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

The economic situation and policies of the Czech Republic were reviewed at a meeting of the Economic and Development Review Committee on 5 June 2018. The draft was revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 22 June 2018.

The Secretariat's draft report was prepared for the Committee by Falilou Fall and Daniela Glocker under the supervision of Piritta Sorsa. The draft has benefitted from valuable background research by Ales Belohradsky, seconded from the Ministry of Finance of the Czech Republic.

Statistical research was provided by Béatrice Guérard. Assa Fofana formatted and produced the layout.

The previous Survey of Czech Republic was issued in June 2016.

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Basic statistics of Czech Republic, 2017

(Numbers in parentheses refer to the OECD average)

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	10.5		Population density per km² b	137.0	(37.2)
Under 15 (%)	15.4	(17.9)	Life expectancy (years, 2015)	78.7	(80.5)
Over 65 (%)	19.2	(17.0)	Men	75.7	(77.9)
Foreign-born (%, 2011)	7.1		Women	81.6	(83.1)
Latest 5-year average growth (%)	0.1	(0.6)	Latest general election	October	2017
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	215.7		Primary sector	2.4	(2.4)
In current prices (billion CZK)	5 062.1		Industry including construction	37.2	(26.9)
Latest 5-year average real growth (%)	2.9	(2.1)	Services	60.3	(70.7)
Per capita (000 USD PPP)	36.9	(43.8)			
GENERAL GOVERNMENT					
Per cent of GDP					
Expenditure b	38.8	(40.6)	Gross financial debt	43.9	(110.2)
Revenue	40.4	(39.3)	Net financial debt	12.2	(71.2)
EXTERNAL ACCOUNTS					
Exchange rate (CZK per USD)	23.296		Main exports (% of total goods exports)		
PPP exchange rate (USA = 1)	12.532		Machinery and transport equipment	57.6	
In per cent of GDP			Manufactured goods	27.8	
Exports of goods and services	79.4	(55.0)	Chemicals and related products, n.e.s.	6.0	
Imports of goods and services	72.2	(50.5)	Main imports (% of total goods imports)		
Current account balance	1.1	(0.4)	Machinery and transport equipment	47.0	
Net international investment position	-29.1		Manufactured goods	28.7	
			Chemicals and related products, n.e.s.	10.9	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate for 15-64 year-olds (%)	73.6	(67.7)	Unemployment rate, LFS (age 15 and over) (%)	2.9	(5.8)
Men	80.9	(75.4)	Youth (age 15-24, %)	8.0	(11.9)
Women	66.2	(60.1)	Long-term unemployed (≥1 year, %, 2016)	1.7	(2.0)
Participation rate for 15-64 year-olds (%)	75.9	(72.1)	Tertiary educ. Attain. 25-64 year-olds (%,2016)	23.0	(35.7)
Average hours worked per year (2016)	1 770	(1 763)	Expenditure on R&D (% of GDP, 2016)	1.7	(2.3)
ENVIRONMENT, 2015					
Total primary energy supply per capita (toe)	3.9	(4.1)	CO2 emissions from fuel combustion per capita (tonnes)	9.5	(9.2)
Renewables (%)	8.8	(9.6)	Water abstractions per capita (1 000 m3)	0.2	
Exposure to air pollution (more than 10 µg/m3 of PM2.5, % of population)	100.0	(75.2)	Municipal waste per capita (tonnes, 2016)	0.3	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2015)c	0.258	(0.311)	Education outcomes (PISA score, 2015)		
Relative poverty rate (%, 2015)c	6.4	(11.3)	Reading	487	(493)
Median disposable household income (000 USD PPP, 2015)c	17.2	(22.9)	Mathematics	492	(490)
Public and private spending (% of GDP)			Science	493	(493)
Health care (2016)	7.2	(9.0)	Share of women in parliament (%, 2016)	20.0	(28.7)
Pensions (2013)	9.2	(9.1)	Net official development assistance (% of GNI)	0.13	(0.38)
Education (Except tertiary, 2014)	2.6	(3.7)			

Better life index: www.oecdbetterlifeindex.org

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

b. 2016 for the OECD average; c. 2014 for the OECD average.

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

Executive summary

Economic prospects are good.

- *The economy is thriving.*
- *Strong demand and exports are driving growth.*
- *Economic growth will slow due to labour shortages but remain above its potential.*
- *Poverty and inequality wellbeing indicators are good.*

Low productivity is limiting convergence towards OECD living standards.

- *GDP per capita has been increasing but convergence towards OECD living standards is slow.*

Better skilling, R&D and innovation are needed for the upgrading of the economy.

- *Better skilling is necessary to increase labour productivity and innovation to maintain the price competitiveness and to favour upgrading in value chains.*
- *Increasing labour force participation of women with young children would reduce labour shortages.*
- *An acceleration of immigration procedures and facilitation of immigrants' integration could reduce labour shortages.*

The Czech Republic has to address the challenges of an ageing society.

- *Ageing will weigh on public finances.*
- *Retirement age should be tightly linked to life expectancy.*
- *Financing of health and long-term care can be expanded making all types of income contributing.*

There is room to improve the delivery of health care.

- *The Czech health care system performs well along several dimensions but can be improved.*
- *Indicators for the quality of care and outcome performance are missing in the management and regulation of the health care system.*
- *The delivery of health care could be improved through better management of hospitals; and putting more incentives in the remuneration scheme of health providers.*
- *The efficiency of the delivery of primary care is suffering from lack of co-ordination.*

Short-term economic prospects are good…

The economy is thriving. The growth acceleration in 2017 to 4.6% is more balanced than in previous years. Internal demand is led by strong household consumption, supported by income growth, and private investment. Exports also sustained their expansion in 2017 thanks to boosted activity of trading partners. The unemployment rate has continued decreasing throughout 2017 and at below 3% is among the lowest in the OECD. Inflation picked up strongly in 2017 reaching an annual average of 2.5%. This increase in inflation – from around 0.5% during the last three years – was partly driven by an acceleration of wage growth. Exchange rate appreciation will dampen inflation.

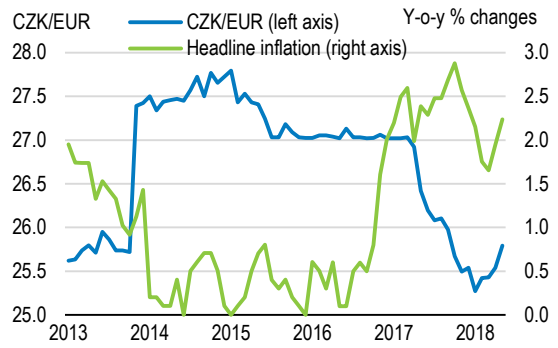
Table A. The economy is projected to grow at above 3% per year in 2018 and 2019

	2017	2018	2019
Gross domestic product	4.6	3.8	3.2
Private consumption	4.0	3.8	3.5
Gross fixed capital formation	5.9	5.2	4.3
Exports	6.9	5.3	5.4
Imports	6.2	6.1	5.7
Unemployment rate	2.9	2.4	2.3
Consumer price index	2.5	2.0	2.1
Current account (% of GDP)	1.1	0.5	0.3

Source: OECD (2018), OECD Economic Outlook 103 (database).

Output growth will slow down on account of labour supply constraints, but will remain above the Czech Republic's 3% potential growth rate in 2018 and 2019. Increasing wages and employment will keep household consumption and internal demand high. Private investment will remain strong thanks to favourable credit conditions. Exports will stay high. Growing wages and strong household consumption are expected to keep annual inflation slightly above the 2% Central Bank's target in 2018 (Figure A). The Czech National Bank (CNB) has started raising its policy interest rate in August 2017 to stabilise inflation at its target level over a medium-term horizon.

Figure A. Inflation will remain around the target



Source: Calculations based on OECD (2018), OECD Economic outlook (database) and Thomson Reuters Datastream (database).

StatLink https://doi.org/10.1787/888933790182

… but the Czech Republic faces risks, including high housing prices.

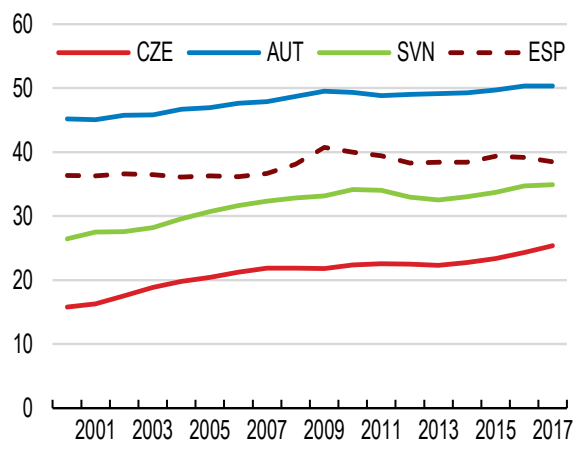
Risks stem equally from internal and external factors. Labour shortages could hamper growth. At around 2.4%, the unemployment rate is hitting a floor. Also, there are signs of overheating as the economy is growing above potential, therefore the rise in inflation and wages may lead to a normalisation of interest rates more rapidly than anticipated. This may create a gap with the rates in the euro area, and therefore further appreciations of the exchange rate. On the external side, the Czech economy is particularly exposed to trade disruptions. Exports in terms of value added contribute to around 45% of GDP. Housing market developments are of rising concern. The loans for house purchase have accelerated in the last two years and are reaching high levels. Price growth in the housing sector was the highest among EU countries in 2017. Therefore, household indebtedness is increasing and banks are exposed to a reversal in household income growth.

The low level of wages is limiting convergence towards OECD living standard standards…

The Czech Republic's growth model of low wage and high reliance on FDI has been successful in increasing GDP per capita but convergence towards OECD living standards is slow (Figure B). Even though wages have accelerated recently, their level remains low in international comparison. Low labour shares are influenced by the gap between GDP per capita and gross national income, which is among the highest in OECD countries (Figure C). Foreign direct investments have benefited the economy through its increasing participation in global value chains. However, there is room to better share the benefits of growth to support inclusive development.

Figure B. Czech wage level is converging slowly

Thousand USD, in 2017 constant prices and constant PPPs



Source: OECD (2018), OECD Labour Force Statistics (database).

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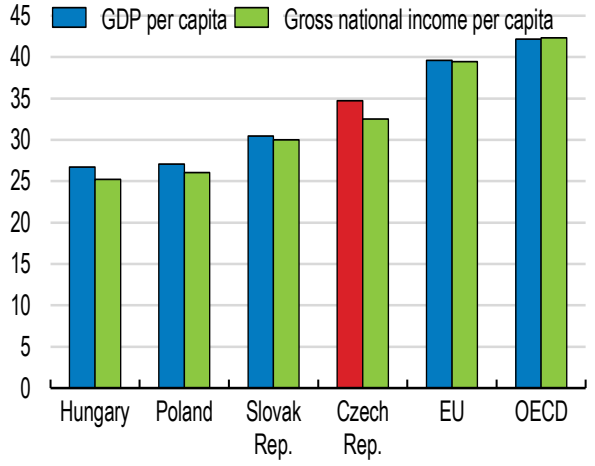
Figure C. The gap between GDP and gross national income is high

Thousand USD PPP per capita, at current prices, 2016



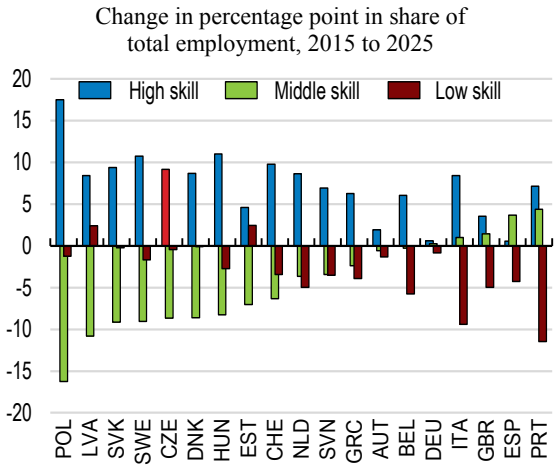
Source: OECD, National Accounts (database).

StatLink https://doi.org/10.1787/888933790220

… and better skilling, R&D and innovation are needed for the upgrading of the economy.

Better skilling is necessary to increase labour productivity and innovation to maintain the price competitiveness and to favour upgrading in value chains. The Czech labour market is shifting towards higher-skilled employment. Since the 1990s, the service sector has expanded and manufacturing has become tightly integrated into global value chains; employment shifted from medium-skilled towards high-skilled jobs (Figure D). Sectors such as manufacturing, IT and business services are expected to continue expanding. Providing workers with the right skill set and training to adapt to a changing environment will increase the resilience towards automation. For instance, the demand for a highly skilled labour force, especially the technically educated one, will increase.

Figure D. Employment is shifting towards high skilled jobs



Source: European Centre for the Development of Vocational Training (Cedefop) (2017), Forecasting skill demand and supply.

StatLink https://doi.org/10.1787/888933790239

Preparing the labour market for technological change is high on the political agenda. Policy actions that foster productivity and innovation as highlighted in the last survey (OECD, 2016[1]) should be accelerated.

The skill mismatch is still important. Graduates are lacking in the fields of mathematics, science, statistics, and health and welfare studies. Current developments suggest that the stock of skills in the labour force may not suffice to address emerging shortages in certain sectors, such as health and IT. Providing effective, up-to-date and tailored information, advice and guidance are crucial to address emerging skills gaps. Vocational education should be further developed to play a significant role in overcoming skill mismatch through the involvement of employers in the design of curricula and in developing internships.

Increasing labour force participation of women with young children would limit labour shortages.

Available skills of women are not fully utilised in the labour market. Female graduates form the majority in mathematics and natural sciences (59.6%) and health and welfare studies (83.5%). These skills are often not available to the labour market as one out of three women aged 25 to 34 that graduated in a STEM (Science, Technology, Engineering, and Mathematics) field with a tertiary degree reported being inactive in 2016. Despite recent efforts, female labour force participation tends to fall with childbirth, contributing to gender inequality.

The long break in young mothers' employment is partly due to long parental leave rules. Spending on maternity and parental leave is the highest among OECD countries, reflecting a preference for home care over formal childcare. Conditional on the expansion of affordable and quality childcare, the maximum duration of parental leave should be reduced. Child care facilities should be further developed by redirecting funds from cash transfers and parental leave. Increasing the flexibility of jobs by better enforcement of rights for part-time work, flexible teleworking arrangements and shared jobs can support the re-entering of female labour into the market.

The Czech Republic faces challenges of an ageing society.

Ageing will weigh on public finances. The Czech population is ageing more rapidly than in most European countries; the dependency ratio will rise from 28.1% in 2016 to 49.7% in 2070 with a peak at 56.1% in 2058.

Pension spending as share of GDP should be stable up to 2030, but will then rise steeply by more than 2.5 percentage points of GDP over 20 years. In 2017, the Czech government withdrew the perpetual increasing of the statutory retirement age and instead put a ceiling at the age of 65. However, the retirement age ceiling is worsening the effect of pension spending on public finances (Table B).

Also, the recent changes in the pension indexation rule are pushing up pension spending by approximately 0.3 percentage points over the projection horizon.

Health care and long-term care expenditures are also projected to rise in the upcoming decades. In comparison with other countries, the Czech

Republic is going to face one of the biggest spending increases as share of GDP.

Financing of pensions, health care and long-term care currently requires more than 43% of the government budget. Assuming that the size of the budget in relation to GDP remains constant (at around 35%), the projected social expenditures in 2060 would take more than 75% of the budget (Table B). As in many OECD countries, the Czech Republic could consider linking retirement age tightly with life expectancy. Improving the efficiency of health care delivery could help cushion the impact of ageing on health spending.

Table B. Impact of ageing on public finance

Pension expenditure projections, % of GDP

	2016	2030	2040	2050	2060	Peak year
Total public pensions	8.2	8.2	9.2	10.8	11.6	2059
linked to life expectancy		8	8.5	9.7	10.2	2059
Expenditure projections as shares of the government budget						
		% of GDP			% of govt. budget	
		2017	2060		2017	2060
Pensions		8.2	11.6		32.4	45.7
Old age pensions		6.8	10.2		26.8	40.2
Health care		6.2	9.6			
financed by social security contributions		4.1	3.3			
financed by the government budget		2.1	6.3		8.4	24.7
Social long-term care		0.7	1.4		2.8	5.5

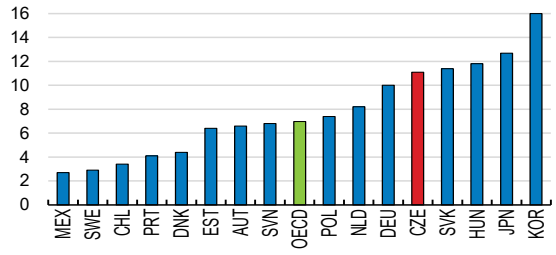
Source: EC (2018), Ageing Report: Economic and budgetary projections for the 28 Member States (2016-2070), OECD projections of health spending.

Improving the health care system

The Czech health care system performs well along several dimensions but can be improved. Life expectancy rose by 2.6 years to 78.7 years between 2005 and 2015, just below the average of 80.6 years in the OECD. Spending on health care at 7.2% of GDP in 2016 is relatively low compared with OECD peers. However use of health services is among the highest in the OECD (Figure E).

Figure E. Number of physician consultations

Per inhabitant, 2015 or nearest year



Source: OECD (2017) Health Statistics (database).

StatLink http://dx.doi.org/10.1787/888933790258

Indicators for the quality of care and outcome performance are missing in the management and regulation of the health care system. Moreover, the health system is heavily regulated by the government through the Reimbursement Decree which sets most prices and volume limitations of activities of health providers. Having a genuine negotiation process between health care providers and insurance funds would help reduce some of the inefficiencies in service delivery.

Overall, there is a need to rebalance the system towards more competition between health providers and insurance funds and private funding to improve quality, efficiency and reduce the reliance on public funding.

The delivery of health care could be improved through better management of hospitals; and putting more incentives in the remuneration scheme of health providers. In hospitals, optimising outpatient care and day surgery should reduce the length of stay and lower spending. The new diagnostic related group (DRG) system should be used for setting the prices of health services but also to incentivise or reform underperforming hospitals. The DRG system should be based on a group of best-performing hospitals.

The efficiency of the delivery of primary care is suffering from lack of co-ordination. Patients' ability to access specialist care without a prior general practitioner (GP) consultation, poorly defined mutual responsibilities of outpatient specialists and GPs and current payment systems mean that primary care's potential to lead for instance chronic disease management is not being fulfilled. GPs should be entrusted with a greater gate-keeping and co-ordination role to ensure that patients are better directed to the most appropriate place for their treatments, which also allows diminishing the overuse of hospital facilities.

Ageing will account for roughly half of the future rise in health-care spending and pushes for broadening the financing of the health system. While total health spending is low, the share of public spending in total spending at 82.4% is among the highest in the OECD. The heavy reliance on public financing is a weakness in the context of an ageing society. Over the last 15 years, voluntary and out-of-pocket payments increased, reaching 17.6% of health care expenditure in 2016, remaining below the OECD average of about 20%. The main sources of revenue for the health insurance system are compulsory contributions that are levied primarily on wages. To increase revenues and allow more spending on health care in the future, the tax base needs to be broadened. Within the current scheme, contributions by the self-employed could be increased gradually. More generally, all kinds of income sources could be taxed to contribute to social security financing. Moreover, introducing smart cost sharing can steer patients' behaviour and promote cost-efficient consumption of health care.

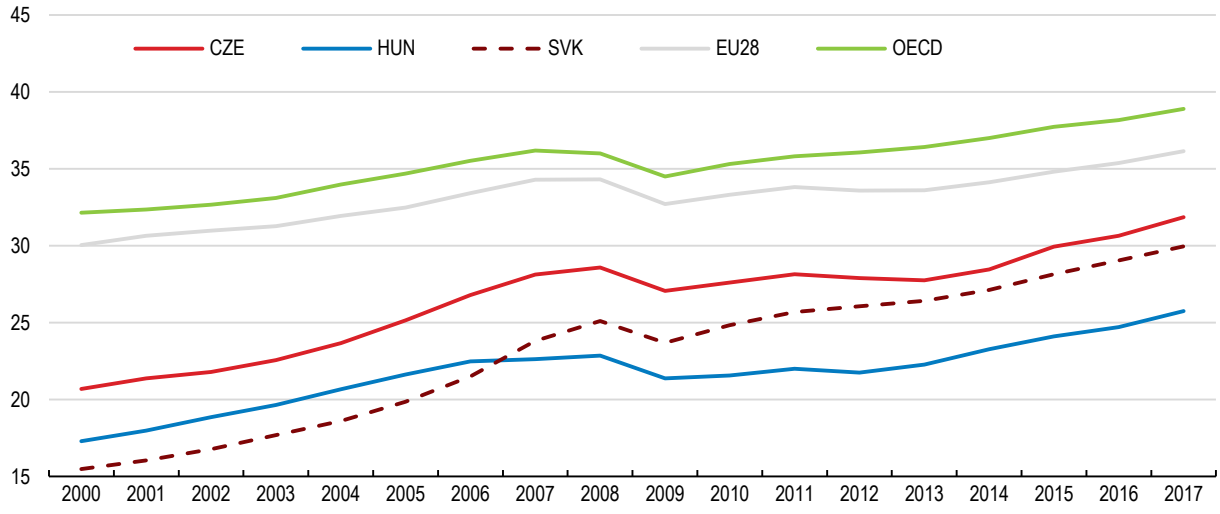
MAIN FINDINGS	KEY RECOMMENDATIONS
Macroeconomic and financial policies	
Average annual inflation at 2.5% in 2017 was above the target. There are signs of overheating in the economy that could affect the inflation.	Gradually raise the policy interest rate and stand ready to fasten the pace if needed.
Banks are exposed to increasing loans for house purchase following rising house prices.	Allow the CNB to set binding prudential rules applicable to individual loans.
The fiscal position is strong.	Keep some fiscal space to cope with future ageing-related spending.
Tackling long run challenges, including the impacts of ageing	
The structure of government revenues relies heavily on social security contributions. The tax wedge is the 6th highest across the OECD.	Rebalance tax revenues by reducing social security contributions and raising indirect taxes (VAT compliance and environmental taxes).
The population is ageing rapidly. The financing of ageing-related spending count already for more than 43% of the government budget.	Link tightly retirement age to life expectancy. Broaden the financing of health care and long-term care by expanding the base of contributions to all types of income.
Need for stronger price incentives to green the economy.	Introduce a carbon component in energy taxation for carbon emissions outside the EU system.
Addressing labour shortages	
Labour shortages are the main bottleneck to economic growth, as the 15-64 year old population declines. Many are inactive because they have poor skills or their skills are mismatched to job vacancies.	Increase resources to education, skilling, reskilling and upskilling. Accelerate immigration procedures and facilitate immigrants integration, including language classes.
Female labour force participation tends to fall with childbirth, contributing to gender inequality.	Keep expanding the supply of affordable childcare facilities. Reduce the maximum duration of parental leave as planned and incentivise fathers to take some of the parental leave. Increase the flexibility of jobs by better enforcement of rights for part-time work, flexible teleworking and shared jobs.
Improving the health care system	
A harmonised monitoring system to evaluate health services is lacking. The decree that sets prices for health care services (Reimbursement decree) undermines the negotiations between health care providers and insurance funds.	Gradually introduce a pay-for-performance scheme for hospitals and doctors based on a broad set of performance indicators. Reduce the scope of the reimbursement decree by limiting its coverage and leave room for negotiations between insurance funds and health providers.
The number of hospital beds is still above the OECD average. The remuneration for GPs is dominated by capitation fees and less by fee-for-service rendering it less profitable than for specialists.	Continue reducing hospital beds by encouraging regions and municipalities to restructure capacities of health services and facilities. Strengthen the role of primary care through gate-keeping and further shift towards a better mix of capitation fees and fee-for-service for GPs.
The average age of doctors is high and may limit health access in the future. Nursing graduates are too few. Adverse lifestyle factors such as smoking, alcohol consumption and the prevalence of obesity are close or above the OECD average.	Increase the capacity of medical faculties and the number of students through scholarships and ensure the sustainable financing of universities. Increase taxes on tobacco, alcohol and consider introducing taxes on unhealthy food and beverages. Promote a healthier lifestyle and further develop education, disease prevention and screening programmes.
Differences in the funding of health care provided in hospitals and long-term care facilities create perverse incentives to use hospitals.	Align payment schemes for long-term care in health and social care setting by co-ordinating the use of user fees.

Key policy insights

Since the early 1990s, the Czech Republic has progressed successfully towards the average OECD incomes. Building on its geographical location and strong industrial base, the country has opened its markets and attracted foreign direct investments. Following the Velvet Revolution in 1989, the economy has become highly integrated in global value chains. Growth has been strong, though volatile. Following slow growth in the wake of the 2007 financial crisis, the Czech Republic has resumed its convergence towards OECD and EU average incomes. The economy is thriving, driven by internal and external demand. Per capita GDP reached 82% of the OECD average in 2017 or 88% of the EU average (Figure 1).

Figure 1. GDP per capita is converging to the OECD average

2010 prices, thousand USD PPP



Source: OECD (2018), OECD Productivity (database).

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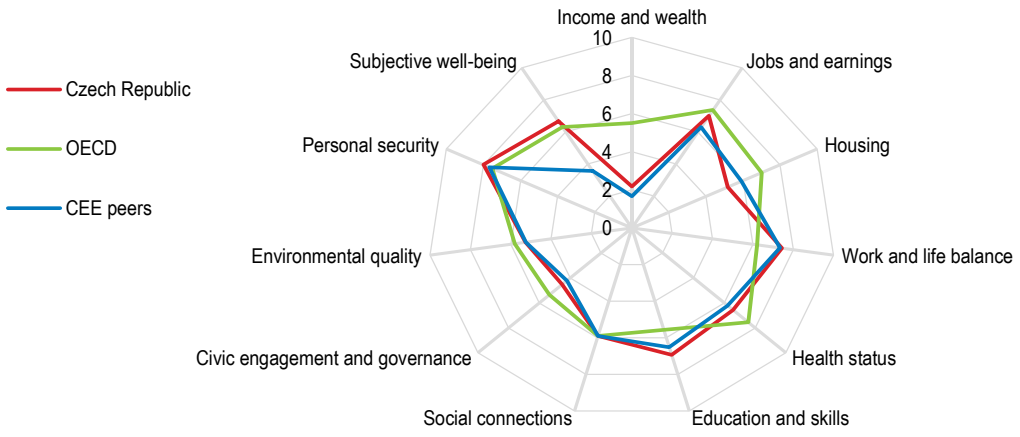
The Czech Republic has adopted many best policy practices in macroeconomic and structural policy areas. A sound macroeconomic policy mix, in particular prudent debt policy, has laid the ground for strong institutions that contribute to high business and consumer confidence. As such, the country is an attractive location for investment. The Czech Republic shows continuous efforts to improve its business environment, for example, by implementing reforms towards broadening access and competition of its markets (as highlighted in Annex A).

To remain sustainable in the long term, economic growth should translate into an environment that creates opportunity for all parts of the population and where the benefits

of prosperity are distributed fairly across society. Relative to the OECD average, the Czech Republic improved on many aspects of well-being. In particular, indicators of overall personal security, environmental quality, work-life balance, and education and skills are high. Despite having low inequality, the Czech Republic lags behind the average OECD country in terms of income and wealth (Figure 2). Improvements are also needed in civic engagement and governance, and health. Further, the country is one of the most equal societies in the OECD in terms of disposable income (Figure 3).

Figure 2. Measures of well-being outperform the CEE peers, but lag behind the OECD average

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



Note: For each dimension indicators are normalised according to the following formula: (indicator value - minimum) / (maximum - minimum) x 10 and averaged. The OECD aggregate is population-weighted. CEE peers are Estonia, Hungary, Poland, the Slovak Republic and Slovenia. Note that the OECD does not officially rank countries in terms of their BLI performance.
Source: OECD (2017), OECD Better Life Index, www.oecdbetterlifeindex.org.

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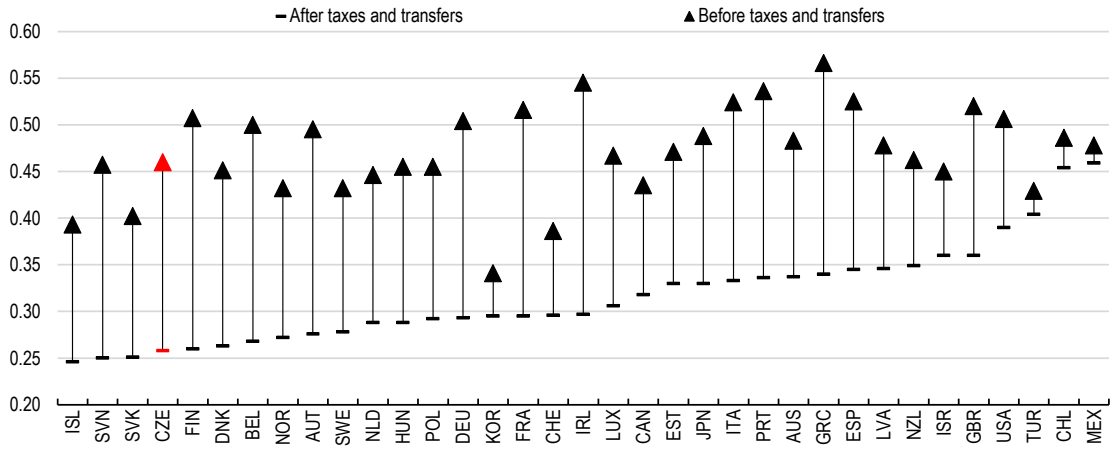
Figure 3. Redistribution reduces inequalities

Gini coefficient, 2015 or latest year



Source: OECD (2018), OECD Income Distribution (database).

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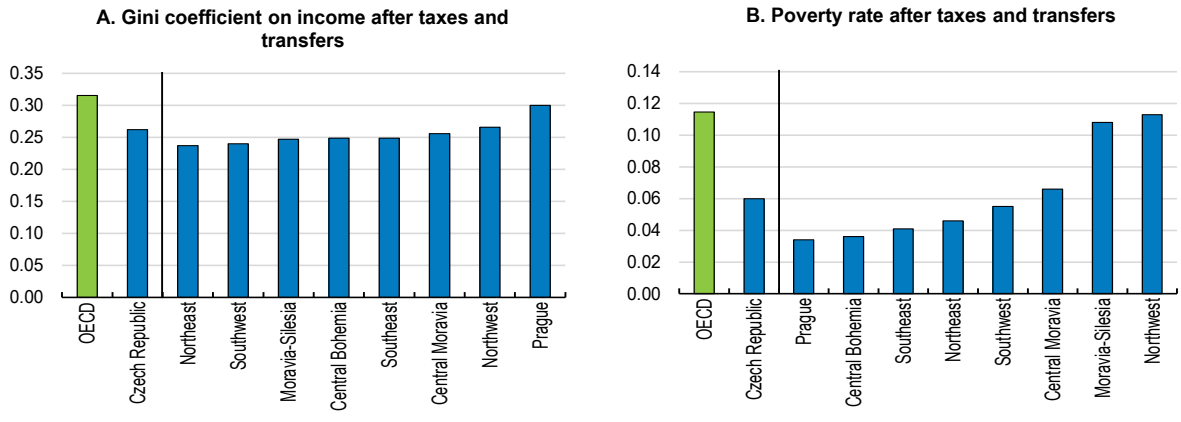
Inequality and poverty have stayed remarkably low in the last decade. However, there are large regional differences in poverty rates, which are high in the Northwest and Moravia-Silesia regions (Figure 4). Inequality is highest in Prague. As the poverty rate is relatively low, this reflects a high dispersion of wages due to differences in skills and productivity between sectors. At the same time, even low-income earners in Prague do better than those in more "peripheral" regions. In the Northwest, the higher poverty rates are driven by low wage/income for most workers.

Figure 4. Inequality and poverty are relatively low but vary across regions

Ratio, 2013



Note: The Gini coefficient is zero if everyone had the same income and is one if a single person had all the income. The poverty rate shows the share of the population with an income of less than 50% of the respective national median income. Income is after taxes and transfers, adjusted for differences in household size.
Source: OECD Regional Well-Being database, http://dotstat.oecd.org/Index.aspx?DataSetCode=RWB and OECD Income Distribution database.

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To sustain further improvements in living conditions, the Czech Republic will need to move up the value chain and improve the skills of its workforce. In the short run, it needs to respond to labour shortages, e.g. by increasing female workforce participation, while preparing for the impact of an ageing society in a longer-term perspective. The key messages of this *Economic Survey* are:

- The economy is booming, but growth needs to be more inclusive. Labour and skills shortages risk becoming main constraints to higher growth. Skilling is a win-win for more inclusive growth as apart from growth it would raise job quality, wages and well-being.
- The fiscal position is strong but spending related to ageing, such as pensions and health, will weigh on public finance. Restraining increases in pensions and other ageing-related spending in the long run is still necessary.
- The health sector works well but will be challenged by an ageing population. Efficiency and quality of service delivery have room to improve.

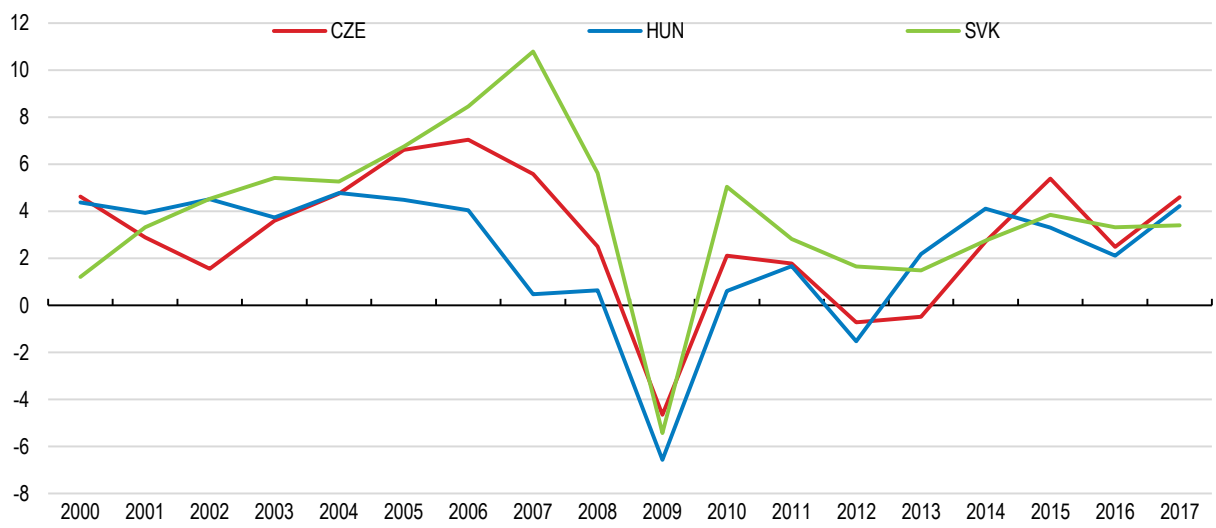
Recent macroeconomic developments and short-term prospects

Growth has picked up strongly

Since 2013 growth has accelerated (Figure 5). The main driver has been EU-financed public investment, especially in 2015. In 2016, growth slowed down to 2.6% as public investment slumped. By contrast, private investment became the engine of growth, supported by rising profits and credit, together with stronger household consumption boosted by rising wages and employment.

Figure 5. Growth is accelerating as in neighbouring countries

Real GDP growth, year-on-year per cent changes



Source: OECD (2018), OECD Economic Outlook (database).

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Table 1. Macroeconomic indicators and projections

Annual percentage change, volume (2010 prices)

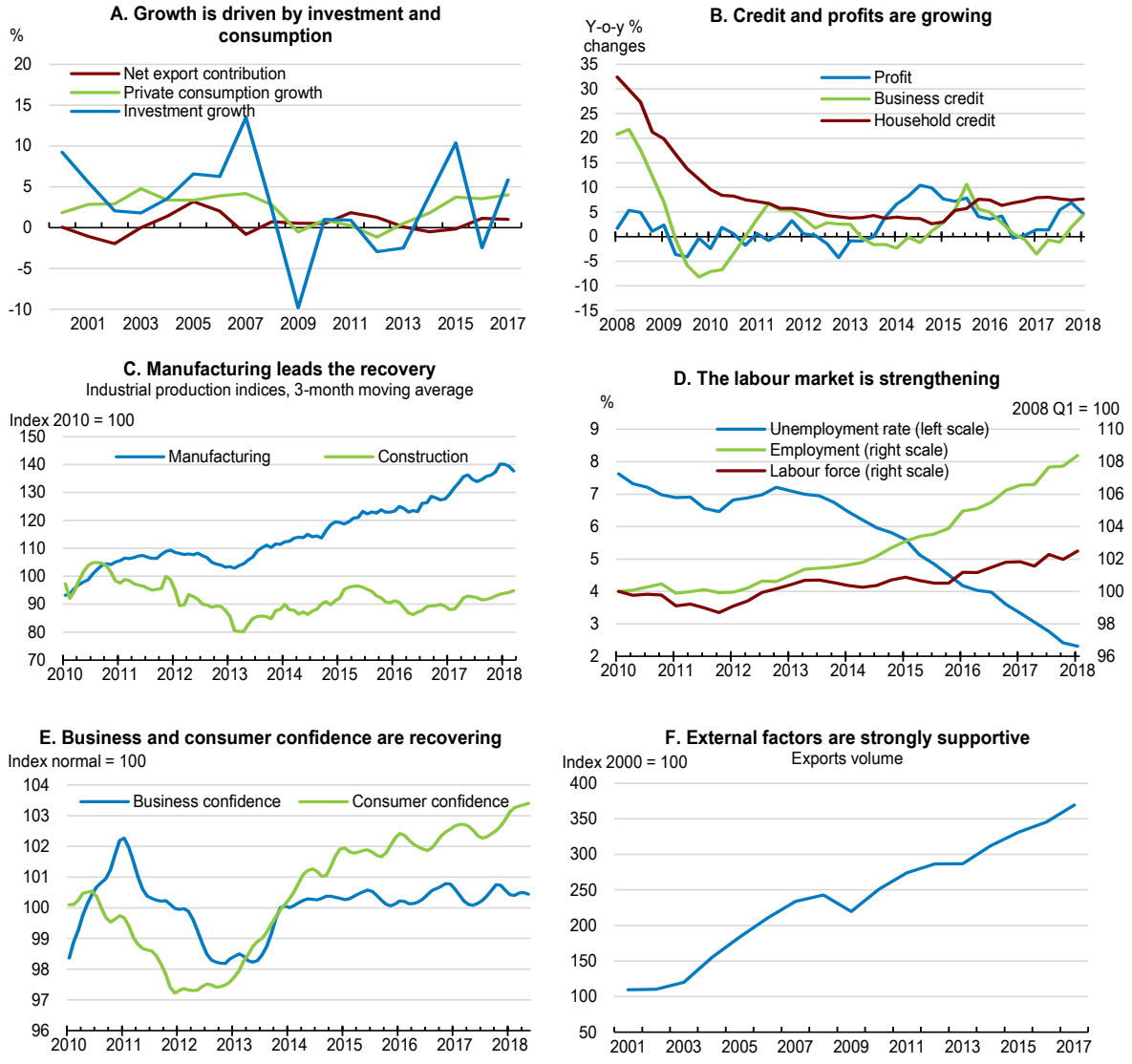
	2014 Current prices (billion CZK)	2015	2016	2017	2018 (projected)	2019 (projected)
GDP[1]	**4,313**	5.4	2.5	4.6	3.8	3.2
Private consumption	**2,073**	3.7	3.5	4.0	3.8	3.5
Government consumption	**849**	1.9	2.0	1.5	1.8	1.6
Gross fixed capital formation	**1,083**	10.4	-2.5	5.9	5.2	4.3
Housing	**145**	22.7	8.9	7.2	5.6	4.9
Final domestic demand	**4,006**	5.1	1.5	4.0	3.8	3.4
Stockbuilding[2]	**32**	0.8	0.0	0.0	0.5	0.0
Total domestic demand	**4,038**	5.9	1.4	3.9	4.3	3.3
Exports of goods and services	**3,559**	6.2	4.3	6.9	5.3	5.4
Imports of goods and services	**3,284**	7.0	3.1	6.2	6.1	5.7
Net exports[2]	**274**	-0.2	1.1	1.0	-0.2	0.1
Other indicators (growth rates, unless specified)						
Potential GDP	. .	2.4	2.7	2.7	2.9	3.1
Output gap[3]	. .	0.4	0.2	2.0	2.9	3.1
Employment	. .	1.4	1.9	1.6	0.8	0.3
Unemployment rate	. .	5.0	3.9	2.9	2.4	2.3
Wage bill	. .	4.8	5.8	8.3	7.0	5.8
Unit labour cost	. .	-0.4	3.3	3.6	2.8	2.4
GDP deflator	. .	1.2	1.2	1.4	1.2	1.4
Consumer price index	. .	0.3	0.7	2.5	2.0	2.1
Core consumer prices	. .	1.3	1.6	2.0	2.0	2.1
Household saving ratio, net[4]	. .	6.8	6.0	5.4	4.8	3.9
Current account balance[5]	. .	0.2	1.6	1.1	0.5	0.3
General government fiscal balance[5]	. .	-0.6	0.7	1.6	1.6	1.4
Gross government debt (Maastricht definition)[5]		40.0	36.8	34.6	32.4	30.5
Three-month money market rate, average	. .	0.3	0.3	0.4	0.9	1.4
Ten-year government bond yield, average	. .	0.6	0.4	1.0	2.0	2.5

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

Source: OECD (2018), OECD Economic Outlook 103 (database).

The growth acceleration in 2017 to 4.6% was more balanced than in previous years. It was driven by both internal and external demand. Private consumption remained high in 2017 (Figure 6, Panel A) as household consumption was supported by income growth, declining savings rate as confidence went up and by rising credit (Figure 6, Panel B). Private investment also increased markedly, driven by manufacturing and ICT investment on the back of a continued recovery in profits (Figure 6, Panel B and C). Industrial production increased, particularly in the automotive sector, which benefited from both demand from abroad and domestic orders of machinery and equipment. Exports also kept their expansion in 2017 thanks to accelerating growth in trading partners. But imports were also strong due to the high import component of exports and investment.

Figure 6. Czech economic developments



Source: OECD (2018), OECD Economic Outlook (database); Czech National Bank; OECD (2018), OECD Quarterly National Accounts (database) and OECD Main Economic Indicators (database).

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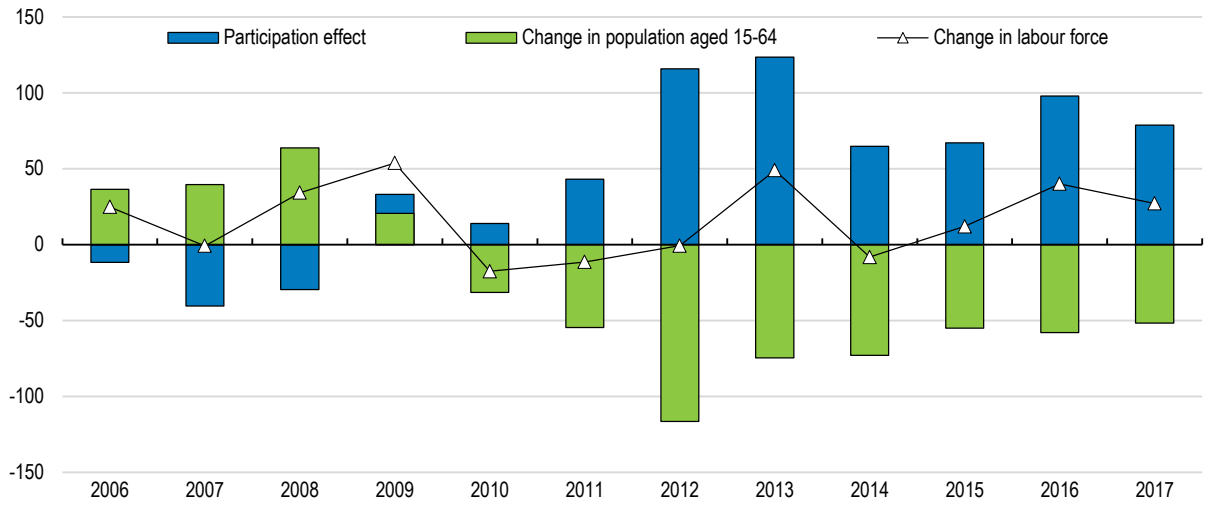
The unemployment rate fell further in 2017 and at below 3% is among the lowest in the OECD (Figure 6, Panel D). Robust job creation pushed up wages by around 6% and the wage bill by 8.3% in 2017, helping to reduce inequalities. The wage bill has been growing strongly in the last three years and at a higher pace than GDP (Figure 10).

The lack of workers is becoming the main bottleneck to higher economic growth. Until recently, labour shortages driven by demographic changes and high employment were partly offset by higher economic activity rates. The ageing process has resulted in a continuous decline of the population aged 15-64 since 2010 (see Figure 7). Nevertheless, this negative effect on the labour force was mitigated in most years by a higher participation rate of persons that have not been economically active in the past, attracted

by job vacancies and growing earnings. However, the economy is facing constraints on the labour market and vacancies registered at employment offices increased more than seven folds, from 30 803 in December 2010 to almost 267 000 in April 2018.

Figure 7. Higher participation in the labour market has offset the effect of ageing

Change in 1 000 persons



Source: OECD (2018), Labour Force Statistics (database).

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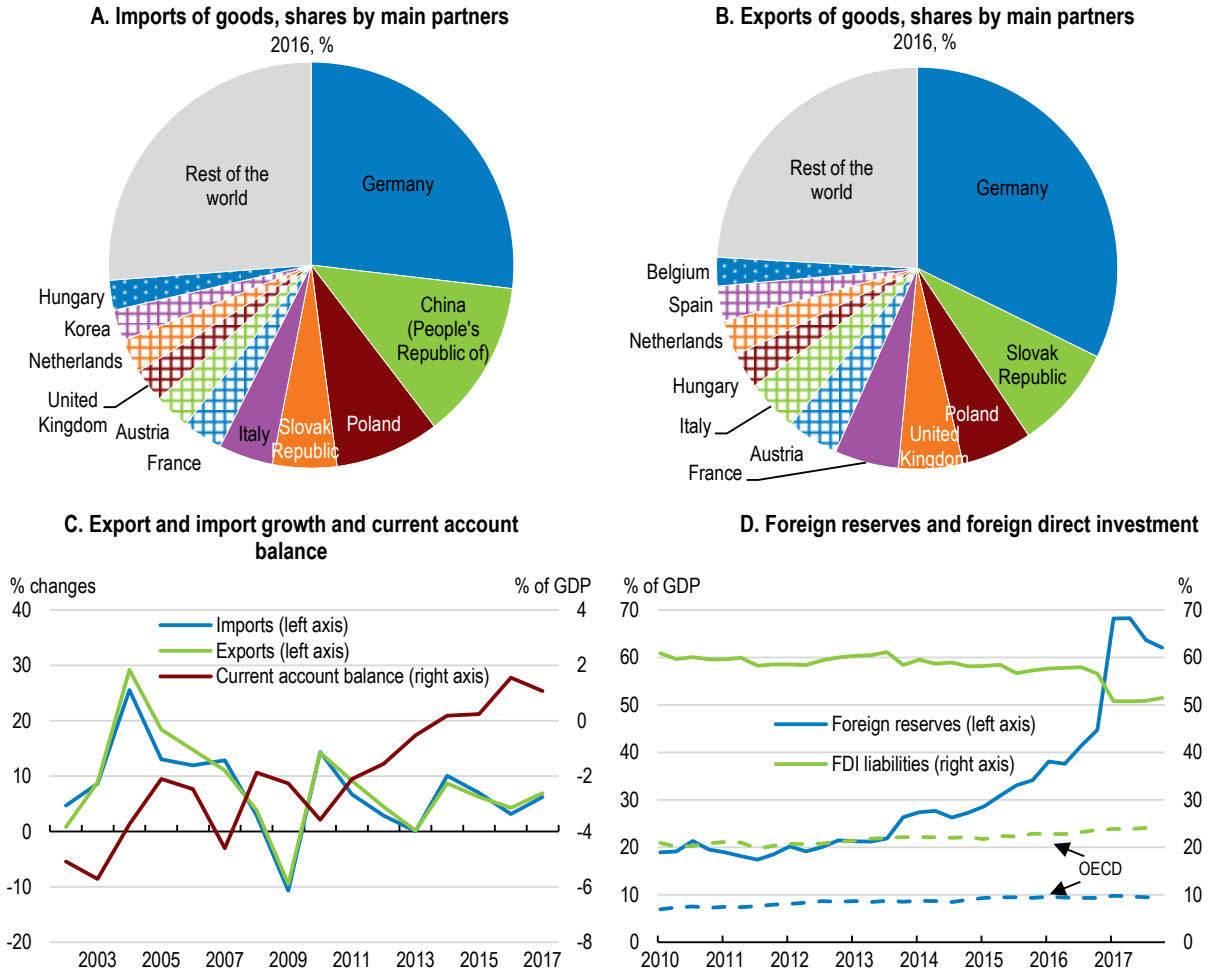
At 3% in 2017, the growth rate of labour productivity is above the post-crisis trend but still below the pre-crisis trend (Figure 9). The level of labour productivity remains relatively low compared to advanced economies due to significant skills mismatches, a low transformation of R&D in innovation and the size of low-skilled intensive manufacturing industries (OECD, 2016[1]).

Exports remain an important source of demand, growing by around 6% in 2017 (Figure 8). Much of this, however, can be thought of as re-exports of imported intermediate goods and ICT technology. Germany is the main partner in this two-way traffic as the Czech industry is closely integrated into German value chains (Figure 8, Panels A and B). The Czech industry is also well integrated into Central and Eastern European value chains.

The current account has been positive in the last four years (Figure 8, Panel C) contributing to foreign reserves accumulation. In addition, the Czech National Bank's exchange rate policy led to further accumulation of foreign reserves to prevent the koruna appreciation from 2013 to 2017. Following the exit from this exchange rate policy in April 2017, reserves started to decrease as a percentage of GDP and the koruna to appreciate.

Figure 8. EU countries are the Czech Republic's main trading partners



Source: OECD (2018), OECD International Trade by Commodity Statistics (database); OECD Economic Outlook (database) and OECD Resilience (database).

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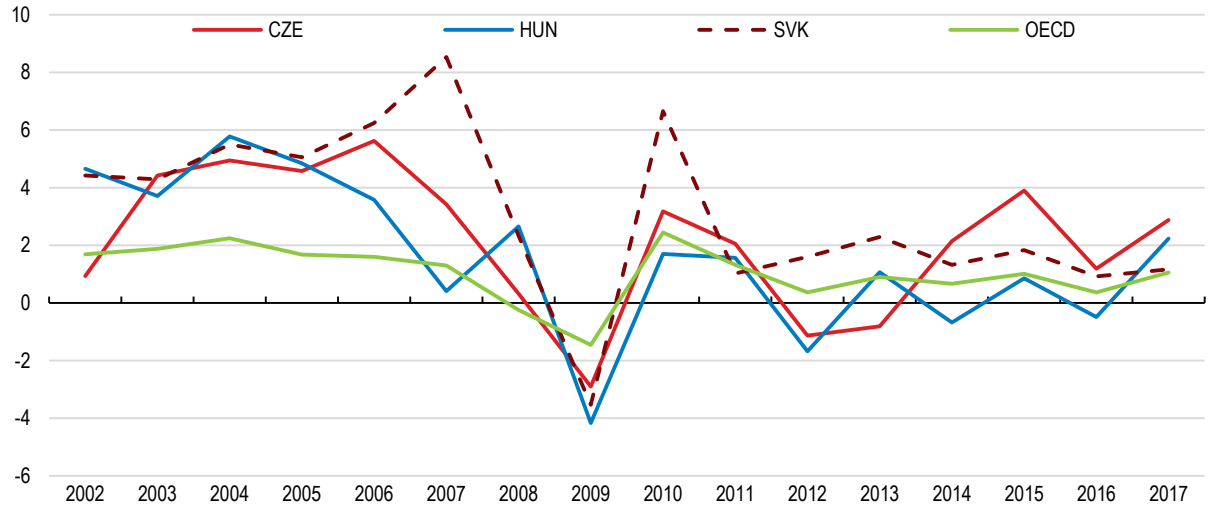
Figure 9. Labour productivity is picking up

Year-on-year per cent changes



Source: OECD (2018), OECD Economic Outlook (database).

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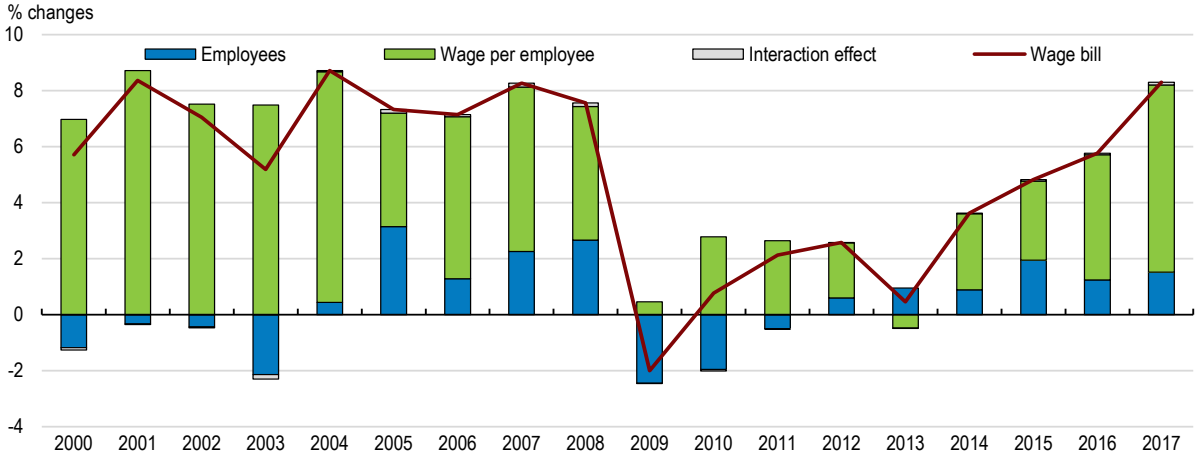
Figure 10. The wage bill is rising

Decomposition of wage bill growth



Source: OECD (2018), OECD Economic Outlook (database).

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Inflation picked up strongly in 2017 reaching on average 2.5% after three years of being around 0.5% (Figure 11). On the supply side, low unemployment combined with high job vacancies led to an acceleration of wage growth, which in turn prompted increases in unit labour cost. In addition, increasing oil prices contributed to inflation. On the demand side, strong household consumption drove up inflation. Food and non-alcoholic beverage prices are the key contributors to inflation.

Prospects and risks

Economic growth is projected to slow in 2018 mainly due to labour supply constraints. However, even at 3.8%, growth will be hovering above its estimated potential (Table 1). Increasing wages and employment will keep household consumption and internal demand high. The increase in public sector wages by 10% on average in 2018 will contribute to higher demand. Private investment is also projected to increase thanks to favourable credit conditions, and greater withdrawal of European Structural and Investment Funds. Moreover, the relative higher cost of labour than capital should stimulate physical capital investment. Also, high housing demand and prices will continue to drive housing investment. The net contribution of the external sector to growth should be more limited as imports and exports grow in parallel. Growing wages and strong household consumption are expected to keep annual inflation slightly above the 2% target of the Central Bank in 2018.

Risks stem equally from internal and external factors. Labour market developments could limit growth or even drive a bigger slowdown of growth than expected. First, the unemployment rate is hitting a floor as the seasonally adjusted unemployment rate in the age group 15–64 declined to 2.3% in April 2018 (CZSO, 2018[2]). The number of job vacancies exceeds 267 000 in April despite increases in participation rates. Also the rise in inflation and wages and slower appreciation of exchange rate may lead to a normalisation of interest rates at a speedier pace than anticipated, increasing the gap with the euro area's rates. That would accelerate the appreciation of the koruna and impact negatively exports and growth (Table 1). The rapid rise in house prices poses a further risk.

Also, there are signs of overheating as the economy is growing above potential, wages are increasing rapidly and the labour market is tight. These dynamics pose a risk of inflation picking up strongly and calling for early interventions of the Central Bank and stronger appreciations of the exchange rate than expected.

On the external side, the Czech economy is particularly exposed to trade disruptions given its high inclusion in global value chains (Table 2, Box 2). Exports in value added terms contribute to around 45% of GDP (OECD, 2017[3]). The United States and the United Kingdom are the second and third destinations respectively in terms of value added exports of the Czech Republic. Therefore, escalation in import tariff hikes would be damaging for growth. As well, a disorderly Brexit would hit the growth prospects.

Table 2. Potential vulnerabilities of the Czech economy

Shock	Potential impact
Limits on the free movement of goods and services after Brexit.	The Czech economy is landlocked and very integrated into European value chains and would be struck by major changes affecting the flow of goods and services across Europe.
Rising protectionist pressures in trade and investment	Tariff increases affecting intermediate goods for the manufacturing sector would have damaging impacts.

Monetary, financial and fiscal policies to promote stability and well-being

Monetary policy and exchange rate developments

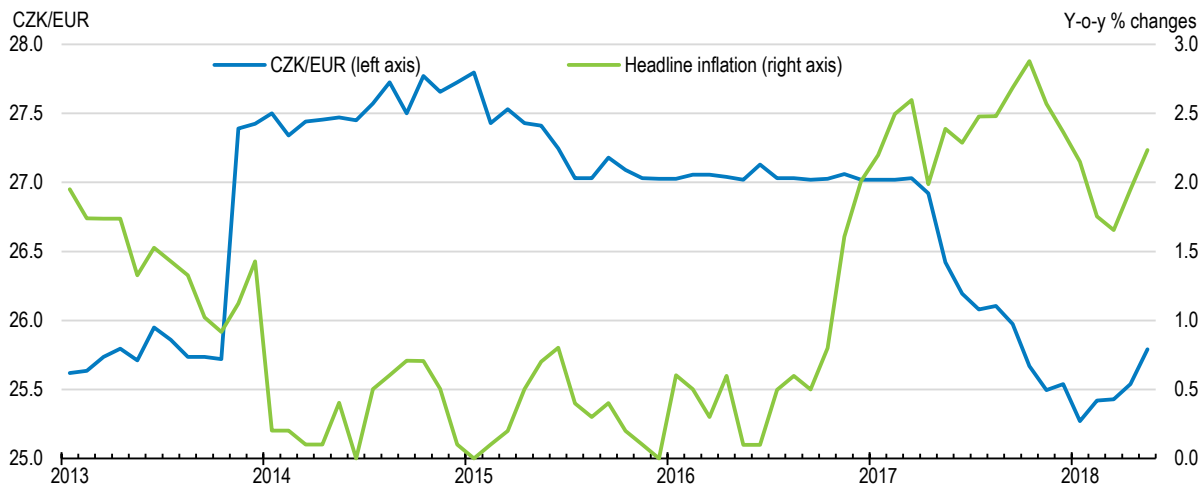
The Czech National Bank (CNB) is committed to an inflation-targeting framework and a floating exchange rate. Confronted with a persistent deflationary risk, in November 2013

the CNB used the exchange rate as a further policy instrument within its inflation-targeting strategy. In particular, the CNB intervened in the foreign exchange market to maintain the koruna above a floor set at CZK 27 to the euro, accumulating foreign reserves (70% GDP in April 2017). In April 2017, the CNB announced the exit from the exchange rate floor policy. In the following months the koruna gradually and continuously appreciated, reaching CZK 25.5 to the euro by the end of 2017. The exit from the exchange rate floor policy is a welcomed development.

As inflation rebounded strongly over the course of 2017, the CNB raised interest rates for the first time in five years in August 2017. Two more hikes followed afterwards, setting the base rate at 0.75% (March 2018). The increase of the interest rate is needed to prevent increasing inflation.

As wages and inflation are rising, monetary policy should raise interest rates further at a gradual pace as inflation remains within the neighbourhood of the target and monitor closely the inflation impact of the developments in the labour market. Should the economy show inflationary signs of overheating, the CNB should stand ready to raise rates accordingly. A faster pace of rising interest rates in the Czech Republic will increase the gap vis-à-vis euro area interest rates and contribute to the appreciation of the koruna. However, an appreciating exchange rate will tend to dampen economic activity and temper inflationary pressures, particularly for imported goods and services (Figure 11).

Figure 11. The exchange rate is appreciating and inflation is around the target



Source: Calculations based on OECD (2018), OECD Economic outlook (database) and Thomson Reuters Datastream (database).

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Financial sector vulnerability

The financial sector is benefiting from the economic boom. Its robustness and resilience have increased throughout 2017 despite increasing exposure to the housing sector. Indeed, the profits of banks, which represent 80% of the financial sector, have been increasing. The return on assets stands at 1.1% compared to 0.5% in the European Union (Czech National Bank, 2017[4]).

The good profits of the banking sector are driven by increasing loans to households at a comfortable interest rate margin (Figure 12). In particular, the margin for consumer loans at 8.6 percentage points remains high. Moreover, non-performing loans have receded markedly in all categories, to 3% of the total in 2017 (Figure 12). The structure of banks' finance appears robust as the ratio of loans to deposit remains low and overall indebtedness is low compared to most OECD countries. Liquidity ratios do not show high exposure risk in the short run as bank assets are high (Figure 12).

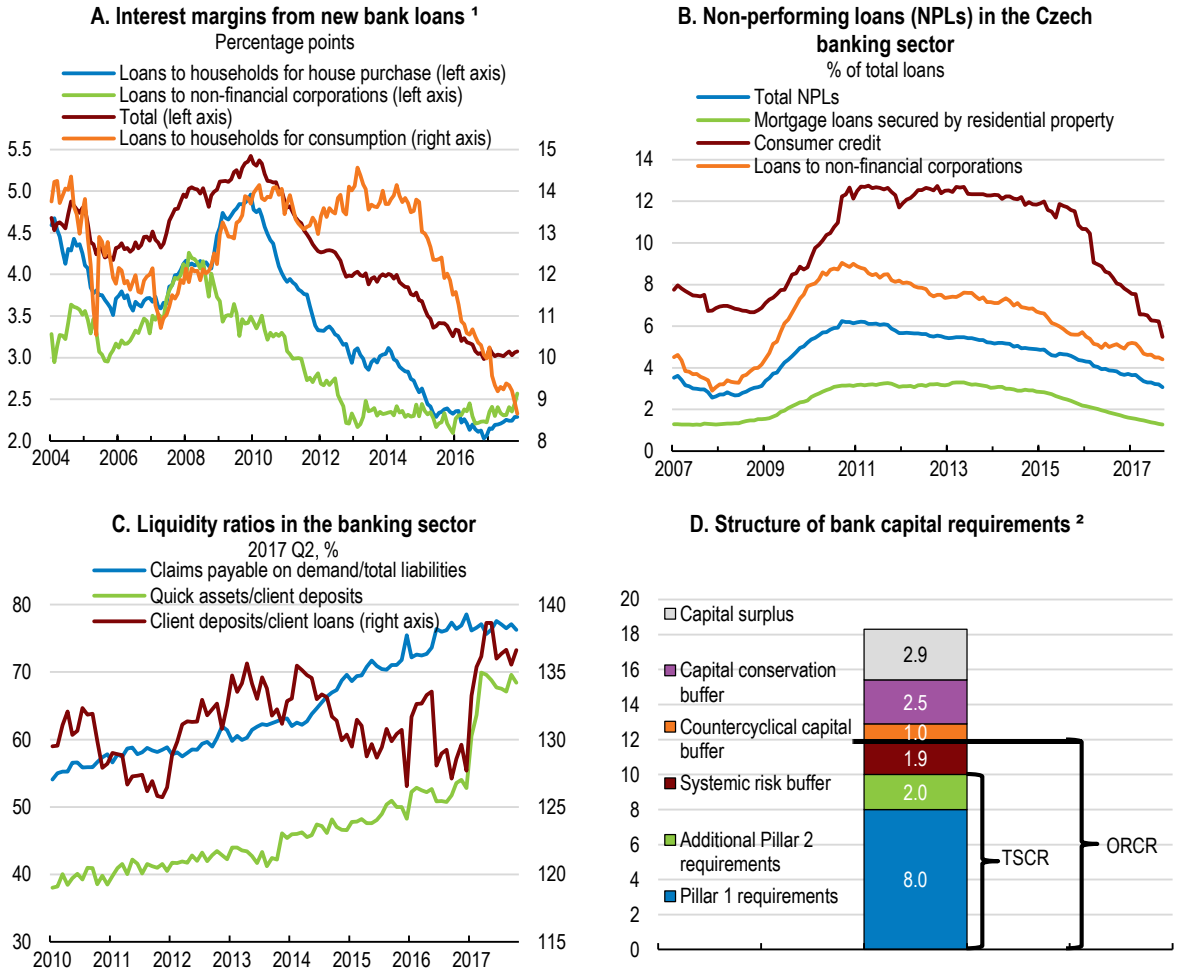
Banks also have strong buffers compared to capitalisation requirements. In addition to the overall capital requirements, the Czech National Bank added two more capital requirements: the capital conservation buffer and the counter-cyclical capital buffer. Banks in the Czech Republic exceeded these requirements by 2.9 percentage points by the end 2017 (Figure 12, Panel D). As the cost of risk remains low due to low interest rates and credit is increasing rapidly, the CNB introduced in January 2017 a 0.5% counter-cyclical buffer. The cyclical component of systemic risk posed by rising credit is persistent, as such the announced increase in the counter-cyclical capital buffers to 1.5% effective from 1 July 2018 appears necessary. Moreover, the counter-cyclical buffer is not affecting so far the availability of credit or the cost of capital. These prudential rules are in line with best practices in OECD countries.

Housing market developments are of some concern. Low interest rates combined with improving economic prospects and rising incomes have resulted in increasing demand for houses. The loans for house purchases have accelerated in the last two years (Figure 13, Panel A) and are reaching historically high levels. The increases in the loan growth rate and supply constraints are mirrored in rising housing prices. The housing sector experienced the highest price growth rate among EU countries in 2017 (Figure 13, Panel C). Moreover, housing prices are growing at a faster pace than wages, though they decelerated moderately in the first quarter of 2018. Therefore, household indebtedness is increasing and banks are exposed to a reversal in household income progress.

Increasing house prices are also the result of constraints on the supply side. Regulatory burdens to receive a construction permit are high and requires on average the fulfilment of 21 procedures compared to about 12.5 across OECD countries (World Bank, 2018[5]). As such, time between planning and finalising a construction project may take several years (OECD, 2017[6]).

To limit banks' exposure to the housing market and ensure that borrowers are creditworthy, the CNB introduced in 2015 and 2017 various prudential measures, in particular loan-to-value (LTV) ratios. For instance, it is recommended that the LTV ratio of no retail loan secured by residential property exceeds 90%. Banks are also encouraged to limit loans that have an LTV ratio between 80-90% at 15% of their portfolio on a quarterly basis. Banks and loan providers are also recommended to prudently assess the loan request of clients whose debt-to-income ratio exceeds eight or whose debt (service)-to-income ratio exceeds 40%. From October 2018, debt should not exceed nine times the net annual income of borrowers and the debt service-to-income ratio should not exceed 45%. These prudential ratios are only recommendations and are not binding, limiting their effectiveness. The CNB can only use the aggregate prudential instruments, in particular additional capital requirements, to influence banks' lending behaviours.

Figure 12. Exposure to financial vulnerabilities is low



1. Interest margin is the difference between the borrowing and lending rates of banks.
2. TSCR is for Total Supervisory Review and Evaluation Process Capital Requirement or Total SREP Capital requirements. "Overall capital requirements" is the sum of TSCR and all buffers. OSCR means "Other relevant capital requirements" and is the sum of the TSCR and the systemic risk buffer.
Source: Czech National Bank.

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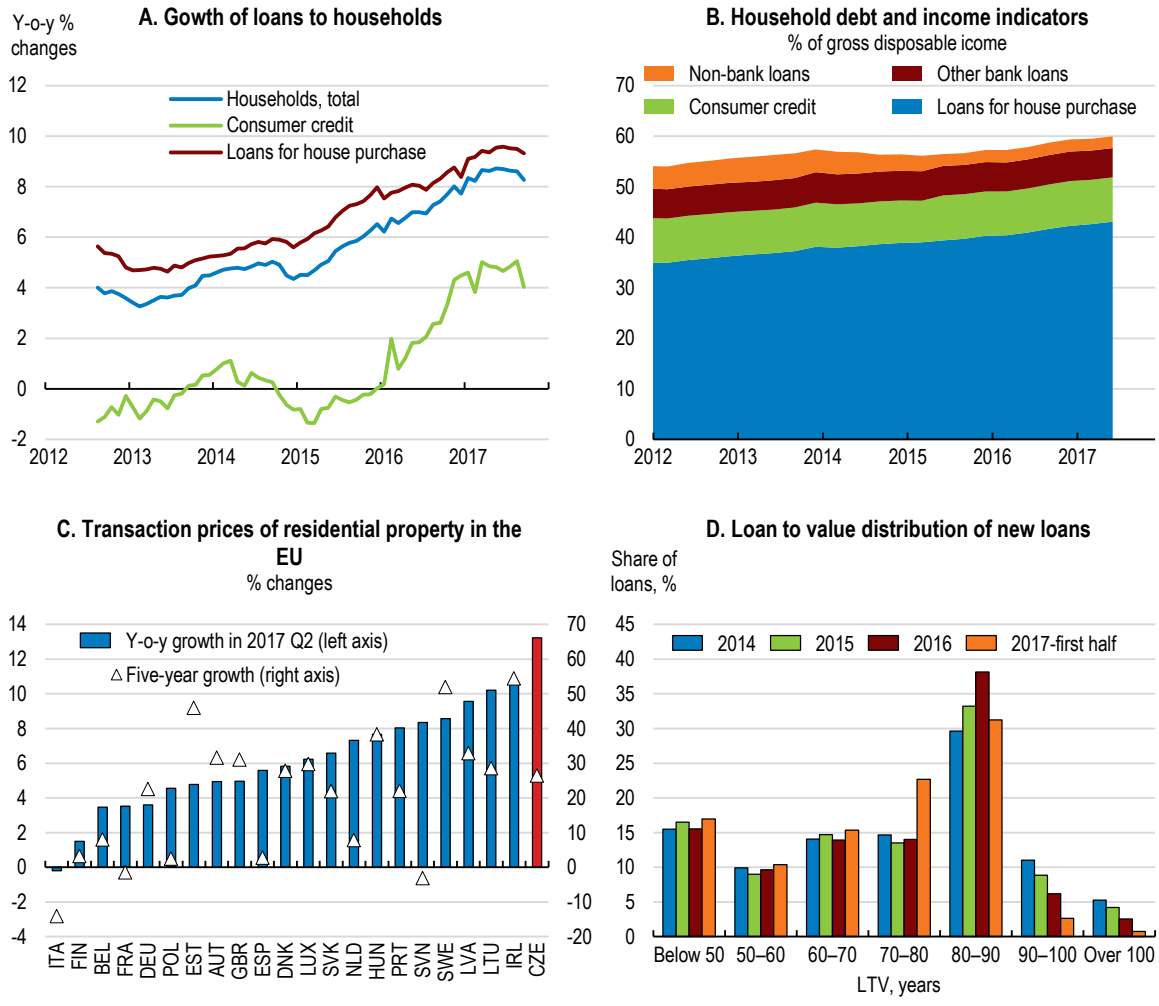
So far, banks are not fully compliant with these recommendations. The share of loans with LTVs of 80-90% stood at 31% in the first half of 2017, and almost 3% of the loans provided had LTVs of over 90% (Figure 13, Panel D), though in June 2017 the compliance significantly improved. Moreover, the valuation of collateral tends to be higher to respect the LTV norm (Czech National Bank, 2017[4]), which is increasing banks' exposure to changes in the economic situation of borrowers.

The CNB could be given the power to set prudential rules applicable to individual loans. However, to avoid overly restricting credit to individuals, the borrowing limits should be judged with regard to borrowers' capacities, in particular their level of income.

Figure 13. Credit and housing market developments raise some concerns



Source: Czech National Bank; Czech Statistical Office and Eurostat.

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Fiscal policy

The fiscal position is strong but will be challenged by an ageing population. At 2.3% of GDP in 2017, the primary balance increased compared to 2016 and has been in surplus for three years in a row. Therefore, debt-to-GDP is decreasing rapidly and is one of the lowest in the OECD in 2017 at 35% (Maastricht definition). The primary balance is expected to remain positive in the next two years, further bringing government debt down. At below 30% of GDP, gross debt is considered sustainable for the Czech Republic (Fournier and Fall, 2015[7]). Moreover, fiscal buffers needed to cushion adverse shocks are estimated at 10% of GDP (Fall et al., 2015[8]).

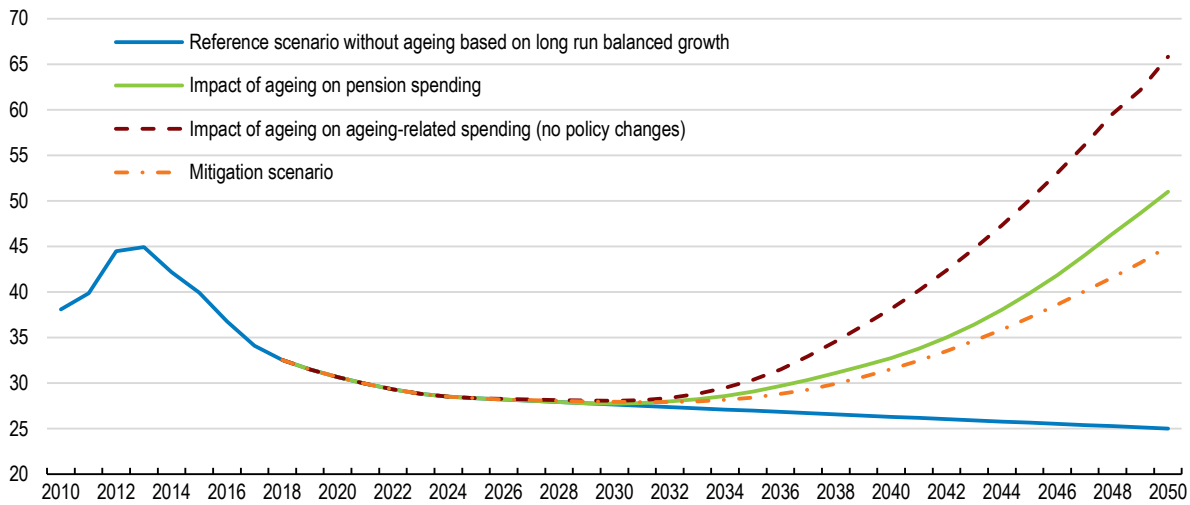
However, ageing will weigh on public finances in a longer-term perspective. If pension policy is not adjusted to cushion the impact of ageing, the debt-to-GDP ratio will increase by more than 20 percentage points by 2050 (Figure 14). Moreover, if no action is taken in

any ageing-related spending domain, the debt-to-GDP ratio would double by 2050 and further deteriorate by 2059 – the peak year of ageing impacts on spending.

The Czech Republic is committed to strengthening its fiscal framework to guarantee sustainability in the long run. In line with European Union and past OECD recommendations, fiscal institutions are being set up (Table 3).

Figure 14. Some fiscal space is available to address future needs

General government gross debt, Maastricht definition, in per cent of GDP



Note: The baseline consists of projections for the Economic Outlook until 2019. Thereafter, assumptions are: real GDP grows progressively closing the output gap and from 2025 growing by 2.5%; a balanced budget from 2025; and an average real effective interest rate converging to 2% by 2025. The "impact of ageing on pension spending" scenario assumes increases on pension spending are financed through the deficit which reaches 2.6% of GDP in 2050. The "impact of ageing on ageing-related spending" scenario adds together the impact of ageing on pensions, health and long-term care and assumes the deficit reaches 4% of GDP in 2050. The "mitigation" scenario assumes that half of the ageing-related spending is financed by increasing revenues and limiting spending increases.
Source: Calculations based on OECD (2018), OECD Economic Outlook (database).

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Table 3. Past recommendations to strengthen the fiscal framework

Recommendations in previous *Surveys*	Action taken
Implement the new fiscal framework and the fiscal council.	Acts on budgetary responsibility entered into force in February 2017. A medium-term budgetary objective is set to ensure long-term sustainability of public finances. Two independent institutions are put in place to monitor the respect of fiscal rules: • National Budgetary Council (members appointed on 25 January 2018): surveillance of the respect of fiscal rules and assess the impact of governmental actions on long-term sustainability of public finances • Committee for Budgetary Forecasts (members appointed on 30 April 2018): verify the plausibility of macroeconomic and fiscal forecasts used in the budgetary process.
Reduce the advantages of self-employment in terms of social contributions and personal income tax.	Since January 2018 there has been a 50% reduction of the flat-rate expenditure limit (to CZK 1 million) for entrepreneurs. This measure reduces the fictitious reporting of employment as a self-employment activity and approximates the level of taxation of self-employed to workers.

The stance of fiscal policy has been restrictive for the last two years (Table 4). While more public spending would have contributed to maintain growth momentum in 2016 and push inflation up, the fiscal stance was appropriate in 2017 in the context of strong growth and inflation. As there are signs of overheating, fiscal policy should avoid beeing procyclical. Public investment has fallen from the peak of 5.1% of GDP in 2015 to around 3.3% of GDP in 2016 and 2017. Public investment should increase again in 2018 with the acceleration of the EU funds withdrawal. Government spending, though stable relative to GDP (Table 4), is increasing in volume at a pace slightly higher than GDP. Government spending increased by 5% in 2017 and is expected to grow by 6% in 2018.

The main drivers of increases in government spending are:

- Pension benefits, which went up by 4% partly due to the changes in the indexation formula.
- Benefits for people with disabilities and long-term care.
- Benefits for families with children in particular to support the return of mothers to the labour market and for introducing paternity leave.
- The salary scale of civil servants, which will increase by 10%, excluding teachers, whose scales increased by 15% from November 2017, and health care workers whose scales have increased by 10% as of January 2018. The government wage bill should increase by at least 7% in 2018 (Ministry of Finance, 2018[9]).

These measures are partly in line with past OECD recommendations to help women with children to further participate in the labour market by increasing family benefits. They also confirm that public expenditure is tilted towards social spending and less in investment in infrastructure, R&D and education. The dynamics of public investment remains closely driven by investment co-financed with EU resources, which implies high volatility and can delay investment in important infrastructure such as highways and railways. Future increases of public sector wages should be linked to labour productivity growth in the economy.

Table 4. The fiscal situation is robust

Per cent of GDP

	2015	2016	2017[1]	2018[1]	2019[1]
Spending and revenue					
Total revenue	41.1	40.2	40.3	40.2	39.8
Total expenditure	41.7	39.4	38.8	38.6	38.4
Net interest payments	0.9	0.8	0.6	0.6	0.5
Budget balance					
Fiscal balance	-0.6	0.7	1.6	1.6	1.4
Cyclically adjusted fiscal balance[2]	-0.8	0.7	0.8	0.4	0.1
Underlying fiscal balance[2]	-0.6	0.7	0.8	0.4	0.1
Underlying primary fiscal balance[2]	0.4	1.4	1.4	1.0	0.7
Public debt					
Gross debt	52.0	47.7	43.9	41.7	39.8
Gross debt (Maastricht definition)	40.0	36.8	34.6	32.4	30.5
Net debt	20.0	17.2	12.2	10.0	8.1

1. Projection
2. As a percentage of potential GDP
Source: OECD (2018), OECD Economic Outlook 103 (database).

Government revenue is booming thanks to the expanding economy. Revenue collection increased by 6.5% in 2017 compared to 1.5% in 2016 (Ministry of Finance, 2018[10]) and is projected to remain high in 2018. Increasing household consumption and the introduction of electronic recording of sales and VAT declarations are boosting VAT revenues, which increased by 9.5% in 2017. This has also started to have an effect on VAT evasion, which has decreased recently (European Commission, 2018[11]). Revenues from personal income tax and social contributions have increased notably in 2017 and are projected to remain high in 2018, driven by growing employment and wages.

The Czech Republic has made significant efforts to increase the collection of VAT. Estimates of the VAT Gap conducted for all EU Member States show a downtrend of revenue losses in the Czech Republic during the last 4 consecutive years. However, the estimates have to be interpreted carefully with respect to VAT fraud and tax evasion. While the VAT Gap presents a measure of VAT revenue losses from fraud and non-compliance expressed as the difference between the amount of VAT revenue actually collected and the theoretical amount that is expected to be collected, it can also be influenced by bankruptcies and tax arrears, as well as reporting problems in national accounts. However, the Czech Republic's VAT Gap (at 16.48%) remains above the EU average (12.77%), and continued vigilance and efforts to further reduce this gap are therefore warranted. Consideration should notably be given to further reducing possible complexities from rate differentiation and exemptions, as these are generally known to have a negative impact on compliance.

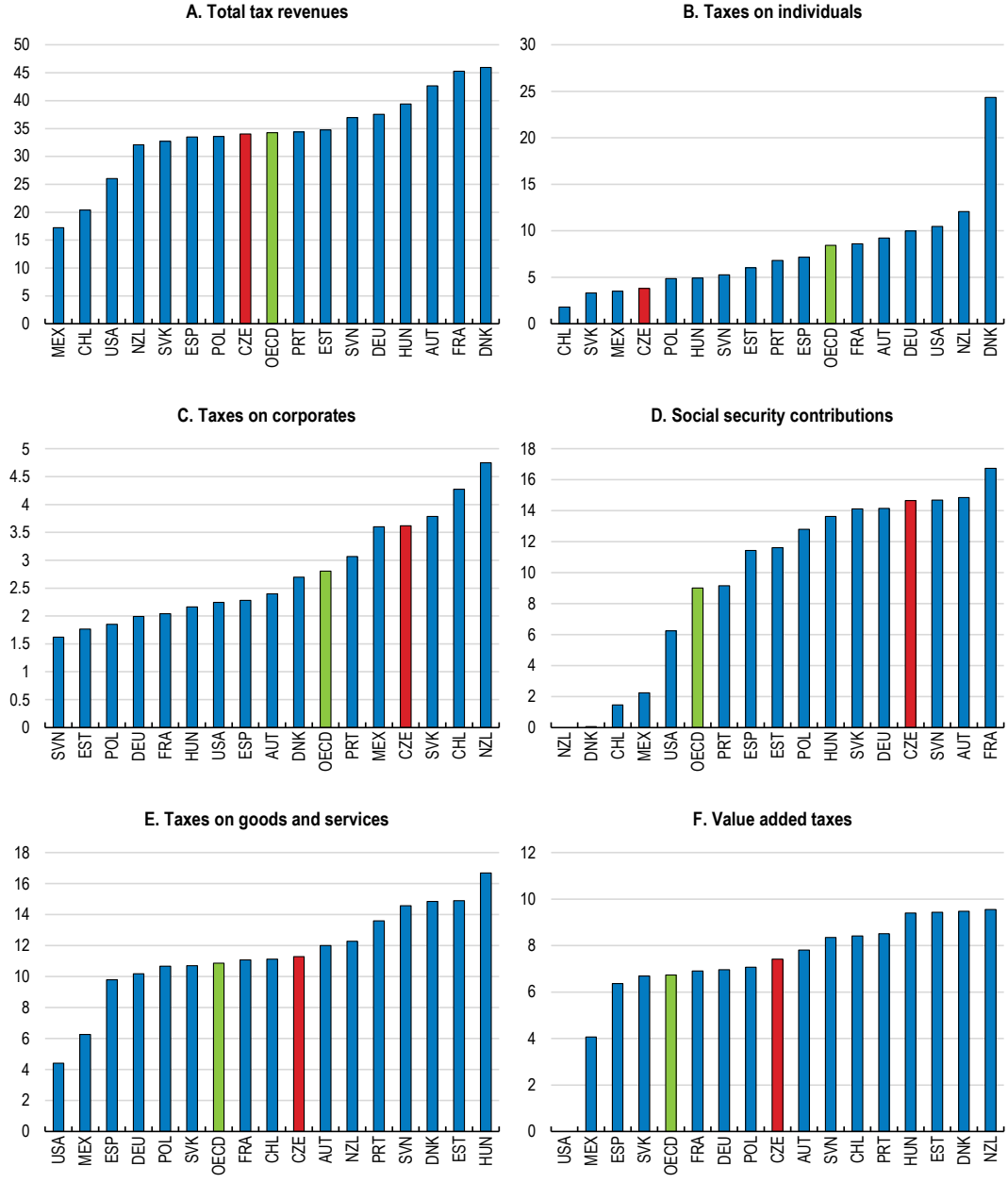
The Czech Republic is also advised to carefully target anti-fraud measures at the sectors and taxpayer profiles that present the highest risk, in accordance with modern compliance risk management strategies, and to avoid that such measures create undue compliance burden for bona fide business. Moreover, regular changes to the tax system are creating uncertainties and compliance costs. The tax system should move towards more simplicity and fewer exemptions or reduced rates and more stability.

The structure of government revenues is unbalanced, with a heavy reliance on social security contributions. While government tax revenues were almost 35% of GDP in 2016, social security contributions were 14% of GDP (Figure 15). In terms of collected social security contributions, the Czech Republic ranks among the highest countries across the OECD. At the same time, personal income tax revenues are low (Figure 15, Panel B). VAT revenues are above the OECD average, but the revenues on goods and services are more similar to the OECD average, indicating that the Czech Republic raises relatively fewer excise duties (possibly on fuels, environmentally related taxes).

Imbalances in the structure of government revenues contribute to relatively high cost of labour. The tax wedge is the 6th highest across the OECD and the average rate of employers' social contributions is the second highest (Figure 16). Up to now, this has not been detrimental to labour market performance, in particular to employment, only because the average wage is low compared to other EU countries. Indeed, the Czech Republic has built its comparative advantage by holding wages low to attract foreign direct investment, in particular in manufacturing industries.

Figure 15. Government fiscal revenues rely heavily on social contributions

2016 or latest, % of GDP



Source: OECD (2017), Revenue Statistics (database).

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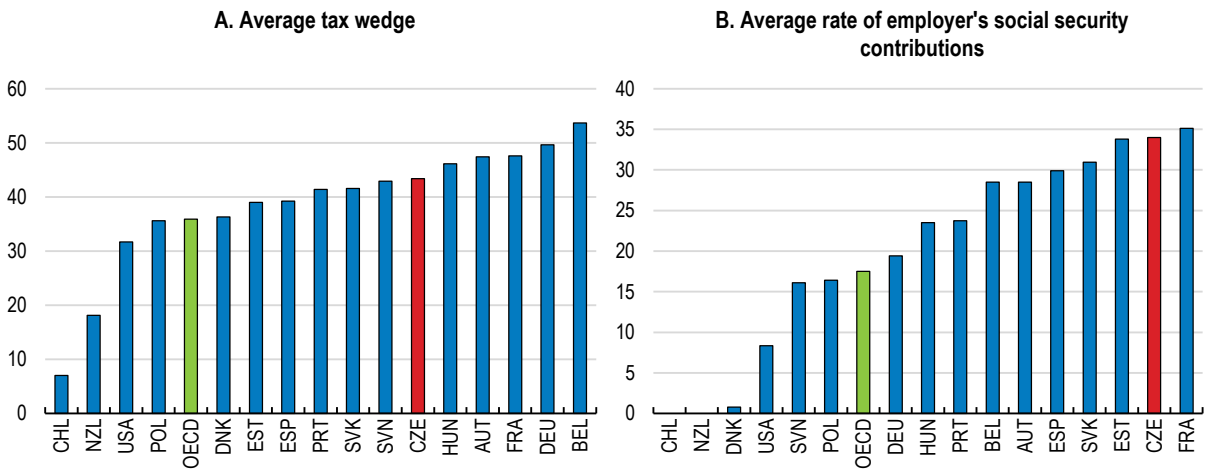
However, as wage convergence towards OECD and EU averages is continuing and given the recent acceleration of wage growth, the high level of wage taxation could become burdensome. To maintain wage competitiveness, the government should consider shifting part of the financing of social protection from wages towards taxes on goods and services or on all kinds of income (e.g. capital and property income) and environmental taxes. For instance, there is room to shift one percentage point of GDP of social contributions

collected towards VAT revenues and/or environmental taxes (Table 5). Also, indirect taxes are less harmful for growth than taxes on wages.

Figure 16. The fiscal burden on labour could be lowered

2017, percentage



Note: The tax wedge is the sum of personal income tax and employee plus employer social security contributions together with any payroll tax less cash transfers, expressed as a percentage of labour costs for a single person on average earnings.
Source: OECD (2018), "Taxing Wages: Comparative tables", OECD Tax Statistics (database).

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Table 5. Scenarios of VAT rates to offset lowering social security contributions

VAT rates to offset a decrease of one percentage point of GDP of social contributions collected.

	Actual	Scenario 1	Scenario 2	Scenario 3	Scenario 4
basic %	21	25	24	24	21
reduced %	15	15	18	15	21
2nd reduced %	10	10	13	15	21

Note: Based on 2016 GDP and VAT collected from the different rates. These simulations do not take behavioural responses to tax rate changes into account.
Source: OECD calculation.

Table 6. Financial assessment of fiscal recommendations

Fiscal recommendations	Impacts on fiscal balance
Shift 1 percentage point of GDP of social contributions collected towards indirect taxes and/or environmentally related taxes.	Neutral almost
Keep expanding the supply of affordable childcare facilities by redirecting funds from family related transfers	Direct 0.8 pp of GDP from the 3.3% of GDP family benefits spending.
Favour higher participation of inactive persons through special training and vocational training.	-0.7% of GDP
Link retirement age to life expectancy	+0.2 pp of GDP in 2030 and +0.7 pp in 2040

Source: OECD

Taxes on self-employed remain lower than for employees creating loopholes in the tax system. The Czech Republic has a large number of self-employed compared to OECD countries due to incentives created by the tax system. The assessment base for social contributions is set at 50% of profits, effectively lowering the overall contributions of self-employed people compared to employees. However, recent reforms of self-employed taxation in addition to high job creations and strong wage growth may have contributed to the small decline in the number of self-employed. Some self-employed people have shifted towards limited liability companies or became secondary self-employed (meaning their business activity is not the primary source of income, they have other sources of income). Indeed, a cap on the use of lump-sum expenses has already been tightened over the past few years. The cap was further reduced since January 2018. However, for self-employed people with revenues up to CZK 1 million (around EUR 40 000) the tax system remains advantageous.

The lower assessment base for social contributions for self-employed has direct consequences on the contribution of self-employed to health care and pension schemes and their benefits. While self-employed benefits from the health care system are the same as for employees, their pensions are on average about 13% lower (Šatava, 2017[12]). The risk of falling below the poverty line is higher for retired self-employed individuals, which would increase the burden on public finances through future social transfers.

The current framework incentivises self-employed to under-declare their income. For example, health care contributions of self-employed are defined as the maximum between the minimum contribution level and 13.5% of half of their profits. The marginal effective tax rate for those who declare an income above the minimum contribution level jumps from 0 to 6.75%. Therefore, self-employed are incentivised to declare a revenue so that they contribute the minimum contribution level, which about 90% of self-employed people do. Different options could be considered to raise the contributions of self-employed:

- The government could consider gradually increasing the assessment base for health contributions for self-employed or the minimum contribution level.
- In addition to increasing the minimum contribution level, self-employed would pay a lower contribution rate on their revenues above the threshold. While such design would not increase their health care benefits, it would imply higher pensions in the future as an incentive.

Addressing longer-run challenges to well-being

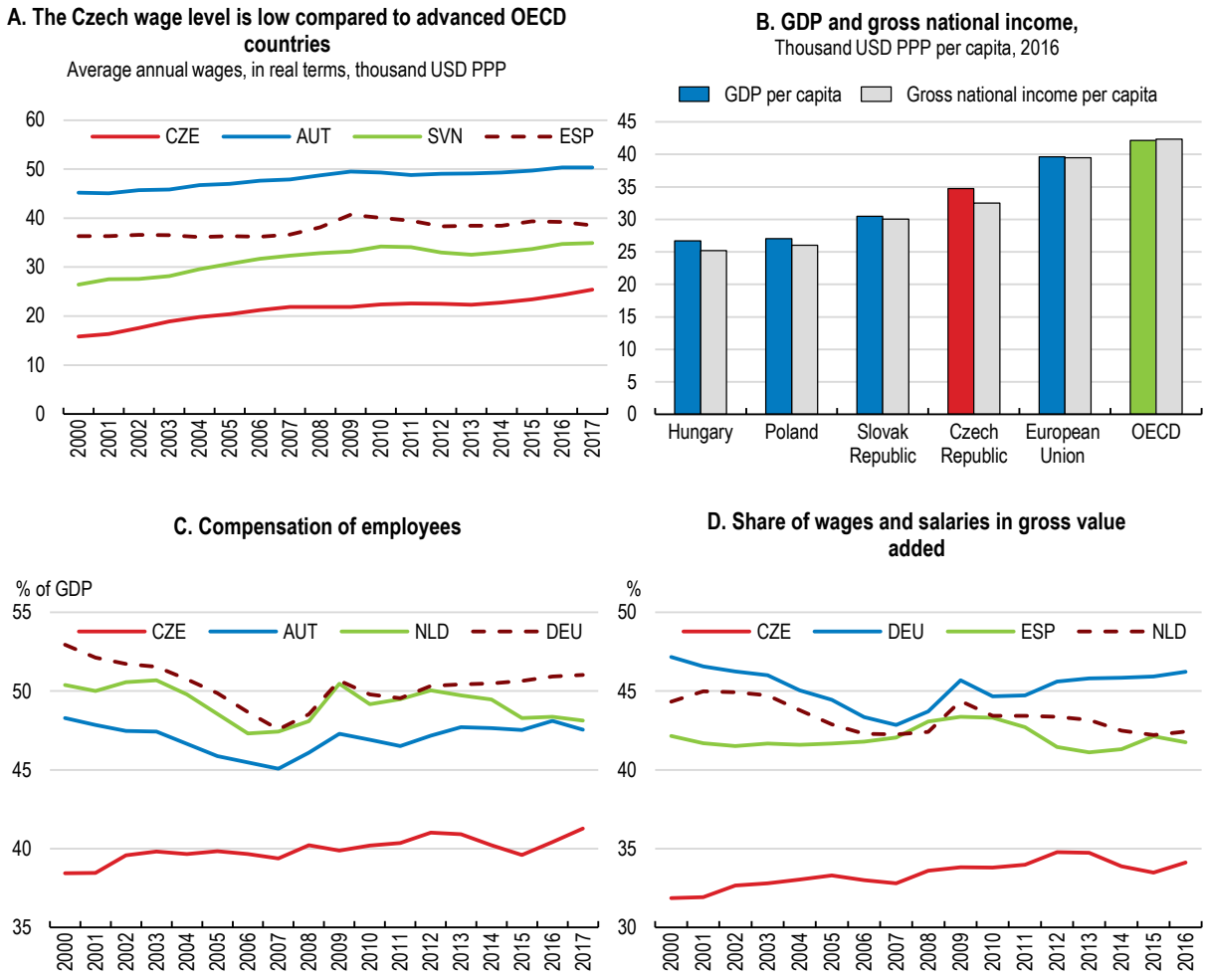
Sharing growth benefits and convergence

As discussed above, GDP per capita is converging towards the OECD average (Figure 1). However, the convergence in terms of household income is lagging behind (Figure 17). Indeed, compensation of employees represents 41% of GDP compared to 45% for most advanced economies and 51% in Germany (Figure 17, Panel C). Moreover the share of wages and salaries in value added is only 34% compared to 42% in Spain and the Netherlands and 46% in Germany (Figure 17, Panel D).

Low labour shares are influenced by the gap between GDP per capita and gross national income, which is among the highest in OECD countries (Figure 17, Panel B). It is the result of large profit outflows related to foreign direct investments that has benefited the economy and its insertion in global and regional value chains. However, it also means

that there is room to improve the sharing of value added to foster a greater convergence to OECD standards (OECD, 2015[13]).

Figure 17. Czech wage levels are not converging to OECD standards



Source: OECD (2018), OECD Labour Force Statistics (database); OECD Economic Outlook (database) and OECD National Accounts (database).

StatLink https://doi.org/10.1787/888933790581 (figure 17)

Box 1. Simulations of the potential impact of structural reforms

Simulations based on historical relationships between reforms and growth in OECD countries allow gauging the impact of structural reforms recommended in this Survey (Table 1). The estimates assume swift and full implementation of reforms. Reforms include a reduction in social security contributions, an increase in training spending and other measures to increase labour supply, notably childcare. Results in Table 7 are not fully comparable to results presented in Table 6 due to differences in methodology.

Table 7. Potential impact of structural reforms on GDP per capita after 10 years

Structural policy	Policy change		Total effect on GDP per capita
	2018	After reform	
Fiscal policy			
A. Reduce social security contributions	34%	31%	1.3%
Labour market policies[1]			
B. Increase spending on activation/Training (2)	7%	14%	0.8%
C. Increase family benefits in kind	0.7%	1.0%	2.1%
D. Increase family benefits in kind (3)	0.7	1.5	5.6%
Total			
A+B+C:			4.2%
A+B+D:			7.7%

1. Table 2 presents the detailed measures.
2. Percentage of GDP per capita
3. Percentage points.

Source: OECD calculations based on Balázs and Gal (2016[14]), "The quantification of structural reforms in OECD countries: A new framework", OECD Journal: Economic Studies, Vol. 2016/1 and Balázs (2017[15]), "The quantification of structural reforms: taking stock of the results for OECD and non-OECD countries", OECD Economics Department Working Papers, forthcoming.

Table 8. Type of reforms used in the structural reform simulations

Structural policy	Structural policy changes
Fiscal policy	
Reduce social security contributions	Reduce social security contributions, which fund pensions, health care and unemployment benefits, from 34% of gross wages to 31%.
Labour market policies	
Increase spending on vocational training and activation.	Increase expenditure per unemployed as a percentage of GDP per capita.
Increase family benefits in kind	Increase family benefits in kind, such as childcare services, from 0.7% of GDP to 1% or 1.5% by shifting family cash benefits.

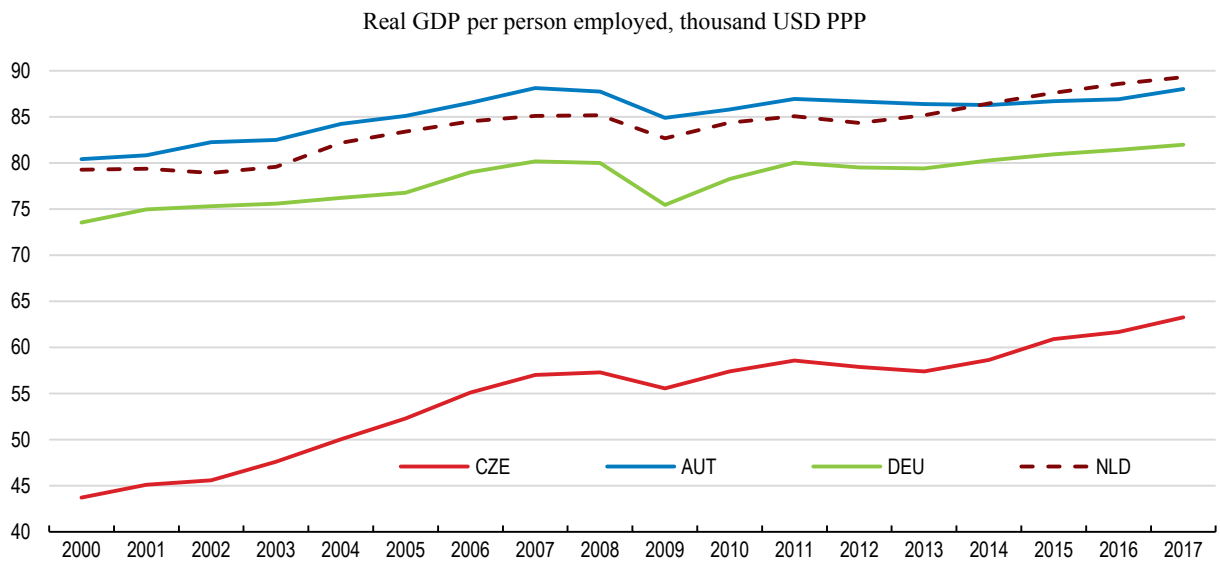
The low level of labour productivity explains the differences in wage levels compared with advanced OECD economies, which, however, allows for an increase in wages without immediately hurting firms' competitiveness (Figure 18). Over the past two decades, low labour costs have contributed to a large inflow of FDI, which has been fundamental for the Czech integration in European production networks (Pavlínek and Ženka, 2015[16]). Recent wage developments are welcomed, but further increases should be backed by corresponding labour productivity growth. To boost productivity and provide a basis for sustainable wage growth, the economy should better leverage its

integration in global value chains (GVCs) and move up the value chain towards knowledge and technology-intensive activities (Box 2).

In the Czech Republic, product and process upgrading prevail (Antal, De Castro and Vlčková, 2015[17]; Pavlinek and Zenka, 2011[18]). To achieve economic upgrading, the Czech economy has to shift from low-skilled activities to higher-skilled activities (Barrientos, Gereffi and Rossi, 2011[19]), increasing the value added that is created and improving the position of firms in GVCs (Humphrey and Schmitz, 2002[20]). To facilitate functional and chain upgrading, innovation capabilities have to be strengthened, and a wide range of knowledge-based capital including superior managerial know-how has to be built up to identify new profitable products (OECD, 2013[21]; OECD, 2016[1]). Endowing workers with the right skill sets – through education and lifelong learning – is also crucial.

Benefits from economic upgrading could encompass spillover effects into the local economy extending beyond firms participating in GVCs. For example, local firms can increase productivity by learning about advanced technologies or good organisational and managerial practices even when not taking part in GVCs (Saia, Andrews and Albrizio, 2015[22]). For local firms to be able to benefit from knowledge diffusion and technological adaptation, the workforce has to be equipped with the right skill-set (OECD, 2017[23]; Morrison, Pietrobelli and Rabellotti, 2008[24]; OECD, 2015[25]). These measures could support more inclusive growth.

Figure 18. The gap between the Czech productivity level and that of advanced economies remains large



Source: OECD (2018), OECD Productivity (database).

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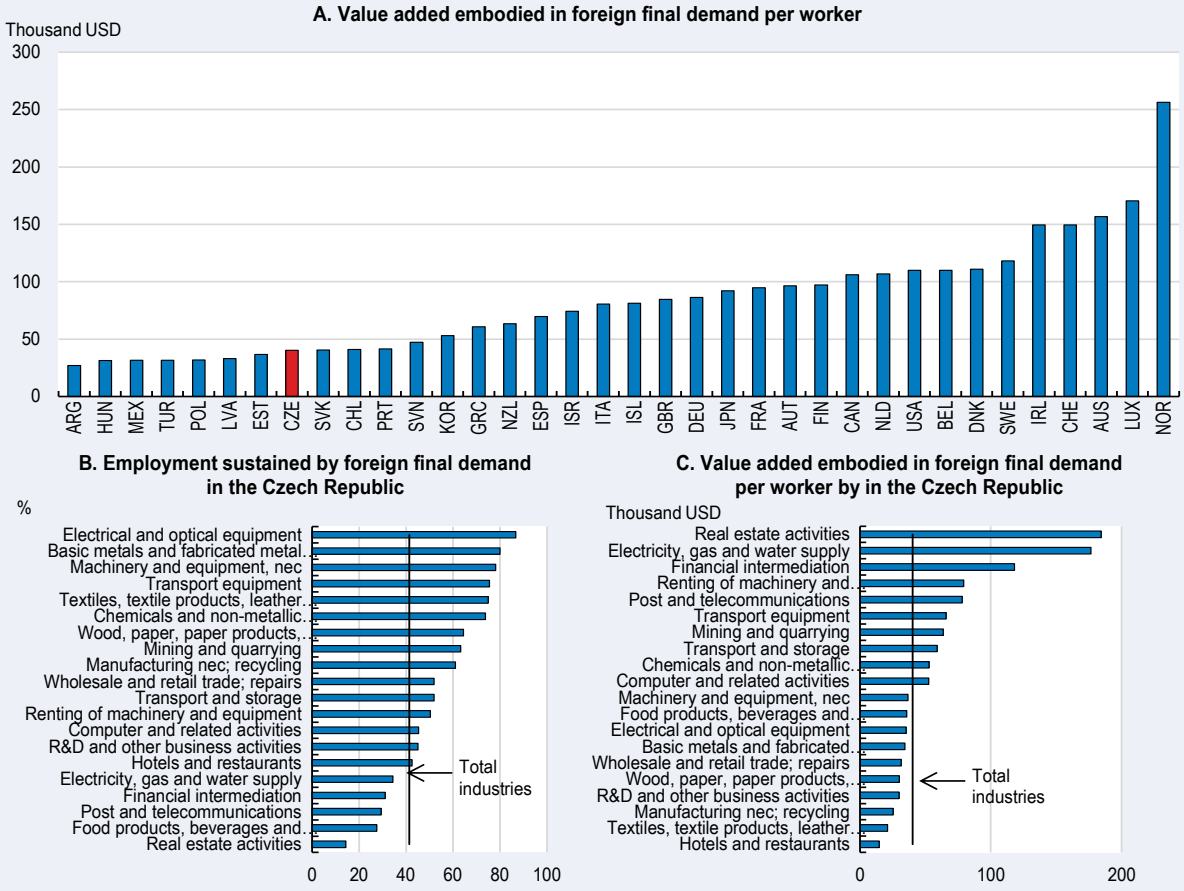
Box 2. Economic upgrading through integration in Global Value Chains (GVCs)

Geographic proximity to Western European markets and significantly lower labour costs, a well-developed supplier base and increasing agglomeration economies have contributed to Czech Republic's high integration in GVCs over the last two decades (Pavlínek, 2015[26]). More than 40% of all jobs are generated through participation in GVCs (Figure 19, Panel B). In some manufacturing industries - e.g. electrical and optical, machinery and transport equipment, textiles - participation in GVCs sustains more than 75% of jobs. Despite the high integration in GVCs, the value-added resulting from this participation is low and most jobs are in less knowledge-intensive sectors (e.g. mass assembly in the automotive industry). Thus, in industries where a large share of jobs is sustained by participation in GVCs, the value added per worker is comparatively low.

Figure 19. Benefits from participating in GVCs are moderate

2011 or latest available



Source: OECD (2018), OECD STAN (database) and OECD TiVa (database).

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The amount of value created has a direct effect on the economy in terms of employment, income and also economic growth. Value added varies across the different stages of the production process, with most of it added at the beginning or the final stages. The fabrication process tends to add the least value to the product.

There are several ways to realise higher value added from GVC participation. Humphrey and Schmitz (2002[20]) distinguish four basic types of upgrading, which have been documented in vast number of case studies (OECD, 2013[27]):

- Process upgrading: undertaking tasks with significantly greater efficiency and lower defect rates, and process more complex orders.
- Product upgrading: supplying higher value-added products owing to their superior technological sophistication and quality, and also introducing novel products faster.
- Functional upgrading: starting to supply competitive products or services in value chain activities which are associated with higher value added.
- Chain upgrading: participating in new GVCs that produce higher value-added goods or services, often leveraging the knowledge and skill acquired from the current participation in GVCs.

Source: Based on OECD (2017[28]), Employment Outlook 2017; OECD (2017[23]), Skills Outlook 2017: Skills and Global Value Chains.

Addressing labour market challenges

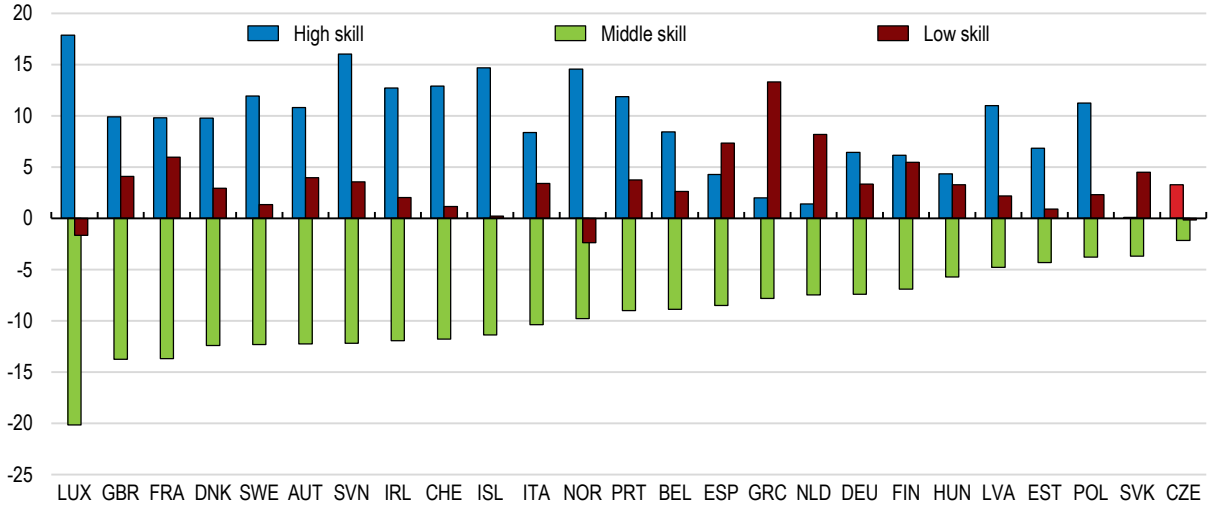
Structural changes in the labour market require adjustments of skills

The Czech labour market is shifting towards higher-skilled employment. Since transitioning from central planning, the service sector has expanded and manufacturing has become tightly integrated into global value chains, changing more and more the skill set that was needed in the labour market (OECD, 2014[29]). From 1997 to 2017, employment shifted from medium-skilled towards high-skilled jobs (Figure 20). Over this period, technology adoption measured as the level of ICT capital services per hour worked has grown by about 300% (OECD, 2017[23]). The increase in computerisation and automation not only led to a change of job profiles, but also to a loss of non-cognitive routine jobs due to automation.

Sectors such as manufacturing, IT and business services will continue expanding, creating new jobs in these sectors. Employment projections from CEDEFOP (Figure 21) suggest that the need for high-skilled workers will increase, whereas the demand will decrease in low and middle-skilled employment. Similar results are found by Antal et al. (2015[17]) who showed that low-skilled jobs are at the greatest risk. By contrast, the demand for highly skilled workers, especially those with a technical education, is found to increase. Providing workers with the right skill set and training to adapt to a changing environment will also increase the resilience towards automation. Estimates suggest that about 10% of jobs are at high risk of being automated within the next 10 to 20 years, and another 36% are at risk of significant change (Arntz, Gregory and Zierahn, 2016[30]).

Figure 20. The labour market has shifted from medium towards high-skilled employment

Percentage point change in share of total employment, 1997 to 2017



Note: High-skill occupations include jobs classified under the ISCO-88 major groups 1, 2, and 3. That is, legislators, senior officials, and managers (group 1), professionals (group 2), and technicians and associate professionals (group 3). Middle-skill occupations include jobs classified under the ISCO-88 major groups 4, 7, and 8. That is, clerks (group 4), craft and related trades workers (group 7), and plant and machine operators and assemblers (group 8). Low-skill occupations include jobs classified under the ISCO-88 major groups 5 and 9. That is, service workers and shop and market sales workers (group 5), and elementary occupations (group 9). As agricultural, fishery and mining industries were not included in the analysis, those occupations within ISCO-88 group 6 (agricultural and fisheries workers) were likewise excluded. The above chart includes 15 of the 18 listed industries. The excluded industries are the following: Agriculture, hunting, forestry and fishing (1), mining and quarrying (2), and community, social and personal services (18). As a result of unavailable data for 1997, a different starting year was used for some countries. Latvia and the Slovak Republic used 1998.
Source: Eurostat.

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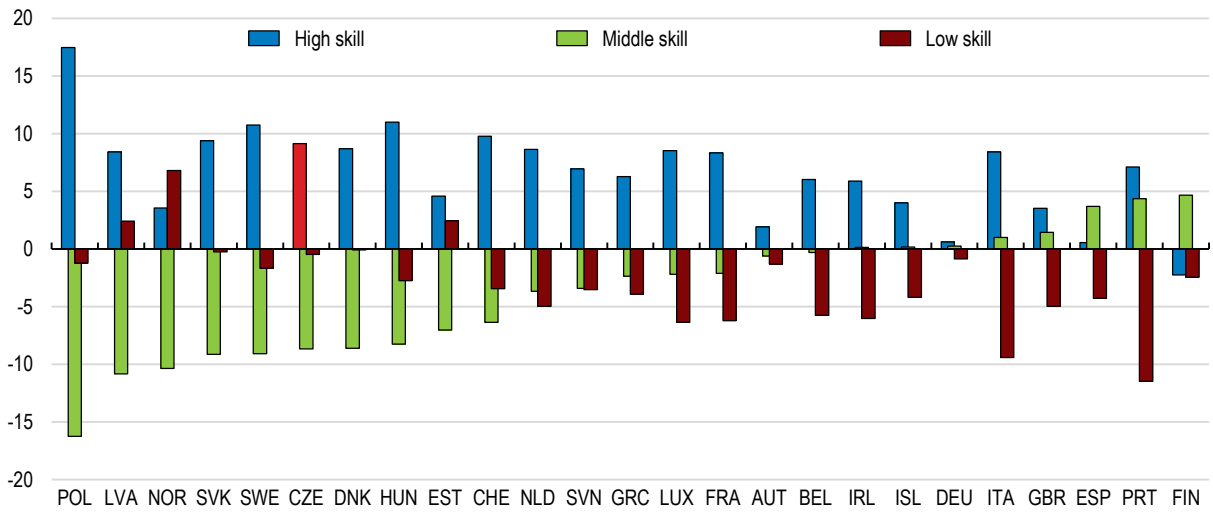
Preparing the labour market for technological change is high on the political agenda. Significant support is currently devoted to the area of digital competences as well as preparing the economy and society for the next industrial revolution. A key policy of the Industry 4.0 strategy is to upgrade data and information infrastructure to facilitate knowledge diffusion and adoption of technological change. This is expected to increase competitiveness through more efficient manufacturing, meaning faster, cheaper and resource-effective production and to enhance the ability of Czech companies to be involved in GVCs (European Commission, 2017[31]). The implementation of the Industry 4.0 strategy should be accelerated and a funding strategy for participating projects needs to be developed. Furthermore, policy actions that foster productivity and innovation as highlighted in the last survey (OECD, 2016[1]) have to follow.

Figure 21. The shift towards high-skilled employment is expected to continue

Percentage point change in share of total employment, 2015 to 2025



Note: High-skill occupations include jobs classified under the ISCO-88 major groups 1, 2, and 3. That is, legislators, senior officials, and managers (group 1), professionals (group 2), and technicians and associate professionals (group 3). Middle-skill occupations include jobs classified under the ISCO-88 major groups 4, 7, and 8. That is, clerks (group 4), craft and related trades workers (group 7), and plant and machine operators and assemblers (group 8). Low-skill occupations include jobs classified under the ISCO-88 major groups 5 and 9. That is, service workers and shop and market sales workers (group 5), and elementary occupations (group 9). As agricultural, fishery and mining industries were not included in the analysis, those occupations within ISCO-88 group 6 (agricultural and fisheries workers) were likewise excluded. The above chart includes 15 of the 18 listed industries. The excluded industries are the following: Agriculture, hunting, forestry and fishing (1), mining and quarrying (2), and community, social and personal services (18). As a result of unavailable data for 1996, a different starting year was used for some countries. Finland, Sweden and the Czech Republic used 1997, while the Slovak Republic used 1998.
Source: European Centre for the Development of Vocational Training (Cedefop) (2017), Forecasting skill demand and supply, http://www.cedefop.europa.eu/en/events-and-projects/projects/forecasting-skill-demand-and-supply/.

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Identifying skill needs and preparing the workforce for the future

The relation of workers graduated in a field to the number of jobs in that respective field, indicates a lack of graduates in mathematics, science and statistics, health and welfare, but also in services such as finance and insurance (Montt, 2015[32]). Current developments suggest that the stock of skills in the labour force may not suffice to address emerging shortages in certain sectors, such as health and the IT (European Centre for the Development of Vocational Training, 2017[33]). Although the share of the population with tertiary education has been increasing from 23% in 2010 to 33% in 2016, students do not graduate in fields that are in high demand of firms. For example, in 2015 only 4% of tertiary graduates had studied information and communication technologies, and 10% health and welfare (OECD, 2017[34]). Moreover, this trend is expected to continue as the share of tertiary students currently enrolled in IT or health care does not indicate a significant change in the short to medium term. About 5% of students in 2015 were enrolled in information and communication technologies, and 12% in health care (OECD, 2017[34]).

To guide career decisions and assess potential skill gaps, the Czech Republic is aiming to make labour market forecasts with a focus on emerging skill needs within the framework of the KOMPAS project. Providing effective, up-to-date and tailored information, advice and guidance is one crucial element in developing strategies to address emerging skill gaps. In combination with high-quality initial education and training, this assessment forms the basis for setting incentives for individuals to invest in those skills most needed and to raise educational capacities in the relevant institutions to address the skill gap in the long term (OECD, 2017[35]). Such initiatives should further be part of a sustainable framework and could be directly linked with actual labour market policies and trainings.

Long-term strategies need to be complemented by short- and medium-term solutions focusing on skill upgrading of the existing workforce. As shifting the skill composition of the labour force through new entrants takes time, the current labour force should be provided with adequate training options to adapt to new skill demands. Vocational education should be further developed to play a significant role in overcoming skill mismatch through the involvement of employers to supply workers with the needed skill set. Support for vocational education is provided through projects that aim to increase the professional skills of employees, such as "Support for Vocational Training for Employees II" (POVEZ II) and "Education and Skills for the labour market II" (VDPT II). Retraining should encompass solutions for all skill ranges based on modern systems of lifelong learning that help workers to adapt and update their skills over the course of their career. In particular, specific programmes should be developed for old-aged workers to ensure that they are equipped to adapt and participate in the changing economy.

Changes in the occupational structure evoked by digitalisation and automation require a holistic policy framework to contain the risk of increasing inequality. The social security system needs to adapt to new forms of employment and ensure adequate coverage for workers on non-standard work contracts (OECD, 2017[35]). For example, rather than linking entitlements to the employment history, they should be linked to the individual and therefore allowing greater labour mobility. Moreover, new forms of employment which do not fit easily with the standard definition of employment need to be covered by the tax system and require solutions with respect to the minimum wage, employment protection legislation, working time regulations and regulations to safeguard occupational health and safety (OECD, 2017[35]). As such, labour market and skills policies as well as tax and benefit schemes will need to be adjusted to promote skill adaptation and labour mobility. At the same time, it needs to be ensured that even low-paying work provides a sufficient income to avoid poverty.

Mobilising domestic labour

To ensure economic growth, all potential sources of labour supply need to be mobilised. The increasing shortage in the labour market has already led to a decline in the employment gap of traditionally disadvantaged groups, such as the young (15-29-year-olds), non-native, old age, people with disabilities and mothers of young children (OECD, 2017[28]). Despite the slight improvements, further advances have to be made as the labour market misses out on talent (Table 9). Participation to the labour market of inactive persons could be favoured through special training and adaptation programmes.

Though participation of Czech women in the labour market is high, available skills of women are not utilised fully in the labour market. Women are increasingly investing in their education and over the past few years, more women than men graduated from tertiary education (63% of first-time graduates in 2015 were female). While men tend to

be overrepresented in most STEM fields, female graduates form the majority in mathematics and natural sciences (59.6%) and health and welfare studies (83.5%). Although these skills are in high demand, they are not available to the labour market as one out of three women aged 25 to 34 that graduated in a STEM field with a tertiary degree reported being inactive in 2016 (OECD, 2018[36]). For the ones aged 35 to 44, still 15% reported being inactive. By contrast, less than 7% of men having graduated with a STEM field reported being inactive in both age groups combined.

Despite recent efforts, reconciling career and family choices continues to be a problem for women in the Czech Republic. As already highlighted in last surveys (OECD, 2016[1]; OECD, 2014[29]), female labour force participation tends to fall with childbirth contributing to gender inequality over the subsequent career path. While the employment rate between men and childless women differs only slightly, female labour force participation drops once women have children (Eurostat, 2017[37]). The difference between the employment rate of women aged 25-49 without children and with children under the age of 6 in 2016 exceeds 40 percentage points (see Figure 22). This places the Czech Republic among the three EU countries (together with Slovakia and Hungary) with the most sizeable consequences of childbirth on mothers' employment. The break in the employment history of mothers further translates into gender gaps in the overall employment rate and lower average earnings.

The long break in young mothers' employment is partly due to parental leave rules, which do not incentivise resuming work. Spending on maternity and parental leave is the highest among OECD countries, reflecting a public policy preference for home care over formal childcare. The Czech Republic offers up to 216 weeks of maternity and parental leave, which is significantly higher than the OECD average of about 85 weeks (19.1 weeks of maternity and 65.7 weeks of parental leave in 2016) (OECD, 2018[38]). However, the total amount of parental allowance can already be drawn in six months of parental leave. Furthermore, take-up rates are among the highest in the EU. While parental leave can be shared between the parents, mothers tend to be the principal user. In 2015, only about 2% of men used any kind of parental leave (OECD, 2016[39]). Moreover, from 2018 the government is increasing pro-family spending by CZK 5 billion to introduce paternity leave and increase social benefits. As highlighted in the last survey, conditional on the expansion of affordable and quality childcare, the maximum duration of parental leave should be reduced as planned. Fathers should be encouraged to take some of the parental leave. Child care facilities should be further developed by redirecting funds from family transfers towards OECD average.

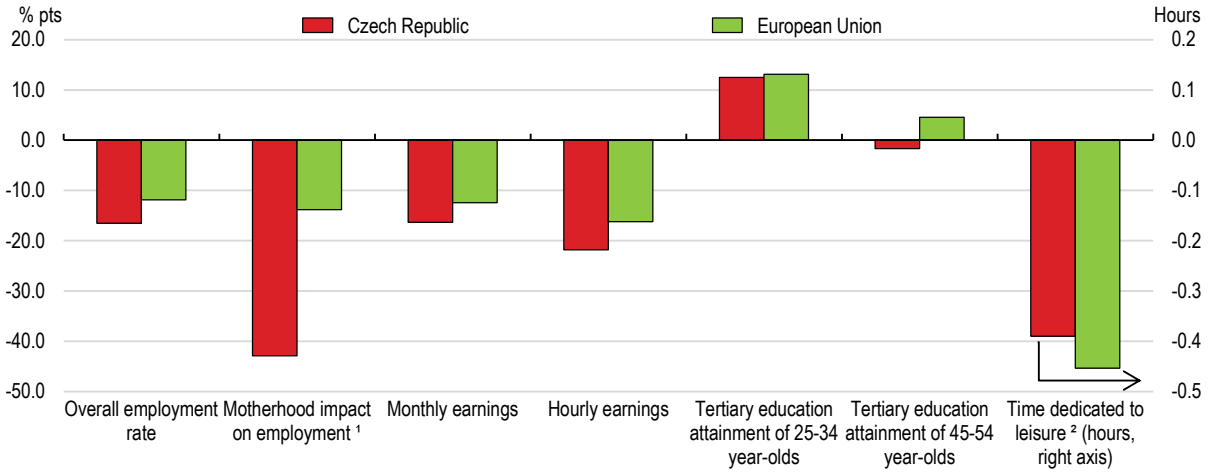
Long maternity leaves are also due to a lack of accessible and affordable childcare services for young children. In 2014, only 5.6% of children aged two years or less were enrolled in formal childcare services and pre-school facilities. As such, the rate is significantly lower than the EU average (31%) and OECD-28 average (34%) (OECD, 2016[40]). As the maximum length of entitlement for parental allowance is until the child is aged up to 4 years, enrolment rates of children aged 3 to 5 in pre-primary and primary education are much higher at around 80%. However, participation rates for three-year-olds are with 68% far lower than those for the five-year-olds (89%), indicating a shortage of child-care facilities. Thus, out of the approximately 20% of respondents with unmet need for formal childcare services, about 28.5% declared as main reason that no child care places were available or that the opening hours were unsuitable (Eurostat, 2018[41]).

The Czech government has introduced new measures to expand access to child-care facilities. Following an amendment to the education act of 2016, public kindergartens are

in the process of being scaled up, guaranteeing a place for children older than 4 years since September 2017. From 2018, there will be guaranteed places for all children older than three years and from 2020 for all children older than 2 years. In addition, firms are incentivised to provide children groups for children of their employees. By 2017, firms, NGO's and others provided 431 children groups accommodating 5 530 children (Ministry of Labour and Social Affairs). These developments are in line with previous recommendations regarding the expansion of child care and should be continued.

Figure 22. Gender gaps in the labour market are large

Percentage point difference between female and male outcomes, unless specified



1. Difference in employment rates of women aged 20-49 with children up to 6 years old and those without children.
2. The number of hours per day that, on average, full-time employed people spend on leisure and on personal care activities. This is one component of work-life balance dimension of the OECD Better life index 2017.
Source: OECD (2018), OECD Labour Force Statistics (database); Eurostat; OECD Earnings (database), OECD (2018), Education at a Glance (database); and OECD (2017), Better Life Index 2017.

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Childbirth and long maternity leave affect the career opportunities of women. The unemployment rate of women with children is twice as much as that of childless women. Re-entering the labour market after taking parental leave seems to be especially difficult. About 60% of unemployed women with children up to 6 years became unemployed immediately after their parental leave. Returning to work is partly hindered by inflexible work arrangements. In 2016, only 9.8% of working women in the 20-64 age group worked part-time, most of them mothers with children of up to 6 years. The EU average of women working part-time was significantly higher with 31.4% (Eurostat, 2018[42]). Increasing the flexibility of jobs by providing and enforcing existing rights for part-time work, flexible teleworking arrangements and shared jobs can support the re-entering of skilled female labour into the market.

Attracting skilled labour and integrating migrant workers

To compensate for labour shortages in the context of an ageing society, policies can attract skilled labour into the Czech Republic. However, attracting foreign workers from outside the EU faces several challenges, including language barriers and current migration policies. By 2015, most newly arrived migrants were from Eastern Europe, i.e.

from the Slovak Republic, Ukraine and Russia. In November 2015, a special migration procedure was introduced for high-skilled workers from Ukraine. This project "Special Procedures for Highly Qualified Workers from Ukraine" gave participants priority access to embassies when applying for the Employee Card. In August 2016, a similar project, "Special treatment for qualified workers from Ukraine", was launched, with a capacity of 3 800 specialised workers per year. As there were high interest and uptake, the capacity was increased in February 2017 and in January 2018. Moreover, new programmes were launched for workers from Mongolia and the Philippines in 2018.

Migration policies should be reconsidered to attract skilled workers from countries other than Ukraine and Eastern Europe. Easy accessible information about educational degree verification, work opportunities and the availability of language courses could raise awareness among skilled workers to consider the Czech Republic as a destination. Already, a network of 13 regional integration support centres to co-ordinate the efforts of local authorities, NGOs and other stakeholders has been set up to provide information, advice, and integration courses and co-ordinate the development of local integration projects co-funded by the European Social Fund. These efforts should be scaled up to facilitate the integration of workers and their families.

Table 9. Past recommendations for improving innovation and skills mismatch

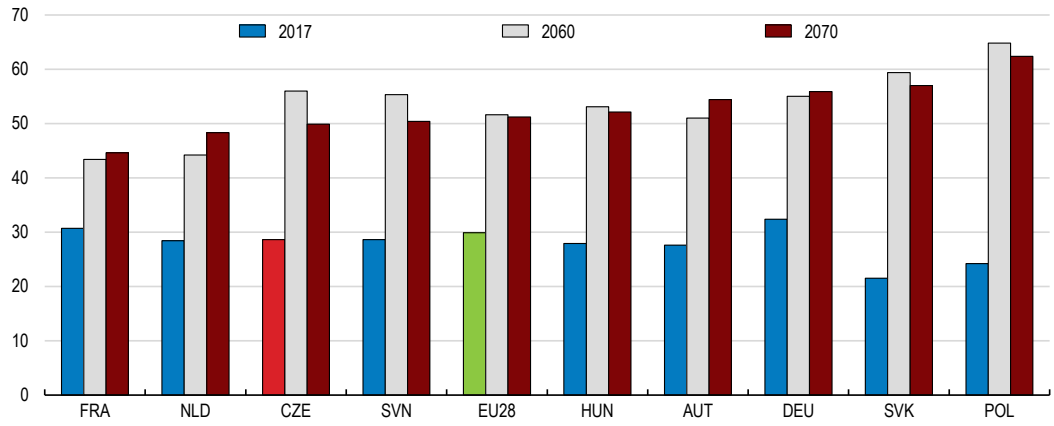
Recommendations in previous Surveys	Action taken
Remove the barriers to the mobility of workers to reduce skill mismatch by improving the functioning of the private rental market, lowering the cost of closing a business and easing the stringency of employment protection legislation.	In 2016, a financial contribution for jobseekers who, due to regional disparities (of a structural and qualification nature), have to commute for work outside their place of residence was introduced. The allowance is provided monthly, for a 12-month period, at a flat rate based on the commuting distance. Also, an allowance to change place of residence because of employment was introduced. This financial subsidy of CZK 50 000 can be provided to an applicant who moved house for the above-mentioned reasons within the territory of the Czech Republic.
Accelerate the creation of funds and guarantee programmes to support SMEs and innovation.	In progress. Example of policy initiatives: • In 2017, 2142 SMEs were provided support amounting to EUR 156.2 million within the framework of the program Guarantee 2015-2023. • During 2017 the first programs supporting venture capital were in co-operation with European Investment Fund (EIF). In January 2017 the Fund of funds managed by EIF was created, combining EUR 40 million from OP EIC (program Venture Capital) and 10 million from EIF RCR mandate.

Ageing will weigh on public finance

The Czech population is ageing more rapidly than in most European countries. According to recent European projections, the demographic old-age dependency ratio in the European Union is about to rise from the current 29.6% to 51.2% in 2070 (European Commission, 2018[43]). The Czech situation follows this average trend with projections going from 28.1% in 2016 to 49.7% in 2070 with a peak at 56.1% in 2058 (Figure 23). This peak is higher than the average for the EU and is caused mainly by large generations born in the 1970s and the drop in the turn of millennia, which was connected to the change of lifestyle after the Velvet Revolution.

Figure 23. The old-age dependency ratio is projected to peak around 2060

In percentage



Note: Old-age dependency ratio is the ratio of population aged 65 and more to the working-age population aged 15-64.
Source: Eurostat.

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Population ageing will affect public finances. Not only will spending on pensions increase, but also spending on health and long-term care. It is, however, the old-age pension scheme that brings the biggest burden on public finance in the context of ageing (Table 10).

The main pillar is a mandatory defined benefit pay-as-you go public system. A second pillar was introduced in 2013 and abolished in 2016. It was an attempt to set up a voluntary defined contribution funded scheme providing complimentary pensions, which would have allowed discharging the public scheme partially. A third pillar exists and allows voluntary savings in a fully funded, defined contribution scheme. Although the number of participants is high, the savings are low.

Pension spending in terms of GDP ratios are projected to be stable over the next 15 years. However, a steep rise is expected to occur over the 20 years after 2030, accounting for more than 2.5 percentage points of GDP. In 2017, the Czech government withdrew the automatic mechanism of increasing statutory retirement age and put a ceiling at the age of 65 (Table 11). However, every five years, the Ministry of Labour and Social Affairs will prepare a report on life expectancy and suggest a shift of statutory retirement age to assure that on average everyone spends a quarter of his life in retirement. Under this mechanism, the change of retirement age is dependent on government decision and prone to non-compliance.

The recently introduced ceiling on retirement age is worsening the effect of pension spending on public finances. As in many OECD countries, the Czech Republic should follow the strict and tight linking of retirement age with life expectancy, which would limit the increase of pension spending (Table 10).

Also, the recent changes in the pension indexation rule are pushing up pension spending along the projection horizon. Currently, pensions are indexed to a combination of the consumer price index (or pensioners' cost of living index, whichever is higher) and real wage growth (half of the growth). Moreover, if the growth of pensions were to be less

than 2.7% according to the standard formula, the government has the discretion to raise pensions by as much as 2.7%. Before, it was the sum of inflation and one third of real wage growth. This new rule makes the expenditure approximately 0.3 percentage points higher at the projection horizon compared to the previous indexation rule (Ministry of Finance, 2017[44]). The new indexation rule should help prevent old age poverty by targeting an average replacement rate at around 40%.

Table 10. Pension expenditure projections

Percentage of GDP

	2016	2020	2030	2040	2050	2060	2070	Peak year
Total public pensions	8.2	8.1	8.2	9.2	10.8	11.6	10.9	2059
of which								
old-age pensions	6.8	6.7	6.8	7.7	9.4	10.2	9.5	2059
disability pensions	0.9	0.8	0.8	0.8	0.8	0.7	0.8	2016
survivor pensions	0.5	0.6	0.6	0.7	0.7	0.7	0.7	2062
linked to life expectancy	8.2	8.1	8.0	8.5	9.7	10.2	9.3	2059

Note: The baseline scenario is computed with the fixed ceiling on statutory retirement age. The last row represents a scenario linking the statutory retirement age to the life expectancy.
Source: Ministry of Finance (2017[44]).

Table 11. Past recommendations on pension reforms

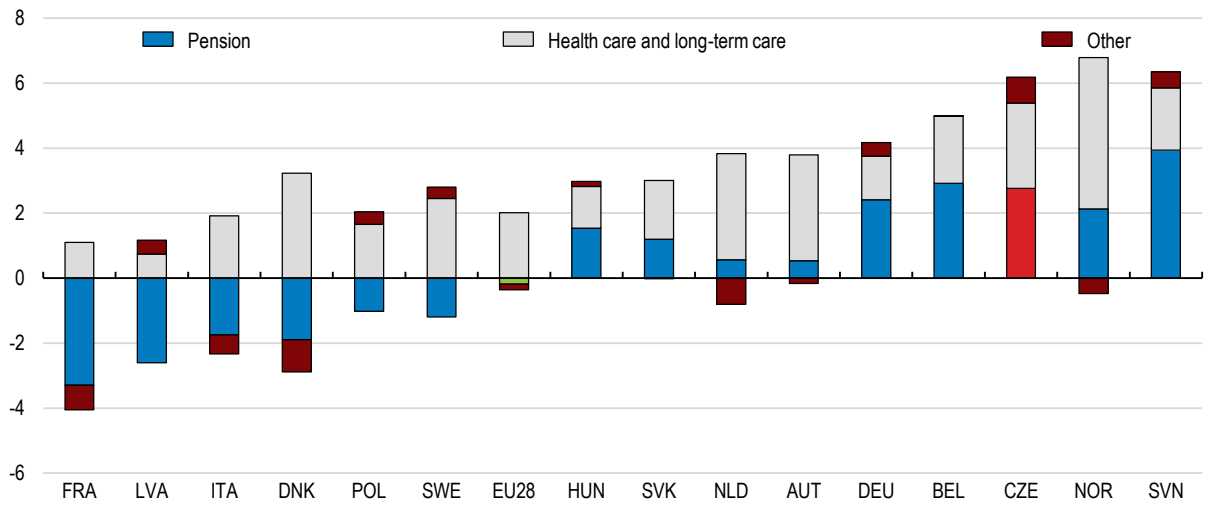
Recommendations in previous Surveys	Action taken
Take steps to secure an increasing effective retirement age. Continue to ensure that the indexation of pensions does not lead to old-age poverty problems. Consider options for diversifying income sources for pensioners. An additional measure could be to bring forward the increases in the statutory retirement age.	Pension indexation changes introduced in 2017 are more generous to protect the purchasing power of pensions. Retirement age increases have been capped at 65 years of age for both men and women.

Health care and long-term care expenditures are also projected to rise in the upcoming decades. In comparison with other EU countries, the Czech Republic is going to face above average increases as share of GDP (Figure 24). Since this comparison is based on AWG reference scenarios (European Commission, 2018[43]), it disregards the non-demographic aspects and considers mainly the effect of ageing. The actual increase is thus likely to be even higher (see Chapter 1).

Financing pensions, health care and long-term care currently requires more than 43% of the government budget and the requirements will rise substantially in the coming decades. While keeping the size of the budget in relation to GDP constant (around 35%), the projected social expenditures in 2060 would take more than 75% of the budget (Table 12). Thus, it would mean either serious crowding out of other expenditures (wages in public administration and education, investments, etc.), or an expansion of the government budget by an increase of the tax burden. Linking tightly retirement age to life expectancy will limit the impact of ageing on public finances. More efficiency in health care delivery will also help limit the impact of aging on health spending (see Chapter 1).

Figure 24. Ageing will have a substantial impact on public finances

Change in gross public expenditure between 2016 and 2070 in percentage points of GDP



Note: Other expenditure covers education and unemployment benefits. Baseline scenarios are used for pensions, education and unemployment benefits, and AWG reference scenarios for health care and long-term care.
Source: EC (2018), Ageing Report: Economic and budgetary projections for the 28 Member States (2016-2070) and Ministry of Finance of the Czech Republic (2017), Pension projections of the Czech Republic, October 2017.

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Table 12. Expenditure projections as shares of the government budget

	to GDP		to govt. budget	
	2017	2060	2017	2060
Pensions	8.2	11.6	32.4	45.7
Old age pensions	6.8	10.2	26.8	40.2
Health care	6.2	9.6		
financed by employees, employers and self-employed	4.1	3.3		
financed by the government budget	2.1	6.3	8.4	24.7
Social long-term care	0.7	1.4	2.8	5.5

Note: The share of health care financed by the government budget is only approximated. It is not possible to get it directly from the budget, as it is decomposed in various items, not only direct payments to health insurance funds, but partly also in other social transfers and transfers to regional budgets. Projections to 2060 are estimated assuming fixed ratio of the budget to GDP. Long-term care does not cover health long-term care which is included in health care expenditures. Total government expenditures accounted for CZK 1 279.8 billion in 2017. Pensions covered 414.7 billion (32.4%), from which 343.4 billion went particularly in old-age pensions. Health care was financed mostly through direct contributions of employees, employers and self-employed to health insurance funds, which is not recorded in the government budget. The government expenditure is thus approximated subtracting these contributions from the total public health expenditures, assuming that the rest must be covered by the public budgets. The share in 2060 is estimated with an assumption of a fixed burden on one person in terms of GDP ratio. The decreasing ratio is a result of shrinking working age population. Health spending increases include non-demographic factors and correspond to OECD estimates.
Source: EC (2018), Ageing Report: Economic and budgetary projections for the 28 Member States (2016-2070), OECD projections for health spending.

Greening growth and addressing environmental issues

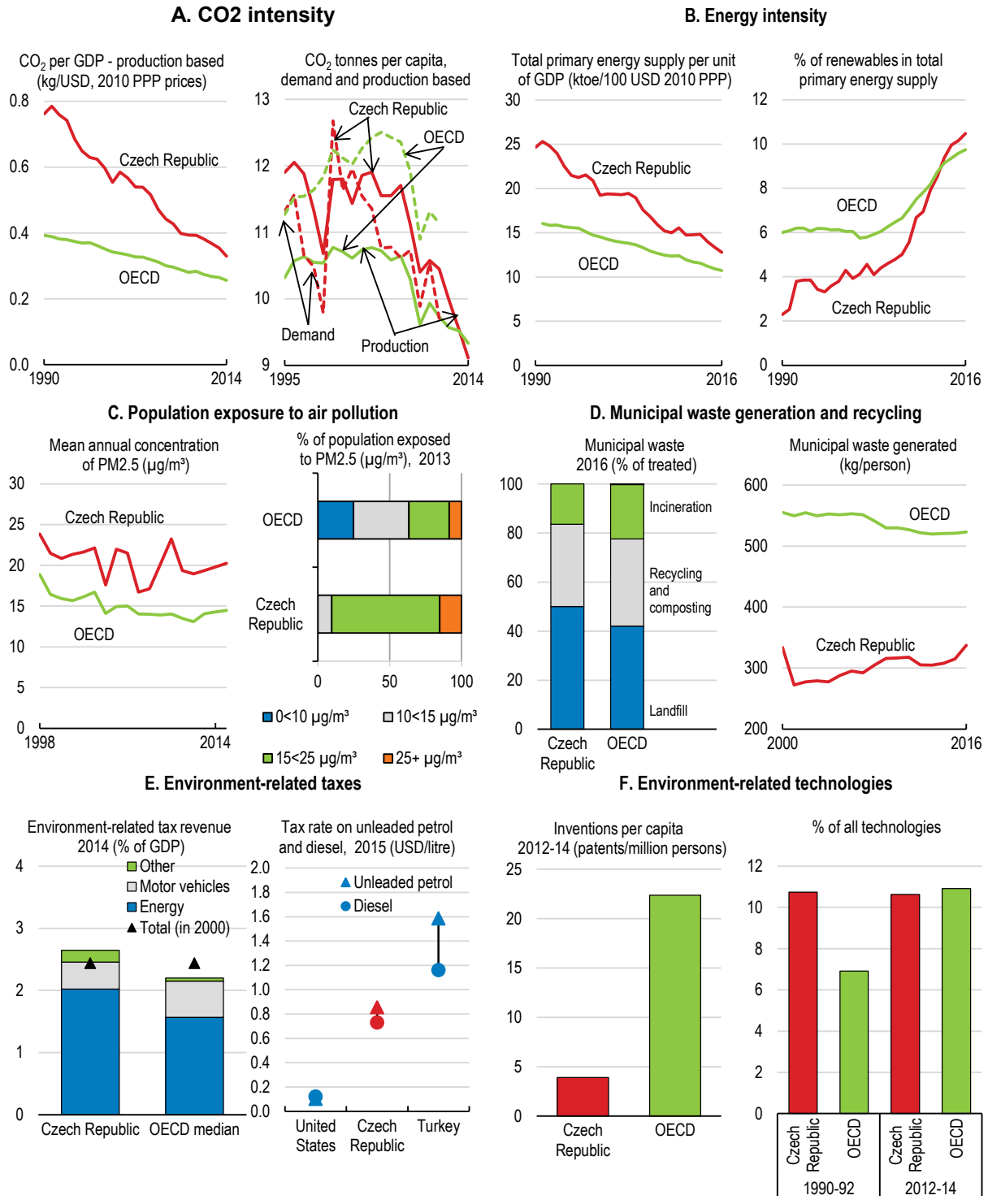
The 2018 OECD Environmental Performance Review of the Czech Republic finds that the country performs well on a number of Sustainable Development Goals such as poverty, water and biodiversity. The 2017 "Czech Republic 2030" strategy defines priorities for implementing the 2030 Agenda. However, the economy remains among the most energy- and carbon-intensive in the OECD, and the population is exposed to high levels of air pollution due to reliance on coal (Figure 25).

Strengthening political commitment to a low-carbon economy and aligning the State Energy Policy with the Paris Agreement objectives are key priorities. The Review analyses the potential for a review of the tax structure to better align economic and environmental objectives. Pricing carbon will help in tackling climate change and air pollution cost-effectively. It could contribute to improving energy affordability.

The Czech Republic has progressed in increasing the use of environmental and regulatory impact assessments, as well as strategic environmental assessments of policies. But it could go further in greater use of cost-benefit analysis and in ex-post analysis of policy impacts and efficiency. Public participation in environmental decision making and access to information have improved, but on issues including the liability regime and access to environmental justice, current practices need upgrading.

In considering particular policy areas, the Czech Republic made progress in waste recovery but continues to rely on landfilling (Figure 25, Panel D). The Review sees the need for promptly adopting the pending new Waste Act and harmonising the national waste management information. It also reviews how compact city policies can help the future urban structure produce a better balance between affordable housing with adequate mobility and low air pollution.

Figure 25. Green growth indicators: Czech Republic



Source: OECD (2018), Green Growth Indicators.

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Box 3. Recommendations of the 2018 OECD Environmental Performance Review

The Review makes a wide range of specific recommendations, of which the following is a non-exhaustive summary.

Many specific policy recommendations highlight that policy coherence and adequate price signals are key to progress towards green growth:

- Strengthen political commitment to a low-carbon economy: develop an integrated energy and climate plan to reach the 2030 and 2050 GHG reduction targets.
- Introduce a carbon component in energy taxation for carbon emissions outside the EU ETS and provide a stronger and more consistent price signal across the economy.
- Consider recycling part of revenue from higher taxes on heating fuels and electricity to vulnerable households using an income-tested cash transfer.
- Raise the excise tax on diesel to at least match that on petrol, and index the taxes on both fuels to inflation.
- Extend distance-based charging to address air pollution and congestion and tighten environmental criteria of vehicle taxes to promote fleet renewal towards cleaner vehicles.
- Review waste-related taxation in line with the waste hierarchy and ensure full cost recovery for municipal waste service provision.
- Reduce agricultural pollution by reducing fertiliser and pesticide use, including through taxation.
- Apply water user charges that allow sustainable cost recovery. Ensure that groundwater abstraction charges reflect resource scarcity and remove exemptions that are not justified on environmental grounds.
- Consider establishing a green tax commission, possibly as part of the National Budgetary Council, to review the environmental effects of fiscal instruments.

In some cases, environmental governance and management could be strengthened to improve co-ordination, efficiency and enforcement. For example:

- Enhance collaboration among municipalities to make use of economies of scale and co-ordination in service provision, e.g. waste treatment and disposal, water supply and treatment.
- Improve vertical co-ordination by strengthening guidance from the Ministry of Environment to regional and local authorities.
- Use more cost-benefit analysis for assessing environmental policies, and expand ex post evaluation.
- Establish and enforce strict (independent of faults) liability for environmental damage by removing exemptions for compliance with

environmental permits.

- Ensure that the public and NGOs have a right to go to court if the competent authority fails to act in response to non-compliance.

Source: OECD (2018), Environmental Performance Review of the Czech Republic.

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Annex. Progress in structural reforms

A. Strengthening the fiscal framework and fiscal sustainability

Recommendations in previous *Surveys*	Action taken
Implement the new fiscal framework and the fiscal council.	Acts on budgetary responsibility entered into force in February 2017. A medium-term budgetary objective is set to ensure long-term sustainability of public finances. Two independent institutions are put in place to guarantee the respect of fiscal rules: • National budgetary council (members appointed on 25th January 2018: surveillance of the respect of fiscal rules and assess the impacts of governmental actions on long-term sustainability of public finances • Committee for Fiscal Forecasts (appointments are ongoing): the other will verify the plausibility of macroeconomic and fiscal forecasts used in budgetary process.
Use a multi-pronged approach to secure fiscal sustainability. • Take steps to secure an increasing effective retirement age. • Continue to ensure that the indexation of pensions does not lead to old-age poverty problems. • Consider options for diversifying income sources for pensioners. • An additional measure could be to bring forward the increases in the statutory retirement age.	Limited progress has been made. • Pension indexation changes in 2017 are more generous to protect the purchasing power of pensions. • Retirement age increases have been capped at 65 years of age for both men and women.

B. Fostering productivity growth and income convergence

Recommendations in previous *Surveys*	Action taken
R&D and innovation systems	
Encourage the participation of managers and workers in training and further education to increase the productivity of staff. Offer individual training accounts or refundable tax credits to individuals that undertake training at accredited institutions.	No action. Different options are preferred. The Ministry of Education, Youth and Sports (MEYS) prepared "Action Plan for Development of Human Resources for Research, Development and Innovation and Gender Equality in Research, Development and Innovation in the Czech Republic for the years 2018-2020" (hereinafter referred to as "HR Action Plan"), which was approved by the Government Resolution No. 8 of 3 January 2018. In the coming period, the measures resulting from the approved HR Action Plan will be implemented.
Unify the design, assessment and co-ordination of research and development and innovation policies in a single institution. Specifically, research institutions should be under the responsibility of the same institution.	Work in progress. The August 2017 proposal for a new law on the support R&D&I has been put on hold.
Increase R&D spending effectiveness by better targeting government funding to broaden the scope of R&D activities in the Czech Republic.	Has been realized under the National R&D&I Policy respectively the National RIS3 Strategy through targeting of (European, national and private) funds to activities leading to the priority defined promising areas.
Develop government co-financing schemes to complement grants and increase fiscal incentives for business R&D spending.	No action taken
Increase incentives and funding through the national programmes of applied research and innovations to develop collaboration between research entities and businesses.	Ministry of Education, Youth and Sports (hereinafter referred to as "MEYS") implemented within the OP RDE a call called "Building Expert Capacities - Transfer of Technologies" aimed at supporting the development of centres and other necessary background for technology transfer at research organizations in the Czech Republic.

	MEYS also continuously implements "National Sustainability Programs I and II", with the establishment of "Regional Centres for Research and Development" created for the purpose of co-operation of the public research sector with the business sphere.
Develop mobility schemes for public researchers to work during some period in businesses research centres to facilitate the inter-actions between research institutions and firms.	Addressed through MEYS programmes: "Pre-application Research", "Pre-Application Research for ITI", "Long-term inter-sector co-operation" and "Long-term inter-sector co-operation for ITI" for support of individual projects under the OP RDE and already above mentioned "Building Expert Capacities - Transfer of Technologies".
Use public procurement contracts to initiate innovative solutions in strategic areas with societal benefits.	No action taken
Remove the barriers to the mobility of workers to reduce skill mismatch by improving the functioning of the private rental market, lowering the cost of closing a business and easing the stringency of employment protection legislation.	In 2016, a financial contribution for jobseekers who, due to regional disparities (of a structural and qualification nature), have to commute for work outside their place of residence was introduced. The allowance is provided monthly, for a 12-month period, at a flat rate based on the commuting distance. Also, an allowance to change place of residence because of employment was introduced. This financial subsidy of CZK 50 000 can be provided to an applicant who moved house for the above-mentioned reasons within the territory of the Czech Republic.
Increase the share of government R&D grants directed to programmes including international collaborations and to support activities conducive to the acquisition of knowledge-based capital.	In progress. MEYS prepared an "Action Plan of International Co-operation of the Czech Republic in R&D and the Internationalization of the R&D Environment of the Czech Republic for the Years 2017-2020" (hereinafter referred to as "Action Plan"), which was approved by the Government Resolution No. 1179 of 19 December 2016.
Creating a productivity enhancing environment	
Limit the possibilities to delay bankruptcy procedures and eventually allow for the write-off of debts.	Partial developments had been made by recent enactment of the amendment to the Act no. 182/2006 Coll., on Bankruptcy and Methods of its Resolution (Insolvency Act). This relatively extensive amendment entered into effect on 1st July 2017 contributed to significant acceleration of unsuccessful discharge procedures. Since 1st July 2017, unsuccessful discharges prevailingly lead to the complete dismissal of the insolvency proceedings. This allows accelerated write-off of debts for creditors.
Reduce the number of regulated professions and strengthen the competition and regulation of product markets framework.	The general trend in the Czech Republic is to deregulate the regulated professions. For instance, the licensed trade "Preparation of catalogue data" was deregulated in 2017.
Accelerate the creation of funds and guarantee programmes to support SMEs and innovation.	In progress. Example of policy initiatives: • In 2017, 2142 SMEs were provided support amounting to EUR 156.2 million within the framework of the program Guarantee 2015-2023. • During 2017 the first programs supporting venture capital were initiated by the Ministry of Industry and Trade in co-operation with European Investment Fund (EIF). In January 2017 the Fund of funds managed by EIF was created, combining EUR 40 million from OP EIC (program Venture Capital) and 10 million from EIF RCR mandate. The first selected funds shall begin to operate during 2018. • At the end of 2017 the Ministry of Industry and Trade joined regional initiative of EIF called the Central Europe Fund of Funds, together with Austria, Slovenia and Slovakia. The Czech contribution delivered by the Czech-Moravian Guarantee and Development Bank amounts to EUR 8.2 million, the combined sources of the Fund of funds amount to EUR 80 million.
Reduce the advantages of self-employment in terms of social contributions and personal income tax.	Since January 2018 there has been a significant reduction of the flat-rate expenditure limit (to CZK 1 million) for entrepreneurs. This measure reduces the fictitious reporting of employment as a self-employment activity and approximates the level of taxation of self-employed to workers (this should be also addressed by other institutes that will be implemented by the forthcoming new Income Tax Act). It is also expected

	to introduce a new discount of CZK 500 per month as compensation for social security payments for employees. These expenditures are not reflected in contemporary tax base.
Encourage employers to provide training to young unskilled workers through tax subsidies or targeted reductions in social security contributions. Looking ahead, if the statutory minimum wage increases sufficiently, an additional measure could be the introduction of a youth minimum wage linked to training.	No action taken concerning training support through tax subsidies or reduction in social contribution. All contribution in various projects focused on youth employment support is done via financial funds to create new jobs or on in the job training. Minimum wage has been increasing steadily in the past few years to amount 40% of average wage. There are equal conditions for all - different minimum wage rate for disability pension beneficiaries has been abolished as of 1 January 2017. Lower min. wage rate for youth up to 21 years was abolished by 1 January 2013.

C. Promoting competition and improving the business environment

Recommendations in previous *Surveys*	Action taken
Improve the managerial integrity of remaining state-owned enterprises by concentrating governance within a single authority. Privatise and divest business-related state-owned enterprises and activities.	No action
Secure effective independence for all network regulators, improve the co-ordination between the competition authority and regulators, and have a common approach to what constitutes a proper definition of market dominance.	ENERGY SECTOR: The Energy Regulatory Office (ERO) is the regulatory authority responsible for the Czech energy sector (electricity, gas and heating). The effective independence of the Energy Regulatory Office is set in the Energy Act No. 458/2000 of 28 November 2000. Since 1 August 2017 (an amendment of the Energy Act by the Act No. 131/2015) the ERO is controlled by the Board of the Energy Regulatory Office which consists of five board members, each nominated by the minister of industry and trade and confirmed by the government for a five year term. On 29 November 2017 the Energy Regulatory Office and the Office for the Protection of Competition (UOHS) signed a memorandum on mutual co-operation to create a clear and stable regulatory framework in the energy sector. ELECTRONIC COMMUNICATIONS/POSTAL SERVICES:The Czech Telecommunication Office, sectoral regulatory authority, is independent according to the Electronic Communications Act (127/2005 Coll., as amended). This office co-ordinates and co-operates with the Office for the Protection of Competition in the field of relevant market analyses and in dealing with significant market power.
Tackle vertical constraints on competition via effective ownership unbundling or via holding structures with financial separation of all activities that counters the risk of cross-subsidisation.	ELECTRICITY SECTOR: In the Czech Republic, the unbundling process in the electricity sector, as required by the EU third energy package, has been completed. GAS INDUSTRY:As well in the gas industry, ownership unbundling has already been implemented. ELECTRONIC COMMUNICATIONS/POSTAL SERVICES SECTOR: Financial and functional separation is voluntary within the Czech legal framework. However, we have positive examples, such as the division of the former incumbent, nowadays 2 companies: CETIN (Ceská telekomunikacní infrastruktura) – pure network operator, O2 Czech Republic (pure service provider). The postal incumbent is obliged by law to keep separate accounts for costs and revenues related to the provision of each of the universal services. On the basis of those records the national regulatory authority can check the calculation of the net cost, if any, of universal service obligations. Those data are also used for price regulation and price control makes it possible to prevent potential cross-subsidies. RAILWAY SECTOR: The vertical separation in railway sector started in

	2003 when Ceské dráhy, s. o., was divided into Ceské dráhy, a. s - railway operator company, SŽDC, s. o. – infrastructure manager and the rail inspection when the Act n. 77/2002 Coll., on Ceské dráhy, a. s., SŽDC, s. o. and further amendments was adopted. In 2011 the process of separation moved significantly forward when infrastructure manager (SŽDC, s. o.) took over traffic management. In 2016 property of all railway stations within the Czech Republic was transferred from Ceské dráhy, a.s. to infrastructure manager (SŽDC, s. o.) in 2016.

D. Promoting a more effective public sector

Recommendations in previous *Surveys*	Action taken
Enhancing the effectiveness of public administration	
Further improve tools and rules to increase use of joint procurement by public entities. Increase auditing throughout the process and monitoring of processes and outcomes.	No action taken
Establish specialist competency centres to help public bodies and local governments with technical procurement contracts.	The Ministry for Regional Development provide the contracting authorities with methodological support. Regular training courses are organised.
Designate responsibility for the co-ordination and prioritisation of investments on the basis of the highest social return. Evaluate investment needs in a standardised way across sectors and use cost-benefit analysis for all large projects.	No action taken
Increase monitoring and accountability throughout the investment cycle, from project selection through to ex post evaluation.	No action taken
Use and publish standardised performance indicators for publicly funded activities at all levels of government. Increase the use of benchmarking.	There have been no such steps undertaken which would have led towards standardised performance indicators for publicly funded activities at all levels of government at this point. At this point CBA does not intend to do so as municipalities and regions are according to the Czech law independent and decide fully on its own.
Extend the national and regional standing conferences for EU-funded projects to all significant investment projects and cross-cutting public policies.	No action taken
Give the Supreme Audit Office powers to audit all public bodies and local government.	There was a legislative proposal focused on extending of the powers of the Supreme Audit Offices to audit further public bodies and local and regional governments. It was approved by the Chamber of Deputies, in a later stage however rejected by the Senate.
Review the implementation of the Civil Service Act, including the capacity of human resources units, the overall remuneration system and conditions and staff engagement.	The Civil Service Act is subject to a deep ex-post evaluation aimed at its implementation and functioning. This evaluation includes also remuneration system, conditions and staff engagement.
Introduce conflict of interest disclosures and create a register of private interests for officials involved in procurement.	The Public Procurement Act has introduced an obligation to identify the actual owner of the selected supplier. Since 1 January 2018, the central register of real owners has been created.
Improving the effectiveness of sub-national government arrangements	
Establish framework conditions which help municipalities to reap the benefits from joint service provision, while building support for mergers.	A special project in this regard is being implemented in co-operation between the Ministry of Interior and the Union of Towns and Municipalities. Objective of the project "Shared service centres" is to ensure more efficient delivery of public services to citizens. The political representation strictly refuses any discussions concerning mergers of municipalities.
Increase incentives and technical support for mergers.	There are indirect financial incentives for municipalities providing a wider range of services for citizens and delegated state administration tasks. The Ministry of Interior is however ready to provide a methodological and technical support to those municipalities which merge on a voluntary basis.
Increase local capacity through technical assistance and supporting shared services centres. Consider establishing a minimum size required for carrying out certain municipal functions.	Shared service centres are currently being developed within the framework of the above-mentioned project focused on inter-municipal co-operation.
Reduce the share of grants and transfers that are earmarked and ensure adequate service standards are maintained by monitoring performance.	The main general grant for municipalities and regions (contribution for performance of state administration) has been increased and reshaped in last several years. Earmarked grants are provided principally for

	specialised projects in specific fields. Maintaining of service standards is continuously monitored by higher-level authorities, specialised control bodies or by beneficiaries themselves. In 2018, the law on budgetary designation of taxes was changed and the share of municipalities on VAT was increased. Transfers from central level account only for 15 % of total revenue of municipalities.
Simplify the system of territorial administration by completing the transition from the system of districts and streamlining delivery of delegated functions at municipal level.	There is a legislative proposal of the Act on Territorial Division of the State which was carried out and submitted just for the purpose of simplification of the system of territorial public administration and which includes all mentioned aspects. It should be submitted to the Government by the end of 2018.
Increase incentives in local government revenues to grow local economies. Use a fiscal equalisation component to adjust for differences in revenue-raising capacity.	Local economies, after recovering from the financial crisis of 2008 – 9, are fluently growing. Some equalisation components are currently in place as well.
Proceed with plans to introduce a debt rule for local governments.	The debt rule for local governments was introduced by law, and although challenged by a group of Senators due to alleged excessive interference of the State in the right for self-government, it was recently confirmed by the Constitutional Court. Debt rule for local governments was introduced by the Act No. 23/2017, o rules of budgetary responsibility with the effect as of 1 January 2018.

E. Achieving efficiency in the energy system

Recommendations in previous *Surveys*	Action taken
Support implementation of carbon taxation at the EU level. Realign the excise tax rate on all fossil energy sources and products, based on their carbon content and other environmental externalities, notably by increasing the relative taxation of diesel. Remove several excise tax reliefs on fuel use.	No action taken. Work in progress.
Develop traffic management in urban areas, including traffic restrictions in city centres, parking fees and incentives to commute by public transport. Strengthen control of emission from older vehicles and stimulate the renewal of vehicles through adequate carbon pricing.	Following the Air Protection Act cities can introduce low-emission zones, but it is a voluntary activity itself cities. The MoE supports the purchase of vehicles with alternative propulsion for municipalities and regions and organizations set up by them, and municipal transport projects – e.g. City Mobility Partnership and is active in supporting the European Mobility Week. Since 1 December 2017, emissions measurement has been tightened by an amendment to the Act on road operating conditions (No. 56/2001 Coll.) as follows - the measurement record and its result are recorded in the online system (as well as in the technical inspection stations). The measurement system of Emission has changed since June 2017. Since 1/1/2018 Emission Measurement Stations have started taking photos of vehicles. Since January 2018, it has been no longer possible to issue a valid emission measurement protocol if an emission measurement station is not connected to the system.

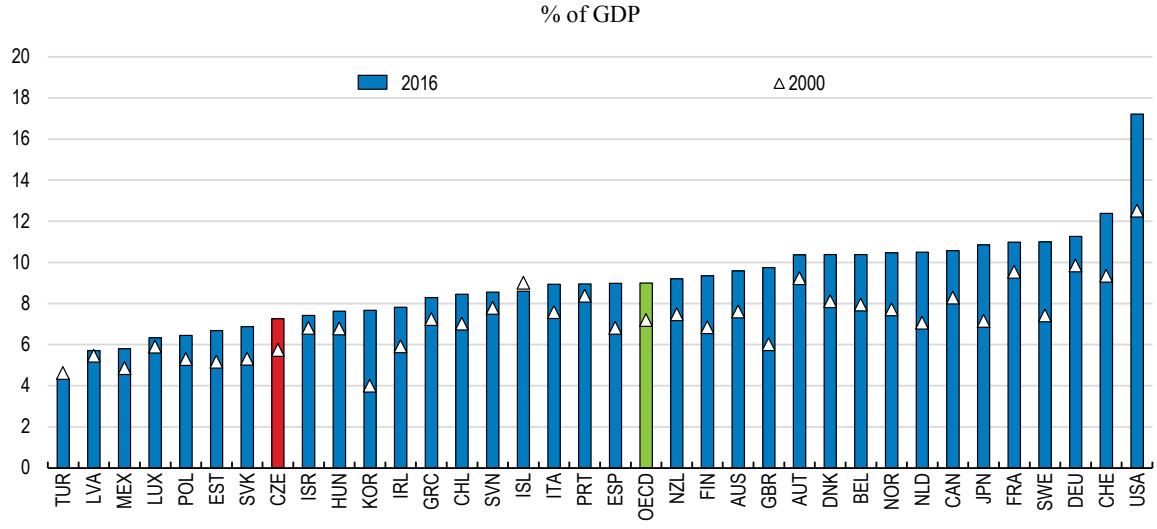
Chapter 1. Improving the Czech health care system

This chapter assesses the performance and emerging key challenges of the Czech health system, and provides recommendations to adapt the system to remain effective and financially sustainable in the context of an ageing society. The system is doing well in terms of health outcomes compared to other CEE economies that inherited similar health systems after the transition and has been converging to OECD averages. However, benchmarking the Czech health system to countries with comparable institutional setting points to potential for efficiency gains. The chapter also discusses how various disincentives in the system create inefficiencies on the supply and the demand side of health care.

Health contributes both to well-being and economic growth. The health status of the population is linked to economic performance through workforce participation and productivity. An efficient health care system that provides equal access and quality treatment of care also contribute to better well-being and makes society more inclusive (James, Devaux and Sassi, 2017[1]). Health outcomes in turn are influenced by a set of determinants, ranging from access to and quality of care to living conditions and lifestyle choices of the population.

The Czech health care system performs well along several dimensions. Along with incomes, living conditions have converged towards the OECD average over the last two decades. Life expectancy rose by 2.6 years to 78.7 years between 2005 and 2015, just below the average of 80.6 years in the OECD (OECD, 2017[2]). Spending on health care at 7.2% of GDP in 2016 is relatively low compared with OECD peers, although the health care system provides mandatory, universal coverage for all its residents (Figure 1.1).

Figure 1.1. Total health care expenditure is rising



Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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The financial sustainability of the health care system is challenged by an ageing society as the dependency ratio deteriorates. The system is funded mainly through social security contributions levied primarily on wages and therefore the financial sustainability is vulnerable to both economic shocks and an ageing society. By 2040, every fourth person is projected to be 65 years or older compared with 18% of the population today. The demographic shift will result in lower revenues from wage-based contributions, while expenditures are likely to rise due to age-related health costs. It is therefore crucial to make the system more resilient and sustainable now when the economy is doing well. The reform should ensure the efficient use of available resources while maximising the health and well-being of the population.

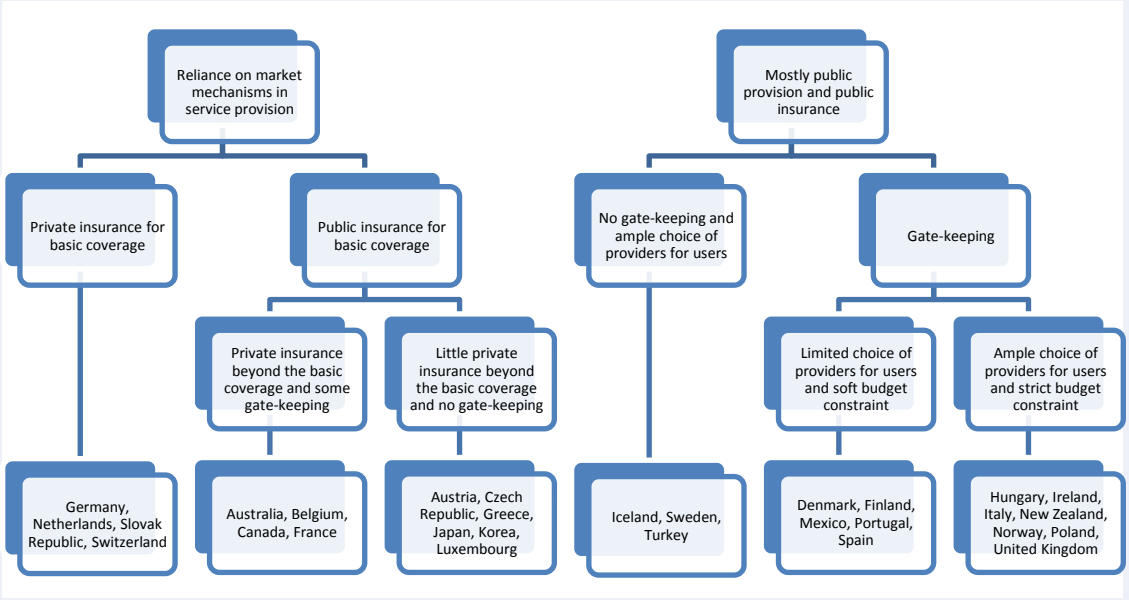
This chapter assesses the performance and emerging key challenges of the Czech health care system, and provides recommendations to adapt the system to remain effective and financially sustainable with regard to ageing. The system is doing well in terms of health outcomes converging to the OECD average and performing well compared with other CEE economies that inherited similar health care systems after the transition. Benchmarking to countries with a comparable institutional setting (Box 1.1) however points to potential efficiency gains. The chapter also discusses how various disincentives in the system create inefficiencies on the supply and the demand side of health care.

Box 1.1. Health care systems: A wide variety of frameworks and an OECD typology

In health care there is no single system that performs best and several types of system can function well, but policy settings, such as those affecting incentives, have to be coherent. Joumard et al. (2010[3]) provide an empirical typology of health care systems in OECD countries. A cluster analysis on a dataset containing information on health institutions and policies suggest that six groups exist, that vary in the mechanisms regulating insurance markets and coverage, the choice of provider and the degree of private provision amongst other (see Figure 1.2).

The Czech Republic, together with Austria, Greece, Japan, Korea and Luxembourg are featuring public basic insurance coverage combined with some reliance on market mechanisms at the provider level. Extensive private provision of care gives users a wide choice among providers and there is no gate-keeping in place. As the available information on quality and prices is scarce, little competitive pressures on providers are created. Over-the-basic coverage is limited. The budget constraint tends to be less stringent than in other country groups.

Figure 1.2. OECD typology of health care systems



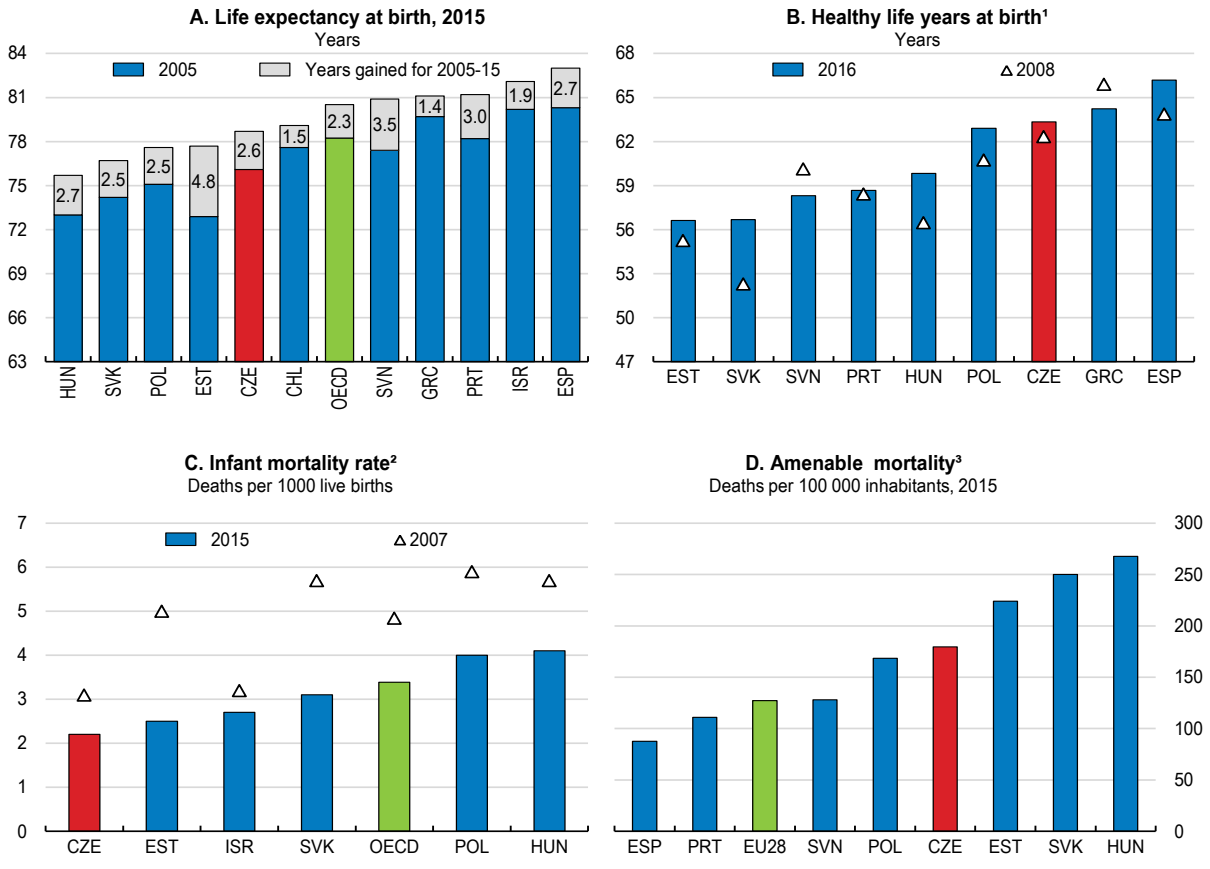
Note: Countries' institutional setting is based on the *Survey on Health System Characteristics* from 2009.
Source: Joumard, I., C. André and C. Nicq (2010[3]), "Health Care Systems: Efficiency and Institutions", OECD Economics Department Working Papers, No. 769, OECD Publishing, Paris. http://dx.doi.org/10.1787/5kmfp51f5f9t-en

Overview of health outcomes in the Czech Republic

The health status of the population is slowly converging to the OECD average

Although many health outcomes have improved significantly over the last decades, there is room for improvement. The infant mortality rate has decreased from 10.8 to only 2.5 infant deaths per 1 000 live births over the course of 25 years and is now among the lowest in the OECD (Figure 1.3, Panel C). Healthy life years, which indicate the share of remaining years free of disability, have also increased. Thus, better health care has not only led to men and women living longer but also to ageing healthier (see Figure 1.3, Panel B). While the Czech Republic outperforms several CEE economies with respect to health outcomes such as survival rates after admission to hospital for ischaemic strokes (OECD, 2018[4]), and in amenable mortality, it is still lagging behind the OECD average (Figure 1.3, Panel D).

Figure 1.3. Health outcomes have improved on several dimensions



1. Weighted average of data by gender for the population less than one year.
2. Based on the minimum threshold of 22 weeks of gestation period (or 500 grams birthweight).
3. Defined as deaths from selected disease groups that could have been potentially avoided through good quality health care. Data based on Eurostat's list.
Source: OECD (2018), Health statistics (database) and Eurostat.

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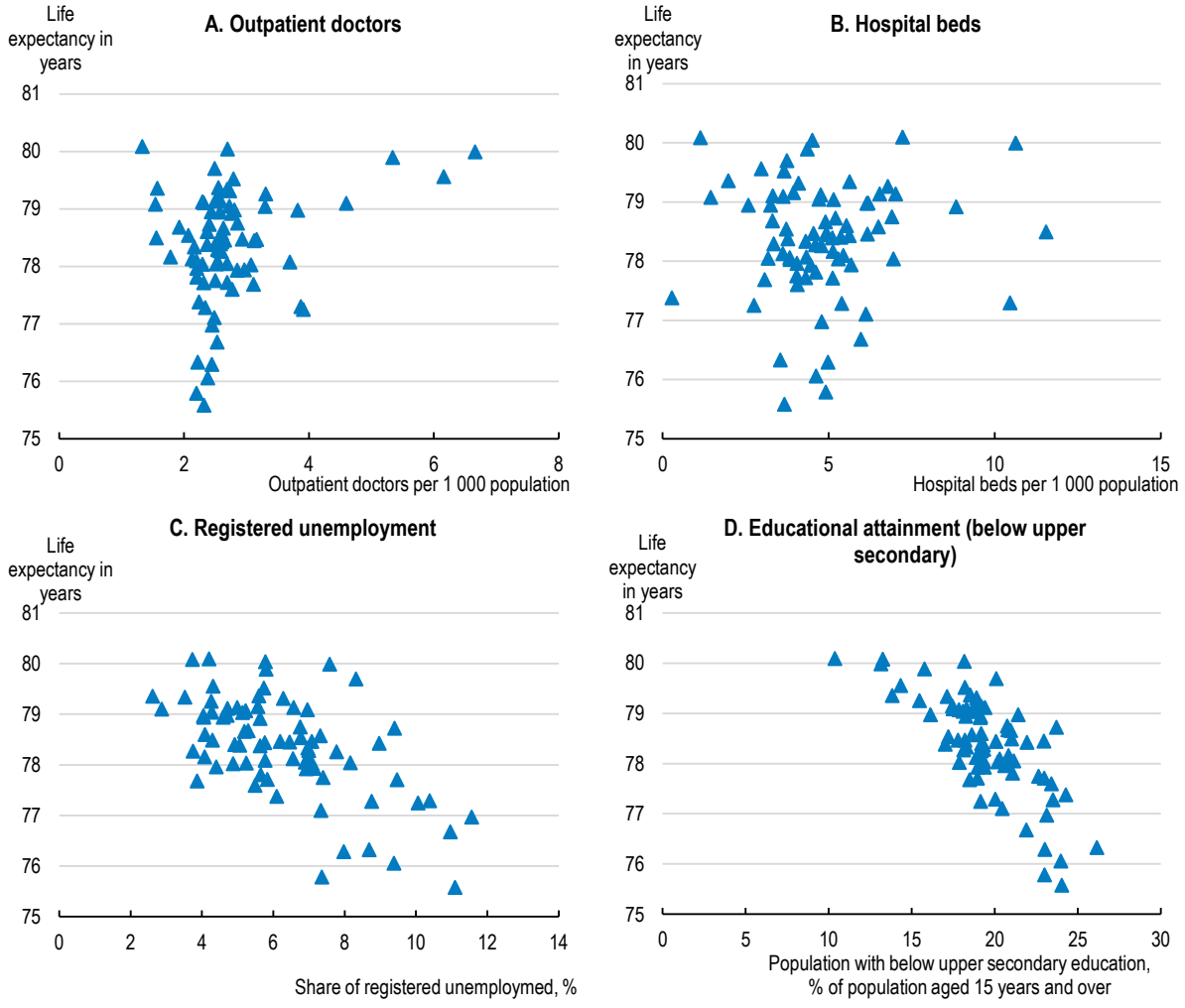
Health outcomes also vary significantly by region. Life expectancy at birth across districts differs by more than 4 years for both men and women. The larger cities such as Prague and Brno have the highest life expectancy and districts in the Ústecký region in the north the lowest one (Box 1.2). As doctor coverage across the regions is comparatively high with respect to most other OECD countries, the differences in health outcomes seem to reflect regional differences in socio-economic background. There is a significant negative correlation of life expectancy with the registered unemployment rate or the share of the population with only basic education (Figure 1.4). For example, the share of the low-educated population and the unemployment rate are both high in the Ústecký region. The number of outpatient or hospital doctors shows, however, only a weak positive correlation with life expectancy, reflecting the overall high doctor density across regions (Box 1.2).

Figure 1.4. Life expectancy is lower in socially deprived districts

2015



Source: Calculations based on data from Czech Statistical Office.

StatLink https://doi.org/10.1787/888933790790

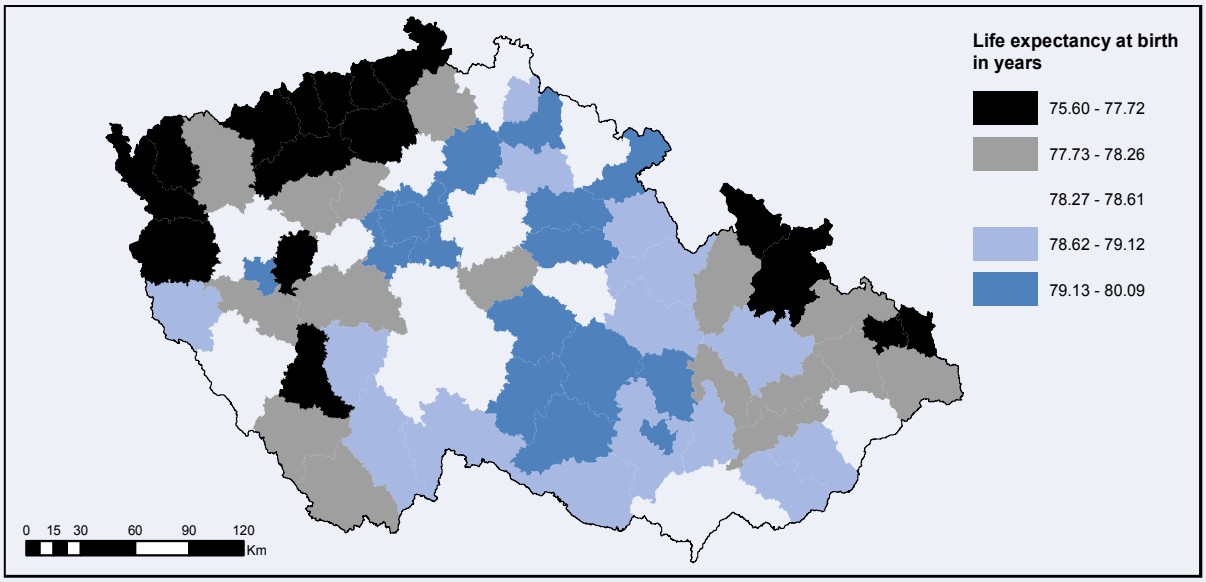
Box 1.2. Explaining regional variations in health outcomes

Understanding the drivers of regional variations in health outcomes is important to develop targeted policy solutions. Previous OECD work focussing on efficiency of the health care sector across countries found governance arrangements and institutional features to be the main explanatory factors, in addition to life-style and socio-economic characteristics (Joumard, André and Nicq, 2010[3]). Within a country, framework conditions such as the institutional set-up, regulations and laws apply to all regions, thus regional inequalities in health outcomes are likely the result of structural differences. Depending on what drives the differences in health outcomes, targeted policies should be developed. For example, if socio-demographic characteristics are explaining the observed variation in health outcomes, policies to increase health literacy for populations at risk could lead to more equal outcomes.

In the Czech Republic, life expectancy varies significantly between the 77 districts. Geographical coverage of medical providers is evenly distributed. Differences in health outcomes are therefore likely to reflect variations in the quality of services, health status of the population, lower health literacy or prevalence of behavioural risk factors.

Figure 1.5. Life expectancy at birth across districts

Average of 2012-16, quintiles



Source: Calculations based on data from Czech Statistical Office.

Estimating life expectancy using factor analysis to capture the latent processes of the highly inter-correlated district specific variables (see the Technical Background paper for details) indicates a strong negative effect for socio-economically deprived districts. Thus, the most socio-economically deprived district has a 2.5 years lower life expectancy than the average, and 4.1 years compared with the least socially deprived district. Further, alcoholic consumption negatively affects life expectancy, particularly in the case of men (Table 1.1, Panel 6). Health care accessibility explains about 1.5 years

difference, between the district with the lowest and the highest density of doctors and medical facilities. Urban regions are slightly better off, with Prague at the top having approximately eight months of life extra beyond the average thanks to the urban amenities and the way of life. Environmental pollution has only little power in explaining the differences in health outcomes within the Czech Republic.

There are also gender differences in the urbanisation effect. It seems that for females, the city amenities do not bring such an advantage, or they are offset by negative aspects connected to urbanisation. One has to take into account that these effects are separated from the socioeconomic aspects, which certainly are correlated with the urban-rural pattern.

Table 1.1. Determinants that drive regional variations in health outcomes

Factor analysis on cross-section of 77 districts.

	(1) Min	(2) Max	(3) LE at birth		(4) LE at 65		(5) LE (fem) at birth		(6) LE (male) at birth	
Urbanisation	-1.18	5.65	0.12 (0.05)	*	0.13 (0.04)	**	0.06 (0.06)		0.17 (0.06)	**
Health care accessibility	-2.96	3.38	0.24 (0.05)	***	0.23 (0.04)	***	0.23 (0.06)	***	0.23 (0.06)	***
Socioeconomic deprivation	-1.96	3.07	-0.82 (0.05)	***	-0.47 (0.04)	***	-0.80 (0.06)	***	-0.85 (0.06)	***
Environmental pollution	-2.09	4.21	-0.04 (0.05)		0.02 (0.04)		0.01 (0.05)		-0.09 (0.06)	
Alcoholic consumption	-1.30	3.37	-0.18 (0.05)	**	0.06 (0.04)		0.04 (0.06)		-0.40 (0.06)	***
Average life expectancy			78.23 (0.05)	***	17.71 (0.04)	***	81.23 (0.05)	***	75.38 (0.06)	***
Adjusted R^2.			0.80		0.69		0.75		0.78	

Note: Statistical significance notation: * p<0.05; ** p<0.01; *** p<0.001. Standard errors in parentheses. Urbanisation is mainly defined by population density, education, knowledge-intensive business specialisation and also number of crimes per population as this is also a feature of cities. Health accessibility is composed from density of doctors and medical facilities. Socioeconomic deprivation is negatively connected to civic participation measured as election participation and positively to unemployment, social exclusion and gambling. Environmental pollution is based on concentration of SO2 and particular matters in air. Alcoholic consumption reflects a combination of hospitalisation and mortality rates for alcohol-related diseases. (See exact factor decomposition in the Technical Background paper.)
Minimum and maximum values express the range for every factor, while the mean values are always 0. It measures a deviation from average life expectancy and as such it is comparable between different factors.
Source: Based on data from the Czech Statistical Office, Institute of Health Information and Statistics (UZIS), Czech Hydrometeorological Institute, Ministry of Finance and Ministry of Labour and Social Affairs.

In addition to socio-economic, medical infrastructure and urbanisation factors, regional life expectancy might be the result of quality differences in medical care. Potential differences across districts in the quality of care are unobservable due to a lack of quality and performance indicators for the medical sector. For example, sorting of better skilled medical personnel into more attractive regions (i.e. with less crime and lower air pollution) could ultimately create differences in the quality of treatment and potentially explain the absence of effects. However, to identify potential sorting and quality differences and their effect on health outcomes requires better data that are currently not available.

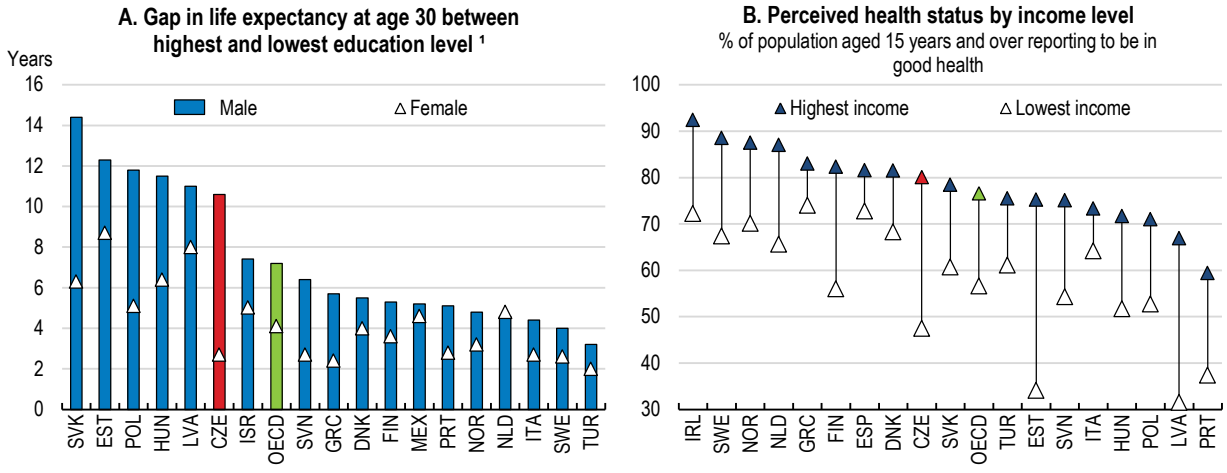
Health outcomes differ by socio-economic background

The universal coverage with a broad benefit package ensures equal access to health care regardless of socio-economic background. However, despite equal access, health

outcomes vary significantly by socio-economic status. The difference in life expectancy between the highest and lowest education levels at age 30 is especially high for men - 10.6 years versus 7.1 years on average in the OECD (see Figure 1.6, panel A). For women, the gap in life expectancy between the highest and lowest education levels at age 30 is significantly lower than for men, and with 2.7 years less pronounced than the OECD average of 4.2 years. As educational levels and income are positively correlated, the pattern is similar by equalised household income level. The gap between the share of individuals perceiving their health as good in the highest income quintile and the lowest income quintile is among the highest in the OECD, after Estonia and Latvia (see Figure 1.6, panel B). These disparities may be explained by financial access barriers, differences in living and working conditions, and in smoking and other risk factors.

Figure 1.6. Health inequalities by socio-economic status

2015 or latest



1. The figures show the gap in the expected years of life remaining at age 30 between adults with the highest level (tertiary education) and the lowest level (below upper secondary education) of education. Data for the Czech Republic is based on administrative data, but information on educational level is only available for about 30% of all deaths.

Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

StatLink https://doi.org/10.1787/888933790809

Low-income households may have financial access barriers to certain health services. Whether the statutory equal access to health care is also reflected in practice remains an important but unanswered question. Limited data availability does not allow assessing whether systematic differences regarding quality of treatment or access to care exist for some population groups. While survey results have to be interpreted carefully, they suggest that unmet medical needs, though relatively low compared with EU countries, vary by education level (which in turn tends to be correlated with income). Respondents to the EHIS 2014 survey were more likely to state financial constraints as reason for unmet health care needs when they had below-secondary education (Eurostat, 2017[5]).

Despite the broad benefit package, financial barriers to access could be related to out-of-pocket payments. Although they are comparatively low in an international perspective,

they may deter low-income people from seeking health care at the margin. For example, co-payments for pharmaceuticals may result in patients not following through with the prescribed treatment due to financial constraints and limited knowledge of reimbursable generics (see below). In addition, prospective patients might be deterred to seek medical care if it requires the upfront payment of a registration fee for new patients or if it involves treatment that is not covered by the health insurance, such as most dental treatments. While no detailed information is available about the financial access barriers, most of the respondents with low education, which stated financial issues as reason for unmet health care needs, were referring to medical care and prescribed medicines (Eurostat, 2017[6]).

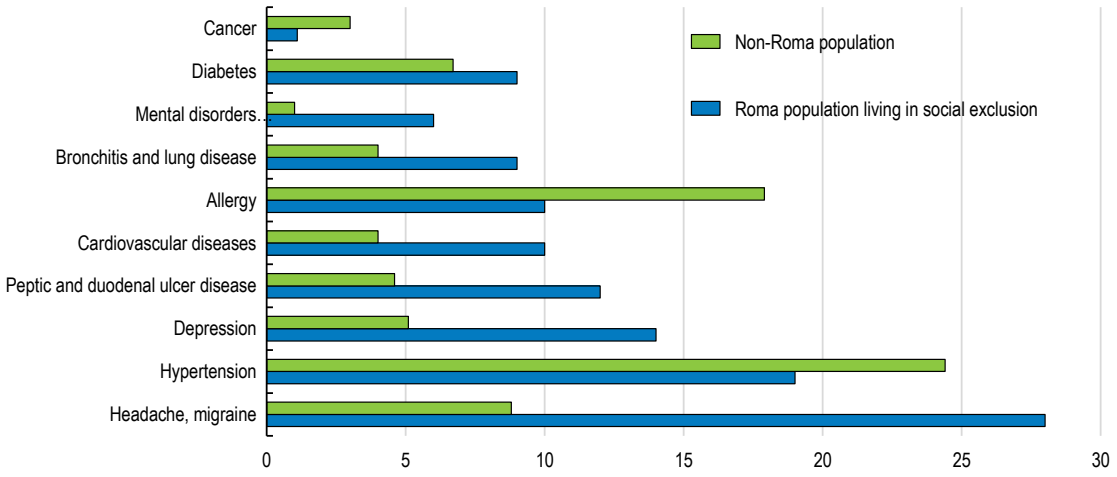
The use of health care and health outcomes also differs between minority groups such as the Roma (2.5% of population) and the rest of the population. Although government statistics do not allow assessing whether minority groups face systematic differences in access to health care and in the quality of treatment, some estimates suggest that the Roma face significant health inequalities (International Organisation of Migration, 2016[7]). For example, the life expectancy of the Roma is estimated to be 10-15 years lower than the majority of the population, and their infant mortality is twice the national average (Úřad vlády ČR, 2017[8]).

Studies suggest that social status, poor living conditions and risky behaviour related to health are main drivers of morbidity and inferior health status. For example, smoking is widespread among the socially excluded Roma population - 65% for men and 57% for women (Úřad vlády ČR, 2017[8]; Serrano Rodriguez and Rodríguez Derecho, 2009[9]). Behavioural risk factors that are more common among the socially excluded Roma population, such as smoking, poor diet and alcohol consumption are closely linked to higher prevalence of diseases such as cardiovascular disease, diabetes and respiratory and digestive tract diseases (Figure 1.7).

The existing (but scarce) data further indicate that the Roma use preventive and dental services less often (European Union Agency for Fundamental Rights, 2014[10]). To increase health literacy and to address social and cultural differences, the Office of the Government supports programmes focused on reducing health inequalities in social exclusion areas with a high share of Roma population. There is, however, a lack of systematic support to train and increase the awareness of health and social assistants with respect to social, cultural and language barriers of minority groups (Úřad vlády ČR, 2017[8]). Targeted policies at minority groups should include preventive and educational programmes, in combination with health providers and social assistants being sensitised for minority population's risk factors and specific needs.

Figure 1.7. Prevalence of diseases by Roma and non-Roma people

Per cent, 2015



Source: The National Institute of Public Health (NIPH, 2015), "Podpora zdraví ve vyloučených lokalitách – snižování zdravotních nerovností".

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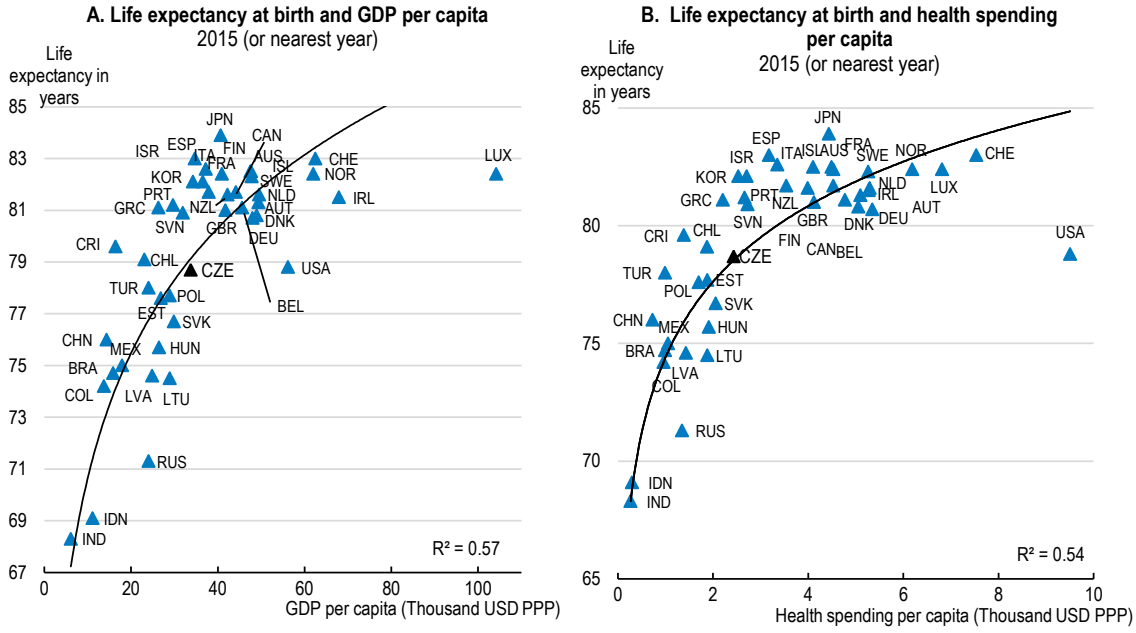
Health outcomes can benefit from health spending reforms

Raising health spending and efficiency can have large gains. Although Czech spending on health per capita is low in international comparison, it is among the highest compared with the CEE economies. However, this does not necessarily translate into better health outcomes. While life expectancy of the Czech population is higher than in Lithuania (4.2 years), Hungary (3 years), Slovakia (2 years) or Estonia (1 year), it remains about two years below Slovenia where spending on health is comparable (see Figure 1.8). Benchmarking the Czech Republic to countries with similar spending and institutional characteristics, suggests that health outcomes underperform. The Korean and Greek populations have higher life expectancy than the Czechs, despite slightly lower health spending per capita. Recent OECD work also shows that the Czech health status remains below the one of Slovenia, Korea and Greece, even when controlling for additional differences in life-style and social factors (Giorno and Londáková, 2017[11]). This suggests that at current funding levels, the Czech health care system has room to increase efficiency and improve health outcomes.

OECD studies further suggest the potential for efficiency gains. Applying a Data Envelope Analysis (DEA), Dutu and Sicari (2016[12]) find that when keeping health expenditure constant but spending it more efficiently, i.e. according to the best practice in the sample (Japan, Iceland, Korea), life expectancy could be increased by about 4%. Furthermore, increasing health spending could improve health outcomes further. OECD estimates based on a sample of OECD countries from 1990-2015 suggest that a 10% increase in health spending (or by about USD 245 per capita per year) is associated with a potential gain in life expectancy of about 3.5 months (James, Devaux and Sassi, 2017[1]).

Figure 1.8. Life expectancy across the OECD

2015



Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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Improving the coherence and organisation of the health care system

Improving the management and regulation of the health care system

OECD research suggests that there is no single best health care model: each model has its strengths and weaknesses (Joumard, André and Nicq, 2010[3]). In all systems incentives are designed to induce actors to behave appropriately in terms of delivering cost-efficient services and quality or limit overconsumption of health services, while regulation should guarantee fair competition and proper price signals (see Box 1.1).

The Czech health system is characterised by the state exerting strong control through price and volume regulations (Box 1.3). While this has kept costs down, efficiency and quality have suffered from asymmetry of information between three types of actors: insurance funds, health care providers and individuals. Thus, there is a lack of proper incentive mechanisms and price signalling (Box 1.3) suggesting that there is ample room to improve the efficiency and quality of the system.

Box 1.3. The Czech health care system

The current structure

The main features of the health care system were established in the early 1990s after the transition towards democracy. The principle of free choice of a health-care provider was introduced, and most of the primary care, non-hospital ambulatory specialist care, the pharmaceutical industry, pharmacies and spa facilities were privatised. Hospitals remained in public ownership, complemented only by a small number of private facilities that emerged over the subsequent years. Several laws were adopted that structure the system, in particular, the General Health Insurance Act (1991), the Act on the General Health Insurance Fund (1991), and the Act on Departmental, Professional, Corporate, and Other Health Insurance Funds (1992). The introduction of insurance funds transformed the health scheme into a health insurance (SHI) model.

Coverage, scope and financing

Health care is delivered as a public service by different types of providers, which are financed by the health insurance funds. The funds play a key role and though independent, they are heavily regulated. Health insurance works on the basis of solidarity, which means that contributions are not linked to health care received or to health status.

More specifically,

- Coverage: The health insurance system is universal. All employees and self-employed are subject to universal coverage through mandatory wage or revenue based contributions. Economically inactive persons (children, students, persons on parental leave, pensioners, unemployed, prisoners and asylum seekers) are covered by state contributions.
- Scope: Individuals have the right to choose their insurance fund. The range of benefits is very broad and includes inpatient and outpatient care, prescription pharmaceuticals, rehabilitation, some dental procedures, spa treatments and over-the-counter pharmaceuticals (if prescribed by a physician). Indeed, the Czech law stipulates that insured individuals are entitled to any medical treatment delivered with the aim of maintaining or improving their health status. In practice, however, benefits are rationed by legislation, formularies, an annual negotiation process between the health insurance funds and providers aimed at defining specific conditions of reimbursement and a fee schedule known as the "List of Health Services".
- Financing: Compulsory, revenue-based contributions are the main source of health care financing, accounting for around 75% of the revenues of insurance funds and 54% of overall health revenues. The remaining share comes from the state as contributions for economically inactive people and out-of-pocket payments. The individual health insurance funds collect the monthly SHI contributions from employers and employees, from self-employed people, and from individuals without taxable income who are not insured by the state.

The functioning of the insurance scheme

People can choose between seven insurance companies. However, the General Health

Insurance Fund (*Všeobecná zdravotní pojišťovna*, VZP) established in 1992 is the oldest and main insurance company. It covers the largest share of insured people. There is a redistribution mechanism between insurance funds according to a risk-adjustment scheme to correct selection biases. Up to 2017, the redistribution between insurance funds was based on a capitation formula taking into account age and gender. In January 2018, a new redistribution mechanism has come into force, which is based on pharmaceutical cost groups (PCG). Besides age and gender, it takes into account cost differences by diagnosis and therefore reflects the needs of chronically ill patients. Moreover, ex-post compensation of 80% and 95% of costs above thresholds stated by law is provided for "costly insured individuals" whose annual costs exceed these thresholds. This is intended to protect the health insurance funds from unexpected fluctuations in expenditure. The reallocation process is managed by the VZP through a special central account. Each month the health insurance funds report to the VZP the total amount of SHI contributions they have collected, as well as the age, gender and PCGs of their insured individuals.

Individuals can choose freely among the health insurance funds and may switch funds once a year either on 1 January or 1 July. Health insurance funds must accept all applicants who have a legal basis for entitlement; risk selection is not permitted. In fact, shifting is very limited as differences between insurance funds' packages and their cost are small.

Indeed, the services provided by insurance funds are heavily regulated and they have limited leeway in contracting with health providers. The Ministry of Health acts as an arbiter in the purchasing process; it supervises annual negotiations between the health insurance funds and the providers to determine the conditions of reimbursement – including payment mechanisms – for specific groups of providers, such as acute care hospitals, GPs or ambulatory care specialists. Each year the Ministry of Health publishes a so-called Reimbursement Decree, which serves as a framework for defining specific conditions of reimbursement, such as payment mechanisms. These conditions act as amendments to the existing long-term contracts between health insurance funds and providers. If the negotiations between health providers and insurance funds fail, the Reimbursement Decree applies. Individual health care providers and health insurance funds further have an option to negotiate individualised reimbursement contracts regardless of the results of collective negotiations and Reimbursement Decree.

Recent reforms of the health system and measures introduced

Reforms in the last decade have aimed to increase the efficiency and transparency of health service provision, improve data systems, and contain costs. An important reform took place in 2003, when ownership of half of the hospitals was transferred from the state to the 14 newly formed, self-governing regions. Through this decentralisation process, some regions decided to change the legal form of some hospitals, by transforming them into private companies (of which regional authorities still own the majority of shares). There has been a mix of reforms but generally, implementation has been slow and many implementation processes are still ongoing:

- Diagnosis Related Groups (DRG) were introduced as early as 2007. However, it is not used as the main framework for reimbursement due to the difficulties in classifying and identifying costing of hospital cases. Hospital reimbursement is based on the global budget using DRG as a complement to estimate the changes in volume of provided services. Long-term care (as well as outpatient hospital

consultations) is reimbursed on a capped fee-for-service basis.

- In 2008, the introduction of user fees and co-payments for pharmaceuticals substantially increased the share of out-of-pocket payments, especially in the 2008-2012 period. In 2013, all user fees except the one for emergency services were cancelled by the newly elected government taking effect in 2015.

Source: Alexa J, Rečka L, Votápková J, van Ginneken E, Spranger A, Wittenbecher F. (Alexa et al., 2015[131]); Czech Republic: Health system review. *Health Systems in Transition*, 17(1):1–165; Act 592/1992 Coll.; WHO Global Health Expenditure Database.

The Ministry of Health plays a central role, not only in determining health policy but in the negotiation process between insurance funds and health care providers (hospitals or GPs, for instance). Each year insurance funds and health-care providers negotiate the reimbursement rate of health services. But, as the ministry publishes annually a reimbursement decree that sets the prices of health care, the negotiation process is not genuine as one party (often health providers) tends to rely on the decree. Lobbying to obtain more favourable prices through the decree is prevalent, while the negotiation process has little influence. This weakens the capacity of insurance funds to negotiate lower prices to reduce cost, link prices to performance and reap efficiency gains.

The ministry also faces a dilemma between its responsibility to guarantee the financial sustainability of the system and its short-run interest as the owner of many hospitals and ultimately having to cover their eventual deficits. The decree also weakens the incentives of health-care providers to increase their efficiency and cost effectiveness as they can always rely on the reimbursement decree as a fall-back option. Having a genuine negotiation process between health care providers and insurance funds, reducing the scope of the reimbursement decree and/or its drafting entrusted to an independent commission would help solve some of the issues.

The regulation of the system rests heavily on volume limitations. As in most countries, the health basket is determined by law. The Act on Public Health Insurance (Act. No. 48/1997) defines access to health care and sets a range of procedures and services excluded either explicitly or implicitly. For instance, abortion, examinations requested by employers and various medical certificates are implicitly excluded as they do not meet the general requirement of maintaining or improving an individual's health status. Moreover, a negative list defines explicitly excluded services such as cosmetic surgery and some dental treatments. However, the Act on Public Health Insurance is complemented by a mechanism of "formularies", which is a positive list of approved pharmaceuticals, medical aids and dental aids that may be reimbursed under the health insurance system. Finally, the list of health services is updated annually, detailing the size of benefits and services covered.

The formularies and lists limit consumption and use of some services and care. For instance, for some treatments or above defined-standard care, partial coverage is not permitted. This means that patients cannot top up their statutory coverage by choosing a treatment that is more expensive or more efficient than what the coverage is offering and paying only for the difference. By strictly controlling treatment reimbursed and defining the standard of care, the system limits consumption and the use of more advanced technologies or pharmaceuticals at the expense of potentially more efficient treatments.

Overall, there is a need to rebalance the system towards more competition between health providers and insurance funds, and towards private funding to improve quality, efficiency

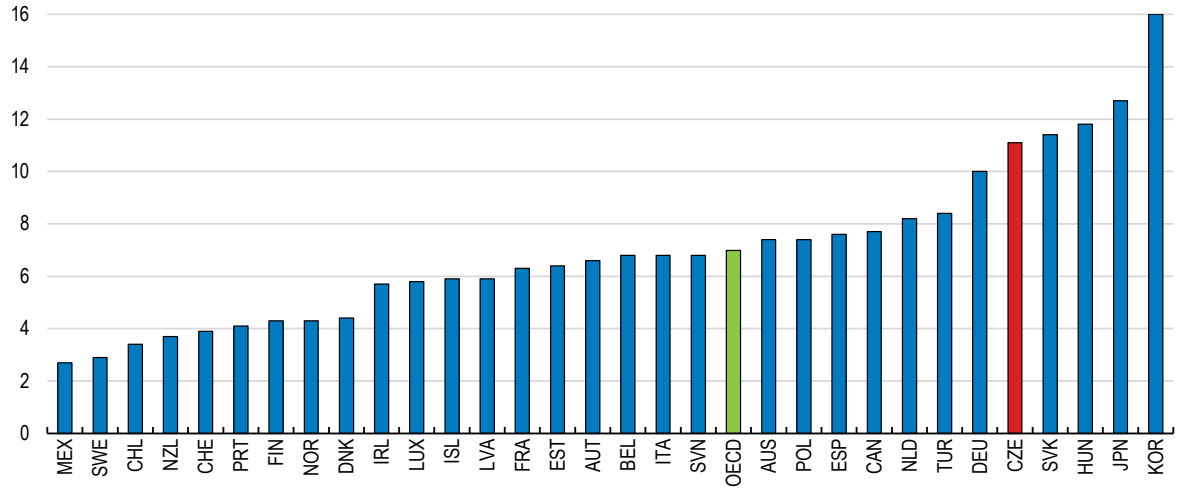
and reduce the reliance on public funding. As will be detailed below, the high reliance of the health care system on wage based contributions in the context of an ageing society will put pressure on public resources. There are different options to reform the settings of the health-care system:

- One option is to decrease the scope of the reimbursement decree by limiting the number of items covered but also leaving sufficient room for genuine negotiations between health providers and insurance funds. The negotiations should include ways to increase efficiency and quality of care among the counterparties to reimbursement prices. However, there would still be a need to allow for greater differentiations between insurance funds to make sure they are incentivised to guarantee the best quality at a cost-efficient way to their clients. This option can be complemented by increasing the share of co-payments on a broader basis than the current co-payment system which is focused on pharmaceuticals and some specific health care services. Although, some exemptions and ceilings in the annual amount of co-payments should be put in place to protect vulnerable groups such as chronically ill or low-income people.
- Another option is to introduce a two pillar system to strengthen the performance of the system while reinforcing its financial sustainability in the long term. The first pillar would be mandatory and include the same basket of services covered by the public system across all insurance companies. In that case, it is necessary to define what services are accessible to all without any financial barrier. These should include all essential and cost-effective care. However, what is defined as "essential" may differ according to national contexts and over time, and cost-effectiveness thresholds will depend on overall budget constraints. The transparency in how decisions are made on which services to include in the benefit basket is essential (OECD, 2015[14]). The second pillar would be optional and individuals would be free to contract a complementary insurance policy with any insurance fund. As such, insurance companies would compete on this second pillar by designing complementary policy packages. However, there is another possibility to differentiate the two pillars. That is to define a percentage of reimbursement guaranteed in the first pillar and let individuals decide whether to buy a complementary insurance policy for the rest or pay out of pocket.

The organisation of the system does not provide a role for the patient as the end consumer of health care. The Czechs have wide access to GPs or specialists and, except for selected specialties (e.g. dentistry care, assisted reproduction, aesthetic surgery, etc.) or emergency outpatient care, no user fees exist. Medical care costs are not salient as incurred costs are paid by the health insurance fund directly to the service provider. Overconsumption might result as medical services are perceived as free by the patient. Indeed, the number of physician consultations per inhabitant is among the highest in the OECD and CEE-economies (Figure 1.9). As discussed below, reducing potential overconsumption is not addressed through incentives on the demand side but rather put on GPs and specialists who can have an upper threshold on the volume of their activities.

Figure 1.9. Czech's number of physician consultations is high

Per inhabitants, 2015 or nearest year



Source: OECD (2017) Health statistics (database).

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A monitoring framework to evaluate the efficiency of the management of the health care system would raise efficiency and produce better outcomes. Identifying emerging challenges, developing policies and evaluating their performance once implemented requires the collection of adequate data. Input indicators measuring how much was put into the health system as well as output indicators measuring how much of health services were provided (e.g. doctor consultations) are partially available. However, outcome indicators assessing the achievement of health care delivered are lacking and need to be developed and monitored. While a new data collection system is under development, it is not yet systematically used to benchmark hospital performance or to control the quality of care. However, the new DRG system should allow for more benchmarking and performance management (see below).

A performance-based data system is necessary for the monitoring and management of the health system. The amendment of the Act on Health Services in 2016 (Act. No. 147/2016 Coll.) provides for the building of a data system for monitoring health care quality. The registry is now set up, but consensus is needed among stakeholders on indicators and policy implementation. The amendment permits to set up a comprehensive National Registry of Reimbursed Health Services. It operates in co-operation with the health insurance companies and will contain most of the production and reimbursement data collected from the healthcare providers. Due to the broad scope of the collected data, the registry will be used to validate or even replace many current data collections within the National Health Information System. It will become the main data source for the production of performance indicators, namely those quantifying the inputs and the volume of provided health services. Further, outcome measures to capture the quality of care are being developed, i.e. in relation to the implementation of the DRG system.

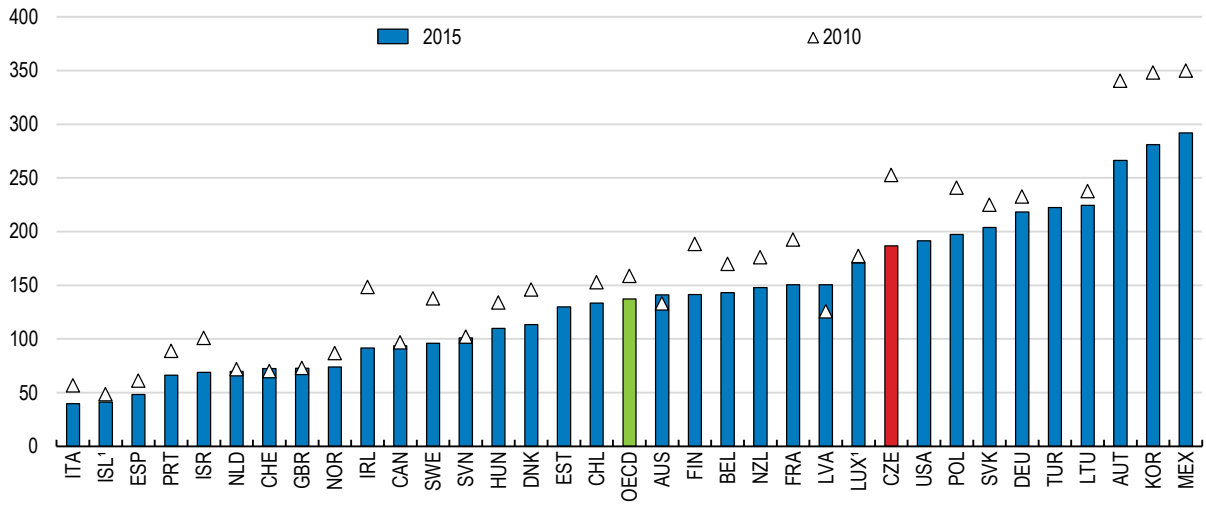
The registry was launched in early 2018 and data collected are not yet used to monitor the quality of care or for pay-for-performance. The implementation should be accelerated to allow for quality measures and improvements in the reimbursement of health care and pharmaceuticals. In particular, it is needed for the reform of the DRG, which relies on

developing unbiased output indicators. It will also be useful for the identification of areas where efficiency gains are possible and the monitoring of reforms.

Building on the registry, a systematic and regular assessment of the quality of care has to be implemented to improve the health system. As of now, quality control relies mostly on the assurance of minimal safety and quality standards through one-time accreditation (OECD, 2014[15]). Indicators of quality of care could play an important role in improving performance through comparisons, reducing over diagnosis or treatment (OECD, 2017[16]), and increasing access to health care. However, the Czech Republic has recently started reporting some of the health care quality indicators used by OECD member states to benchmark and compare performance. For instance, the avoidable diabetes hospital admission rates show that the Czech Republic, despite progress since 2010, has still room to improve overall management of diabetes through self-care, advice and education, and primary care treatment (Figure 1.10). The mortality after admission to hospital for ischaemic stroke shows no progress between 2010 and 2015 (Figure 1.11). Such information can help patients, practitioners and insurance funds to identify shortcomings or risks in the quality of care.

Figure 1.10. Diabetes hospital admissions in adults are decreasing

Age-sex standardised rates per 100 000 population, 2010 and 2015 or nearest year



1. Three-year average.
Source: OECD (2017), *Health at a Glance*.

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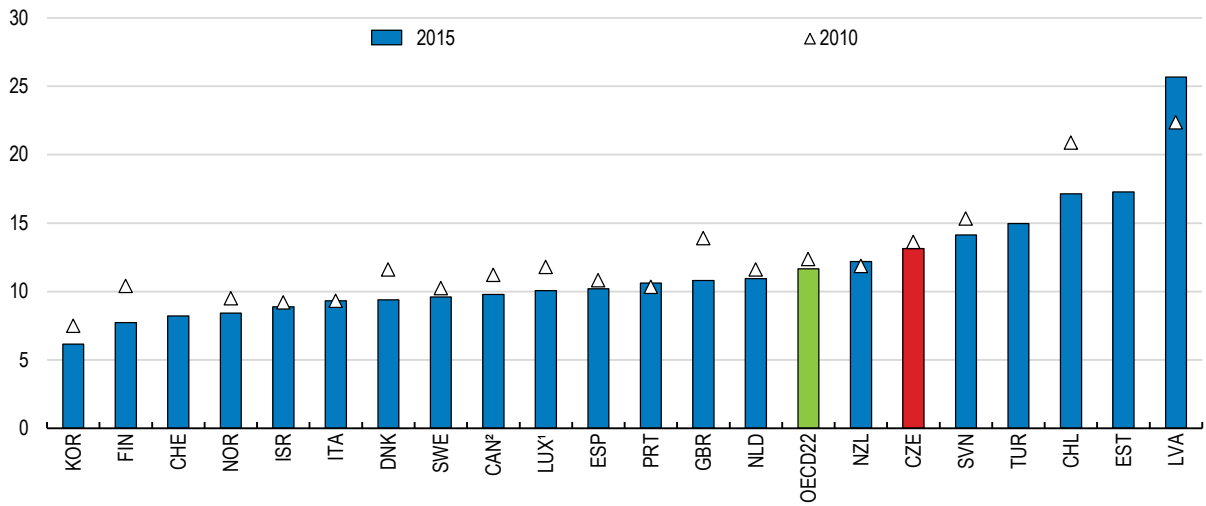
The introduction of the new Diagnostic Related groups system offers an opportunity to regroup and systematically collect data on the outcomes of care from hospitals and health providers. Political initiative is necessary to increase the collection and use of quality indicators in the management of the system as there are inherently little incentives to drive quality improvement. Neither payment nor information systems are geared to encourage continuous quality gains, given that payments to primary care doctors are predominantly capitation-based, for example, and that indicators of the local quality of care are not routinely published (OECD, 2014[15]).

Introducing bonus payments in form of pay-for-performance to service providers can support data collection while improving quality of care. Pay-for-performance payments

are additional payments that complement the existing mode of payment and relate to achieving pre-defined targets. The impact of pay-for-performance scheme on quality of care varies with its set-up, the selected indicators and pre-defined outcomes as well as the amount received as reward. As such, cross country evidence on the impact of pay-for-performance schemes provides limited evidence with regard to improved health outcomes and cost effectiveness, but was in general associated with an improvement in health data infrastructure and data availability with a greater focus on quality (OECD, 2016[17]).

Figure 1.11. Thirty-day mortality after admission to hospital for ischaemic stroke is relatively high

Age-sex standardised rate per 100 patients aged 45 years and over, 2010 and 2015 or nearest year



1. Three-year average.
2. Results for Canada do not include deaths outside of acute care hospitals.
Source: OECD (2017), Health at a Glance.

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Governance of the health care system

Responsibilities for health care are shared between the central government and sub-national governments within a clear organisational structure. The Ministry of Health sets the health policy agenda, prepares legislation, and administers the State Institute for Drug Control (SÚKL) and the public health institutes (Alexa et al., 2015[13]). The authority of the regions is – while subject to the supervision of the Ministry of Health – divided into independent and delegated authorities. Within their independent authorities, regions are responsible for the establishment of regional health facilities, monitoring the quality of care of private health care providers and the preparation and implementation of subsidy programmes, e.g. for capital investments or operational costs (Table 1.2).

Furthermore, the regions are responsible for a set of delegated authorities from the state administration, such as authorisation and registration of health services, inspection and quality control as well as the provision of emergency services. For example, the regional authorities own emergency units, long-term care institutions (except for psychiatric facilities), some primary care facilities and medical spa facilities. Provision of health services through smaller hospitals are often under the responsibility of municipalities (Table 1.2).

Table 1.2. Responsibility for public health in the Czech Republic

National responsibility (Ministry of Health)	Regional responsibility	Municipal responsibility
- Health care - management of large hospitals	- Establishment and management of hospitals	- Health services, through both municipal hospitals and private doctors
- Public health protection, health research activities and directly controlled health facilities	- Nursing homes	
- Ensuring the safety, quality and rational use of pharmaceutical and medicinal products, precursors and additives; approving, licensing and monitoring pharmaceuticals and medical aids	- Facilities for physically and mentally disabled adults and children	
- The search for, protection and use of natural medicinal sources, natural spas and mineral water resources, medicinal products and technical equipment for prevention, diagnostics and treating people	- Monitoring the quality of health care delivery of private providers, jointly with professional medical chambers; monitoring refers to a minimum set of criteria for material and technical equipment, as well as qualification of medical staff which are set by the Ministry of Health.	
- Health insurance and health information systems	- Ensuring that non-state providers comply with a variety of laws and directives that define the technical, staffing and hygienic requirements before registering and thereby allowing them to offer health services	
- The use of biocide preparations and introduction of biocide preparations and agents to the market		

Source: Adapted from Council of Regions (2017[18]), "Public Health", https://portal.cor.europa.eu/divisionpowers/countries/MembersNLP/CR/Policy-Areas-Obligatory/Pages/Public-Health.aspx (accessed December 2017).

Good governance of health care is crucial for the system to be able to adapt quickly to new objectives and priorities. While the responsibilities within the health care system across the levels of government are clearly defined, overlapping responsibilities between the Ministry of Labour and Social Affairs and the Ministry of Health regarding long-term care create inefficiencies. Long-term care is provided through the Ministry of Labour and Social Welfare for a person with reduced self-sufficiency resulting from deteriorating health. The Ministry of Health is responsible for long-term care in terms of the provision of health care without which the patient's state of health would deteriorate. Payment for care delivery under the two systems differs, creating incentives for seeking long-term care in the medical rather than in the long-term care setting . Better co-ordination between policy sectors is therefore needed to reduce inefficiencies in the supply of long-term care.

The development of an e-health system offers an important potential to improve the governance of the health system through better information collection and allows to reap efficiency gains and to implement a smart pay-for-performance system. An e-health system is discussed but has not been introduced. However, e-prescription has been introduced as mandatory since the beginning of 2018 (with a year suspension of sanctions for the case of non-compliance). After 6 months, uptake of e-prescription was about 80%. However, this step has to be closely monitored to ensure that especially old doctors are not favouring retirement over investing in the required technology. This would pose a threat to health care provision especially in rural areas.

The use of new technologies to improve the efficiency of communication between doctors and health insurance companies has not yet been implemented. The current setting of the system should facilitate its introduction as it is already heavily centralised and health providers' remuneration depends already on transmitting certain information.

As is many countries, shared private health data through electronic health records faces resistance due to data privacy issues. However, the development of digital systems is focusing on security issues. A voluntary policy is needed to subsidise the equipment of health providers or raise remuneration, train the users and put in place judicial rules that reassure people on the use of the information.

Improving the delivery of health care

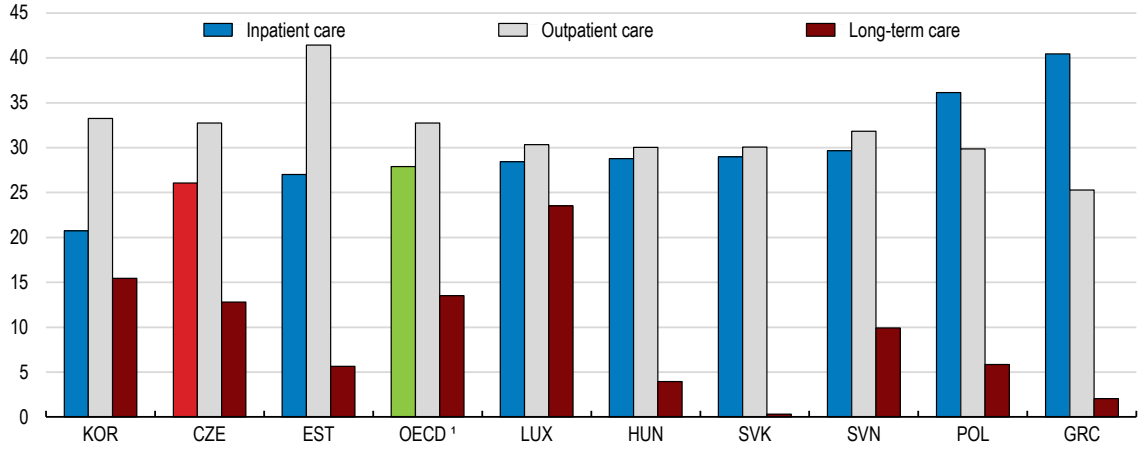
Reforming hospital management and inpatient care

The allocation of resources, the effectiveness of treatments and the appropriateness of care received are important parameters for the efficiency of the system. There are different ways to optimise health spending and effectiveness, for example by streamlining procedures, adjusting treatment methods or creating economies of scale through co-ordinated care provision.

Overall, greater use of outpatient care tends to be more cost effective than inpatient care. It limits waiting times and is the most appropriate treatment method for many interventions (ambulatory surgery). The inpatient care (mostly hospitals) sector accounts for 26% of total spending compared with 29% in the EU and 28% across the OECD in 2015 (OECD, 2017[2]). In contrast to other CEE economies, which like the Czech Republic inherited a large hospital sector, the outpatient care is the biggest sector with 33% of health spending while long-term care and medical spending, though around the OECD average, are less important (Figure 1.12).

Figure 1.12. Health expenditure by type of service

Percent of current expenditure on health, 2015 or nearest year



Note: Inpatient care refers to curative-rehabilitative care in inpatient and day-care settings. Outpatient care includes home-care and ancillary services.
1. The unweighted average of the latest available year excluding Australia, Chile, New Zealand and Turkey.
Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en

StatLink http://dx.doi.org/10.1787/888933790923

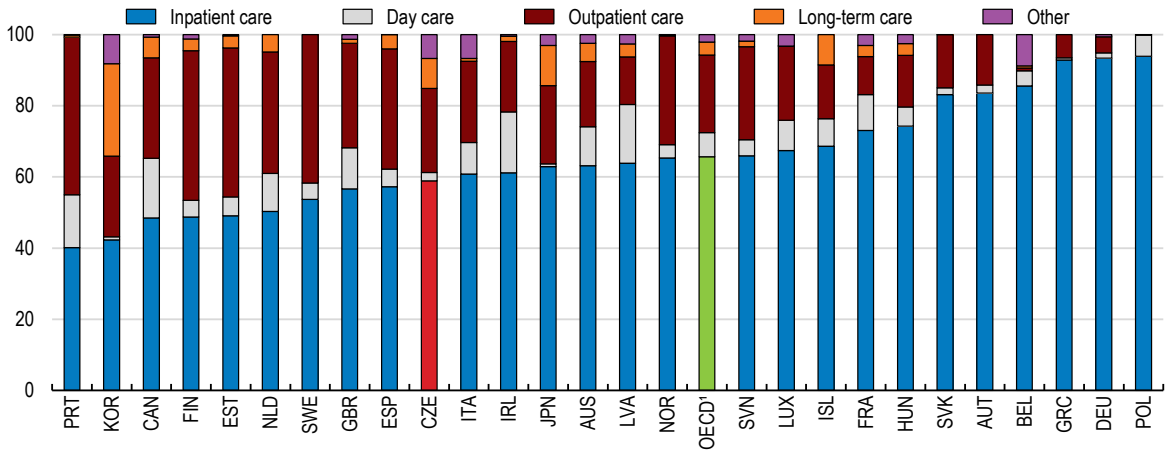
Inpatient and outpatient care are the main components of hospital expenditure. Health spending on long-term care is also important and represents 8% of hospital spending (Figure 1.13). While across the OECD there is a shift from inpatient care to day care in

search for efficiency, in the Czech Republic day-care spending at hospital remains limited (an estimated 2% of hospital spending). More effort should be put to shift inpatient care towards day care as it lowers spending. Monitoring the development of new medical technologies will help in developing day-care.

New medical technologies – in particular the diffusion of less invasive surgical interventions – and better anaesthetics have made day care interventions possible, and reduced the unit cost per intervention by shortening the length of a hospital stay (OECD, 2017[2]). However, the impact of the rise in same-day surgery on overall health spending may not be straightforward since the reduction in unit cost (compared to inpatient surgery) may be offset by the growth in the volume of procedures performed. There is also a need to take into account any additional cost related to post-acute care and community health services following these interventions.

Figure 1.13. Hospital expenditure by type of service

Percentage of hospital expenditure, 2015 or nearest year



Note: Outpatient care includes ancillary services. Data on day-care spending in the Czech Republic faces methodological issues and might be underreported.
1. The unweighted average of the latest available year excluding Chile, Denmark, Israel, Mexico, New Zealand, Switzerland, Turkey and the United States.
Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

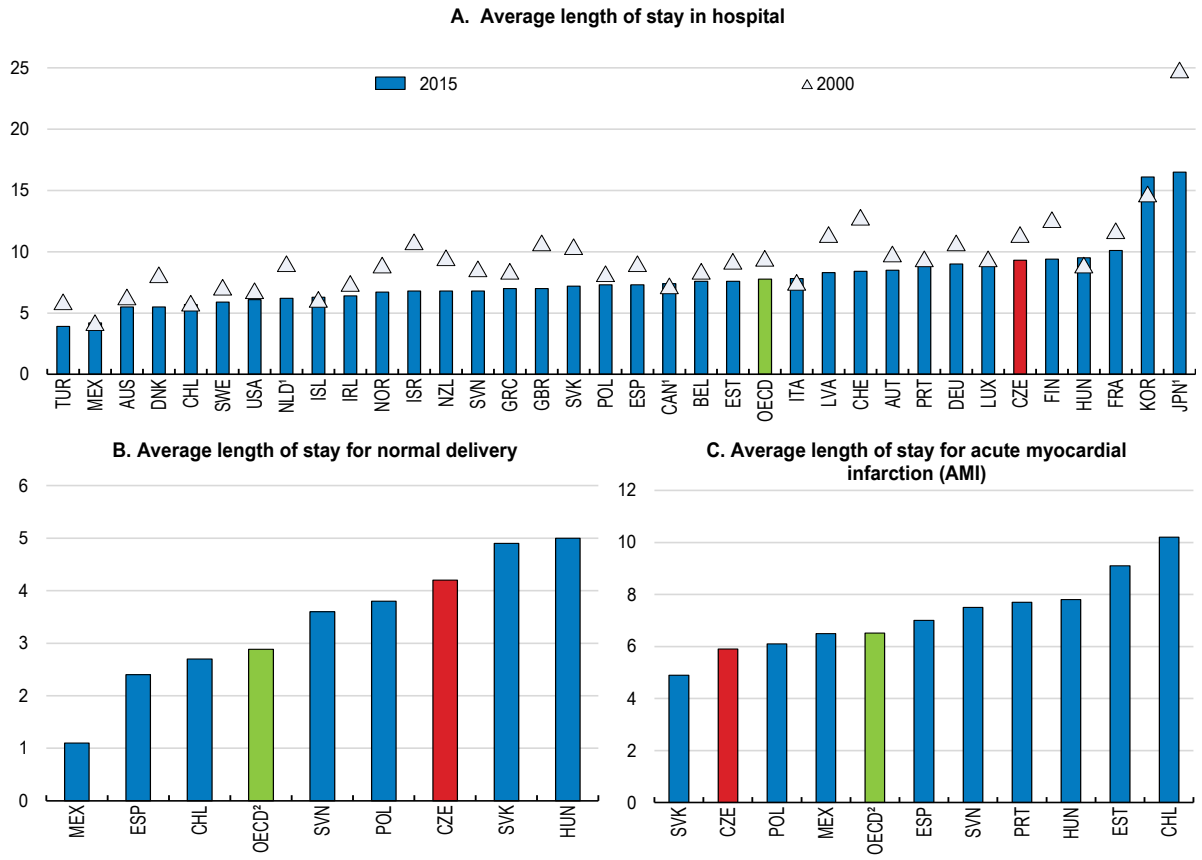
StatLink http://dx.doi.org/10.1787/888933790942

Moreover, progress in reducing the average length of a hospital stay, which at 9.3 days (2015) remains well above the OECD average (of 7.8 days), would bring some efficiency gains (Figure 1.14, Panel A). Reducing the length of stay can be achieved through the advancement of treatments as well as on the backbone of good primary care such that patients can be discharged earlier from hospitals without compromising their recovery. It is in particular the average length of stay for normal delivery which is high compared with other countries (Figure 1.14, Panel B). However, advancements in ambulatory procedures are helping to reduce the average length of stay. For instance, cataract surgery treated as day care surgery increased to 95% compared with the OECD average of 86%. In several countries, nearly all cataract surgeries are performed as day cases (OECD, 2017[2]).

However, the Czech Republic has improved significantly in the coverage and treatment of mental care shifting from in- to out-patient care. The number of persons treated as outpatients for mental illness doubled since 2000 reaching almost 700 000 while inpatient treatments have decreased. A reform is currently being implemented with European funds to improve the quality of life of people with mental illness by the restructuring of services, the creation of a functional network of care facilities and a new approach in the support of patients. The new approach aims to provide timely diagnosis and treatment of basic mental disorders through better support of co-operation between primary care and specialised psychiatric services. The network of existing general and specialised psychiatric outpatient clinics and surgery of clinical psychologists will be completed and community care expanded.

Figure 1.14. The average length of stay in hospital is above OECD average

Days, 2015 or latest



1. Data refer to average length of stay for curative (acute) care (resulting in an underestimation). In Japan, the average length of stay for all inpatient care was 29 days in 2015 (down from 39 days in 2000).
2. OECD average is the unweighted average of the OECD available countries.
Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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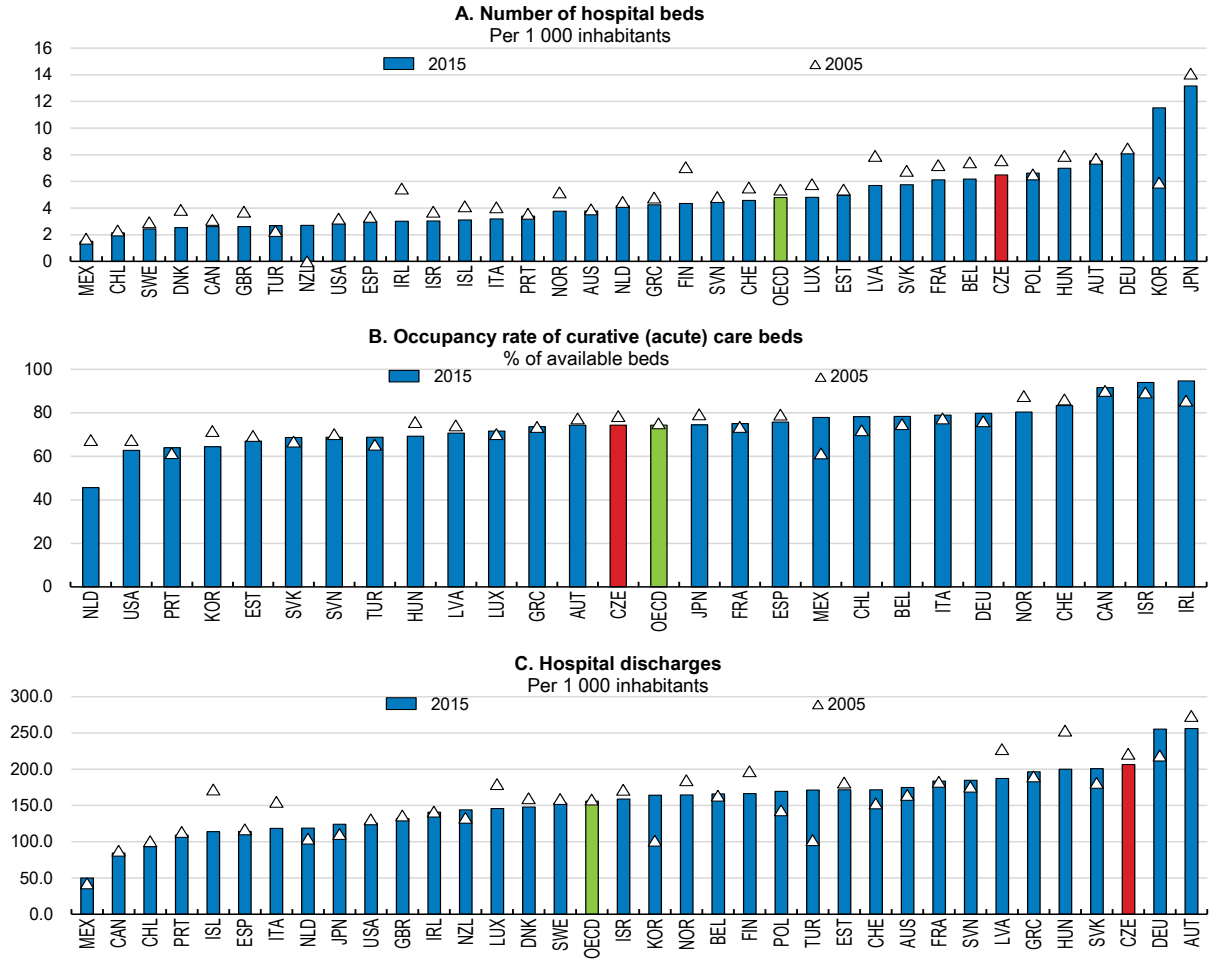
The Czech Republic inherited a health system focused on hospital care from communist times, which still contributes to inefficiencies. Albeit declining since 2000 the number of

hospital beds (6.2 per 1 000 inhabitants) is still above the OECD average (4.7) (Figure 1.15, Panel A). However, long-term care use of hospital beds influences the assessment of the number of hospital beds. The high number of beds also correlates with the total number of hospitals which are not always well allocated geographically. Better co-ordination of neighbouring municipalities and regional hospitals by merging and regrouping of some services could further enhance the efficiency of the hospital sector as well as improving the overall quality of care.

The combination of numbers of hospital beds, occupancy rate and hospital discharges indicates that the number of hospital beds could be further reduced (Figure 1.15, Panel B and C). While the occupancy rate is close to OECD average, the high number of hospital discharges (at least one night at the hospital) compared to OECD indicates that occupancy rates are potentially mirroring sub-optimal choice in treatment and use of hospital resources. Rather than shifting towards day-care, patients seem to be admitted to inpatient care to keep occupancy rates up indicating inefficient management of hospital resources.

Figure 1.15. Hospital care capacity is still high



Source: OECD (2017), OECD Health Statistics (database).

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The remuneration scheme should be used to incentivise hospitals to search for efficiency gains. After a succession of changes in the remuneration scheme of hospitals, it has stabilised since 2012 consisting of a combination of four different reimbursement mechanisms, including case payments based on Diagnostic Related Groups (DRGs), individual contracts, global budgets and fee-for-service payments for hospital outpatient care. Reimbursement based on global budgets modified through DRGs mix is now the main source of hospital revenues (more than 70%).

The Czech DRG system is based on the International defined DRG system. 1 057 groups exist currently. The groups were initially created by the National Reference Centre (NRC). Since 2015 it is under the Institute of Health Information and Statistics (ÚZIS). However, since 2014 the relative weights list published every year by the Ministry of Health has not been updated. The relative weights were calculated based on data from only 12 hospitals, which provided the data on a voluntary basis. The current system is not functioning properly and does not reflect the real cost of health services. It does not allow to benchmark hospital performance in terms of efficiency and best practices and select the subgroup that is used to set prices.

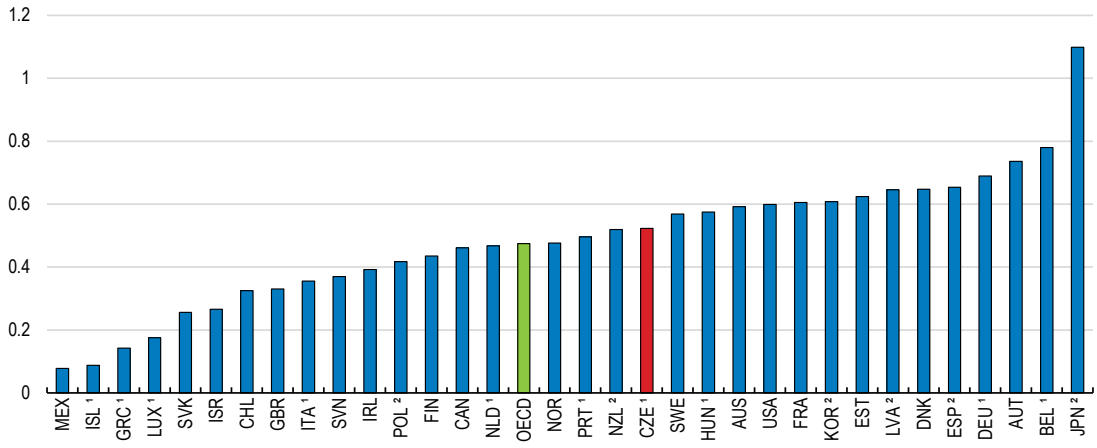
A new DRG system has been under preparation for a couple of years under the programme "DRG Restart". It is currently being tested by a representative sample of over 40 hospitals on a voluntary basis and the results will be compared with the current system. The development of the new DRG system should be accelerated. It should be based on a broad group of hospitals to guarantee enough variance in the information collected for each type of health services. The DRG system should then be used for setting the prices of health services but also to incentivise or reform underperforming hospitals based on a group of best-performing hospitals.

In addition to the overcapacity illustrated by the number of hospital beds, there are issues around the quality of infrastructure. Many psychiatric institutions, long-term care and nursing facilities, and small rural hospitals are in need of modernisation (OECD and European Observatory on Health Systems and Policies, 2017[19]). Given the quite high number of hospitals and facilities and the low level of spending, it is not surprising that capital investment is not sufficient to maintain the quality of infrastructure and equipment. Investment in physical capital in the health sector at 0.5% of GDP is around the OECD average (Figure 1.16).

Underinvestment is partly explained by the reimbursement scheme which does not take into account the use of infrastructure. Therefore hospitals and health care facilities rely on public subsidies and EU funds for investment. Health infrastructure investment and modernisation should be better planned and co-ordinated across regions, as well as follow an integrated approach in the financing of health at the hospital, regional and ministerial level. For example, the management of acute ischemic strokes has been re-grouped in stroke centres and resulted in major improvements. As a result, the probability to receive the necessary treatment below the recommended threshold of 60 minutes is among the highest in the EU.

Figure 1.16. Investment in the health care sector remains modest

% of GDP, 2015 or nearest year



1. Refers to gross fixed capital formation in ISIC 86: Human health activities (ISIC Rev. 4).
2. Refers to gross fixed capital formation in ISIC Q: Human health and social work activities (ISIC Rev. 4).
Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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Reforming the primary and outpatient care sector

Outpatient care can be provided at hospitals or by GPs and specialists in private health facilities or at individual offices. The health system suffers from a lack of co-ordination of primary care between GPs, specialists and outpatient hospital care. Patients' ability to access specialist care without a prior GP consultation, poorly defined mutual responsibilities of outpatient specialists and GPs and current payment systems mean that primary care's potential for instance to lead chronic disease management is not being fulfilled (OECD, 2014[15]).

The absence of a gate-keeping role by GPs is weakening the organisation of the primary and outpatient care. In theory, insured persons must be registered with a GP, dentist, gynaecologist and/or paediatrician for children. However, patients are free to consult a specialist directly or to go to hospitals without passing by their referring doctor which they often do. There is no sanction or incentive to respect the referent doctor process.

This opens room for excessive outpatient care in hospitals at the expense of emergency care and inpatient care. There has been discussion to introduce strict gate-keeping by introducing fees for patients that go to see a specialist without referral, but according to anecdotal evidence it is resisted by the population, specialists and even some GPs. One of the reasons is that GPs are not trusted to properly perform the gate-keeping role. GPs should be entrusted with a greater gate-keeping and co-ordination role. This would ensure that patients are better directed to most appropriate place for their treatments (specialists or hospitals) when necessary. It would also allow to diminish the overuse of hospital facilities and support their refocussing on complex and intense treatments.

The remuneration of GPs and ambulatory care is contributing to the rigidities of the health system. Since 1997, GP reimbursement is based on a system of risk-adjusted capitation fees. In certain rural or remote areas, GPs may be compensated with a higher capitation if the number of registered patients is significantly below the national average

(more than 30% below). Also, GPs who accept to work longer or to be flexible in patients' appointments receive a bonus. However, some services, such as preventive examinations and home visits are paid under the fee-for-service system (around 10 to 15% of GPs revenues; Alexa et al., 2015[13]). Since 2007, ambulatory care specialists are paid under a system of capped fee-for-service up to a pre-defined threshold adjusted annually. Above the threshold, reimbursement fees decline (Alexa et al., 2015[13]).

One incentive for insured people to register with a GP is that it facilitates access by limiting waiting times compared with ambulatory providers. Though there is no mandatory threshold in the number of registrations a GP can take, some GPs reject or discourage further registrations above certain limits. This is due to either workload or because some insurance funds decrease capitation fees for additional patients if they deem the number of registered patients too high.

Another factor contributing to high consultations of outpatient services is the number of certificates requested from patients for reasons unrelated to health. For instance, employees often have to provide a doctor's certificate from the first day of absence onwards, otherwise their absence is considered unexcused. This appears unnecessary as the first three days of sick leave are unpaid and contribute to the excessive number of outpatient consultations.

The level of remuneration of doctors and medical workers is not an issue as the ratios of Czech doctors and medical workers revenues to average earnings are fairly comparable to those of OECD countries (OECD, 2017[2]). However, the design creates disincentives to work more for some GPs. Anecdotal evidence suggests that some GPs and specialists limit their activity after reaching a certain volume because of the decreasing reimbursement (Alexa et al., 2015[13]).

A better mix of capitation fees and fee-for-service should be implemented, in particular for GPs. Increasing the share of fee-for-services in GPs' revenues could be linked to more effective prevention activity and retraining. Also, introducing co-payments would bring more responsible behaviour by insured individuals and GPs with regard to their patients. For example, to not exclude certain population groups, co-payments could be imposed when patients seek specialist advice without GPs referral. For both GPs and specialists, the remuneration should include more quality-based components. Developing e-health and including incentives for GPs and specialists to co-operate through an electronic health system would also increase efficiency and limit the number of consultations and duplication of acts due to information sharing.

Designing a long-term care strategy adapted to an ageing society

The demand for long-term care has increased in the Czech Republic as in other OECD countries in recent years. The impact of ageing is already weighing on the capacity of long-term care provisions. The share of the population aged 80 years and over is estimated to rise from 4% in 2015 to 9% by 2050. The current organisation and financing of long-term care is not prepared to absorb such increases in demand. Long-term care spending represented 1.3% of GDP in 2015 (OECD, 2017[2]), of which 82% is for inpatient long-term care. Long-term care spending in real terms has been increasing by 5% annually over the last ten years, faster than the OECD average (OECD, 2017[2]) and represents more than 10% of health care spending (Figure 1.17, Panel A).

The social and health care aspects of long-term care have different organisation and funding structures (ministries of Social Affairs and Health). While efforts to increase co-

operation between the two ministries have tried to optimise the efficiency of patient care, substantial differences in funding create perverse incentives in the use of hospital facilities. Residential long-term care facilities and other social services are financed by central, regional or municipal budgets, whereas health care facilities for long-term inpatient care are financed primarily through the health insurance.

Since 2007, new legislation based on the principle of free choice of social services provides a care allowance to individuals rather than to institutions. It also introduced a funding mechanism that permitted (a) health-care facilities to finance some forms of social care from the state or regional budgets; and (b) social care facilities to finance some services through contracts with the health insurance funds.

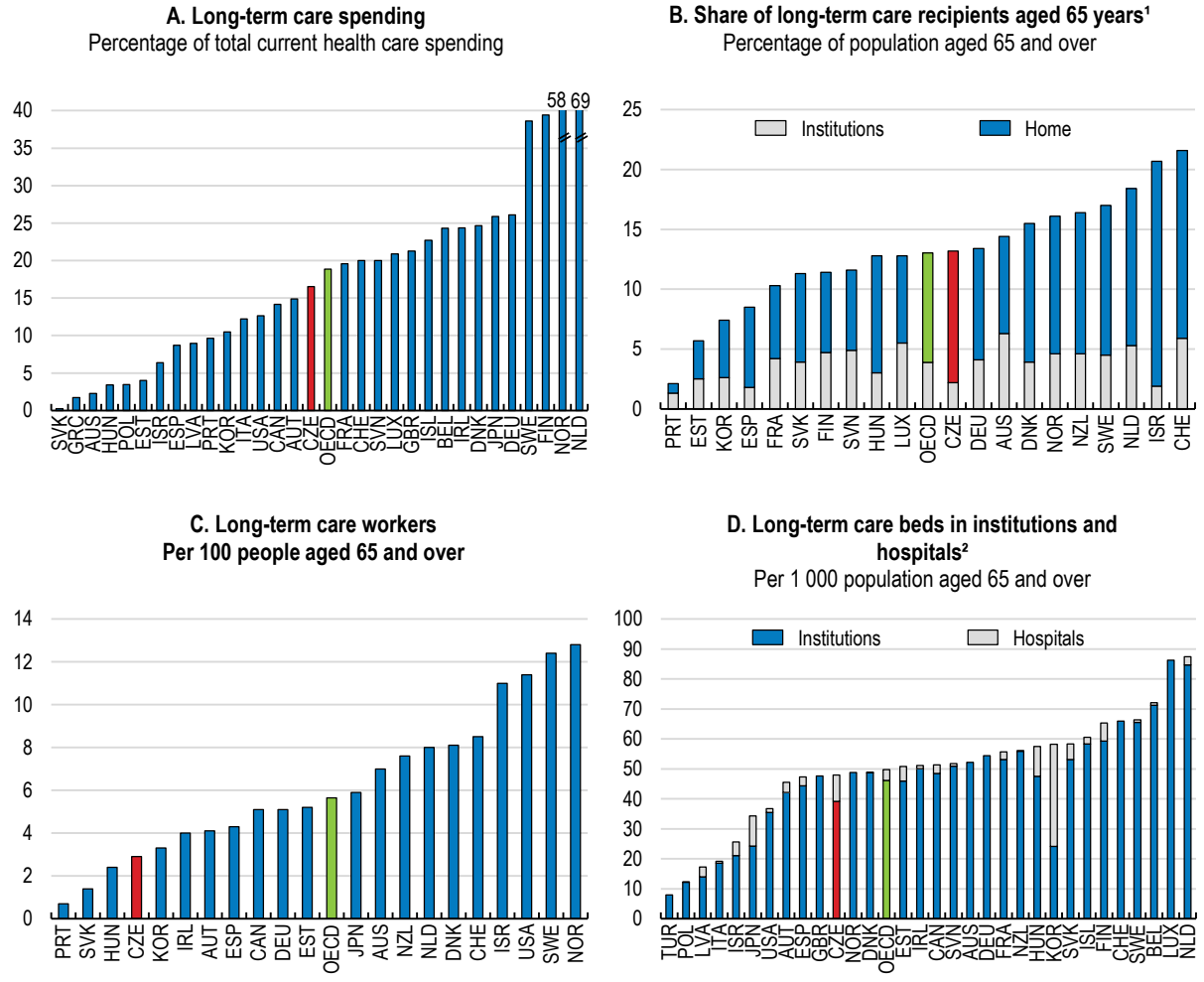
The individual care allowance led to lower budgets for established care institutions and to the development of informal carers. The monthly allowance varies between CZK 880 (EUR 34.70) and CZK 13 200 (EUR 520.50) depending on health status and age. Individuals can use the allowance to remunerate informal carers including family members. It seems that there is a mismatch between the supply of affordable residential long-term social care facilities and demand (Alexa et al., 2015[13]).

A lack of co-ordination and differences in reimbursement of health care provided in hospitals and long-term social care establishments contribute to the inefficient use of hospital services. For example, user fees were abolished for health-care services, but still exist in social care, creating incentives to seek long-term care in higher-cost medical care rather than in social care (OECD and European Observatory on Health Systems and Policies, 2017[19]). This has led to over-use of long-term inpatient care of hospitals (Figure 1.17, Panel D). The occupation rate of these hospitals beds is around 100%. In particular, the average length of stay is prolonged unnecessarily because of the lack of places in care institutions. This situation is further aggravated by the reimbursement policy, which is more favourable in the health care system and is based on per-day reimbursement which incentivises longer stays.

There is a need to support the development of care institutions and to harmonise the reimbursement policy of health care provided in hospitals and other facilities. Regional authorities should be incentivised to ensure that enough long-term care institutions exist within their borders, taking into account future developments. The development of comprehensive home care offers an alternative to hospitalisation. Comprehensive home care is a service of care and assistance provided to patients within their own social environments. It is a medical service provided by nurses under physician supervision and reimbursed by health insurance funds. The development of comprehensive home care should be favoured as an alternative to a lengthy stay in a hospital. The level of the social care allowance should be means-tested to ensure that individuals who wish to enter a social care institution can also afford it. To limit undue increases of the cost of social care institutions, a contractual policy can be set up with these social care institutions in terms of pricing.

Figure 1.17. Long-term care

2015 or latest



Note: OECD average is the unweighted average of the data shown.
1. Data for Czech Republic refer to 2009 data.
2. The numbers of long-term care beds in hospitals are not available for Australia, Switzerland, Turkey and the United Kingdom.
3. Long-term care share of total health care spending doesn't include social long-term care spending.
Source: OECD (2017), OECD Health Statistics (database); OECD (2017), *OECD Economic Surveys: Slovak Republic 2017*, OECD Publishing, Paris. http://dx.doi.org/10.1787/eco_surveys-svk-2017-en and OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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The ageing of health practitioners is threatening access to health care

The number of physicians and health practitioners has been increasing over the last twenty years and is above the OECD average (Figure 1.18, Panel A). The physician density is with 5.7 and 4.2 doctors per 1 000 population in urban and rural areas respectively (Figure 1.18, Panel B).

Although the number of doctors currently is relatively high, the high average age of doctors may soon result in supply constraints affecting coverage and quality of care. Between 2000 and 2015, the proportion of doctors above 55 years has increased from 20% to 37%, one of the highest in the OECD (Figure 1.18, Panel C). Among general practitioners, the share of doctors close to retirement is even higher. In 2017, about one out of three general practitioners was aged 60 years or older (ČLS-JEP, 2018[20]). Within the near future, the retirement of these doctors poses a threat to maintain the accessibility to health care, especially in rural areas (OECD and European Observatory on Health Systems and Policies, 2017[19]; OECD, 2017[2]).

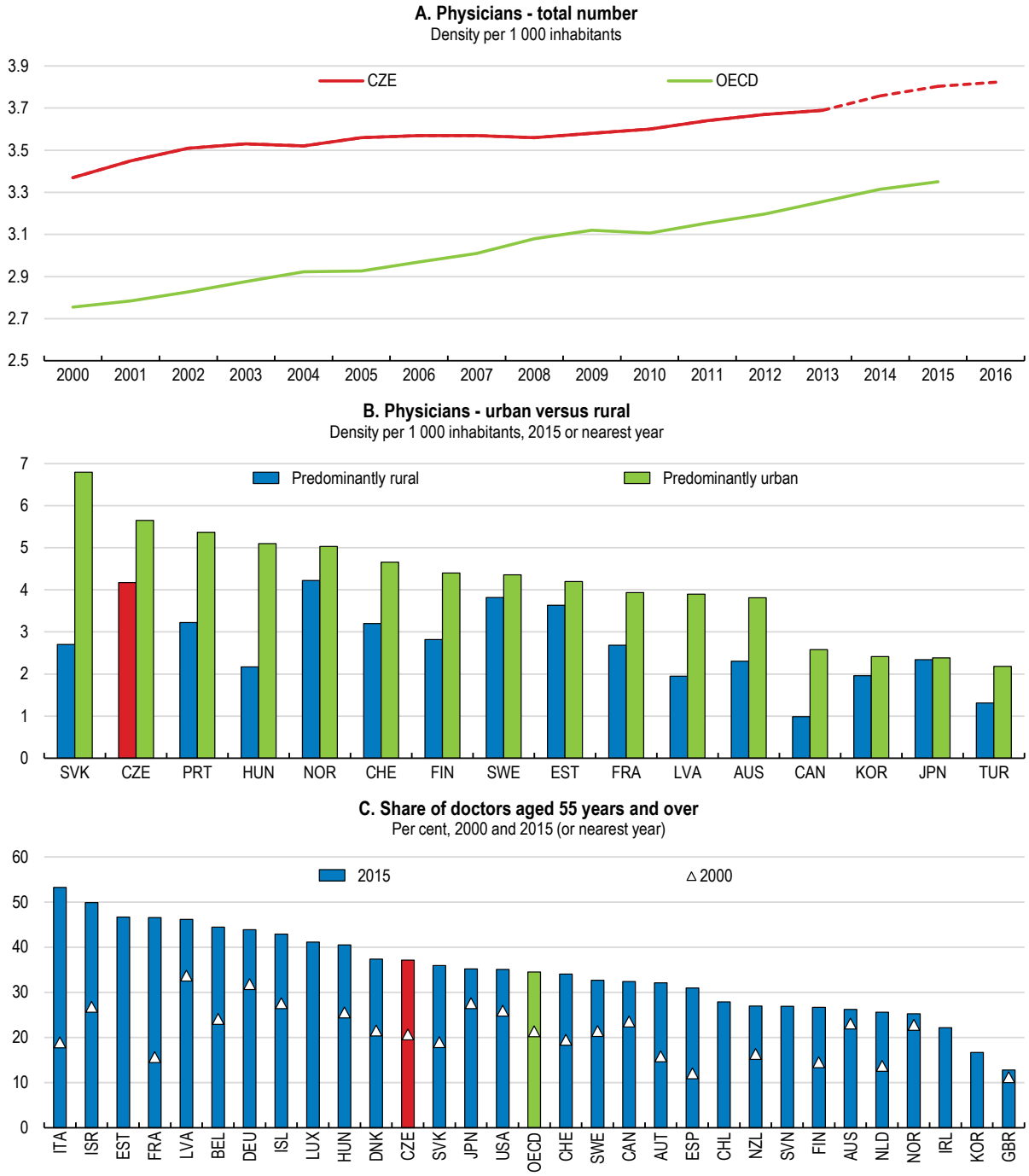
The mix of doctors providing basic and special primary care is also unbalanced with significantly fewer generalists than specialists. 19% of doctors are generalists compared with 30% in the OECD on average (OECD, 2017[2]). As primary care plays a key role for a well-performing health system, the low share of GPs creates serious barriers to its performance. The ageing of doctors can also be an issue for life-long training and the skill mix. The incentives in the system, in particular, the heavy regulation of the activities of GPs are not rewarding and may limit the investment in life-long training by practitioners. As old GPs are less likely to undertake retraining to update their practices, they are less trusted to play a gate-keeping role.

Emigration of doctors is also affecting the number of practitioners, though the emigration rate is below the OECD average (Figure 1.19). Higher wages and better perceived working conditions abroad are pushing Czech doctors to migrate or work abroad. Given the proximity to Germany, emigration rates might not capture the whole picture as doctors may commute to Germany for work, benefiting from better wages and work conditions. The number of Czech doctors working in Germany has more than doubled since 2010, from less than 500 to more than 1 000 (Bundesärztekammer, 2017[21]; 2011[22]). There is a need to retain doctors as well as create incentives to attract more Czech students to enrol in health faculties and also doctors from abroad to ensure sufficient supply in the medium to long-term.

Though there is no formal limitation in access to health studies in terms of exams or requirements, faculties may restrict the number of students accepted due to capacity limits. International students who study in English pay tuition fees, which contribute to the budget. However, they can add to capacity constraints. In 2016, these international students were about 16% of total students in health care faculties (ÚZIS, 2018[23]). In the short-run, due to the rapid ageing of Czech doctors, a plan should be put in place to increase the capacity of Czech health faculties and the number of students that remain within the Czech Republic. Financing of medical faculties should therefore be adjusted accordingly to guarantee that they have enough resources to cope with increasing the number of students.

In principle, Czech legislation guarantees access to doctors and to health facilities within a reasonable distance and time. To increase the incentives for doctors to settle in more remote areas, a subsidy programme has been designed that covers the cost of setting up a new medical clinic. In addition, greater reimbursements from health insurance funds are used as additional measure to create incentives for doctors to settle in remote areas. These incentive programmes should be closely monitored and regularly evaluated to adjust to emerging needs in a timely manner.

Figure 1.18. Evolution in the number of practising physicians



Note: Unweighted OECD average. Panel A: Data for the Czech Republic from the OECD Health Statistics database up to 2013. From 2014 onwards numbers are estimated on the basis of UZIS data on personnel capacity of doctors in healthcare (registered and contractual doctors) and applying a correction coefficient to align with available information of previous years. Panel B: Czech Republic, numbers refer to FTE, including additionally pharmacists.

Source: OECD (2018), Health Statistics (database); UZIS (Institute of Health Information and Statistics of the Czech Republic), Zdravotnictví ČR: Personální Kapacity 2016; and OECD (2017), Health at a Glance 2017.

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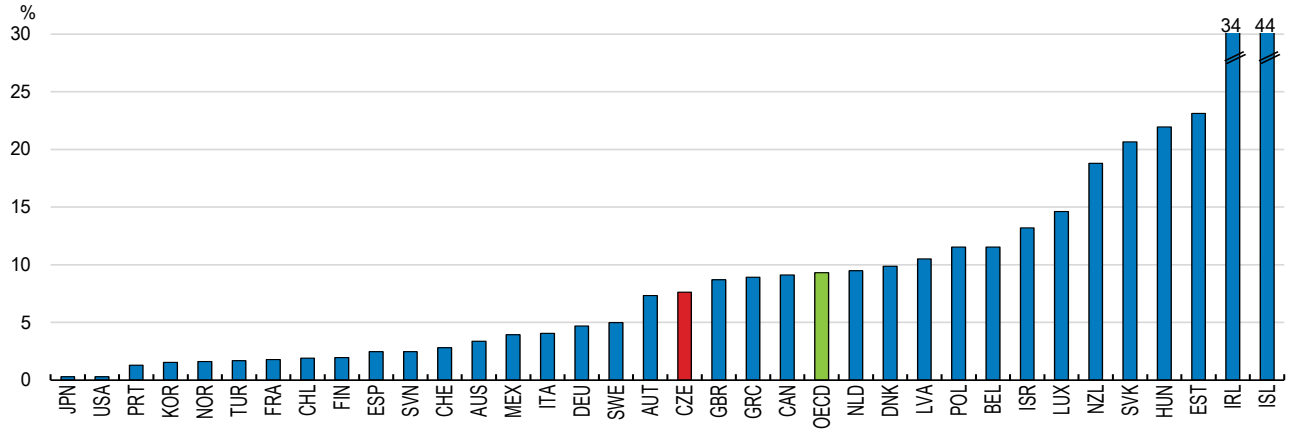
Figure 1.19. The Emigration rate of doctors is high

Percentage of total number of doctors, 2015 or nearest year



Note: Share of doctors trained in the country, but working abroad. 2014 for Denmark, Japan, Sweden and the United States. Data for OECD is the unweighted average of available country data.
Source: OECD (2017), OECD Health Statistics (database), Eurostat and UZIS (Institute of Health Information and Statistics of the Czech Republic).

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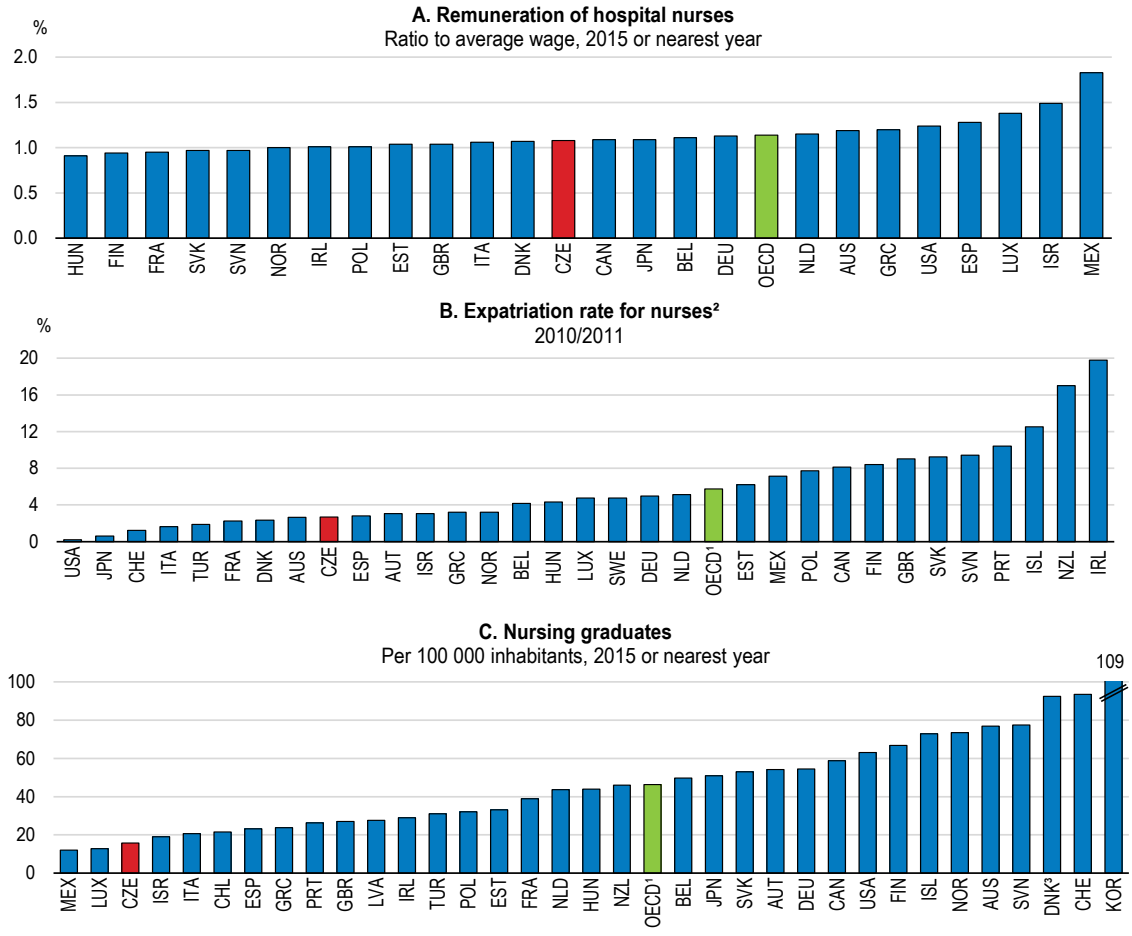
In contrast to doctors, the number of nurses at 8 per 1 000 population is slightly below the OECD average (9 per 1 000 population). The ratio of nurses to doctors is also below the OECD average (OECD, 2017[2]). The Czech Republic has among the lowest number of nursing graduates in the OECD - 16 per 100 000 population (Figure 1.20, Panel C)—with a decreasing trend in recent years.

While the remuneration of nurses is not particularly low in public hospitals compared with other OECD countries, it is, however, low in private health care facilities (Figure 1.20, Panel A). Moreover, the low remuneration in the private sector does not create an incentive to enrol in nursing studies.

Given the ageing dynamic of the population, the demand for graduate nurses is increasing, in particular in the long-term care sector. Therefore, more effort is needed to increase the enrolment of students in nursing studies. In particular, a better regulation of wage settings in the private sector through sectoral or branch negotiations could help to close the gap with the public sector and attract more students. Adapting career prospects to make the nursing profession more attractive, for instance by allowing greater responsibilities along the career path, for example in preventive programmes and patient education of chronic diseases as is the case in the UK (Delamaire and Lafortune, 2010[24]).

Figure 1.20. Nurses related indicators



1. The unweighted average of the data shown.
2. The destination countries refer to OECD countries only.
3. In Denmark, the number refers to new nurses receiving an authorisation to practise.
Source: OECD (2017), OECD Health Statistics (database) and OECD (2015), "Expatriation rates for doctors and nurses, 2010/11" in International Migration Outlook 2015.

StatLink https://doi.org/10.1787/888933791075

Managing health spending and strengthening financial sustainability

Main drivers and evolution of spending

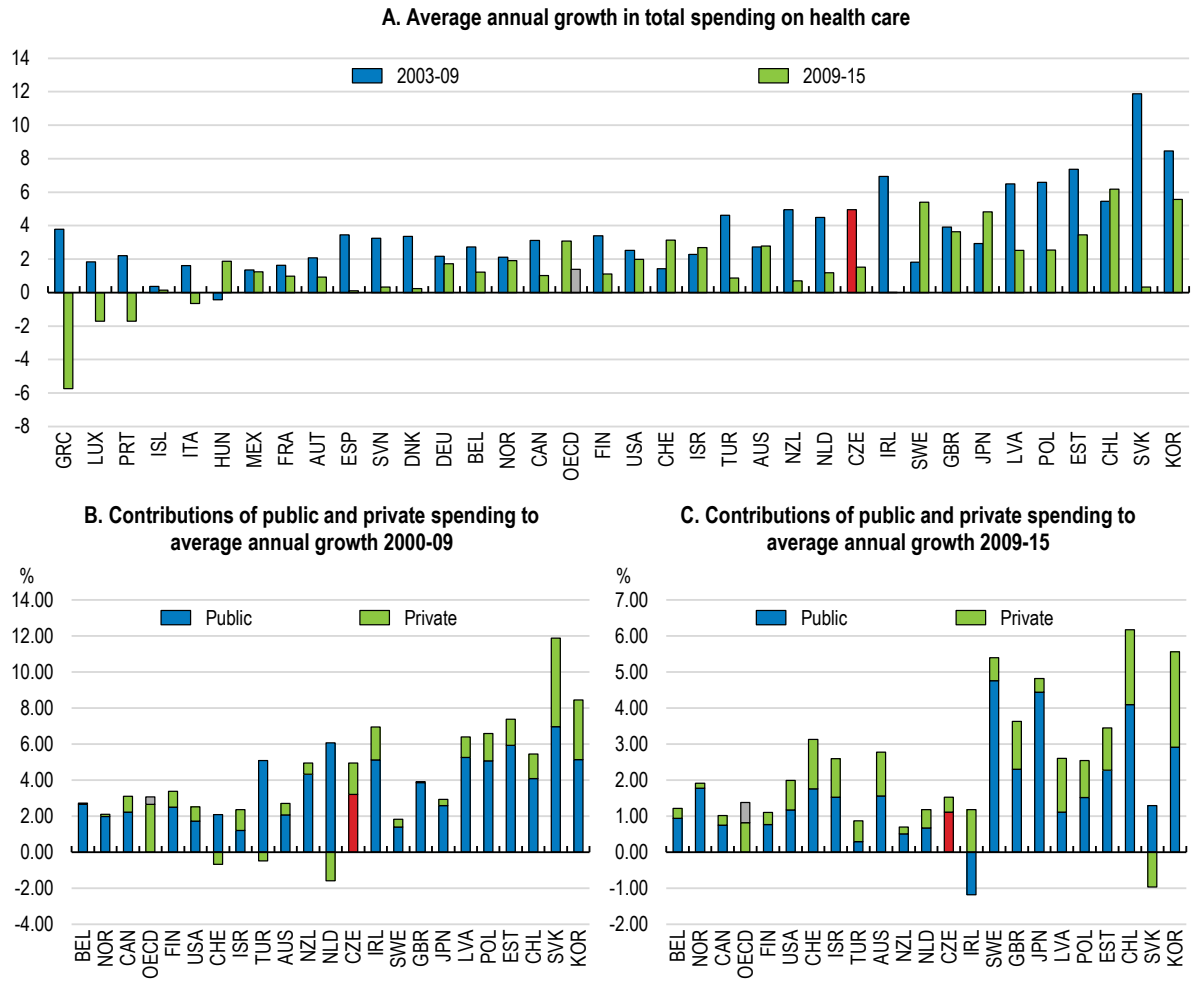
Spending on health care has remained stable since the economic crisis and the share of public spending in total spending is at 82.4% among the highest in the OECD (OECD, 2017[2]). Over the last 15 years, some financial responsibility was shifted to the consumer. Voluntary and out-of-pocket payments increased since 2003, reaching 17.6% of health care expenditure in 2016 (OECD, 2017[2]). Still, out-of-pocket payments remain below the OECD average of about 20%, with most out-of-pocket spending on pharmaceuticals and other medical non-durable goods.

Over the years, the composition of spending has slightly changed (Figure 1.21 and Figure 1.22). While the data has to be interpreted carefully due to breaks in the time

series between 2012-13, some tendencies were visible already before 2013. The share of government spending on medical goods decreased, which was offset by increases in voluntary and out-of-pocket spending. Moreover, private spending for rehabilitative and curative care increased since 2009, which could indicate higher cost through user fees introduced in 2008 (Figure 1.22). The shift towards private spending weakens the heavy reliance on public spending and can support the funding in other parts of the health care sector that will need more resources in the future. Since 2013, public spending on long-term care increased slightly. To further adapt to the needs of an ageing society and the accompanying rise in expenditure the freeing of financial resources from other parts of the health care sector will be required.

Figure 1.21. Growth of health care spending

per capita real health spending



Source: Calculations based on OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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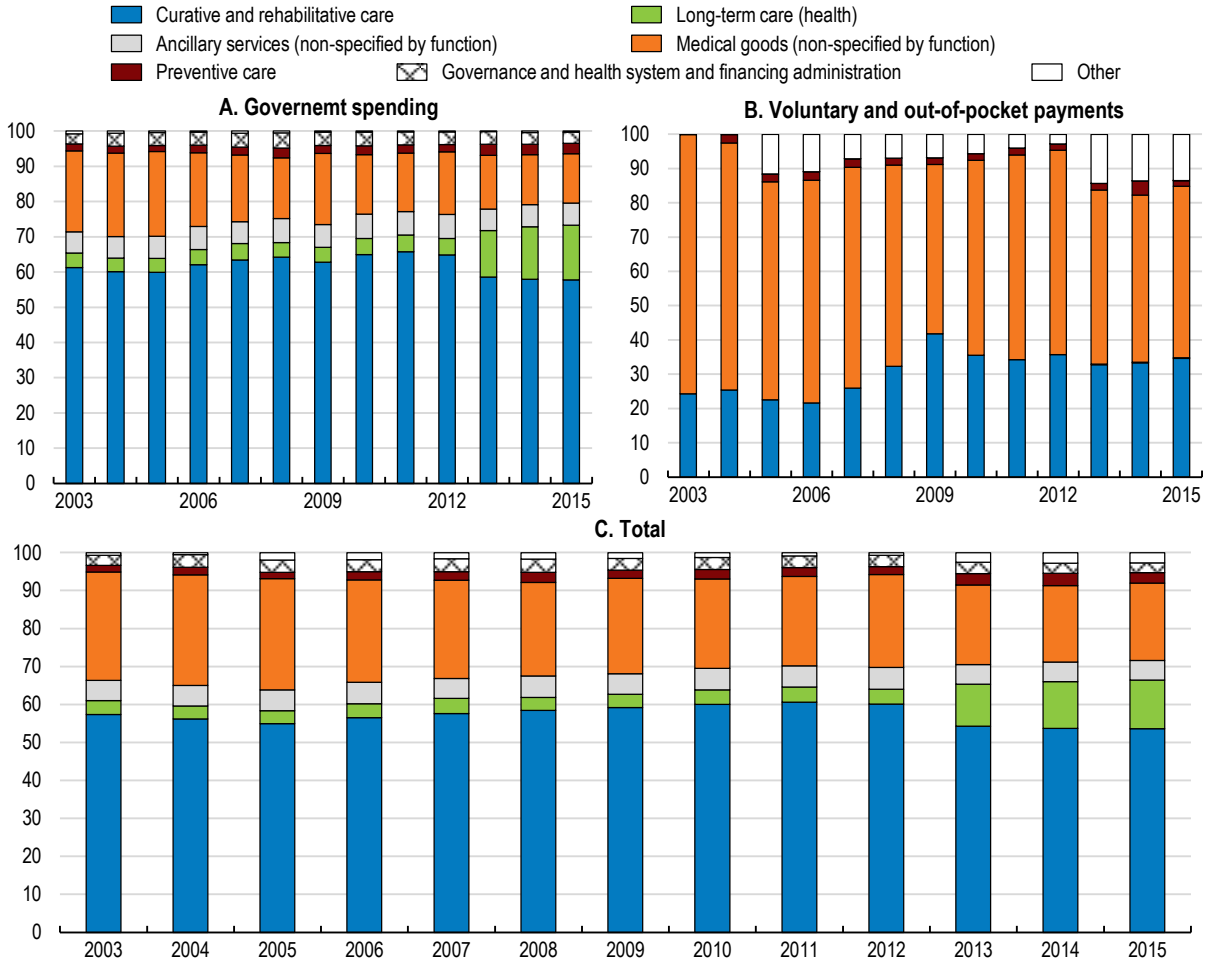
Figure 1.22. Composition of health expenditure

Per cent, 2003-15



Source: Calculations based on OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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To raise the efficiency of health spending, the government has initiated a shift from inpatient to outpatient care and day care and changes in the spending pattern since 2013 indicate a small shift from inpatient to outpatient care so far (OECD, 2018[25]).

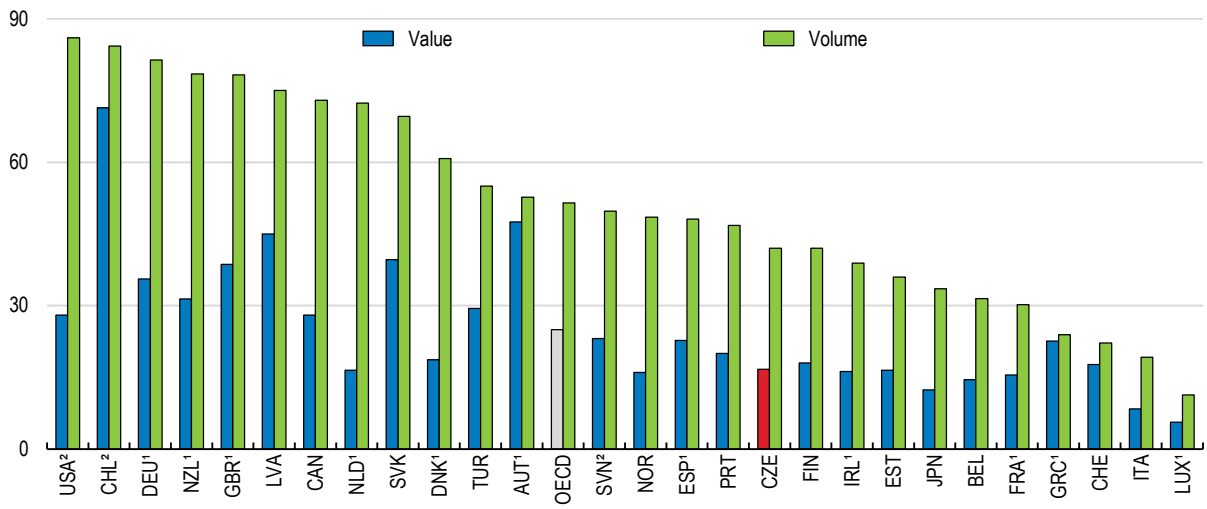
The decline in spending in the pharmaceutical sector towards the OECD average is an example of better cost efficiency. To improve the control and transparency of pharmaceutical spending, the State Institute for Drug Control (SÚKL) has been responsible both for setting the maximum ex-factory price and for decisions on reimbursements since 2008. Prices are only regulated for reimbursable pharmaceuticals, and are set at ex-factory or statutory prices. The ex-factory price of a certain pharmaceutical is set as the average price of the three lowest manufacturing prices of the particular drugs in reference countries. In combination with reimbursement rules that incentivise customers to purchase generic substitutes, price growth has slowed due to a higher share of generic drugs (see Figure 1.23).

The penetration of generic drugs is a policy priority. Since 2008, a doctor can either prescribe the generic or the original drug. If not explicitly prohibited on the prescription, the pharmacist can further substitute the prescribed drug with a less expensive pharmaceutical product that has the equivalent therapeutic effect. Since 2008, the share of generics rose from 28% to 42% in 2015, but still remains below the OECD average of 52% (OECD, 2018[26]). As pharmacies in the Czech Republic are remunerated by a regressive mark-up-scheme, pharmacists do not face a loss of income when substituting the original product with the generic.

To further encourage the take-up of generic pharmaceuticals, customer awareness needs to be strengthened. To incentivise patients to purchase a generic over an original product, the Czech system uses reference prices for a group of products. The cheapest one – usually a locally manufactured generic – is fully reimbursed, whereas the patient has to pay the difference when opting for an alternative (see Box 1.4). Despite this incentive scheme, an empirical study by Votápková and Žílová (2016[27]) suggests that consumers are still more likely to choose the original pharmaceutical product over the generic one for fear of generic products being of lower quality. Better information regarding the equal quality of the original product and the substitute could therefore strengthen the take-up of generics. To further encourage the substitution of generic drugs, health insurance funds could incentivise practitioners to prescribe generics through a pay-for-performance scheme (as e.g. in Japan).

Figure 1.23. Share of generics in the total pharmaceutical market

Per cent, 2015 or nearest year



1. Reimbursed pharmaceutical market.
2. Community pharmacy market.
Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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Box 1.4. Reimbursement policy for pharmaceuticals

Reimbursement is based on reference groups, which are groups of pharmaceuticals with similar effectiveness, safety profile and clinical use, and are considered to be therapeutically interchangeable. All pharmaceuticals within the same reference group have the same reimbursement price. It is also possible to give a premium reimbursement price if a drug has better effectiveness, a better safety profile or a better compliance rate than the reference product. The list of reference groups includes about 300 groups of pharmaceuticals based on therapeutic indications issued by the Ministry of Health.

The reimbursement price is set at the lowest EU price of a pharmaceutical within each reference group. Only if the lowest EU price is considered to be too low, the reimbursement price is set as the average of the two following lowest EU prices of the reference product.

The Act on Public Health Insurance (Act. No. 48/1997 Coll.) also specifies 195 clusters of pharmaceuticals within which at least one product should be fully reimbursed. In this case reimbursement price is not set based on the lowest EU price but according to the lowest Czech price. In general, the cheapest out of a defined group of pharmaceuticals is fully reimbursed, whereas the patient has to pay the difference to the reference price when purchasing other pharmaceuticals.

The reimbursement policy also allows to set a second reimbursement price for a specific group of patients or a specific indication, which is not covered by reimbursement of the reference product.

Source: SÚKL (2018[28]), "Pricing and Reimbursement".

Strengthening the financing of the health care system

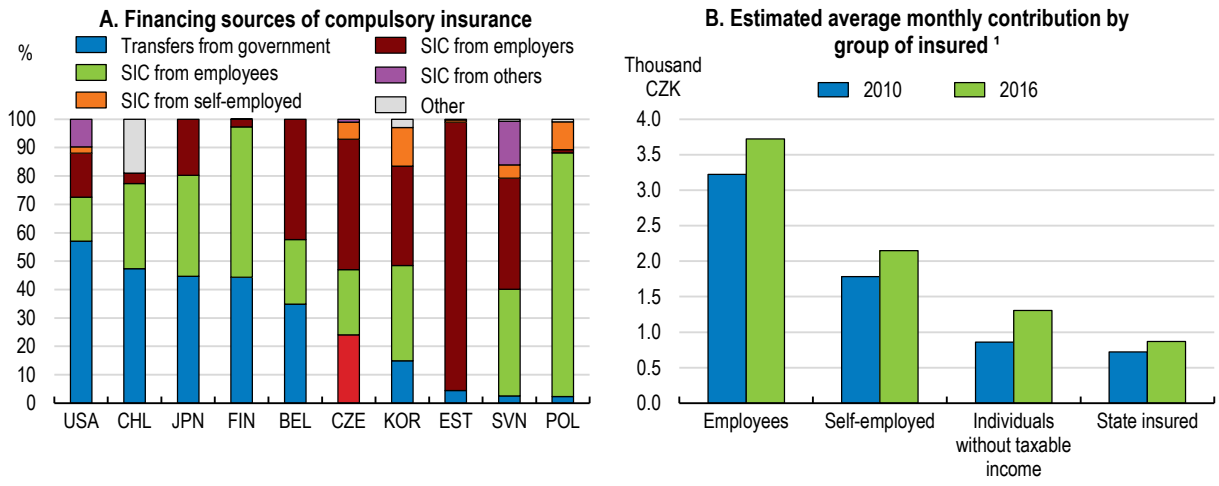
The main sources of revenue for the social insurance system are compulsory contributions that are levied on wages (Figure 1.24, Panel A). Employers and employees pay 13.5% of gross wages, split into 9% for the employer and 4.5% for the employee. Self-employed pay 13.5% based on 50% of their profits, but at least CZK 2 024 per month (EUR 80). The contribution is directly collected by the health insurance funds. For the economically inactive population, the state covers the contributions on their behalf (CZK 969 per month in 2018, EUR 38). The money for the economically inactive is paid by the Ministry of Finance to the Health Insurance funds. In 2016, 64.9% of the revenue of health insurance funds was coming from the employed, 6.6% from self-employed and the remaining 28.5% from state contributions (Úzis, 2017[29]).

Capital investment in health facilities that are managed by the Ministry of Health or that fall under the responsibility of the regional authorities are channelled through a budget that is funded by general taxation. In addition, capital investment can be covered by EU structural and cohesion funds from the Integrated Operational Programme of the Czech Republic. In 2016, spending of state, regional and municipal budgets accounted for 6.3% of total health expenditure (Úzis, 2017[29]).

The Ministry of Health also provides direct financing for public health services, covering some of the costs of training medical personnel, running a variety of specialised health services, air emergency services, conducting medical research, and providing

postgraduate education to physicians. The medical rescue service is subsidised by regional governments (Alexa et al., 2015[13]).

Figure 1.24. Financing sources of health insurance



1. There are four different groups of contributors in the social insurance scheme. Average monthly contributions are estimated from information on total revenues of social insurance funds broken down by each group of contributors. Additional information used for the estimation covers the number of employed and self-employed, average wage, general assessment base and estimates of contributors among different groups. The estimates are intended to express full-time equivalents, however, especially in the case of the self-employed, the information base is not complete.

Source: OECD (2017), *Health at a Glance 2017*: *OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en; Czech social insurance funds and Czech Statistical Office.

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To increase revenues and allow more spending on health care in the future, the tax base needs to be broadened. The health funding is based on the solidarity system which relies heavily on contributions paid by employers and employees, whereas the contributions of the self-employed and from the state are considerably lower (Figure 1.24, Panel B). Within the current contribution scheme, contributions by the self-employed could be increased gradually. In particular, the basis of self-employed contributions should be better defined to reflect their real contribution capacity (see fiscal section in the first part of the survey).

The contribution from the state will not be sufficient in covering the cost of health care, although the set-up acts as an automatic stabiliser in times of an economic downturn. As such, the financial sustainability of the health care system is vulnerable to economic shocks and demographic change. The more people shift from employment to inactivity, the lower the total contributions to the health system. This financing of the system is therefore procyclical and following the financial crisis, the largest health insurance fund VZP ran up debt (Alexa et al., 2015[13]). In addition to increasing state contributions, alternative solutions to rebalance revenues are needed, addressing both the cyclicality and diminishing revenues from economically active people due to population ageing. Government contributions should be linked more tightly to health spending to cover economically inactive people.

To cover public expenditure of the health care system, revenues from general taxation for the health care sector should be broadened. One way is to set a contribution rates on all kind of revenues (capital and property income for instance), not only on wages, and therefore ensure that all revenues are contributing to health. In addition, taxes with potential behavioural effects that reduce the need for spending on health care and add to overall revenues could be introduced or increased. As discussed below, higher taxes on tobacco and alcohol may not only raise revenue, but also create incentives for consumers to reduce consumption and thereby related health problems.

Increasing and broadening co-payments can promote cost-efficient consumption of health care. For services that are not covered by insurance, the patient has to pay the expenses directly to the service provider. The main cost for patients is related to pharmaceuticals and medical goods (8.8%) and for providers of ambulatory health care (4.9%) (OECD, 2018[25]). While out-of-pocket payments as a share of final household consumption remain low if compared with countries with a similar institutional setting (Korea: 5.1%, Greece: 4.9%) and the OECD average of about 3%, out-of-pocket payments have been slowly increasing over the years reaching 2.4% of final household consumption in 2015 (Figure 1.25, Panel A). Out-of-pocket payments could be broadened but reduced for pharmaceuticals and dental care.

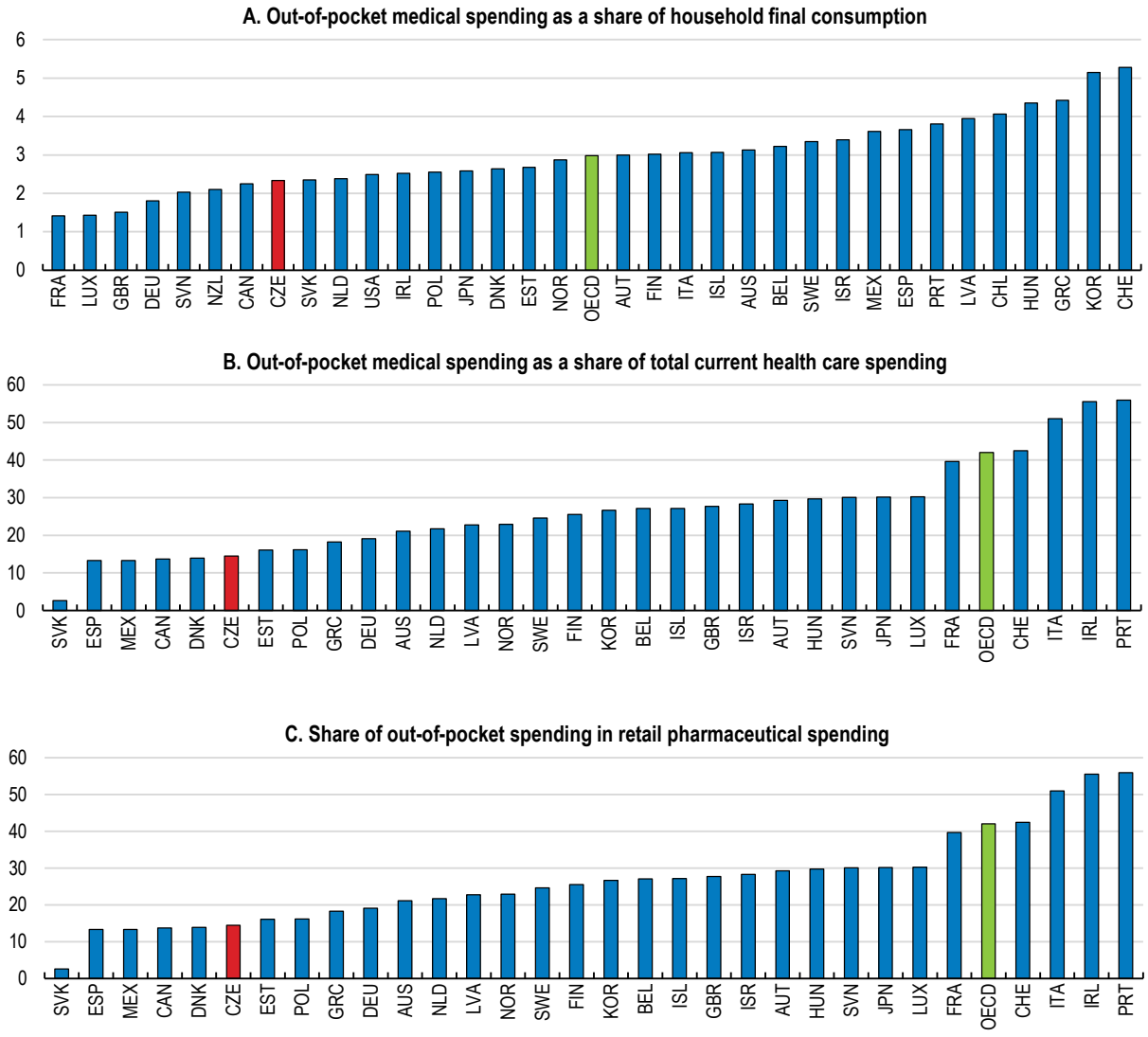
To reduce the number of consultations and increase private participation in health funding, a system of user fees was introduced in 2008. A physician visit with clinical examination cost CZK 30 (around EUR 1.10); every item on a drug prescription CZK 30; and CZK 60 for each day of inpatient care and CZK 90 for emergency services. The introduction of user fees was highly criticised and in 2011 the prescription fee was altered to CZK 30 (EUR 1.10) per prescription (not per item on the prescription) and the fee per inpatient day was increased from CZK 60 (EUR 2.20) to CZK 100 (EUR 3.65). Despite a lack of empirical evidence, in July 2013 the Constitutional Court decided that this increase was unfair to vulnerable groups and the fee was abolished. The government abolished all remaining fees in January 2015, except the fees for emergency services.

Co-payments for pharmaceuticals, dental care and health tools and aids are, however, still in place (Figure 1.25, Panel C). For pharmaceuticals, most of the prescribed drugs in outpatient care are only partially covered by public health insurance, with the patient having to cover the rest.

The impact of user fees and co-payments on health care consumption is a disputed issue since the Rand Health Insurance experiment (Manning et al., 1987[30]). The randomised experiment was initiated by the US federal government in 1974 to evaluate the effect of user-fees on health care consumptions. Based on this experience, Manning et al. (1987[30]) found that higher patient payments significantly reduced medical care utilisation, without any effect on health outcomes on average. This result was confirmed by Chandra et al. (2010[31]) for elderly persons in the US but with compensation effects on inpatient care, in particular among the most vulnerable groups. In France (Chiappori, Durand and Geoffard, 1998[32]) and in South Korea (Kim, Ko and Yang, 2005[33]), user charges were not found to reduce health care consumption. Research in Germany, Japan and other countries found mixed results of higher user charges on health care or drug consumption.

Figure 1.25. Out-of-pocket medical spending is low

Percentages, 2015 or nearest available



Note: Indicators shown relate to current health spending excluding long-term care (health) expenditure.
Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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In the Czech Republic, results are also mixed. While Hromádková and Zdeněk (2013[34]) find that user fees had some (although limited) effects on drug demand, Zápal (2010[35]) do not find a response. Žílová and Votápková (2012[36]) find that the effect of the abolition of user charges on the number of doctor visits is insignificant. An often used argument against user fees was the potential deterrence of lower-income populations at the margin in requesting health care (International Organisation of Migration, 2016[7]).

The lessons from the empirical and theoretical studies of the effects of co-payments on health care consumption are thus mixed. First, country-specific institutional features

(basic coverage, complementary insurance, private sector role, pricing policy, etc.) matter for the design of the scheme. Besides other effects, it influences public perceptions and acceptance of the scheme, which has become one of the main lessons from the Czech experience. Second, to be effective, co-payments must not be too low or too high. Regarding the above empirical studies, the Czech case seems to have suffered from user fees that were too low (especially in the case of the CZK 30 fees for a doctor's visit). It did not affect much the patients' behaviour, but brought an extra administrative burden for doctors. Finally, to minimise eviction effects on inpatient care, vulnerable groups (low income, chronic diseases) should be exempted or the annual amount of co-payments capped.

There is room for reintroducing a better designed system of co-payments in the Czech Republic. The biggest challenge is currently with respect to public perceptions and political sensitivity. Any change must be accompanied with profound informational campaign. The size of fees should be evaluated to ensure a positive pay-off taking into account the administrative burden. One way could be to exclude GPs and introduce co-payments for visits to specialists and hospital visits without referral, which would also strengthen their gate-keeping role.

The role of the health insurance funds

Health insurance funds have little room to compete with each other in terms of services and prices. The services that are covered by health insurance companies are anchored in the Act on Public Health Insurance, which defines a broad benefit package. Providing additional services is often not viable as there is no price competition for attracting or incentivising the insured person to move to another fund. As discussed above (section 0), the reimbursement of health care services is based on contracts between providers and health insurance funds, so that there is no direct channel to provide financial incentives to the end consumer of health care to avoid unnecessary demand or encourage a healthier lifestyle. However, setting up a system that allows insurers to negotiate more effectively the fees with the service providers that are for example linked to their performance can provide room for competition on quality. Further, creating flexibility in the system to allow for contractual policies between insurance funds and individuals could be used to support preventive care and healthy behaviour. For example, lower fees for people who participate in preventive exercise and medical screening programmes could create incentive to adjust towards a healthy lifestyle.

The risk-adjustment redistribution scheme was reformed and enacted in January 2018, opening the possibility for improving the quality of care for chronic patients. The switch from a risk-adjustment scheme based solely on gender and age towards a more sophisticated PCG system avoids the selection of good risks of health insurance funds (see Box 1.1). Moreover, the current system is more beneficial towards health insurance funds that have more patients with chronic diseases. Encouraging health insurance companies to attract chronic patients may ultimately lead to a better quality of care. For example, health insurance companies could set up a specialised network by focussing on contracting relevant health providers and by optimising patients' pathways and treatment methods.

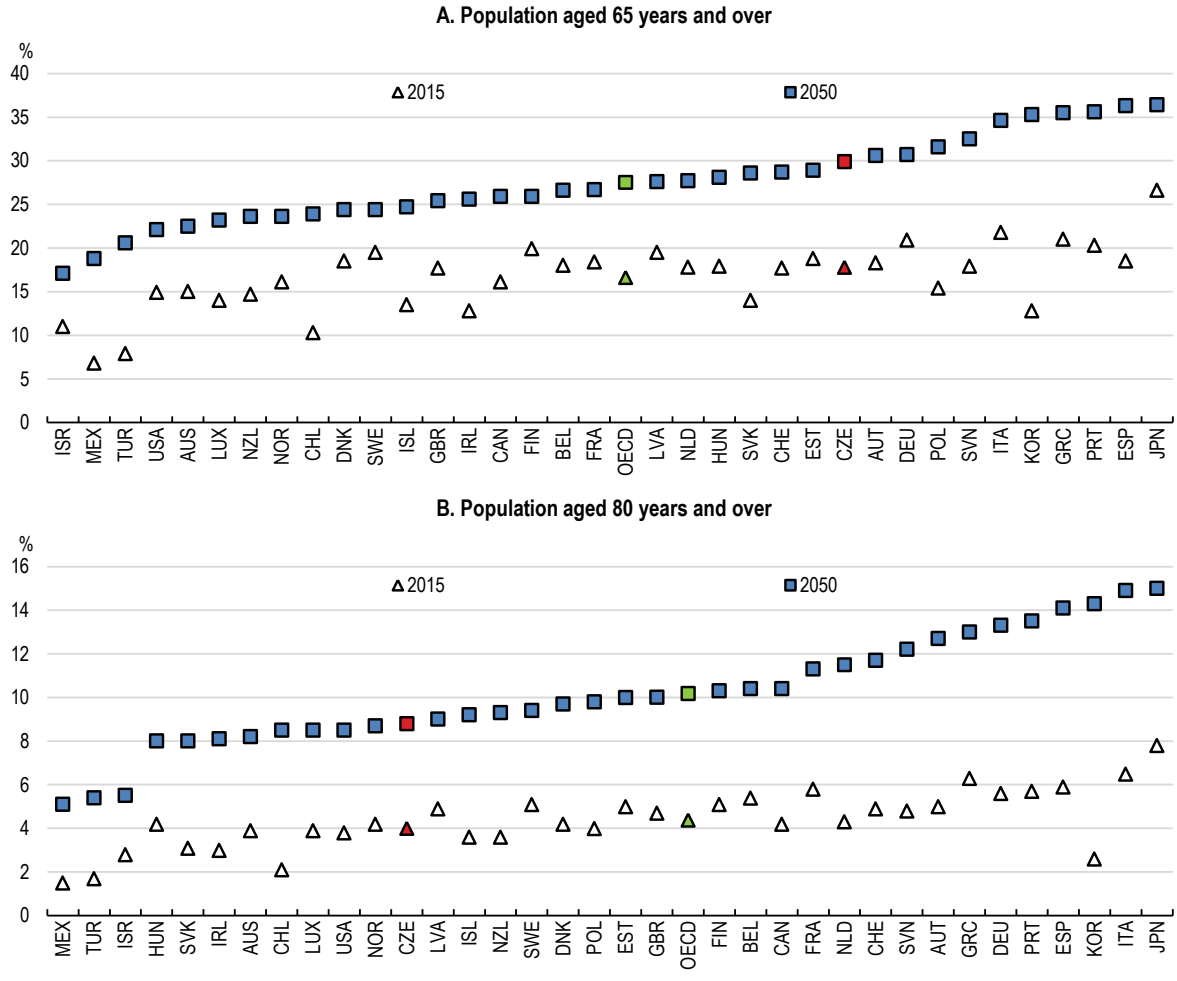
Greater competition in the health insurance market could improve the quality of care (Porter and Teisberg, 2004[37]; Gaynor, 2006[38]). While managing the reimbursement claims, the health insurance funds already monitor service providers' activity within their network. Collecting additional information about the quality of care and allowing

insurance funds adjust reimbursement accordingly could benefit the overall quality of health care (OECD, 2014[15]).

Ageing will account for roughly half of the future rise in health care spending

The population is ageing rapidly. The share of people aged 65 years and above will reach almost 30% by 2050 (Figure 1.26). Although the impact of ageing on health spending is uncertain, recent estimates show an upward pressure on public health care expenditure in the next four decades. Under the assumption of no policy change and disregarding the non-demographic factors, public expenditure on health care is set to rise from 6.2% in 2016 to 8.2% of GDP around 2060 just because of ageing (Figure 1.29).

Figure 1.26. The population is ageing rapidly



Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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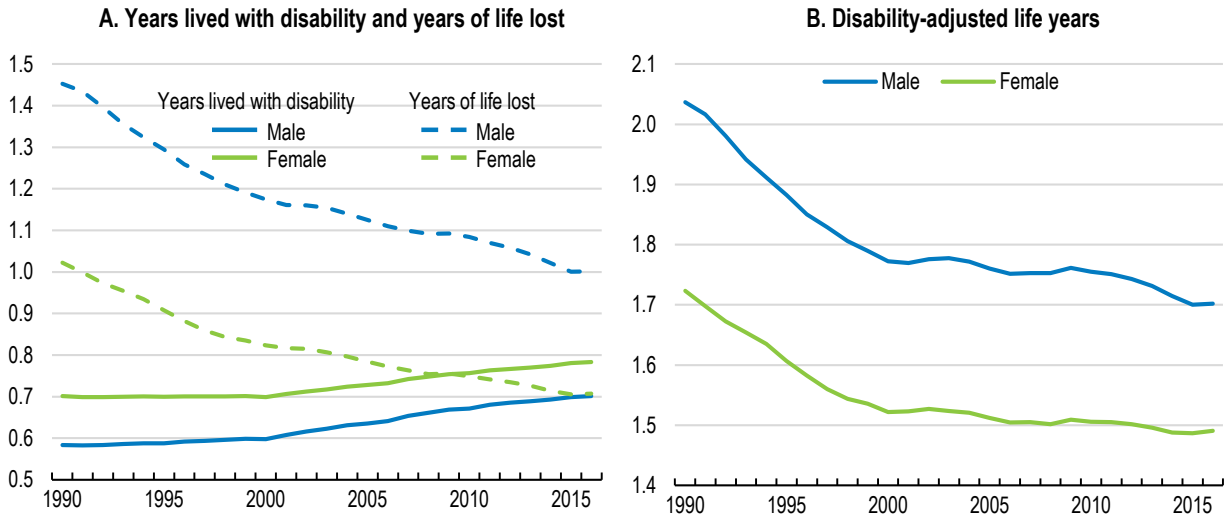
This demographic scenario takes into account death-related costs and assumes that gains in life expectancy are mostly spent in good health. This assumption is extrapolating past

trends. For example, disability-adjusted life years (DALY), the sum for the whole population of the number of years that were lost due to any disease or injury, have been decreasing during the last quarter century (Figure 1.27, Panel A and B). Although the trend is still decreasing, the pace has slowed down after 2000 because of rising years lived with disability (Figure 1.27, Panel A). The growth of years lived with disability is driven mainly by low back and neck pain, sensory organ diseases, diabetes mellitus, cardiovascular diseases and injuries.

Figure 1.27. Disability-adjusted life years and its components

Millions of years (sums for the population)



Source: Institute for Health Metrics and Evaluation (IHME), Global Health Data Exchange.

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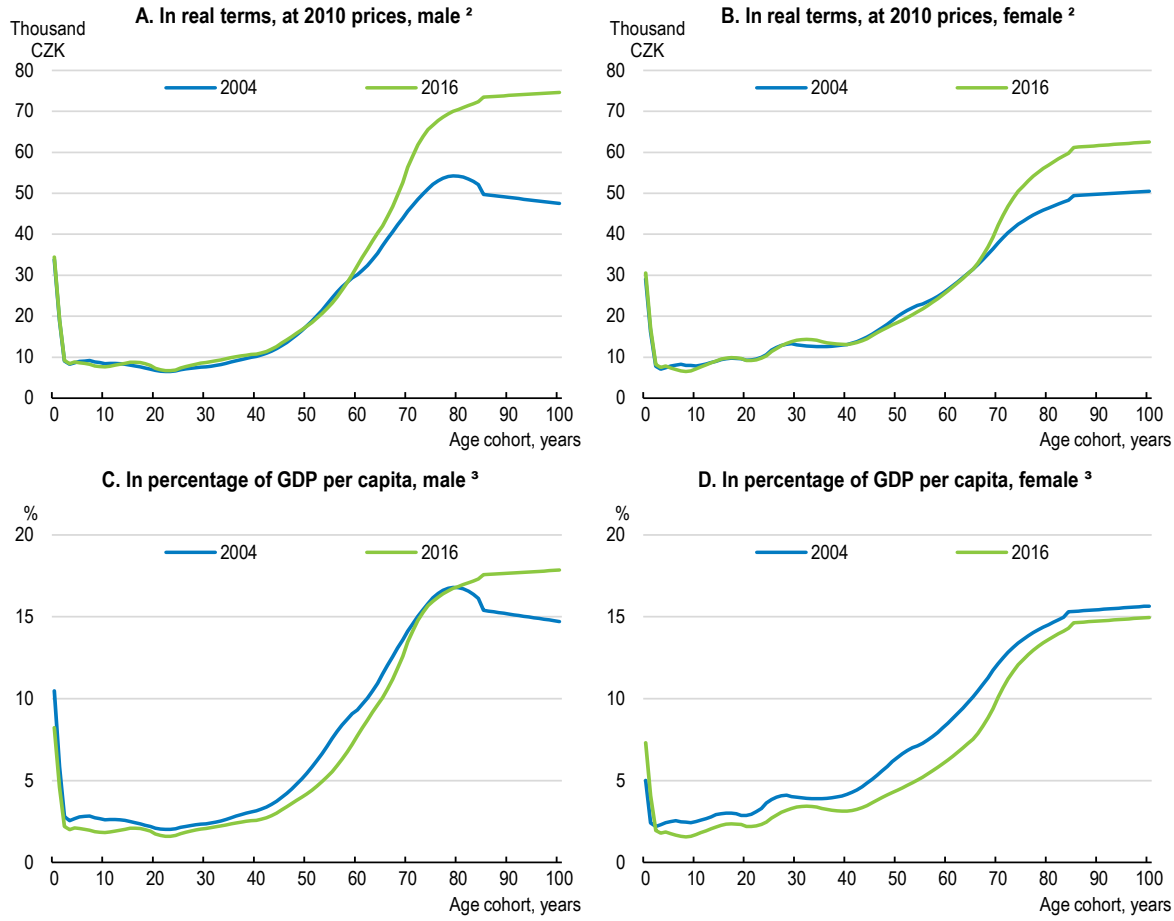
Ageing will also change the average cost profile due to increasing life expectancy, which shows how much is spent on average for patients by their age (Figure 1.28). The absolute numbers demonstrate mainly increases in levels for older age cohorts, which is in line with the changing age composition. In terms of share to GDP per capita (Figure 1.28, Panel B), the cost profiles have a tendency to be shifted to the right, which reflects the healthy ageing of the population.

The uncertainty about future cost profiles is large. The evidence base is well developed for age profiles up to 70 years, but sufficient information beyond this threshold is lacking. One of the main questions is whether the increasing life expectancy will be accompanied by more years spent in good health or not. There are two extreme scenarios (Figure 1.29): Compression of morbidity assumes that all gains in life expectancy are spent in good health, whereas expansion of morbidity counts all into bad health. The effect of ageing can be mitigated by preventive and screening programs.

Figure 1.28. Evolution of health care cost profile over population age cohorts

Health care cost per capita profiles [1]



1. The cost profiles for health care expenditure express how much on average it is paid for an insured by age. If the shape of the profile remains unchanged over time, but population is ageing (i.e. there are more people in the right part of the graph), it means more overall costs. The assumption of healthy ageing implies the profile shifts to the right. At the same time, health care expenditure can rise by other reasons than demographic, which would cause a shift in levels upwards.
2. Deflated by GDP deflator.
3. In order to separate the income effect, this picture shows the profiles as ratios to GDP per capita. It depicts what would be the ratio of health care expenditure to GDP if the whole population was from a given age cohort.
Source: Calculations based on data from OECD (2017), System of Health Accounts (database), Czech Statistical Office and Eurostat.

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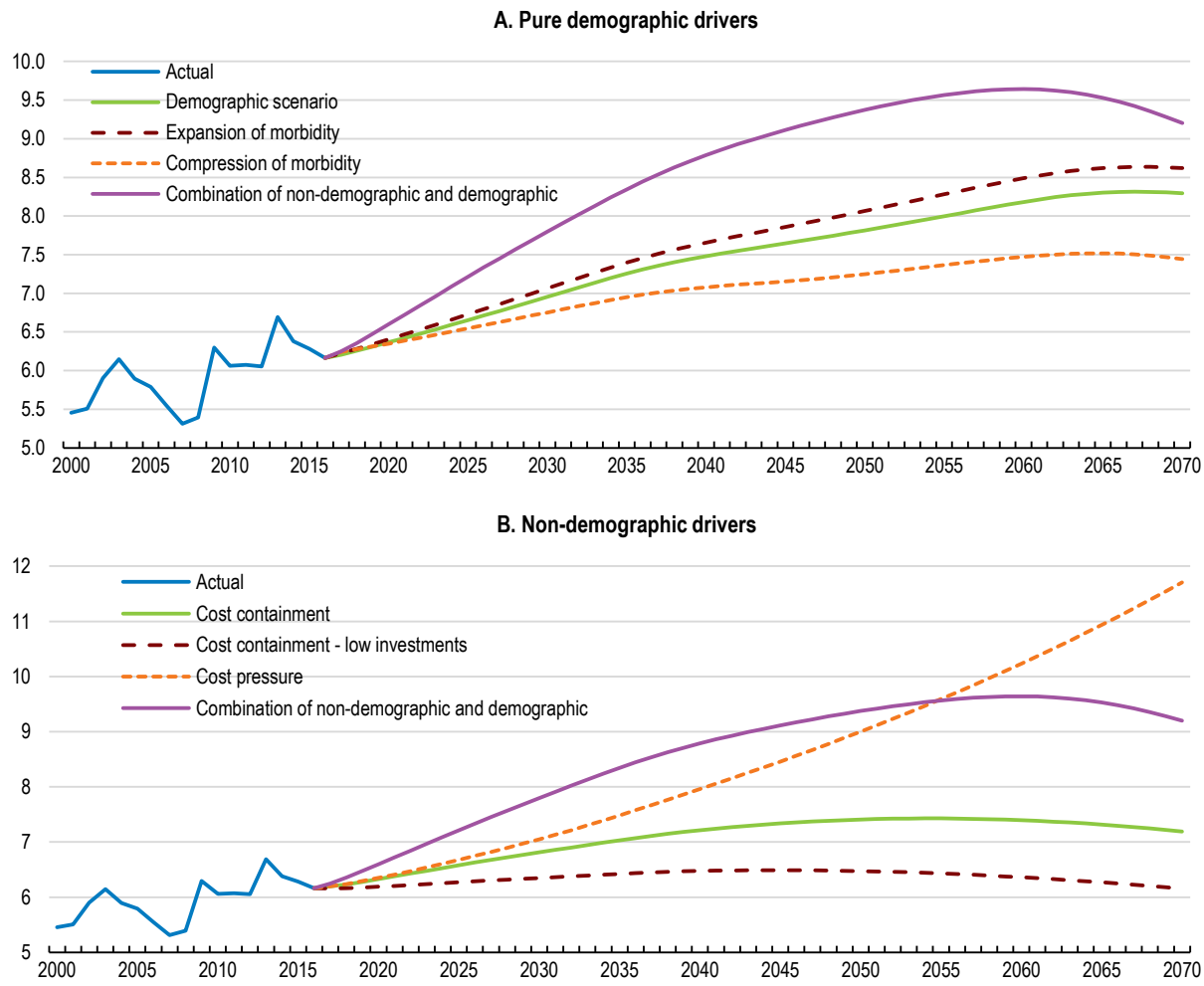
However, the demographic factors explain only a small part of the future development of health care spending. In line with recent research (de la Maisonneuve and Oliveira Martins, 2013[39]; Medeiros and Schwierz, 2013[40]), the major drivers of health care expenditure are the non-demographic factors such as technological and institutional improvements (Figure 1.29, Panel B). The "cost pressure" scenario assumes that non-demographic factors have a large effect on health care expenditure, while the "cost containment" scenario implies that the impact of non-demographic factors diminishes

over the projection horizon. In upcoming decades, however, these factors are likely to have an increasing impact on health care financing, as the Czech Republic still follows a convergence path in technologies and health care standards towards the more advanced economies.

Figure 1.29. Public health care expenditure projections

Per cent of GDP



Note: These scenarios should not be interpreted as predictions of future developments. The projections illustrate future dynamics under certain assumptions in various scenarios. It does not anticipate future policy changes. The starting point is at 6.2% of GDP, which is the current share of public health care expenditure including long-term health care. In projections of the European Commission (2018), long-term care is not included in the health care projections, but is projected separately (together with social long-term care).
Source: Calculations based on data from OECD (2017), System of Health Accounts (database) and European Commission (2018), Population projections by the Ageing Working Group by Eurostat.

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The current financing of the health system is particularly vulnerable to the impact of ageing. The contribution of the state on behalf of retirees and old-aged inactive people will have to increase considerably. But as the contribution of the state for inactive people is low compared to workers' contributions, it will weaken the financing of the system. The heavy reliance on public financing is therefore a weakness that will not be sustainable in the context of an ageing society.

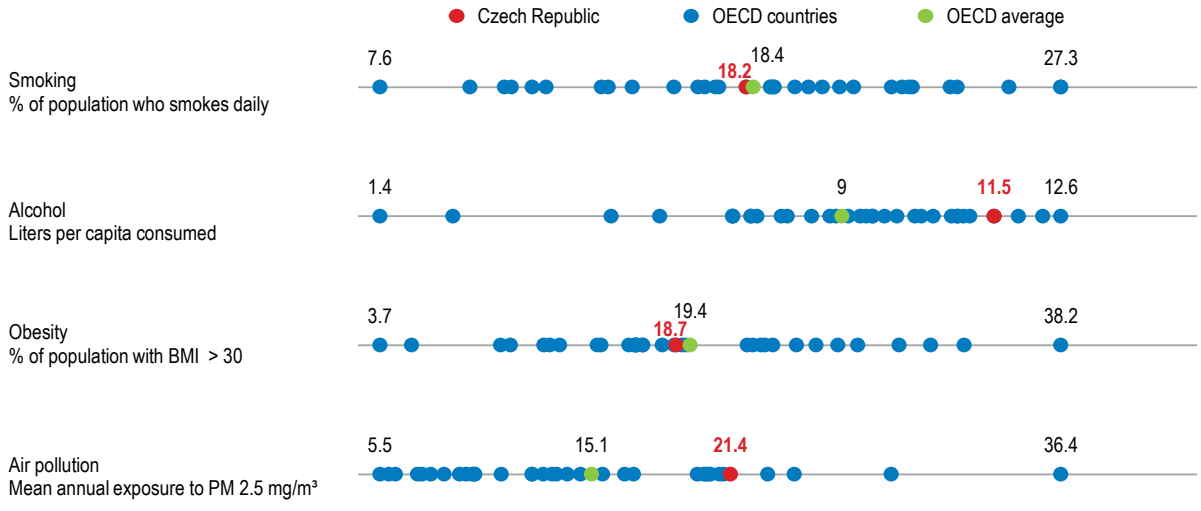
It is therefore necessary to broaden the financing of the health system. A contribution of retirees and old-aged people could be put in place. One of the obstacles is the relative low level of pensions and also their heavy reliance on the public pension scheme. However, pensioners with revenues above the average wage could contribute at a rate equal to the employee's contribution rate (4.5%).

Promoting healthy lifestyle choices and preventive policies

To maintain and improve health outcomes, the authorities need to promote a healthier lifestyle. Exposure to environmental risk as well as risky behaviour such as smoking, alcohol consumption and the prevalence of obesity are close or above the OECD average (Figure 1.30).

Estimates suggest that reducing risky behaviour in terms of smoking, alcohol consumption, diet and obesity to healthy levels could lead to an increase in life expectancy by almost 3.5 years in the Czech Republic (European Commission, 2015[41]). The effect on healthy life expectancy would be even higher and highlights the potential for economic benefits through employment and productivity. Not only could the promotion of healthier lifestyles increase health outcomes, but also reduce health inequalities as behavioural risk factors are correlated with socio-economic characteristics. Thus, people with the lowest level of education were three times more likely to report having diabetes and more likely to be daily smokers (19.9% compared to 9.1%) (Eurostat, 2017[42]).

Figure 1.30. Snapshot of risk factors to health



Source: OECD (2017), *Health at a Glance 2017: OECD Indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/health_glance-2017-en.

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Alcohol consumption remains high affecting premature morbidity. Over the last three decades, it has followed a slight upward trend reaching about 11.5 litres per capita in 2015 – compared with an OECD average of 9 litres per capita (OECD, 2017[2]). Further, the rate of heavy episodic drinking is among the highest in the OECD (Sassi, 2015[43]). In 2012, about 5.8% of all premature deaths in the Czech Republic were attributed to alcohol (World Health Organisation, 2014[44]).

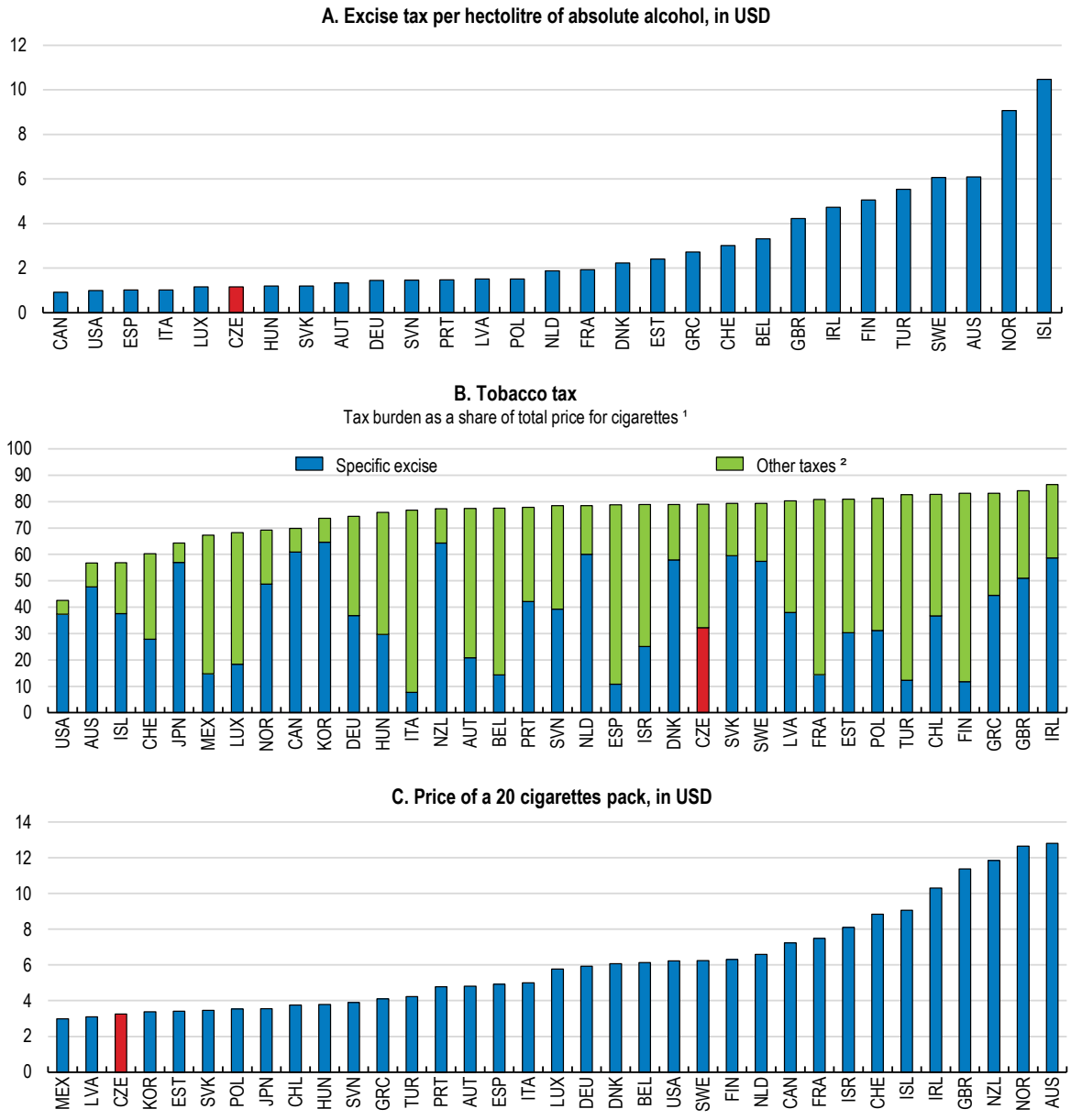
Between 2004 and 2010 a temporary decline in alcohol consumption was visible, likely resulting from an increase in excise duty on alcohol relating to the Czech membership in the EU and tax harmonisation. In 2009, excise taxes on alcohol were increased again. In May 2017, a new law came into force to reduce the harm caused by alcohol focussing on increasing public awareness. It was, however, not accompanied by regulatory measures such as reducing the availability and affordability of alcoholic beverages (Hnilicová et al., 2017[45]). For example, wine has zero excise taxes and introducing higher taxes on alcohol are politically sensitive and alcohol prices are among the lowest in the EU (Sassi, 2015[43]; OECD, 2016[46]).

The authorities' efforts to reduce tobacco consumption have shown first effects, as the share of daily smokers is now just below the OECD average. The government's action plan for tobacco control for the period 2015-2018 envisaged a reduction in the consumption of tobacco products by 8% until 2018, as well as the reduction of the population's exposure to environmental tobacco smoke. As one of the last European countries, the Czech Republic has approved an extended smoking ban for indoor areas such as restaurants, pubs, bars and certain outside areas (around public transport stations) which came into force in May 2017. In addition, the share of daily smokers decreased over the last years, following successive price increases after the Czech accession to the EU. Thus, excise taxes for tobacco have successively increased to soften price jumps that were needed to meet the minimum taxation by 2014 to align with EU legislation. Still, the cost of cigarettes remains low in international comparison (Figure 1.31).

Policy measures targeted to reduce alcohol and tobacco consumption should follow an integrated approach that extends beyond price incentives. While price increases due to higher taxation reduced the share of the smoking population, alcohol consumption seems to be more price-inelastic. Additional measures to reduce alcohol consumption could therefore include the banning of advertisement, restricting places of sales as well as strengthening preventive programmes targeted at vulnerable population, which tend to consume more alcohol (Sassi, 2015[43]). In addition, policy action tackling drunk driving could be implemented through higher police presence on the streets that carry out random alcohol test.

In addition, increasing prices of sugary and high-caloric food items through appropriate tax levies could promote healthier diets as the consumption of these products seems to have a high price elasticity (Sassi, 2016[47]; Sassi, Belloni and Capobianco, 2013[48]). Specific taxation for high-calorie products that are for example high in saturated fats, trans-fatty acids or sugar could be introduced as was for example done in Hungary, Finland, France and Mexico. Studies for Mexico show that taxation of sweetened beverages was correlated with a decrease in consumption when a healthier untaxed alternative was provided (Marron, Gearing and Iselin, 2015[49]; Sassi, Belloni and Capobianco, 2013[48]; Sassi, 2016[47]) (Box 1.5). Such a tax should be further complemented by additional measures to promote healthier lifestyles and ultimately reduced the incidence of obesity.

Figure 1.31. Excise taxes on alcohol and tobacco in the Czech Republic are low



1. Per cent of retail selling price (RSP) for a pack of 20 cigarettes. The RSP is defined as the weighted average price (WAP) i.e. the average consumer price of a tobacco product based on the prices of individual brands and weighted by sales of each brand in the country. Where the WAP is not available, the RSP is defined as the average price of the most sold brand of cigarettes on the market.
2. Include excise on value, value added tax or goods and services tax.
Source: OECD (2016), Consumption Tax Trends 2016.

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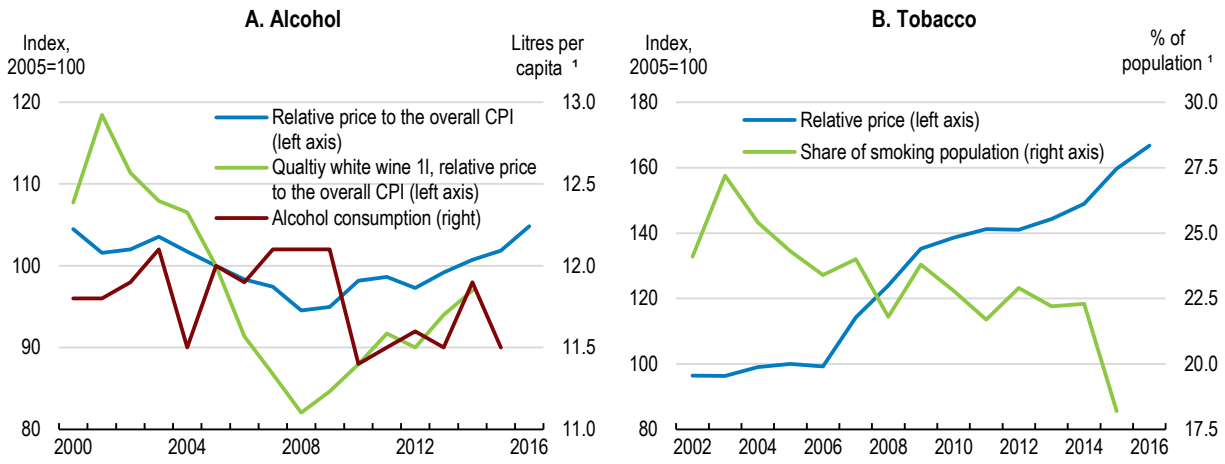
As in many OECD countries, raising obesity rates in the Czech Republic give reasons for concern. Since 2000, the share of the obese population increased from 14% to about 21%. As obesity is linked to the prevalence of diabetes and chronic diseases, not only negative health outcomes but also increases in related health costs are likely (OECD, 2010[50]).

Early school-based prevention programmes to promote a healthy lifestyle can reduce the prevalence of diabetes, whereas early control, counselling and quality management in the primary care sector can avoid high costs due to chronic complications that are common for diabetes when left untreated or poorly controlled (OECD, 2014[15]).

In the Czech Republic, despite aggregate decreases in the potential life years lost per 100 000 population, premature mortality relating to the cause of diabetes mellitus has not shown any advancements over the last 10 years showing room to improve treatment management (OECD, 2018[4]). General practitioners should be incentivised to take on a greater role in prevention and chronic disease management as a fundamental part of their role as primary care provider. For example, they could act as main co-ordinator between primary and specialist care, while also supporting the patient through patient education and strengthening self-management practices (OECD, 2014[15]).

Figure 1.32. Alcohol and tobacco consumption and their price developments



1. Refer to the population aged 15 and more.
Source: Czech Statistical Office and OECD (2017), Health Statistics (database).

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Measures to prevent diabetes should be scaled up. A National Diabetes Programme was initiated in 2012 with a strong focus on reducing the risk factors such as obesity, low physical activity, overeating and improper diet. Thus, educational programmes such as "Healthy School" or "Healthy Workplace" promote healthy lifestyle choices. In 2016, the control of food sales in elementary schools was introduced, banning products that contain sweeteners, trans-fatty acids or caffeine and excluding tea. Further measures to tackle obesity could include compulsory food labelling, the regulation of food advertising to children and mass media campaigns (Sassi, 2009[51]). Although these have been suggested as part of the National Diabetes Programme and are in line with the Health 2020 strategy, they have not yet been implemented.

Box 1.5. Taxes on sweetened beverages across OECD

In many countries, health policies started to address the impact of sweetened beverages and unhealthy food on health, in particular, obesity and diabetes (WHO, 2015). Increasing taxes on sugar is the main tool used in many countries. In the OECD - although other high-sugar products such as confectionary, ice cream and chocolate are often taxed as well - most commonly, taxes have been imposed on sweetened beverages:

- **Finland** currently taxes sugar-sweetened, artificially-sweetened and non-sweetened beverages, including energy drinks, mineral waters and juices. These taxes (EUR 0.22/L) are primarily intended to generate revenue, although the potential positive health impacts are acknowledged, especially for younger people. A lower tax rate (EUR 0.11/L) is applied to beverages with less than 0.5 g of sugar per 100g of product.
- **France** introduced taxes on all beverages with added sugar and sweetener in 2012 with a flat rate of EUR 7.53 per hectolitre. In 2017, the tax scheme was amended and now beverages with less than 5 g of sugar per 100 ml are exempted and for drinks with 5 to 8 g of sugar per 100 ml the tax rate of EUR 7.53 per hectolitre applies. Beverages with a sugar content of 8 to 10 g per 100 ml are taxed the double, and beverages with more than 10 g of sugar per 100 ml are taxed the triple of that rate.
- **Hungary** taxes sugar-sweetened beverages (at EUR 0.63/litre). The taxes were introduced in 2011 to improve public health. They were also seen as part of a pro-growth tax shift towards consumption. The taxes have resulted in decreases in consumption of sugary soft drinks by about 20% in 2016.
- **Mexico** introduced an ad quantum tax on sugar-sweetened beverages in 2014 amounting to 1 Peso per litre. Artificially sweetened beverages are not taxed. Annual sales of sodas declined by 6% in 2014 after the introduction of the soda tax.
- **Norway** taxes both sugar-sweetened and artificially-sweetened beverages. These taxes were all originally introduced to raise revenue but their continued use now also has a health rationale. In the beginning of 2018, the sugar tax per litre was increased from 2.81 up to 4.75 kroner.
- **Belgium** implemented a tax on sugar-sweetened, artificially-sweetened and non-sweetened beverages. The introduction of the tax is part of a broader tax reform policy to shift some of the tax burden away from labour income and largely towards consumption that generates negative externalities.
- **United Kingdom** introduced a tax of GBP 0.18 per litre on beverages with more than 5 g of sugar per 100 ml of product. A higher rate (GBP 0.24 per litre) is imposed on drinks with more than 8 g of sugar per 100 ml of product. The tax does not apply to fruit juices or milk-based products, and smaller producers are exempted from the tax. In response to the announced tax introduction, several producers have reacted and reduced the sugar content of sweetened beverages to below 5 g per 100 ml of product.

Source: OECD (2016), Health-related taxes on food and non-alcoholic beverages in OECD countries: Key design issues; WHO (2015), "Using price policies to promote healthier diets", World Health Organization

Improving health literacy

Preventive programmes are crucial to reduce avoidable health care cost. In the Czech Republic, preventive programmes focus on immunisation programmes and medical screening to detect diseases early. However, early intervention and preventive programmes regarding risky lifestyle choices are not widespread, despite the close link to chronic diseases. For example, an OECD study based on estimates for 2010 suggests that alcohol preventive programmes could significantly reduce deaths from chronic diseases and injuries. A programme of brief interventions by primary care physicians, aimed at people drinking too much is estimated to lead to a total annual gain of 26 000 years of life in good health. Cost-benefit estimations show that prevention has the potential to cut health expenditures for chronic diseases and injuries by up to USD PPPs 73 million per year in the Czech Republic (Sassi, 2015[43]).

Preventive programmes rarely extend beyond pre- and elementary school interventions. Accompanying the implementation of the Health 2020 strategy, the Ministry of Health, together with the Ministry of Education co-operated to ensure that 50% of pre-school children and 95% of elementary school children have access to institutions that support the health consciousness programmes (Alexa et al., 2015[13]). These efforts could be extended to incorporate healthy behaviour. For example, the school setting could be used to provide nutritious school meals and restrict the availability of unhealthy foods and beverages also beyond elementary school. Furthermore, inequalities in health outcomes could be reduced by education through addressing specific health topics such as injuries, mental health, sexually transmitted infections, violence, pregnancy and substance use.

Health education and access to information should be available for all citizens to make sound health decisions. Despite scarce data, a first survey conducted on health literacy in the Czech Republic showed that about 60% of the respondents showed deficits in general health literacy (Kučera, Pelikan and Šteflová, 2016[52]). Moreover, the study found that health literacy is correlated negatively with age and positively with education and that health literacy has a considerable influence on healthy behaviour and thus on health status.

Providing better access to health information for the general public in addition to health education and prevention programmes in schools can serve as means to create more equal health outcomes. In addition to basic information regarding health in daily life and risk factors, in case of needed medical intervention, information on potential treatments, the quality of health care providers and facilities should be easily accessible.

Although there have been attempts to improve the information on the performance of health care facilities to the public, coverage tends to be low and of limited value for patients to make informed choices. For example, the Czech Society of General Practice, the Health Care Institute and the Ministry of Health conduct different surveys to collect data based on patient perspectives and experiences. The fragmented nature of data collection poses a challenge to achieve a coherent and robust analysis of patient satisfaction and the evaluation of provider and system performance due to differences in survey design and coverage. A better co-ordination of survey design and the provision of the data at one central location – as is for example the case in the UK (Box 1.6) - could support patients to find relevant information.

Box 1.6. Making patients experience data available to the public: examples from across the OECD

In the United Kingdom (England), patient experience data are presented at the Department of Health websites and NHS choices. A sub-set of data from various national survey programmes and a GP survey programme is presented on the main website to help patients compare services and choose between them. Further, care directory scores on different aspects of health care rated by patients allow the public to easily search for a hospital, care home, dentist and/or local service.

Germany has a specific website, and results of surveys conducted by hospitals and physician offices are published via Quality Reports and available to the public for benchmarking. Also the Netherlands makes patient experience data available to facilitate public choice. In Flanders in Belgium, many hospitals report their own data on their website, and since 2015 a central website hosted by the Flemish government, provides the data of the hospitals that are willing to publish these data. More recently, since the end of 2016, France has provided patient satisfaction survey (eSATIS) data available on the website along with accreditation results.

Public reporting of patients experience data is also common in the Nordic countries. In Sweden, comparative data on patient experiences in primary care units across county councils are published online. Results of telephone interviews assessing people's attitudes, knowledge and expectations about the Swedish health care system are also available and comparative data across county councils and regions are published, allowing the public to use these results to choose their primary health-care unit. The Swedish Association of Local Authorities and Regions presents the national data on a website where comparisons with other units or hospitals in other county councils are possible. In Denmark, since 2009, survey results for somatic inpatient and outpatient care are available to the public on the homepages and in Norway, provider-level data are available online to facilitate consumer choice.

Source: Klazinga and Fujisawa (2017[53]), "Measuring patient experiences (PREMS): Progress made by the OECD and its member countries between 2006 and 2016", OECD Health Working Papers, No. 102, OECD Publishing, Paris. http://dx.doi.org/10.1787/893a07d2-en

Box 1.7. Recommendations to improve the health care system

Key recommendations

- Gradually introduce a pay-for-performance scheme for hospitals and doctors based on a broad set of performance indicators.
- Reduce the scope of the reimbursement decree by limiting its coverage and leaving the rest to negotiations between insurance funds and health providers.
- Continue reducing hospital beds by encouraging regions and local bodies to restructure capacities of health services and facilities.
- Strengthen the role of primary care through gate-keeping and further shift towards a better mix of capitation fees and fee-for-service for GPs.
- Increase the capacity of medical faculties and the number of students through scholarships and ensure the sustainable financing of universities.
- Increase taxes on tobacco, alcohol and consider introducing taxes on unhealthy food and beverages.
- Promote a healthier lifestyle and further develop disease prevention and screening programmes.
- Align payment schemes for long-term care in health and social care setting by co-ordinating the use of user fees.

Reform the governance and organisation of the health care system.

- Use the new DRG system for setting the reimbursement prices of health services to reap efficiency gains and reform or close underperforming hospitals.
- Develop e-health through subsidising the equipment of health providers, training of users and guaranteeing the security of information and their appropriate use.

Improve care delivery and develop preventive policies

- Further shift from inpatient care to outpatient care by developing day care through more day surgery and minimal invasive treatments.
- Entrust general practitioners to co-ordinate treatment and preventive measures in primary care and give them a gate-keeping role to improve the efficiency of care management.
- Introduce intelligent cost sharing to limit consultations and increase awareness of health costs. For instance, co-payments could be introduced for people bypassing the referral system, some hospital treatments and some specific consultations.
- Evaluate and increase if necessary the subsidy and reimbursement bonus plan designed to incentivise doctors to settle in remote areas.
- Improve the education and career opportunities for medical staff and nursing by offering more autonomy and responsibilities along the career.

Reform the financing of health care

- Gradually increase contributions from the self-employed to better reflect their contribution capacity.
- Broaden revenues from general taxation for the health care sector by setting a contribution on all kinds of revenues.

Prepare long-term care for ageing

- Incentivise regional authorities to ensure that enough long-term care institutions exist within their borders.
- Provide social care allowance taking into account individual's income to guarantee that individuals can afford access to institutional care.

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