.5
At-risk-of-poverty rate ⁽²⁾ (% of total population)	8.6	9.0	9.8	9.6	8.6	9.7
Severe material deprivation rate ⁽³⁾ (% of total population)	6.1	6.2	6.1	6.6	6.6	6.7
Proportion of people living in low work intensity households ⁽⁴⁾ (% of people aged 0-59)	6.0	6.4	6.6	6.8	6.9	7.6
In-work at-risk-of-poverty rate (% of persons employed)	3.2	3.7	4.0	4.5	4.0	3.6
Impact of social transfers (excluding pensions) on reducing poverty	52.0	50.3	45.6	45.5	48.2	43.6
Poverty thresholds, expressed in national currency at constant prices ⁽⁵⁾	99800	101694	101507	101004	98529	99518
Gross disposable income (households; growth %)	2.9	0.7	0.2	1.0	0.1	2.2
Inequality of income distribution (S80/S20 income quintile share ratio)	3.5	3.5	3.5	3.5	3.4	3.5

(1) People at risk of poverty or social exclusion (AROPE): individuals who are at risk of poverty (AROP) and/or suffering from severe material deprivation (SMD) and/or living in households with zero or very low work intensity (LWI).

(2) At-risk-of-poverty rate (AROP): proportion of people with an equivalised disposable income below 60 % of the national equivalised median income.

(3) Proportion of people who experience at least four of the following forms of deprivation: not being able to afford to i) pay their rent or utility bills, ii) keep their home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) enjoy a week of holiday away from home once a year, vi) have a car, vii) have a washing machine, viii) have a colour TV, or ix) have a telephone.

(4) People living in households with very low work intensity: proportion of people aged 0-59 living in households where the adults (excluding dependent children) worked less than 20 % of their total work-time potential in the previous 12 months.

(5) For EE, CY, MT, SI and SK, thresholds in nominal values in euros; harmonised index of consumer prices (HICP) = 100 in 2006 (2007 survey refers to 2006 incomes).

Source: For expenditure for social protection benefits ESSPROS; for social inclusion EU-SILC.

Table C.4: Structural policy and business environment indicators

Performance indicators	2009	2010	2011	2012	2013	2014
Labour productivity (real, per person employed, y-o-y)						
Labour productivity in industry	-2.86	5.82	3.49	-2.24	-3.96	3.02
Labour productivity in construction	-6.16	2.19	-2.56	0.13	4.78	4.40
Labour productivity in market services	-6.37	3.04	2.16	0.83	1.27	1.47
Unit labour costs (ULC) (whole economy, y-o-y)						
ULC in industry	2.96	-5.92	0.68	4.96	5.21	-1.88
ULC in construction	-0.10	-3.96	2.52	1.03	-8.28	-5.43
ULC in market services	4.20	0.63	-0.14	3.13	-0.92	-0.32
Business environment	2009	2010	2011	2012	2013	2014
Time needed to enforce contracts ⁽¹⁾ (days)	653	611	611	611	611	611
Time needed to start a business ⁽¹⁾ (days)	20.0	17.0	17.0	15.5	15.5	15.5
Outcome of applications by SMEs for bank loans ⁽²⁾	0.81	na	0.70	na	0.73	0.33
Research and innovation	2009	2010	2011	2012	2013	2014
R&D intensity	1.30	1.34	1.56	1.79	1.91	2.00
Total public expenditure on education as % of GDP, for all levels of education combined	4.36	4.25	4.51	4.33	na	na
Number of science & technology people employed as % of total employment	38	38	35	36	37	37
Population having completed tertiary education ⁽³⁾	13	15	16	17	18	19
Young people with upper secondary level education ⁽⁴⁾	92	92	92	91	91	91
Trade balance of high technology products as % of GDP	-0.50	-1.32	0.14	0.66	0.40	0.22
Product and service markets and competition				2003	2008	2013
OECD product market regulation (PMR) ⁽⁵⁾ , overall				1.88	1.50	1.39
OECD PMR ⁽⁵⁾ , retail				1.03	1.23	1.56
OECD PMR ⁽⁵⁾ , professional services				2.77	2.48	2.36
OECD PMR ⁽⁵⁾ , network industries ⁽⁶⁾				2.96	2.45	2.01

(1) The methodologies, including the assumptions, for this indicator are shown in detail here:

<http://www.doingbusiness.org/methodology>.

(2) Average of the answer to question Q7B_a. "[Bank loan]: If you applied and tried to negotiate for this type of financing over the past six months, what was the outcome?". Answers were codified as follows: zero if received everything, one if received most of it, two if only received a limited part of it, three if refused or rejected and treated as missing values if the application is still pending or don't know.

(3) Percentage population aged 15-64 having completed tertiary education.

(4) Percentage population aged 20-24 having attained at least upper secondary education.

(5) Index: 0 = not regulated; 6 = most regulated. The methodologies of the OECD product market regulation indicators are shown in detail here:

<http://www.oecd.org/competition/reform/indicatorsofproductmarketregulationhomepage.htm>

(6) Aggregate OECD indicators of regulation in energy, transport and communications (ETCR).

Source: European Commission; World Bank — Doing Business (for enforcing contracts and time to start a business); OECD (for the product market regulation indicators); SAFE (for outcome of SMEs' applications for bank loans).

Table C.5: **Green growth**

Green growth performance		2009	2010	2011	2012	2013	2014
Macroeconomic							
Energy intensity	kgoe / €	0.36	0.37	0.35	0.36	0.35	-
Carbon intensity	kg / €	1.11	1.10	1.07	1.05	1.03	-
Resource intensity (reciprocal of resource productivity)	kg / €	1.47	1.36	1.41	1.26	1.25	1.27
Waste intensity	kg / €	-	0.19	-	0.19	-	-
Energy balance of trade	% GDP	-2.8	-3.3	-3.9	-4.1	-4.2	-3.8
Weighting of energy in HICP	%	13.46	13.40	14.04	14.22	14.06	14.36
Difference between energy price change and inflation	%	7.9	-1.9	3.8	5.0	-0.1	-5.7
Real unit of energy cost	% of value added	13.6	13.9	14.5	-	-	-
Ratio of labour taxes to environmental taxes	ratio	7.0	7.3	7.3	7.7	8.1	8.2
Environmental taxes	% GDP	2.3	2.3	2.4	2.2	2.1	2.1
Sectoral							
Industry energy intensity	kgoe / €	0.24	0.22	0.21	0.20	0.20	-
Real unit energy cost for manufacturing industry	% of value added	20.0	21.5	22.4	-	-	-
Share of energy-intensive industries in the economy	% GDP	14.35	14.48	14.24	14.10	13.78	14.15
Electricity prices for medium-sized industrial users	€ / kWh	0.11	0.11	0.11	0.10	0.10	0.08
Gas prices for medium-sized industrial users	€ / kWh	0.03	0.03	0.03	0.03	0.03	0.03
Public R&D for energy	% GDP	0.02	0.02	0.02	0.02	0.02	0.02
Public R&D for environment	% GDP	0.02	0.02	0.01	0.01	0.01	0.01
Municipal waste recycling rate	%	23.5	30.7	35.1	43.4	43.7	-
Share of GHG emissions covered by ETS*	%	55.0	55.2	54.8	52.7	52.3	51.8
Transport energy intensity	kgoe / €	1.06	1.01	1.08	1.09	1.08	-
Transport carbon intensity	kg / €	2.96	2.78	2.93	2.98	2.99	-
Security of energy supply							
Energy import dependency	%	27.2	25.6	28.0	25.3	27.9	-
Aggregated supplier concentration index	HHI	24.2	25.2	35.0	29.1	33.3	-
Diversification of energy mix	HHI	0.28	0.28	0.28	0.27	0.26	-

General explanation of the table items:

All macro intensity indicators are expressed as a ratio of a physical quantity to GDP (in 2005 prices)

Energy intensity: gross inland energy consumption (in kgoe) divided by GDP (in EUR)

Carbon intensity: greenhouse gas emissions (in kg CO₂ equivalents) divided by GDP (in EUR)

Resource intensity: domestic material consumption (in kg) divided by GDP (in EUR)

Waste intensity: waste (in kg) divided by GDP (in EUR)

Energy balance of trade: the balance of energy exports and imports, expressed as % of GDP

Weighting of energy in HICP: the proportion of "energy" items in the consumption basket used for the construction of the HICP

Difference between energy price change and inflation: energy component of HICP, and total HICP inflation (annual % change)

Real unit energy cost: real energy costs as a percentage of total value added for the economy

Environmental taxes over labour taxes and GDP: from European Commission's database, 'Taxation trends in the European Union'

Industry energy intensity: final energy consumption of industry (in kgoe) divided by gross value added of industry (in 2005 EUR)

Real unit energy costs for manufacturing industry: real costs as a percentage of value added for manufacturing sectors

Share of energy-intensive industries in the economy: share of gross value added of the energy-intensive industries in GDP

Electricity and gas prices for medium-sized industrial users: consumption band 500–20 000 MWh and 10 000–100 000 GJ; figures excl. VAT.

Municipal waste recycling rate: ratio of recycled municipal waste to total municipal waste

Public R&D for energy or for the environment: government spending on R&D (GBAORD) for these categories as % of GDP

Proportion of greenhouse gas (GHG) emissions covered by EU Emission Trading System (ETS): based on greenhouse gas emissions

(excl land use, land use change and forestry) as reported by Member States to the European Environment Agency)

Transport energy intensity: final energy consumption of transport activity (kgoe) divided by transport industry gross value added (in 2005 EUR)

Transport carbon intensity: greenhouse gas emissions in transport activity divided by gross value added of the transport sector

Energy import dependency: net energy imports divided by gross inland energy consumption incl. consumption of international bunker fuels

Aggregated supplier concentration index: covers oil, gas and coal. Smaller values indicate larger diversification and hence lower risk.

Diversification of the energy mix: Herfindahl index over natural gas, total petrol products, nuclear heat, renewable energies and solid fuels

* European Commission and European Environment Agency

Source: European Commission (Eurostat) unless indicated otherwise