OECD Economic Surveys
SLOVAK REPUBLIC

JUNE 2017

OECD

OECD Economic Surveys: Slovak Republic 2017

OECD
BETTER POLICIES FOR BETTER LIVES

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Please cite this publication as:
OECD (2017), *OECD Economic Surveys: Slovak Republic 2017*, OECD Publishing, Paris.
http://dx.doi.org/10.1787/eco_surveys-svk-2017-en

ISBN 978-92-64-27753-3 (print)
ISBN 978-92-64-27754-0 (PDF)
ISBN 978-92-64-27755-7 (epub)

Series: OECD Economic Surveys
ISSN 0376-6438 (print)
ISSN 1609-7513 (online)

OECD Economic Surveys: Slovak Republic
ISSN 1995-3526 (print)
ISSN 1999-0588 (online)

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

Photo credits: Cover © K Photo/Shutterstock.com.

Corrigenda to OECD publications may be found on line at: *www.oecd.org/about/publishing/corrigenda.htm*.

© OECD 2017

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of the source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to *rights@oecd.org*. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at *info@copyright.com* or the Centre français d'exploitation du droit de copie (CFC) at *contact@cfcopies.com*.

Table of contents

Basic statistics of Slovak Republic, 2016 8
Executive summary 9

Assessment and recommendations 13
Maintaining solid growth in living standards over the longer term will be challenging 17
Improving labour market performance 34
Improving well-being and sustainable development 47
Bibliography 56

Annex. **Progress in structural reform** 61

Thematic chapters

Chapter 1. **Enhancing advanced skills to better meet labour market demand** 67
Better skilled workers will be needed 68
Improving skills formation at secondary schools 71
Boosting skills in tertiary education 79
Securing the skills of the workforce over time 90
Recommendations to enhance advanced skills 96
Bibliography 97

Chapter 2. **Improving the efficiency and outcomes of the Slovak health-care system** . . . 101
The health-care system needs to become more effective 102
Improving the health-care system will require reforms in several areas 114
Recommendations to improve the health-care system 138
Bibliography 139
Appendix 1.A1. 143

Boxes

1. Slovakia's high reliance on the automotive industry 19
2. A steady implementation of the 2012 pension reform is crucial 25
1.1. VET reform 74
1.2. Tertiary education funding – main features 83
1.3. Skills mismatch and worker characteristics 87
2.1. The Slovak health-care system 115

Tables

1. Macroeconomic indicators and projections . . . 18
2. Possible shocks to the Slovak economy . . . 20
3. Housing loans . . . 22
4. Past OECD recommendations on fiscal policy . . . 27
5. Past OECD recommendations on taxation . . . 28
6. Past OECD recommendations on raising the efficiency of public spending . . . 31
7. Past OECD recommendations on improving the judicial system and fighting corruption . . . 32
8. Past OECD recommendations on product market reforms . . . 34
9. Past OECD recommendations on the labour market . . . 37
10. Past OECD recommendations on the housing sector . . . 40
11. Past OECD recommendations on education . . . 43
12. Past OECD recommendations on the environment . . . 56
2.1. Health outcome performance . . . 104
2.2. Projected increases in public health and long term care spending by main source, 2010-60 . . . 113

Figures

1. Slovakia is performing strongly . . . 14
2. Poverty and inequality are low but some other well-being dimensions lag behind . . . 15
3. Slovakia's GDP per capita is catching up, but its population is ageing . . . 16
4. The biggest share of Slovakia's exports is vehicles and most exports go to EU countries . . . 17
5. The car industry in the Slovak republic . . . 19
6. Evolution of macro-financial vulnerabilities . . . 20
7. Financial and housing credit development . . . 21
8. Foreign trade exposure . . . 22
9. Convergence will be hampered by population ageing . . . 23
10. The Roma are much younger . . . 24
11. The number of emigrants from Slovakia has increased significantly . . . 24
12. Structural reforms and fiscal measures can ensure sustainability . . . 26
13. Efficiency of VAT collection . . . 27
14. Taxes in the Slovak Republic . . . 28
15. Composition of general government spending . . . 29
16. Public investment spending . . . 30
17. Effectiveness of public administration . . . 31
18. Perception of the effectiveness of judicial system . . . 32
19. The business environment . . . 33
20. Mothers with young children tend to withdraw from the labour market . . . 35
21. Mothers with small children face incentives to work . . . 35
22. Long-term unemployment is high . . . 36
23. Low spending in active labour market policies . . . 37
24. Roma's employment is low . . . 38
25. Regional economic inequalities . . . 39
26. Regional mobility and housing indicators . . . 40

27. Adult skills in literacy and problem solving . . . 42
28. Teachers are amongst the lowest paid in the OECD . . . 42
29. Roma student performance is weak . . . 44
30. A low proportion of young adults have high-level literacy skills . . . 44
31. Slovak researchers produce many publications, but their average quality is poor . . . 45
32. Qualification and education mismatches among young tertiary educated graduates are high . . . 46
33. Many Slovak students study abroad and only few foreigners study in the Slovak Republic . . . 47
34. Health-care spending and outcomes . . . 48
35. Health inequalities and perceived mismanagement . . . 49
36. Potential efficiency gains in health care . . . 49
37. Hospital care . . . 50
38. Primary care indicators . . . 51
39. Pharmaceutical and other medical goods and service spending . . . 53
40. Long-term care . . . 53
41. Green growth indicators: Slovak Republic . . . 55
42. Deaths from ambient air pollution . . . 56
1.1. Risk of job loss due to automation . . . 68
1.2. Adult skills in literacy and problem solving . . . 69
1.3. Companies are increasingly having problems to find skilled and educated workers . . . 70
1.4. Schools and labour market outcomes are weak . . . 71
1.5. Teachers are amongst the lowest paid in the OECD . . . 72
1.6. Higher salaries are important to raise the attractiveness of the teaching profession . . . 72
1.7. Share of vocational programme enrolment rates in upper secondary education . . . 74
1.8. Slovak VET students' skills are unsatisfactory . . . 75
1.9. Impact of socio-economic status on students' learning outcomes . . . 76
1.10. Major risks for socio-economically disadvantaged children becoming low-performing students . . . 77
1.11. Roma have poor school attendance resulting in weak skills . . . 78
1.12. Tertiary education has expanded . . . 80
1.13. A low proportion of young adults have high-level literacy skills . . . 81
1.14. Slovak researchers produce many publications, but they could be improved in terms of quality . . . 83
1.15. Tertiary education system lacks vocational bachelor programs . . . 85
1.16. Qualification and education mismatches among young tertiary educated graduates are high . . . 88
1.17. Mismatched workers suffer wage penalties, despite similar skills to well-matched workers . . . 89
1.18. The skills assessment system is underdeveloped . . . 89
1.19. The stock of emigrants has increased significantly . . . 91
1.20. The impact of brain drain on the competitiveness is substantial . . . 91

1.21. Many Slovak students study abroad and only few foreigners study in the Slovak Republic . . . 93
1.22. The Blue Card treshold is more restrictive in the Slovak Republic than in other selected OECD countries . . . 94
1.23. The relative unemployment rate of individuals with lower secondary versus tertiary education . . . 95
1.24. Participation in life-long learning across Europe by educational attainment . . . 95
2.1. Slovak life expectancy at birth is comparatively low even adjusted for per capita incomes . . . 102
2.2. Slovak life expectancy outcomes are relatively poor . . . 103
2.3. Selected health indicators of the Roma and non-Roma population . . . 105
2.4. Regional disparities of infant mortality in OECD countries . . . 106
2.5. Health inequalities by socioeconomic status . . . 106
2.6. Satisfaction with the healthcare system . . . 107
2.7. Household out-of-pocket expenditure on health care . . . 107
2.8. Perception of corruption in the public healthcare sector . . . 108
2.9. Average waiting days for elective surgery . . . 109
2.10. Growth of health-care spending . . . 110
2.11. Expenditure on health . . . 111
2.12. Potential efficiency gains in health care . . . 112
2.13. Health administrative spending by type of healthcare system . . . 118
2.14. Hospital care supply . . . 120
2.15. Nurses related indicators . . . 122
2.16. Mortality from selected diseases . . . 124
2.17. Primary care indicators . . . 125
2.18. Physician density and activity . . . 126
2.19. Age structure of physicians . . . 127
2.20. Emigration rates of doctors . . . 127
2.21. Pharmaceutical expenditure . . . 130
2.22. Other medical goods and ancillary health services . . . 131
2.23. Long-term care . . . 133
2.24. Life style indicators . . . 136
2.25. Selected indicators of Roma versus non-Roma living conditions . . . 137

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 Slovak republic were reviewed by the Committee on 6 April 2017. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 23 May 2017.

The Secretariat's draft report was prepared for the Committee by Claude Giorno and Gabriel Machlica under the supervision of Peter Jarrett. The Survey *also benefitted from consultancy work by Martin Haluš, Kristína Londáková, Michaela Černěnko, Dávid Martinák and Ján Toman. Statistical assistance was provided by Paula Adamczyk, Béatrice Guerard and Eun Jung Kim and editorial assistance by Amelia Godber.*

The previous Survey *of the Slovak Republic was issued in November 2014.*

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

Follow OECD Publications on:

http://twitter.com/OECD_Pubs

http://www.facebook.com/OECDPublications

http://www.linkedin.com/groups/OECD-Publications-4645871

http://www.youtube.com/oecdilibrary

http://www.oecd.org/oecddirect/

This book has...

StatLinks

A service that delivers Excel® files from the printed page!

Look for the *StatLinks* at the bottom of the tables or graphs in this book. To download the matching Excel® spreadsheet, just type the link into your Internet browser, starting with the *http://dx.doi.org* prefix, or click on the link from the e-book edition.

BASIC STATISTICS OF SLOVAK REPUBLIC, 2016

(Numbers in parentheses refer to the OECD average)*

LAND, PEOPLE AND ELECTORAL CYCLE

Population (million)	5.4		Population density per km^2	110.7	(37.2)
Under 15 (%)	15.2	(17.9)	Life expectancy (years, 2014)	76.9	(80.6)
Over 65 (%)	14.4	(16.6)	Men	73.3	(77.9)
Foreign-born (%, 2013)	3.3		Women	80.5	(83.3)
Latest 5-year average growth (%)	0.1	(0.6)	Latest general election	March 2014	

ECONOMY

Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	89.6		Primary sector	3.8	(2.5)
In current prices (billion EUR)	81.0		Industry including construction	34.8	(26.6)
Latest 5-year average real growth (%)	2.5	(1.9)	Services	61.4	(70.7)
Per capita (000 USD PPP)	31.2	(42.1)			

GENERAL GOVERNMENT

Per cent of GDP

Expenditure	41.6	(40.9)	Gross financial debt	59.1	(111.8)
Revenue	40.0	(38.9)	Net financial debt[a]	35.7	(72.8)

EXTERNAL ACCOUNTS

Exchange rate (EUR per USD)	0.904		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	0.478		Machinery and transport equipment	61.0	
In per cent of GDP			Manufactured goods	16.4	
Exports of goods and services	93.8	(53.9)	Miscellaneous manufactured articles	9.2	
Imports of goods and services	90.1	(49.3)	Main imports (% of total merchandise imports)		
Current account balance	-0.7	(0.3)	Machinery and transport equipment	48.3	
Net international investment position (2014)	-62.9		Manufactured goods	15.0	
			Miscellaneous manufactured articles	12.9	

LABOUR MARKET, SKILLS AND INNOVATION

Employment rate for 15-64 year-olds (%)	64.9	(67.0)	Unemployment rate, Labour Force Survey (age 15 and over) (%)	9.7	(6.3)
Men	71.4	(74.7)	Youth (age 15-24, %)	22.2	(13.0)
Women	58.3	(59.3)	Long-term unemployed (1 year and over, %, 2015)	7.1	(2.2)
Participation rate for 15-64 year-olds (%, 2015)	70.9	(71.3)	Tertiary educational attainment 25-64 year-olds (%, 2015)	21.1	(35.0)
Average hours worked per year (2015)	1 754	(1 766)	Gross domestic expenditure on R&D (% of GDP, 2015)	1.2	(2.4)

ENVIRONMENT

Total primary energy supply per capita (toe, 2015)	3.0	(4.1)	CO_2 emissions from fuel combustion per capita (tonnes, 2014)	5.4	(9.3)
Renewables (%, 2015)	8.5	(9.6)	Water abstractions per capita (1 000 m^3, 2014)	0.1	
Exposure to air pollution (more than 10 µg/m^3 of $PM_{2.5}$, % of population, 2015)	100.0	(75.2)	Municipal waste per capita (tonnes, 2015)	0.3	(0.5)

SOCIETY

Income inequality (Gini coefficient, 2013)	0.269	(0.311)	Education outcomes (PISA score, 2015)		
Relative poverty rate (%, 2013)	8.4	(11.1)	Reading	453	(493)
Median disposable household income (000 USD PPP, 2013)	14.2	(22.0)	Mathematics	475	(490)
Public and private spending (% of GDP)			Science	461	(493)
Health care (2015)	7.0	(9.0)	Share of women in parliament (%)	20.0	(28.7)
Pensions (2013)	7.6	(9.1)	Net official development assistance (% of GNI)	0.12	(0.39)
Education (primary, secondary, post sec. non tertiary, 2013)	2.7	(3.7)			

Better life index: *www.oecdbetterlifeindex.org*

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

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.

© OECD 2017

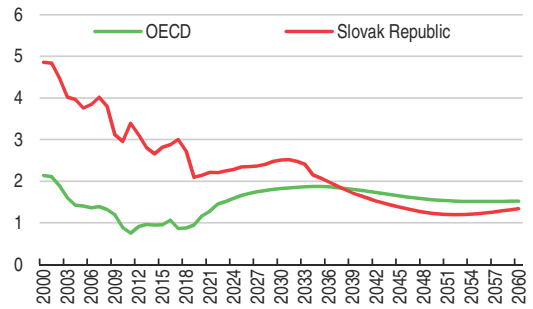
Executive summary

- *The Slovak economy has been growing strongly*
- *Inclusiveness needs to be improved*
- *Enhancing public-sector efficiency to raise living standards for all*

The Slovak economy has been growing strongly

Growth is strong, but will weaken because of population ageing

GDP per capita



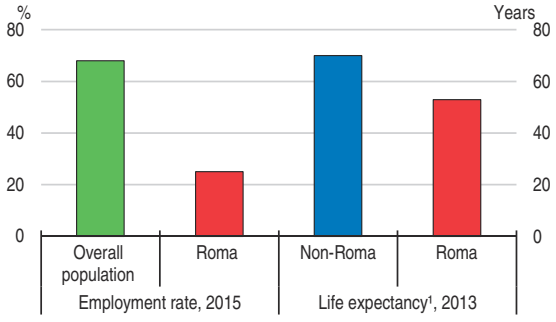
Source: OECD (2017), OECD Economic Outlook: Statistics and Projections (database).

StatLink http://dx.doi.org/10.1787/888933499885

The Slovak Republic continues to exhibit robust economic performance. International competitiveness is strong, fiscal and financial policies are prudent, poverty and income inequality are low, and the country's environmental footprint has improved markedly. Employment is rising, prices have been stable, and the external account is near balance. However, population ageing, which is projected to be one of the sharpest in the OECD, will pose a long-term challenge for fiscal policy and higher living standards.

Inclusiveness needs to be improved

Roma employment and health status



1. Covers areas with Roma community representing 10 to 25% of the total population.

Source: European Union Agency for Fundamental Rights (2016) and B. Gavurová et al. (2014).

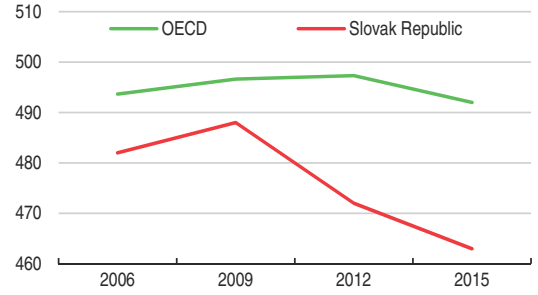
StatLink http://dx.doi.org/10.1787/888933499895

The benefits of growth have not been equitably shared. The Roma are not well integrated in society. Their weak integration is reflected in poor health, education and employment outcomes, and poses an ongoing challenge to the inclusiveness of economic performance. Together with low regional labour mobility, it contributes to large disparities between Bratislava and the eastern part of the country. Another social challenge concerns young mothers: they stay out of the labour force too long because of lack of quality childcare and of insufficient take-up of paternity leave. This has negative effects on gender equity.

Enhancing public-sector efficiency to raise living standards for all

Students' education outcomes are weak and deteriorating

Average of mean score in science, reading and mathematics



Source: OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education.*

StatLink http://dx.doi.org/10.1787/888933499901

Educational outcomes have declined, and the education system does not do a good enough job preparing students for the labour market. Long-term unemployment is high, despite a strong labour market. At the same time, many young talented Slovaks are studying and working abroad. For its part productivity is hindered by a poor business environment in the non-tradables sector, especially in professional services and network industries. Important public-sector weaknesses, including low efficiency, widespread corruption and inadequate infrastructure hinder inclusive growth. Population ageing will put increasing pressure on the health-care system, which already suffers from poor efficiency and generates mediocre health-care outcomes.

MAIN FINDINGS	KEY RECOMMENDATIONS
Fiscal and financial policies and public-sector reforms	
The economy continues to expand but with growing tensions on capacity and swiftly rising housing loans.	Stand ready to further tighten macro-prudential policy settings if financial-sector risks do not diminish.
The fiscal situation is healthy, as strong growth and efforts to boost tax collection are generating rapid revenue growth. Priority areas for improvement are education and Roma integration. In the medium term population ageing will put pressure on spending.	Pursue budget balance by 2019 as planned. Increase public-spending efficiency by expanding and deepening spending reviews ("Value for Money" initiatives) to allow higher spending in priority areas such as education and Roma integration.
The existing debt ceiling is not an effective operational fiscal rule and entails the risk of pro-cyclical policy when debt approaches the ceiling.	Supplement the current debt ceilings with a much lower non-binding debt target, and implement the promised expenditure ceilings.
Despite considerable progress, tax evasion remains substantial.	Merge the tax/customs and social security agencies to raise revenues. Link the IT systems of the tax administration and banks.
The tax mix imposes too high a tax burden on low-skilled workers.	Further shift the tax burden from labour to less distortive bases such as real estate, alcohol and environmental externalities such as air pollution.
Air quality suffers from heavy use of brown coal in power generation.	Remove support for brown coal mining in electricity generation.
Corruption is still perceived to be a problem.	Proceed with the OECD audit and integrity assessment of anti-corruption laws. Ensure proper implementation of all recommendations.
Fostering inclusiveness and well-being	
The weak integration of Roma is a serious inclusiveness challenge.	Raise pre-school attendance of the poor with conditional cash transfers. Promote Roma access to health care by increasing support for trained Roma mediator programmes. Develop statistics to monitor the effectiveness of support to the Roma.
Weak geographic labour mobility contributes to regional disparities and reflects in part an underdeveloped rental market.	Phase out financial incentives for homeownership. Develop long-term rental contracts better protecting landlords' rights, while ensuring stability and predictability for tenants.
Amenable mortality is high, reflecting poor primary health care and a lack of general practitioners (GPs).	Further increase medical school places for GPs, and expand their prescription-writing authority. Expand fee-for-service payments for GPs primary care procedures.
Hospital-care financing is deficient, and management is poor. There are too many acute-care beds.	Phase in the diagnosis-related-group-based hospital financing system. Further centralise hospital procurement, professionalise their management and decouple salaries from national average wage. Further cut the number of acute-care beds.
The supply of long-term care for dependent people is underdeveloped and fragmented.	Create regional one-stop shops with well-trained personnel to coordinate and simplify access to long-term care services.
Boosting skills, employment and productivity	
Educational outcomes are below the OECD average and declining, in part due to poorly motivated and trained teachers.	Further increase teachers' salaries, particularly for starting teachers, conditional on improved teaching quality through high-quality professional development and increased focus on disadvantaged pupils.
There is substantial scope to raise the quality of university research. Tertiary education does not properly prepare students for the labour market.	Increase the transparency and independence of the tertiary quality-assurance framework to international standards. Boost the funding of internationally recognised research. Introduce a graduate tracking system to improve the responsiveness of tertiary education to labour market needs.
Skilled workers are in short supply. Emigration and young mothers' work disincentives are reducing employment and harming inclusive growth.	Simplify work visa and residence procedures for skilled workers. Expedite the expansion of high-quality early childcare. Make some of the currently long parental leave available only to fathers.
Productivity in non-tradable sectors is hindered by barriers to entrepreneurship.	Lower licencing restrictions for legal services, architects and engineers. Further reduce public-sector involvement in network industries.

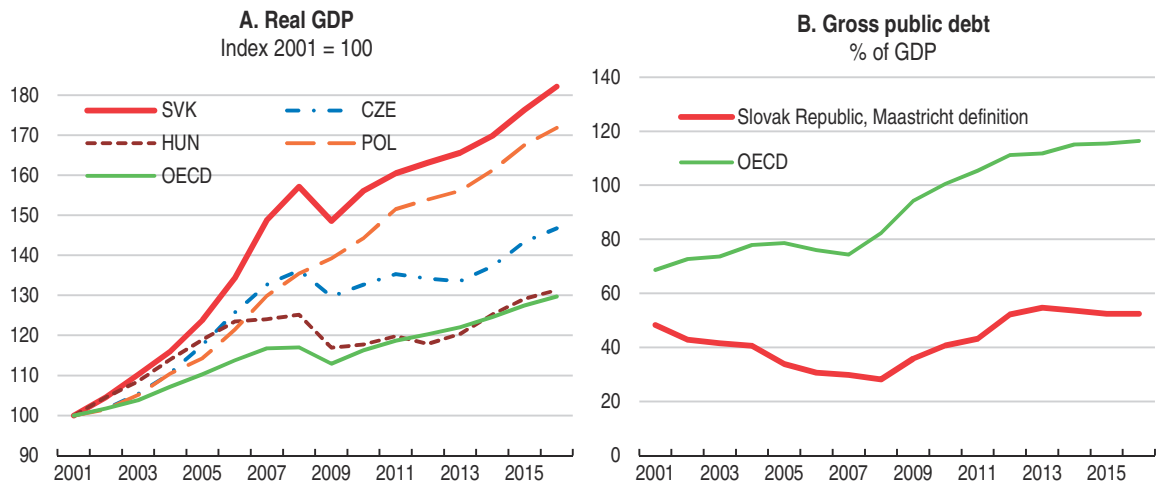
© OECD 2017

Assessment and recommendations

- *Maintaining solid growth in living standards over the longer term will be challenging*
- *Improving labour market performance*
- *Improving well-being and sustainable development*

Slovakia's economy continues to perform extremely well both in terms of macroeconomic outcomes and public finances (Figure 1). GDP growth exceeded 3½ per cent on average in 2015 and 2016 and is projected to stay strong in the next two years. Prices have been stable, the unemployment rate has fallen below 10% – its lowest level in seven years – and the current account is near balance. The fiscal situation is solid, with a deficit of well below 2% of GDP in 2016 and a public debt around 52% of GDP, far below the OECD average. International competitiveness, fiscal and financial stability and ample foreign direct investment (FDI) are all contributing to a sustained rise in living standards.

Figure 1. **Slovakia is performing strongly**



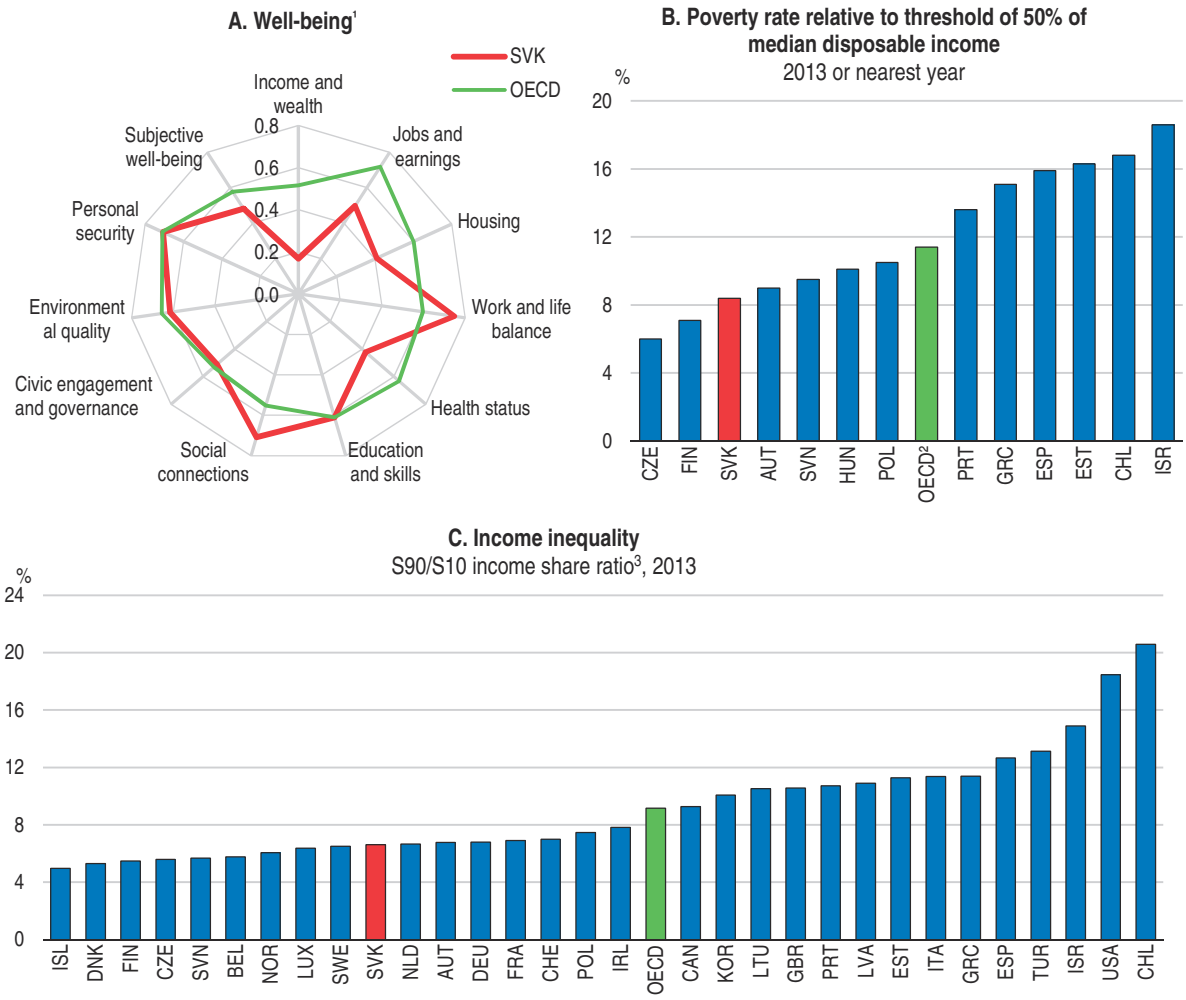
Source: OECD (2017), OECD Economic Outlook: Statistics and Projections (database).

StatLink http://dx.doi.org/10.1787/888933499912

Slovaks also do as well as or better than the OECD average on a number of dimensions of well-being, though average incomes still lag behind (Figure 2). To some extent, high well-being reflects the fairly low poverty rate (with only 8% of the population living in households with less than 50% of the median disposable income, which measures the relative poverty, and only 2% living with less than the income threshold measuring the absolute terms) and relatively even income distribution (the ratio of the average income of the 10% richest households to average income of the 10% poorest households is low by international comparisons). Work-life balance and social connections indicators are also good.

However, as in many countries, per capita growth has fallen since 2008-09, and the catch-up process has slowed (Figure 3, Panel A). Moreover, population ageing, projected to be one of the steepest in the OECD on the basis of the expected change in old-age dependency ratio (Panel B), will pose policy and social challenges in the decades ahead. They will be compounded by the persistent emigration of young and educated people, as

Figure 2. **Poverty and inequality are low but some other well-being dimensions lag behind**



1. Each well-being dimension is measured by one to four indicators from the OECD Better Life Index database. Normalised indicators are averaged with equal weights. Indicators are normalised based on 38 countries except for health performance status (35 member countries). Normalised indicators range between 1 (best) and 0 according to the following formula: (indicator value – minimum value)/(maximum value – minimum value).
2. Unweighted average.
3. S90/S10 income share ratio is the ratio of the average disposable income of the top 10% richest households to the average income of the 10% poorest households.

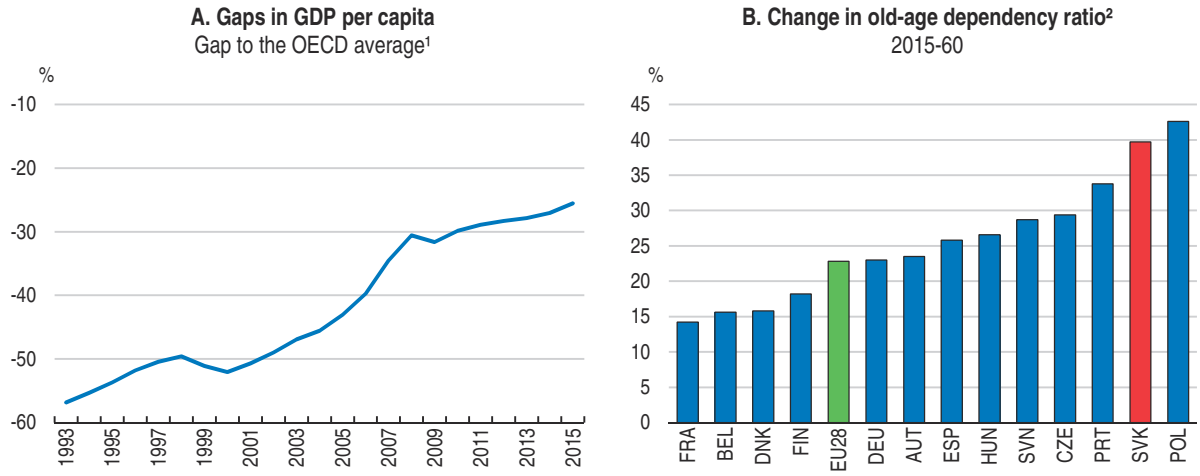
Source: OECD (2016), "Income distribution and Poverty" and "Better Life Index 2016", OECD Social and Welfare Statistics (database).

StatLink http://dx.doi.org/10.1787/888933499925

well as the weak integration of Roma. Other challenges are the work disincentives faced by women and high long-term unemployment, including for youth. Widely different labour market outcomes between Bratislava and the eastern part of the country also contribute to large regional per capita GDP gaps and a dual functioning of the economy, as discussed in the previous *Survey* (OECD, 2014a).

To a large extent, these problems reflect the persistence of substantial public-sector deficiencies. These include generally low efficiency, high levels of perceived corruption and inadequate infrastructure. The education system faces difficulties in developing individuals' human capital and enabling them to realise their potential to adapt to the needs of the labour market and future technological changes. Structural weaknesses also

Figure 3. **Slovakia's GDP per capita is catching up, but its population is ageing**



1. Percentage gap of per capita GDP expressed in constant 2010 PPPs.
2. Elderly persons (65 and over) as a share of the working-age population (15-64).
3. Unweighted average.

Source: OECD (2016), Eurostat (2017).

StatLink http://dx.doi.org/10.1787/888933499935

affect the health-care system where, despite strong increases in spending, health outcomes of the population have remained relatively weak, undermining productivity and well-being (Figure 2, Panel A). Moreover, there has been no progress in improving housing adequacy, as proxied by the number of rooms per person, and one in ten Slovaks report low life satisfaction.

The authorities have continued their reform process over the last few years to address these issues. Some improvement has been achieved in the domain of public sector efficiency, thanks in particular to significantly better tax collection. Steps have been taken to enhance public procurement procedures in hospitals. Reforms have also started in the area of vocational education and training to develop a dual system relying on work-based learning. However, the pace of structural reforms in 2015-16 seems to have slowed compared with 2013-14 (OECD, 2017a), no doubt in part because of the electoral timetable. Against this background, the main messages of this *Survey* are:

- Growth is strong as the country has remained attractive for FDIs thanks to appropriate macroeconomic policies. This situation offers an opportunity to address remaining weaknesses and thereby set the stage for making growth more inclusive and further increasing the living standards of all Slovaks.
- Making growth more inclusive for the Roma, women and the chronically unemployed will require reforms in education, health-care and the labour market, along with better infrastructure. Improving the integration of disadvantaged groups, especially Roma, into society is crucial.
- The government appropriately intends to reach a balanced budget or better by 2019 to maintain the soundness of the public finances. Thus, the budgetary resources needed to pursue further inclusiveness-friendly reforms will have to be found from enhanced tax collection, the wide scope for efficiency gains and reprioritisation in public spending.

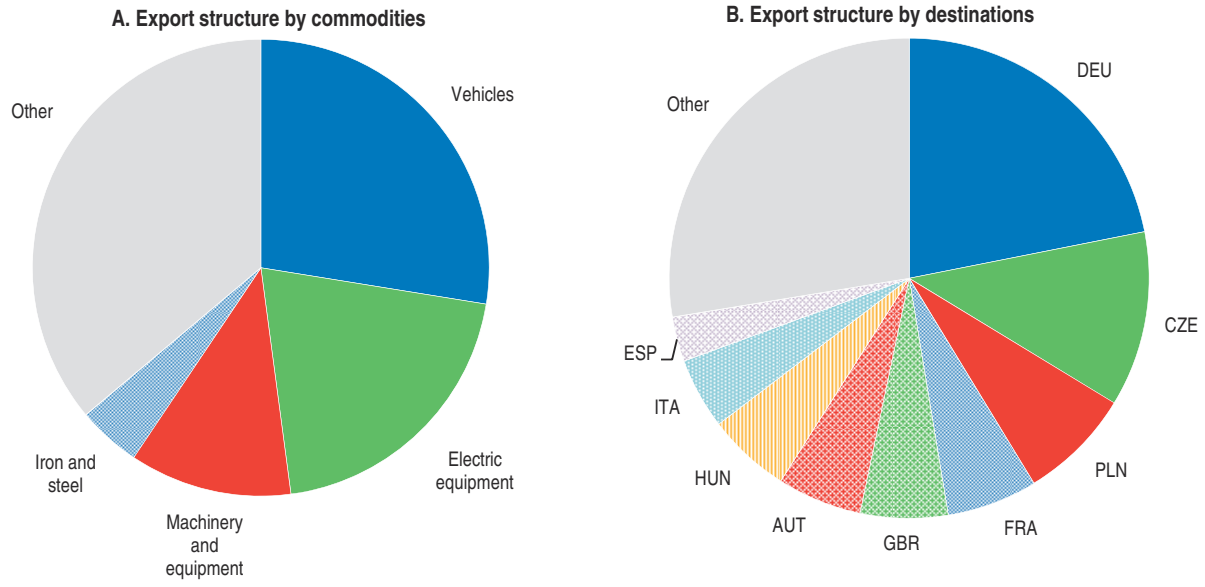
Maintaining solid growth in living standards over the longer term will be challenging

The Slovak economy continues to expand in the short term

Robust growth continued in 2016 on the back of household consumption, underpinned by a stronger labour market and rising confidence. Improved household finances and low mortgage rates have led to a house-price pick-up of almost 10% since 2014. Investment activity has temporarily declined, as the boost from exceptional 2015 EU structural funds absorption faded at the start of the new financing period. However, business investment has remained strong, supported by low interest rates and major capital projects in the automotive sector. Integration in global value chains, especially in the form of vehicle assembly investments, coupled with a jump in tourism, has helped Slovakia to increase its export market shares. Consumer price inflation remains low albeit increasing as elsewhere.

Growth is projected at between 3½ and 4% in 2017 and 2018 (Table 1). The continued expansion of the automotive sector should further boost investment and exports. Car exports were 27% of Slovak exports in 2015 (Figure 4, Panel A), and production will reach 1.4 million units by 2018 (Box 1), most of which go to EU countries (Panel B), though their ultimate destination is unclear. As a consequence, the current account balance should soon turn positive.

Figure 4. **The biggest share of Slovakia's exports is vehicles and most exports go to EU countries**



Source: Statistical Office of the Slovak Republic (2016), "Yearbook Development of Foreign Trade in the Slovak Republic 2011-15", December.

StatLink http://dx.doi.org/10.1787/888933499941

The labour market should benefit from a stronger economy. Employment and hours worked are the highest since independence and will continue to increase, entailing a drop in the unemployment rate to around 7½ per cent by end-2018. However, employers are voicing concern about workforce quality. Shortages affect over half of all manufacturers and are particularly acute in the automotive sector. In 2016 more than 80% of the sector's suppliers signalled that labour availability and quality were major problems. The demand for qualified IT workers is estimated to be four times the supply, and, according to ICT

Table 1. **Macroeconomic indicators and projections**

Annual percentage change, volume (2010 prices)

	2013 Current prices (EUR billion)	2014	2015	2016	2017	2018
GDP	74.2	2.6	3.8	3.3	3.3	4.1
Private consumption	41.8	1.4	2.2	2.9	3.1	3.2
Government consumption	13.7	5.3	5.4	1.6	0.9	1.9
Gross fixed capital formation	15.4	1.2	16.9	-9.3	1.2	7.0
Housing	2.0	-1.7	-11.6	2.9	4.1	3.4
Final domestic demand	70.8	2.1	6.0	-0.3	2.2	3.7
Stockbuilding[1]	0.2	1.1	-1.1	1.2	0.0	0.0
Total domestic demand	71.0	3.1	4.7	1.0	2.3	3.6
Exports of goods and services	69.6	3.7	7.0	4.8	6.6	7.0
Imports of goods and services	66.4	4.4	8.1	2.9	6.6	6.7
Net exports[1]	3.1	-0.5	-0.7	1.8	0.2	0.6
Other indicators (growth rates, unless specified)						
Potential GDP	..	2.5	2.9	2.8	2.8	3.0
Output gap[2]	..	-2.8	-1.9	-1.5	-1.1	0.0
Employment	..	1.5	2.6	2.8	1.6	1.4
Unemployment rate[3]	..	13.2	11.5	9.6	8.5	7.6
Harmonised index of consumer prices	..	-0.1	-0.3	-0.5	1.6	2.0
Core HICP	..	0.5	0.5	0.9	1.5	2.0
Wage rate		1.5	2.6	2.5	4.2	5.2
Unit labour costs		1.5	1.8	1.3	2.4	2.2
Household saving ratio, net[4]	..	1.4	3.1	3.2	3.2	3.2
Current account balance[5]	..	1.1	0.2	-0.7	-0.2	0.7
General government financial balance[5]	..	-2.7	-2.7	-1.7	-1.2	-0.6
Underlying government financial balance[2]	..	-2.6	-2.5	-1.6	-1.1	-0.6
Government gross debt (Maastricht)[5]	40.6	53.6	52.5	51.9	51.7	50.2
Government net debt[5]	24.2	35.5	35.3	35.7	35.5	34.0
Three-month money market rate, average	..	0.2	0.0	-0.3	-0.3	-0.3
Ten-year government bond yield, average	..	2.1	0.9	0.5	1.0	1.3

1. Contribution to changes in real GDP.
2. As a percentage of potential GDP.
3. As a percentage of the labour force.
4. As a percentage of household disposable income.
5. As a percentage of GDP.

Source: OECD Economic Outlook 100 Database.

employers, 10 000 more specialists (equivalent to 14% of employment of the sector) are needed; that number is expected to double in five years (ITAS, 2016).

Wage increases are projected to accelerate to 5% in 2018, reflecting labour shortages and productivity growth. Higher real wages are expected to sustain robust consumption and push up inflation to around 2%, close to the ECB target for the euro area.

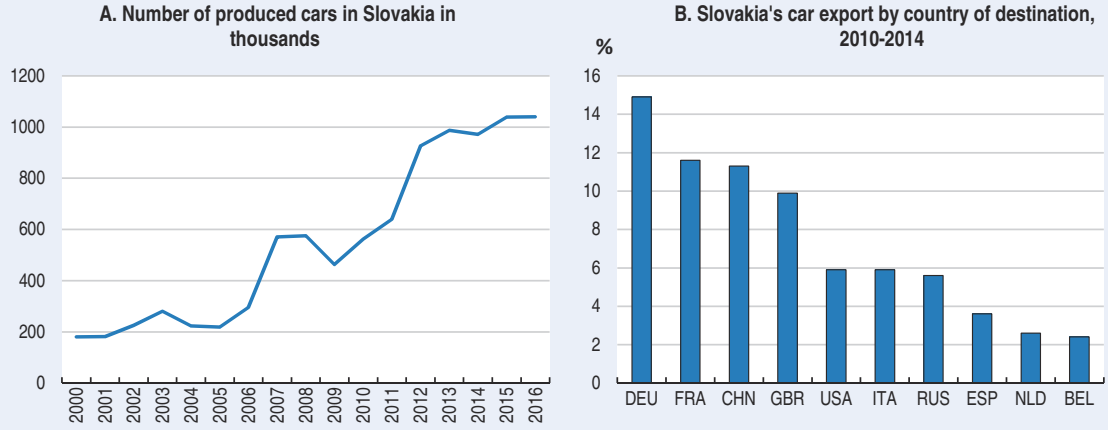
Macro-financial vulnerabilities have decreased considerably since the financial crisis in almost all dimensions (Figure 6). The authorities consider that the financial situation is sound, as the banks are profitable (although less so than in 2015, as in other euro area countries, because of the contraction of the net interest margin) and have ample liquidity (NBS, 2016a; IMF, 2016a). Their capitalisation is also healthy, non-performing loans are low, and liabilities denominated in foreign currencies are low, though increasing somewhat. The Slovak external position has improved, thanks to better international price and cost competitiveness, leading to a somewhat stronger net international investment position.

There are both upside and downside risks to the outlook. Exports will depend in large part on the recovery in Europe, which has recently been looking more promising but could

Box 1. **Slovakia's high reliance on the automotive industry**

The robust economic growth in recent years has been underpinned by the automotive sector. The number of cars produced in Slovakia has increased more than five times over the last decade and reached 1 million vehicles produced per year (Figure 5, Panel A), making Slovakia the largest per capita producer of cars in the world. The sector represents around 40% of the industrial output and one third of exports, with export mostly directed to EU countries, but also China, the United States and Russia (Panel B). Due to the high import intensity, the car industry only accounts for 4% of total value added in the country.

Figure 5. **The car industry in the Slovak republic**



Source: ZAP, Kendera, T. (2016), "Na ktorých zahraničných trhoch sa najviac presadzujú automobily zo Slovenska?", National Bank of Slovakia, Bratislava.

StatLink http://dx.doi.org/10.1787/888933499954

The automotive sector will continue to drive export and production growth in the coming years. The planned opening of a fourth large car plant by Jaguar Land Rover in 2018 should increase annual car production by 130 000 units, create 7 500 additional jobs within the automotive sector and boost GDP by 1½ per cent over the 2017-20 period (NBS, 2016).

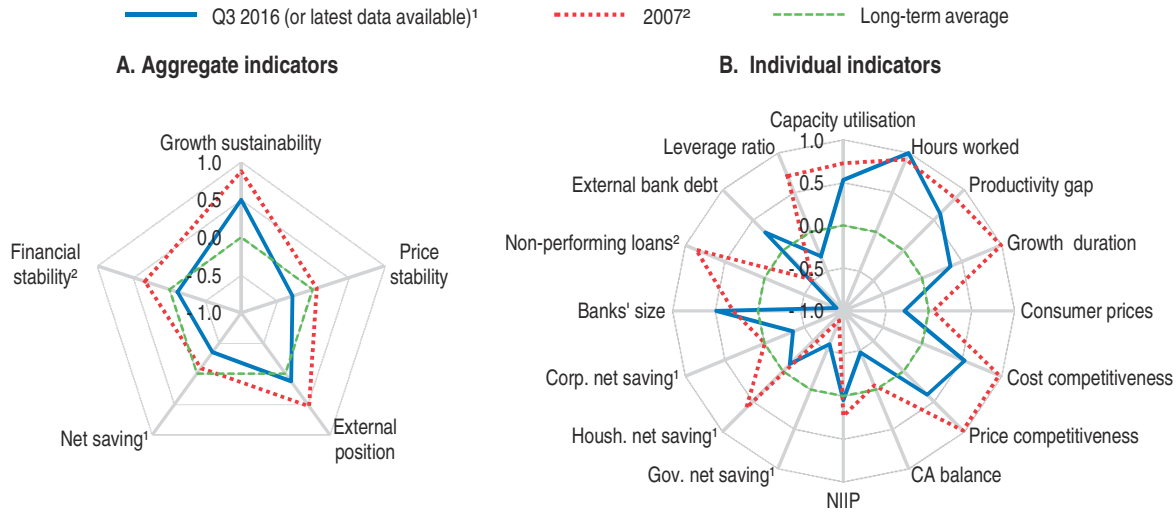
The production is located in the western part of the country, where unemployment is below 5% and car manufacturers are already facing a shortage of skilled workers. Upward pressures on wages in the sector are thus likely to intensify in the coming years.

suffer from a disorderly Brexit. However, a slowdown in China would pose risks to the world economy, and thus Slovakia. Rising tensions on capacity, if they persist, could lead to some overheating and a deterioration in international competitiveness. Spreading labour shortages and inadequate labour skills could hinder productivity gains, slowing growth. A close monitoring of wages and labour cost developments is thus desirable, even if there is room to bring more people into the labour force and to further lower unemployment. The economy may also confront several other shocks, including a rise in trade protectionism, whose effects are difficult to factor into the projections (Table 2). The car sector is especially vulnerable to such risks; this would have important external trade effects, given its large export share.

Strong growth and very low interest rates have also led to rapid bank lending increases, particularly for housing, at annual rates close to 10% since mid-2016 (Figure 7, Panel A). Since the crisis household indebtedness has risen more sharply than elsewhere, although

Figure 6. **Evolution of macro-financial vulnerabilities**

Deviations of indicators from their real time long-term averages (0), with the highest deviations representing the greatest potential vulnerability (+1), and the lowest deviations representing the smallest potential vulnerability (-1)



Note: Each aggregate macro-financial vulnerability indicator is calculated by aggregating (simple average) normalised individual indicators. Growth sustainability includes: capacity utilisation of the manufacturing sector, total hours worked as a proportion of the working-age population (hours worked), difference between GDP growth and productivity growth (productivity gap), and an indicator combining the length and strength of expansion from the previous trough (growth duration). Price stability includes headline and core inflation (consumer prices), and it is calculated by the following formula: absolute value of (core inflation minus inflation target) + (headline inflation minus core inflation). External position includes: the average of unit labour cost based real effective exchange rate (REER), and consumer price based REER (cost competitiveness), relative prices of exported goods and services (price competitiveness), current account (CA) balance as a percentage of GDP and net international investment position (NIIP) as a percentage of GDP. Net saving includes: government, household and corporate net saving, all expressed as a percentage of GDP. Financial stability includes: banks' size as a percentage of GDP, the share of non-performing loans in all receivables from loans, external bank debt as percentage of total banks' liabilities, and capital and reserves as a proportion of total liabilities (leverage ratio).

1. Data on net saving and its components in 2015.
2. Data on non-performing loans in 2010.

Source: OECD calculations based on OECD (2017), OECD Economic Outlook: Statistics and Projections (database), OECD (2017), Main Economic Indicators (database), OECD (2017), OECD National Accounts Statistics (database), National Bank of Slovakia, Thomson Reuters Datastream.

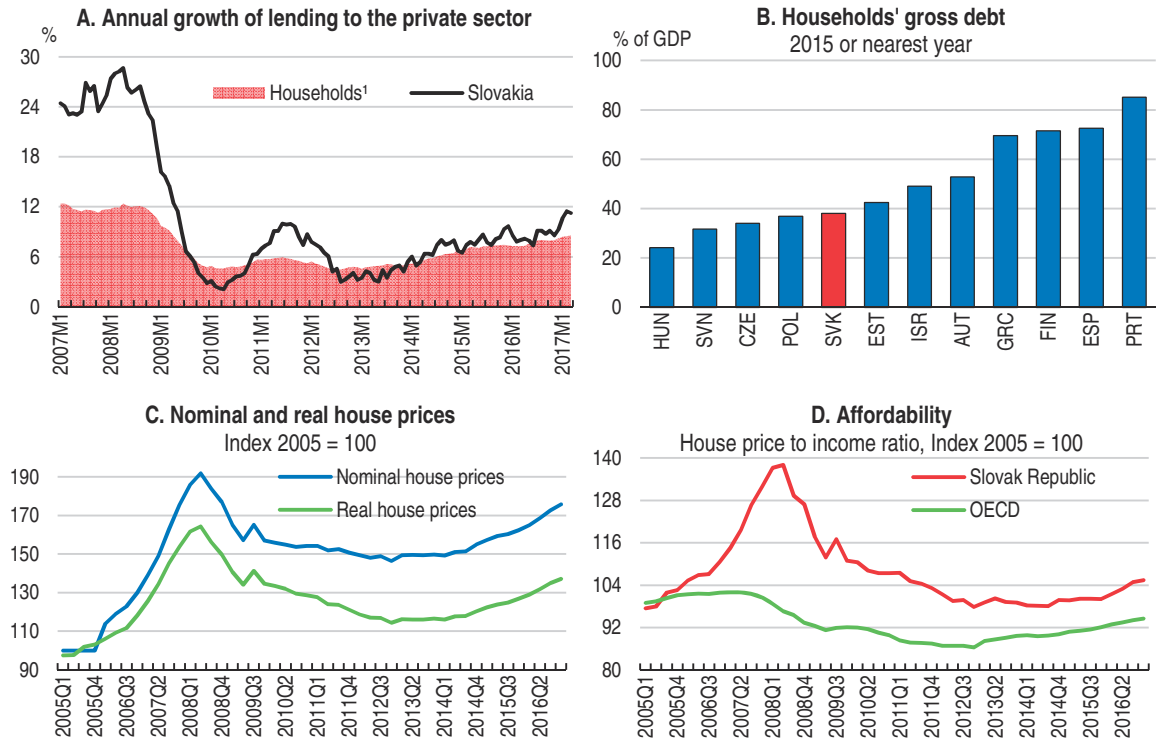
StatLink http://dx.doi.org/10.1787/888933499965

Table 2. **Possible shocks to the Slovak economy**

Shock	Possible impact
Reduction in the free movement of goods and labour due to a rise in protectionism.	This would undermine Slovak exports, as the economy is strongly anchored in global value chains.
Increase in geopolitical tensions in and around Europe.	This would hurt confidence and activity in Europe, which would undermine growth.
A hard landing of emerging economies, particularly in China.	Such a shock would affect Slovakia, largely through its strong linkages with the German economy.

its level remains relatively low (Panel B). This has led to a marked increase in banks' exposure to the housing sector: their share of residential real estate loans in total loans is higher than in most other OECD countries (Table 3). To reduce the risks of a housing bubble and strengthen financial stability, the National Bank of Slovakia has correctly taken proactive measures, making several macro-prudential changes in 2014, which have since been progressively tightened. Since the beginning of 2017 banks have had to limit the share of their new housing loans with a loan-to-value (LTV) ratio exceeding 90% to less than 10%. As from August 2017 they will also have to hold an additional 0.5% countercyclical capital

Figure 7. **Financial and housing credit development**



1. Contribution of households to annual growth for Slovak Republic.

Source: OECD (2017), OECD Economic Outlook: Statistics and Projections (database); OECD Analytical House Price Database; and ECB (2017), MFIs Balance Sheets Database.

StatLink http://dx.doi.org/10.1787/888933499974

requirement. These measures may not lower loan growth in the short term. Slovak banks can meet the new capital requirements (NBS, 2016b), and the loan-to-value restrictions are not particularly tight (IMF, 2016a). The authorities must thus stand ready to tighten these macro-prudential measures if risks to the financial system do not diminish and, for instance, further lower LTV ratio limit and/or impose higher credit risk weights on the riskier subcomponents of real estate loans. These credit risk weights, which are currently standardised at 35% for all housing credits, could for instance be increased for mortgage loans with LTV ratios over 80%, in line with the latest Basel proposal (IMF, 2017).

Longer-term perspectives pose challenges

Large FDI inflows have helped integrate Slovakia into global value chains and boosted exports and productivity (OECD, 2013a). However, the strong shift to export-oriented production and the high share of jobs linked to trade (Figure 8) have exposed it to the world trade slowdown and the decline of the pace of globalisation since 2008 (Haugh et al., 2016). For Slovakia, this applies especially to the prospects for the automotive sector. In addition, the longer term technological changes may limit future demand for automobiles, if self-driving cars become a real option.

The Slovak Republic has one of the fastest ageing populations in the OECD, as the fertility rate is low, and life expectancy is set to rise substantially with incomes. The Slovak population, which is currently one of the youngest in the EU with a low old-aged dependency

Table 3. **Housing loans**

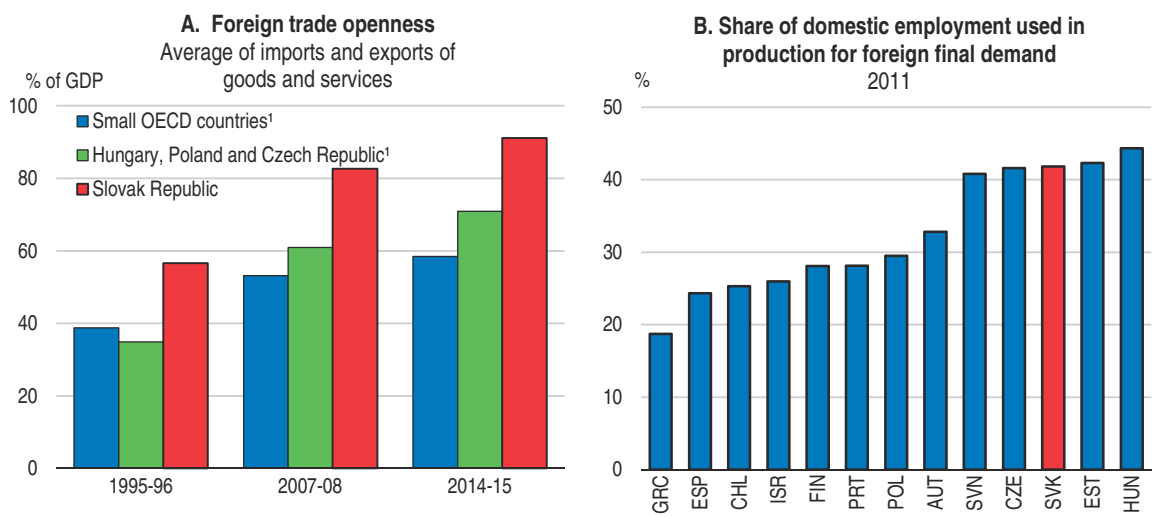
Share in % of total loans

	2008[1]	2016 Q3 or most recent available data[2]	Change
Australia	57.7	63.3	5.6
Austria	11.0	20.2	9.2
Belgium	18.5	14.6	-3.9
Denmark	30.8	36.0	5.2
Canada	32.3	36.0	3.7
Finland	28.8	28.8	0.0
Germany	15.7	18.6	2.8
Greece	20.7	27.6	6.9
Israel	23.5	35.2	11.6
Italy	15.0	19.1	4.1
Netherlands	24.4	23.3	-1.1
Norway	41.4	43.6	2.3
Poland	26.4	31.8	5.4
Portugal	31.9	38.2	6.3
Slovakia	**20.6**	**44.4**	**23.8**
Spain	27.2	30.2	3.0
Sweden	32.3	37.1	4.8
United Kingdom	11.7	20.0	8.3
United States	38.0	31.1	-6.9

1. 2009 for the United States.
2. Q2 2016 for Italy, the United Kingdom, Finland, Greece and Q1 2016 for Norway.

Source: IMF Soundness Indicators.

Figure 8. **Foreign trade exposure**



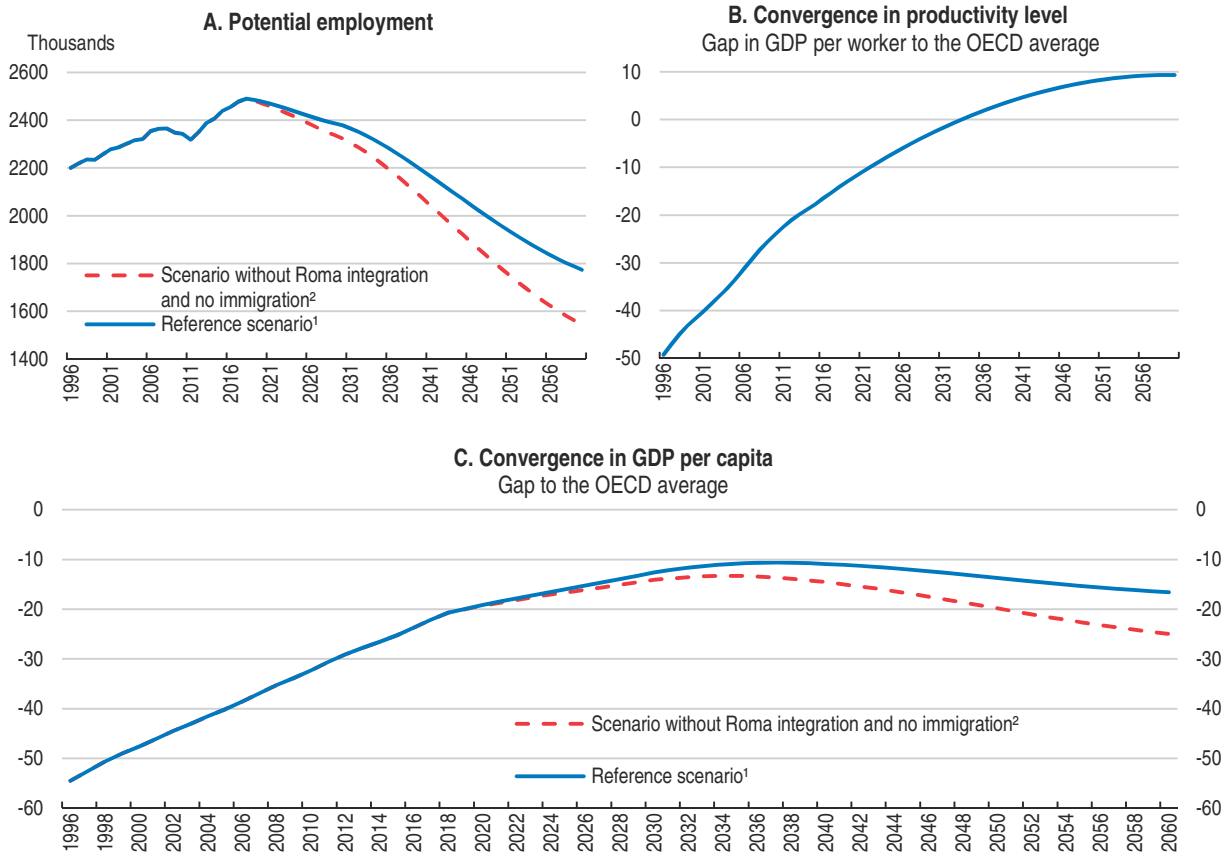
1. Unweighted average.

Source: OECD (2016), OECD Economic Outlook: Statistics and Projections (database); and OECD/WTO (2016), Statistics on Trade in Value Added (Tiva) database – October 2015.

StatLink http://dx.doi.org/10.1787/888933499985

ratio, is projected to become the 8th oldest by 2060. As a consequence, the share of working-age in total population could shrink from 71% today to 55% in 2060, and employment could decrease by a fifth (Figure 9, Panel A) (EC, 2015a).The rate of catch-up of per capita income with the average OECD countries might slow and even reverse in the long term (Panel C).

Figure 9. **Convergence will be hampered by population ageing**



1. Reference scenario is affected by aging in line with *OECD Economic Outlook 100* and European Commission (2015), The 2015 Ageing Report. It includes immigration and assumes Roma's integration to the labour market in line with non-Roma population.
2. Scenario without Roma integration and no net immigration assumes the current labour market outcomes for the Roma and an increase in their share of the population based on Sprocha (2014).

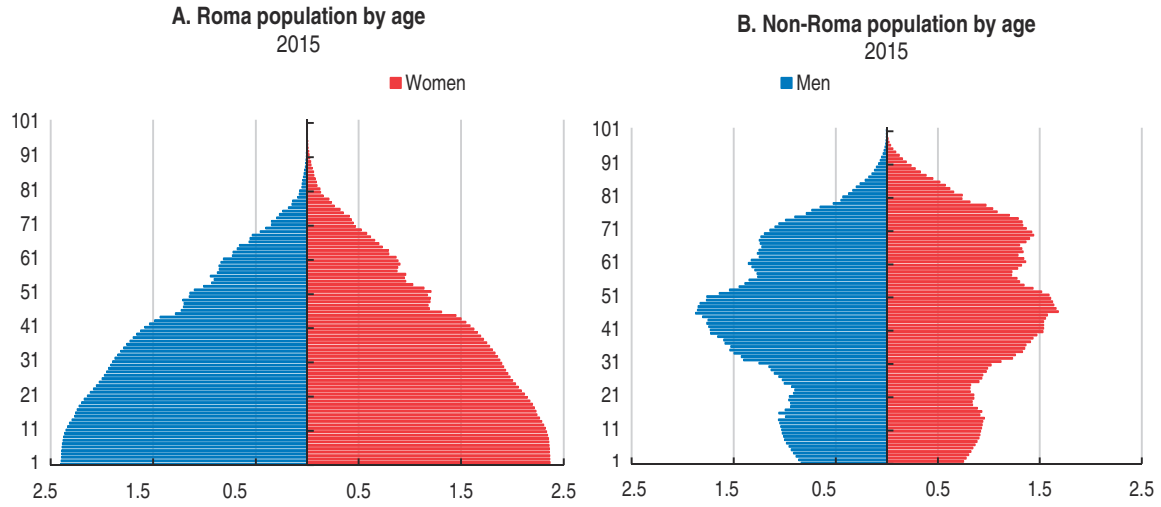
Source: OECD (2017), *OECD Economic Outlook No. 100*; European Commission (2015), The 2015 Ageing Report: Economic and budgetary projections for the 28 EU Member States (2013-2060); Sprocha, B. (2014), Reprodukcia rómskeho obyvatel'stva na Slovensku a prognóza jeho populačného vývoja, INFOSTAT – Výskumné demografické centrum; and OECD calculations.

StatLink http://dx.doi.org/10.1787/888933499993

In spite of strong economic growth, social inclusion is weak, particularly for Roma, who are very poorly integrated into the labour market and have long suffered from many disadvantages. Their share in the total population is expected to rise from 8% today to 14-15% by 2060, as they are much younger (Figure 10; Sprocha, 2014).

Another challenge relates to emigration. In the last 15 years a net 300 000 Slovaks (or 6% of the population) emigrated, and almost a tenth of Slovak citizens now live abroad (Figure 11). Since 2010, on average almost 0.3% of the population has left the country every year, though in 2016 the number of returning migrants slightly exceeded that of emigrants (Haluš et al., 2017). Emigrants are mostly young and well-educated. One third are between 18 and 26, and those with a tertiary degree are most likely to leave (Haluš et al., 2017). The emigration improves the well-being of the emigrants, but it also contributes to shortages of qualified workers in Slovakia. At the same time, Slovakia has one of the least favourable regimes within the European Union in providing foreign workers access to its labour market, though new legislation effective from May 2017 will result in some easing of the

Figure 10. **The Roma are much younger**

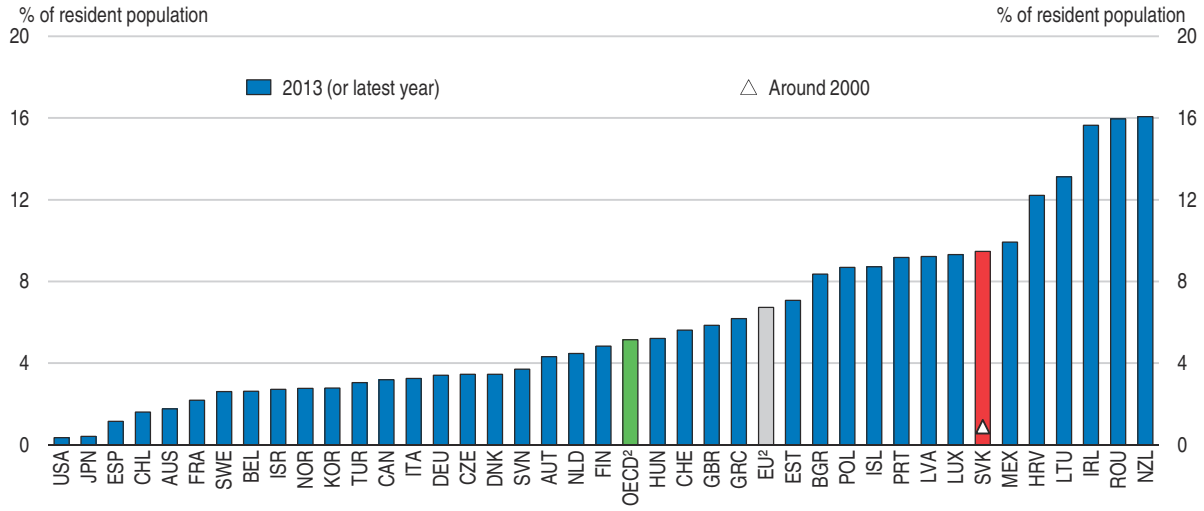


Source: Sprocha, B. (2014), Reprodukcia rómskeho obyvatel'stva na Slovensku a prognóza jeho populačného vývoja, INFOSTAT – Výskumné demografické centrum.

StatLink http://dx.doi.org/10.1787/888933499995

Figure 11. **The number of emigrants from Slovakia has increased significantly**

Stock of emigrants[1]



1. Emigration stocks are computed with reference to a sample of 34 OECD countries of destination for which immigrant data by country of birth (stocks) are available.
2. Unweighted average.

Source: OECD (2016), OECD International Migration Statistics (database); and OECD Economic Outlook: Statistics and Projections (database).

StatLink http://dx.doi.org/10.1787/888933500014

rules for foreign workers (see Chapter 1). Overall, if both the risks of emigration and non-integration of Roma were to materialise, the level of per capita GDP would be lowered by 6 percentage points in 2060 relative to the reference scenario, which assumes some increase in immigration and some progress of Roma's integration.

Preserving healthy public finances

The Slovak budgetary framework has been strengthened considerably. An independent fiscal council was established, and transparent debt rules were defined in the constitution

in 2011. However, this framework is incomplete, as the envisaged binding multi-annual expenditure ceilings, which are also a constitutional provision (Slovak Republic, 2011), have not yet been implemented. According to the Fiscal Responsibility Act, public debt must remain below 60% of GDP, and this legal ceiling will decline annually by one percentage point as from 2018 until it reaches 50% by 2027. As public debt is now over 50% of GDP this ceiling would already be potentially binding if, for example, growth were to slow sharply. This possibility calls for creating more room under the ceiling.

In 2009 the government launched a consolidation plan, which reduced the Maastricht measure of the deficit from almost 8% of GDP to 2.7% of GDP in 2013. This allowed Slovakia to exit the European Union's Excessive Deficit Procedure in 2014 and increased international financial markets' confidence (OECD, 2014a). In 2016 the deficit fell by a further 1% of GDP to 1.7% of GDP, better than the 1.9% budgetary target. Moreover, the government plan, which is in line with the European Union's Medium-Term Objective, aims to reach a balanced budget by 2019 in order to further decrease the public debt and deal with the longer-term challenge of population ageing. As illustrated by the baseline scenario in Figure 12, this plan will indeed lower the debt level well below the constitutional ceiling, even if the debt will pick up somewhat again after 2050, because of the fiscal impact of population ageing (Box 2).

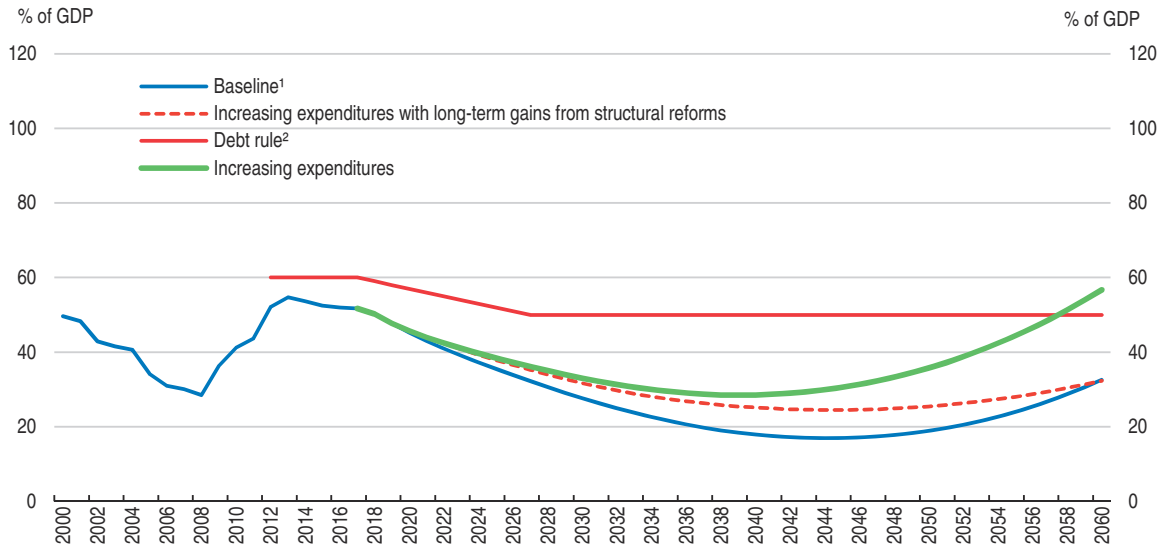
Box 2. **A steady implementation of the 2012 pension reform is crucial**

As mentioned above, population ageing in Slovakia will be one of steepest in the OECD, which will expose the public finances to strong pressures in the next few decades. To face this fiscal challenge, a general pension reform was adopted in 2012-13. This broad reform, which streamlined the pension system including special regimes for armed forces and police, is expected to reduce public spending by 3% of GDP by 2060 if it is steadily and fully implemented (OECD, 2014a), in contrast to what happened in 2017 when a more generous increase was accorded. Yet, even if the reform is implemented as originally envisaged, long-term ageing costs are expected to rise by about 3.0% of GDP from 2020 to 2060 (Fiscal Council, 2017). Although this fiscal cost is expected to be felt only after 2050, it will be higher than in most other EU countries, where the budgetary impact of ageing will reach 1.6% of GDP on average (EC, 2015a). Moreover, with replacement rates not particularly high in Slovakia, pensions indexed only on consumer prices as from 2018, and the statutory pensionable age being raised in line with life expectancy from 2017 onwards, other changes in the pension system do not provide much potential room to painlessly ease the pressure from population ageing.

Ensuring a proper implementation of the current fiscal consolidation plan until 2019 is needed as it provides the authorities with more fiscal room for manoeuvre to reduce the risk of being forced to take pro-cyclical measures in case of any unexpected large negative shocks (Figure 12, "Baseline scenario"). Although, as discussed below, there is much need for further promoting inclusiveness-friendly measures in priority spending areas of education and Roma integration, until 2019 these measures should be financed through efficiency gains from both expenditure and revenue sides. There is indeed a considerable scope for improvement in this domain (see below). In the longer term, as the debt will be lower, fiscal room will be larger to finance new structural reforms and additional initiatives in priority spending areas, especially as these measures, if well-designed, have the potential to strengthen growth, make it more inclusive, and further enhance public sector efficiency.

Figure 12. **Structural reforms and fiscal measures can ensure sustainability**

General government debt, Maastricht definition



1. The baseline consists of the projections for the OECD Economic Outlook 100 until 2018. From there on real growth is based on the European Commission ageing report and will grow by 1.7%. The baseline scenario assumes the fiscal balance will reach a surplus of 0.16% of GDP by 2019 with its further development influenced only by the revenues and expenditures sensitive to population ageing based on EC ageing report. The "relaxing the consolidation" assumes government balance will reach deficit of 0.3% of GDP by 2019, thus lower by 0.5% of GDP compare to government plan. The "without consolidation" scenario assumes the current primary deficit at the level of 2015 at 1.2% of GDP with its further development influenced only by the revenues and expenditures sensitive to population ageing based on EC ageing report.
2. Constitutional debt thresholds: 60% of GDP – Vote of confidence procedure against the government. Between 2018 and 2028, the thresholds are to be gradually lowered by 10 percentage points.

Source: Calculation based on OECD (2016), OECD Economic Outlook: Statistics and Projections (database); and European Commission (2015), The 2015 Ageing Report: Economic and budgetary projections for the 28 EU Member States (2013-2060).

StatLink *http://dx.doi.org/10.1787/888933500033*

Although, these latter positive economic effects are difficult to quantify precisely, they are likely to help reduce the fiscal pressure stemming from population ageing (Figure 12, "Increasing expenditures with long-term gains from structural reforms").

Nevertheless, it would be prudent for the authorities to maintain an adequate fiscal buffer. To this end, they should consider improvements to the fiscal framework to prevent the debt from returning to levels close to the constitutional ceiling, in case, for instance, of inefficient spending (Figure 12, "Higher expenditures"). In this regard, a useful reform would be to supplement the debt ceiling with a debt target that is well below the ceiling. This debt target would provide an anchoring guide for fiscal policy, especially if it benefits from a broad political support, as it would reduce the risk of seeing the debt reach the ceiling as has occurred in the past. In addition, the government needs to implement the multi-annual expenditure rule already planned in the constitution (Table 4). A similar framework has been quite successful in Israel. Combining a debt target with a spending rule would help control the size of the public sector, and therefore the tax burden, and allow the automatic stabilisers to work. Such a reform of the fiscal framework would be a better option than some recent proposals put forward in the public debate to address the need perceived by some of giving policy makers more room for potentially useful fiscal initiatives. One such proposals, which for instance aims at exempting investment spending from the current debt rule (Government, 2016), would weaken the fiscal framework's transparency without addressing all key fiscal needs.

Table 4. **Past OECD recommendations on fiscal policy**

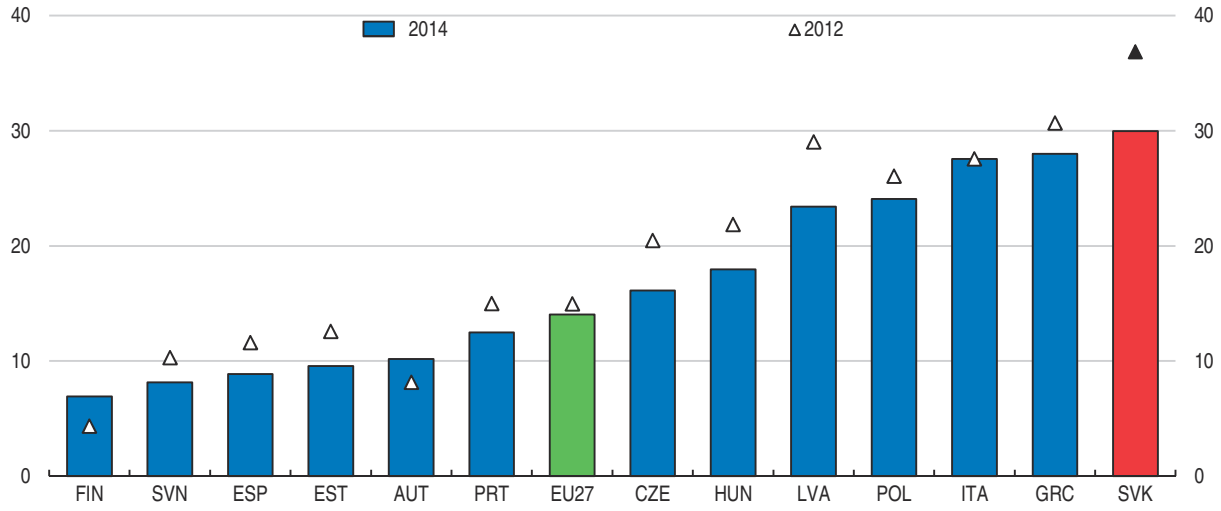
Recommendations in previous *Surveys*	Action taken since September 2014
Create enough room over time under the debt ceiling to allow automatic stabilisers to work.	Debt has been reduced in the last three years, and official plans call for further reduction, but it remains above some legal ceilings.
Implement the constitutional provision of multi-annual binding spending ceilings to reinforce budget discipline in upturns.	No action taken.

A more efficient public sector

Increasing public-sector efficiency is a crucial policy challenge in Slovakia, as highlighted in the previous *Survey*. Transparent and efficient agency management is essential not only to ensure good public services and promote budgetary savings, but also to enhance public trust in policy-making. Pursuing reforms with these objectives is particularly important in education and health care, as discussed below.

Tax evasion also remains substantial, undermining revenues and the system's fairness. The shadow or non-observed economy estimated in the national accounts seems to be relatively large, at around 15% of GDP, as in the other central or Eastern-European countries (Gyomai and Van de Ven, 2014), and the under-reporting of incomes seems widespread (Machlica et al., 2014). Measures adopted by the authorities have considerably improved VAT revenues since 2012, but collection remains much less efficient than in other EU countries (Figure 13). The tax agency's staffing level relative to the total labour force is high, partly reflecting low tax e-filing (OECD, 2015a). To address these deficiencies the government adopted further anti-fraud measures in 2015 (Table 5) and has recently launched a plan to enhance the IT infrastructure of the revenue authority. To make tax payments easier and rely more heavily on voluntary compliance, the government is working to facilitate filing electronically. Additional Action plan to fight tax evasion was adopted in 2017 with measures including better electronic communication, more efficient auditing and online monitoring of transactions. Further helpful measures would include: linking the IT systems of the tax

Figure 13. **Efficiency of VAT collection**[1]



1. Difference between the amount of VAT collected and the theoretical tax liability according to tax law as % of VAT total tax liability.
Source: Center for Social and Economic Research (2016), "Study and Reports on the VAT Gap in the EU-28 Member States: 2016 Final Report", TAXUD/2015/CC/131, August.

StatLink http://dx.doi.org/10.1787/888933500052

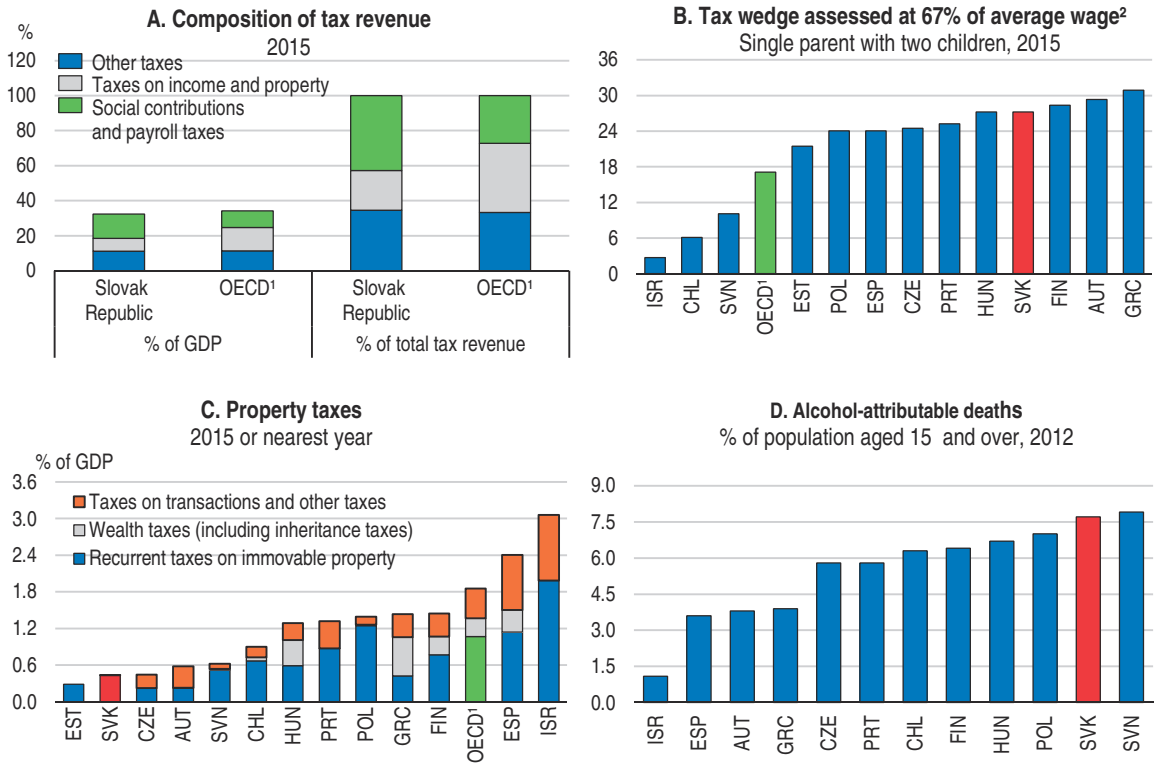
Table 5. **Past OECD recommendations on taxation**

Recommendations in previous *Surveys*	Action taken since September 2014
Further enhance the efficiency of tax administration. Continue efforts to improve tax collection.	In July 2015 the government updated its "Action Plan to Combat Tax Fraud" with 30 additional measures, including, for example, the introduction of criminal liability for firms evading taxes, several measures against excise duty evasion and the establishment of a register of risky taxpayers. Additional Action plan to fight tax evasion was adopted in 2017 with measures including better electronic communication, more efficient auditing and online monitoring of transactions.
Increase taxes on property and environmentally harmful activities.	No action taken.

administration with those of other institutions (the banks, for example); merging the tax/customs office with the social security agency; further strengthening the tax administration's analytical capacity (EC, 2016a); and improve enforcement of sanctions for tax evasion.

Although the tax burden is low, the tax mix could be improved. The relatively heavy reliance on social security taxes increases the cost of employing low-wage workers, harming the least skilled (Figure 14, Panels A and B). The tax burden on labour was somewhat reduced in 2015 with the introduction of a health insurance contribution-free allowance. Recurrent real estate taxation is low, even though such taxes are the least distortive for economic

Figure 14. **Taxes in the Slovak Republic**



1. Unweighted average of data in 2015 or nearest year.
2. Measures the gap between total remuneration from work paid by the employer and net remuneration actually received by the employee, as a percentage of total remuneration from work.

Source: OECD (2016), OECD Economic Outlook: Statistics and Projections (database); OECD Tax Statistics (database); OECD Taxing Wages Statistics (database); OECD Health Statistics (database); and F. Sassi (ed.) (2015), Tackling Harmful Alcohol Use: Economics and Public Health Policy, OECD Publishing, Paris.

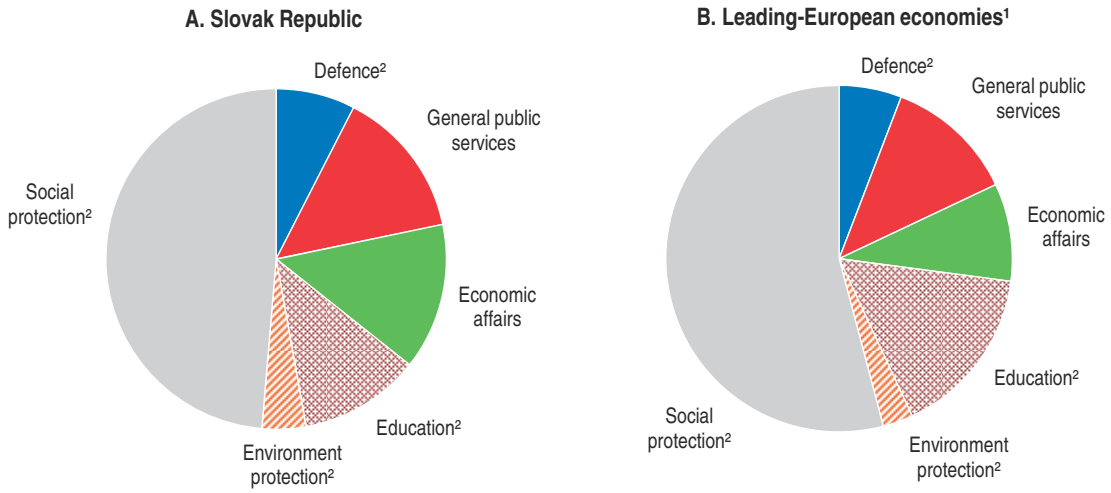
StatLink http://dx.doi.org/10.1787/888933500071

growth (Panel C; Johansson et al., 2008). Moreover, real estate taxes are now unfair, as the tax base does not reflect current market prices for property (OECD, 2014a; Harvan et al., 2015). The authorities have started to prepare to reform this local tax, but this will take several years given political and technical difficulties. Other possible sources of revenue include: inheritances, which are not taxed at all; capital gains on real estate, which are not taxed if the property is held for more than five years; environmental taxes, which would help reduce pollution and waste landfilling and their negative health impact (see below); and higher taxes on alcohol and sugary beverages, which would also improve health outcomes (Panel D). In this regard, the 2017 tax increase on cigarettes was a welcome step.

The composition of Slovak public spending is markedly different than is typical in the OECD, with general services, public order and economic affairs accounting for large shares (Figure 15) (OECD, 2014a). An excessive number of local governments (almost 3 000) implies inefficient governance structure and excessive costs (National Reform Programme, 2017). Merging municipalities and reducing the number of administrative units could free up resources for new investment and services at the local level. Empirical estimates suggest that merging municipalities and reducing their number would free up between 0.1% and 0.4% of GDP (Cernenko, Harvan and Kubala, 2017). This suggests room for shifting the composition towards items such as education and integration that would boost inclusiveness and productivity (Mourougane et al., 2016). Such a development would be helped by an increased absorption capacity of EU structural funds. The gains from stronger public investment could be substantial, given the paucity of public capital (Fournier, 2016). The deficit in transport infrastructure is especially large (OECD, 2014a). Expenditure in this area is low for a catching-up country, and the quality of transport networks looks poor because of a lack of maintenance and repair (MoF, 2016b; Figure 16). This hampers mobility and hinders the reduction of regional disparities and growth, although Slovakia has vast opportunities in this dimension

Figure 15. **Composition of general government spending**

2015

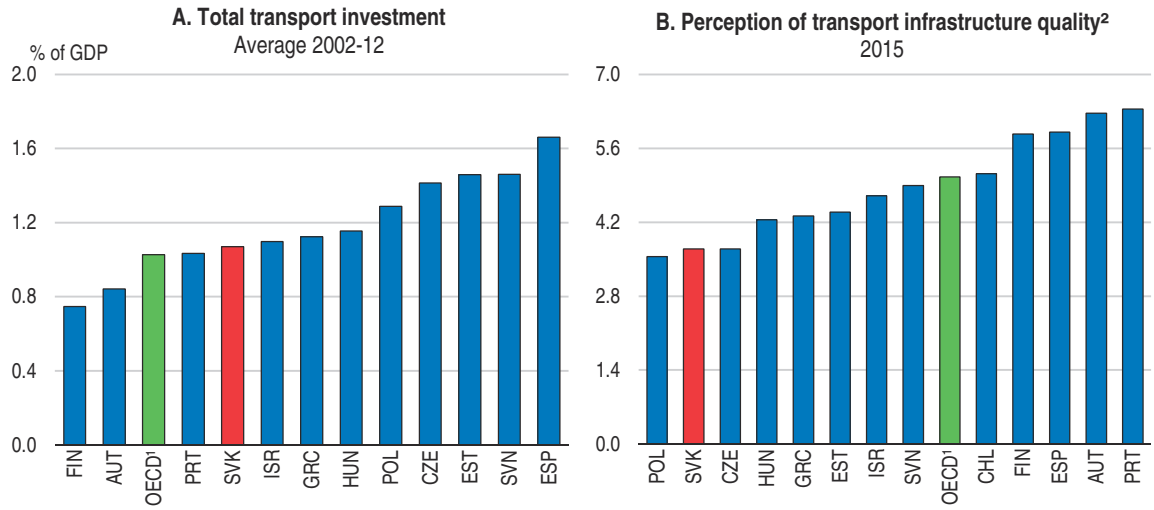


1. Leading-European economies are defined as the top five European economies in the OECD better life ranking: Netherlands, Denmark, Sweden, Norway and Switzerland.
2. Sectors based on the Classification of the Functions of Government 93 (COFOG) with the following aggregations: Defence includes public order and safety; Environment includes housing and community amenities; Education includes recreation, culture and religion; and Social protection includes health.

Source: Eurostat (2017), Government Finance Statistics (database).

StatLink http://dx.doi.org/10.1787/888933500090

Figure 16. **Public investment spending**



1. Unweighted average.
2. Index from the lowest perceived quality (0) to the highest (7).

Source: OECD (2016), OECD Economic Outlook: Statistics and Projections (database); ITF-OECD (2016), "Transport Infrastructure" in Transport Statistics (database); and World Economic Forum (2015), The Global Competitiveness Report 2014-15.

StatLink http://dx.doi.org/10.1787/888933500109

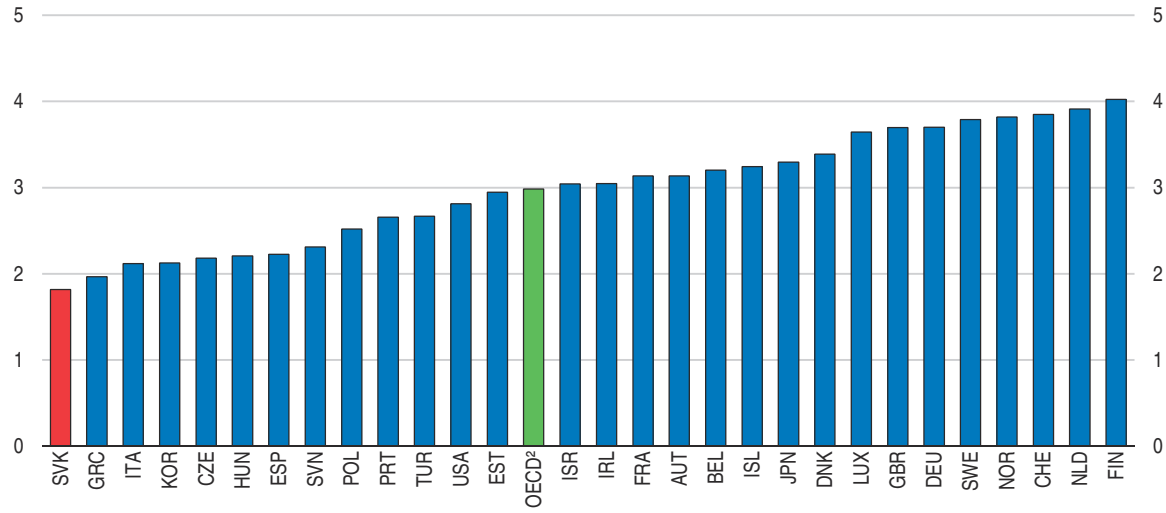
(EC, 2016a). However, there is a large risk that such spending will not be very effective owing to major weaknesses in the public sector.

Poor management efficiency in the public administration has reduced the quality of Slovak public investment (OECD, 2014a; Dutu and Sicari, 2016) (Figure 17). Relatively limited progress has been made so far in modernising it (Table 6). After the 2016 elections a full public expenditure review was launched on a four-year cycle with EC, IMF and OECD support. This initiative aims to develop a methodological toolbox and internal analytical capacity to do "Value-for-Money" analyses at the Ministry of Finance and line ministries. The first review in 2016 assessed government spending in ICT, transport and health, focusing on outcomes rather than inputs, which is welcome, even if it is too early to evaluate its impact. The second review in 2017 covers education, the environment and labour market and social policy.

Reducing corruption is essential. In 2015 nearly 60% of entrepreneurs perceived corruption as a problem for doing business in the country, including for licensing and public procurement (Eurobarometer, 2015). The near-impunity of and often light sanctions meted out to those guilty of these practices, due to the deficiencies of the judicial system, encourage their persistence (EC, 2016a). The judicial system could be improved by strengthening its integrity and independence which are perceived as insufficient, and speeding up its procedures, which are long and costly (Figure 18) (EC, 2017; Palumbo et al., 2013). In the recent past the number of indictments for corruption-related offences has been low, and while most lead to convictions, the proportion of suspended sentences is high (EC, 2016a). Moreover, high-profile cases that reach the courts have remained rare (EC, 2016a). A more independent and transparent judicial system with adequate financial and technical means and dissuasive penalties against infractions would enhance public trust in the state and foster solid and inclusive growth (IMF, 2016b; Rigobon and Rodrik, 2005). The authorities have initiated reforms to address these shortcomings (Table 7), including recent anti-offshore legislation that requires firms participating in public tenders to

Figure 17. **Effectiveness of public administration**

Performance in government general services,[1] scale from 0 to 6 (best)



1. Composite performance indicator for public administration outcome based on OECD's Product Market Regulation (PMR) Indicator (for 2013) to proxy the levels of bureaucracy (33% of indicator) and results of the 2014 WEF survey on the quality of justice, level of corruption and government inefficiency (data for 2013).
2. Unweighted average of data shown.

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

StatLink http://dx.doi.org/10.1787/888933500128

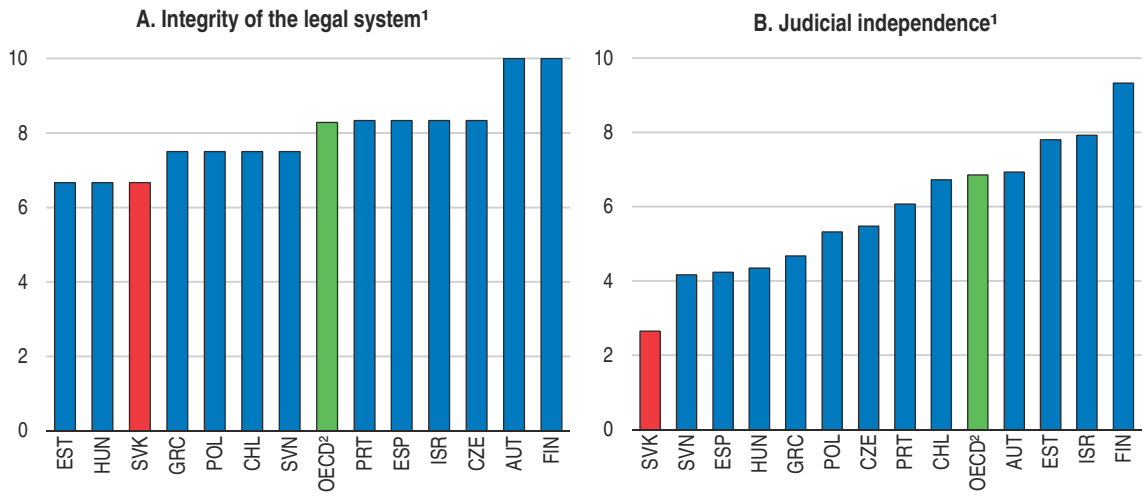
Table 6. **Past OECD recommendations on raising the efficiency of public spending**

Recommendations in previous *Surveys*	Action taken since September 2014
Establish better human resource management, modernise public administration, and strengthen co-ordination and collaboration across government. Widen the use of performance elements in promotion, contract renewals and compensation of public staff.	In October 2015 a comprehensive Strategy on Human Resource Management in the Civil Service (2015-2020) was adopted, resulting in new legislation. This reform, which should enter into force in June 2017, aims to depoliticise the professional staff, increase the transparency of civil servants' recruitment and remuneration, and reduce their turnover. The reform of the local administration, launched in 2013 (the so-called ESO program), is currently in its third phase: one-stop shops are being established in the district offices to provide a wide variety of public services. At the beginning of 2017, 50 customer centres had so far opened out of the 79 planned.
Continue to increase resources for growth-enhancing areas such as education, research and development, and infrastructure. Establish an effective framework for assessing and selecting infrastructure projects, using tools such as cost-benefit analysis.	In 2015 infrastructure investments almost doubled compared to 2014 due to greater use of EU funds. The education budget is expected to rise over the next four years as a result of the planned uprating of teachers' salaries by 6% per year.
Increase the scope for monitoring and evaluation of spending programmes. Establish a robust system of internal controls, and include appropriate performance and results information in annual budget documentation. Allocate more resources to *ex post* audits, and take the results into account in budget allocation.	A programme of spending reviews has begun to improve the efficiency and effectiveness of public spending. The authorities plan on a rolling series of policy and thematic reviews, with the aim of covering the whole of general government over the four-year parliament. Findings from the 2016 evaluation on ICT spending, health care and transport were used in the 2017 budget preparations. Priority is being given to develop a methodological toolbox and internal analytical capacity to do value-for-money analysis at the Finance and line ministries, drawing lessons from international experience with the help of the EC, IMF and OECD on design and methodological matters.

disclose their full ultimate ownership structure. A Memorandum of Understanding was signed between the Slovak Republic and the OECD in January 2017 to deepen co-operation in order to increase transparency and counter corruption. As the first step under this

Figure 18. **Perception of the effectiveness of judicial system**

Scale from 0 to 10 (greatest economic freedom), 2014



1. It is one of the nine components in the area, "legal system and property rights", for the Economic Freedom of the World index which measures the degree of economic freedom present in five major areas: size of government, legal system and security of property rights, sound money, freedom to trade internationally, regulation.
2. Unweighted average of data shown.

Source: Fraser Institute, Economic Freedom of the World (EFW) index (*www.freetheworld.com*).

StatLink http://dx.doi.org/10.1787/888933500147

Table 7. **Past OECD recommendations on improving the judicial system and fighting corruption**

Recommendations in previous *Surveys*	Action taken since September 2014
Strengthen the efficiency and independence of the judicial system. Increase judicial capacity in particular through investment in IT systems.	The Slovak Civil Procedural Law was re-codified with effect from July 2016. Proposed legislation aims to increase enforcement of the law and reduce delays in court proceedings. Several IT projects were implemented or are ongoing, including the development of electronic judicial services, court files, insolvency and disqualification registers. At end-2015 a Code of ethics for judges was adopted. In March 2017, changes in the process of judicial restructuring improved insolvency procedures by reducing the scope for debt forgiveness, unless the creditor voluntarily agrees. In November 2016, new rules were adopted for distraint proceedings to improve procedures for enforcing liabilities.
Fully enforce the provisions of the laws fighting corruption. Ensure that public procurement achieves the best value for money, and continue with measures fighting corruption, *inter alia* by guaranteeing greater transparency.	The National Anti-Corruption Unit has elaborated an internal "Methodology of detection and investigation of the corruption and related criminal offences", which has been in use since January 2015. In early 2015 a new law entered into force to protect whistle-blowers. An Action Plan against corruption was also approved by the government in July 2015. Since November 2015 a new public procurement law has put increasing focus on procurement preparation, use of quality criteria and life-cycle costing. Since January 2017 new anti-offshore legislation requires firms to disclose their full ultimate ownership structure.

initiative, the Government Office invited the OECD to conduct an "Auditing and integrity-risk mapping of the anti-corruption related legislation". To this end, the OECD reviews selected anti-corruption related laws concerning whistle-blower protection, the execution of public duties, audit and inspection in the public service. The resulting assessment of these laws and proposals for action will provide the Government of Slovakia options for

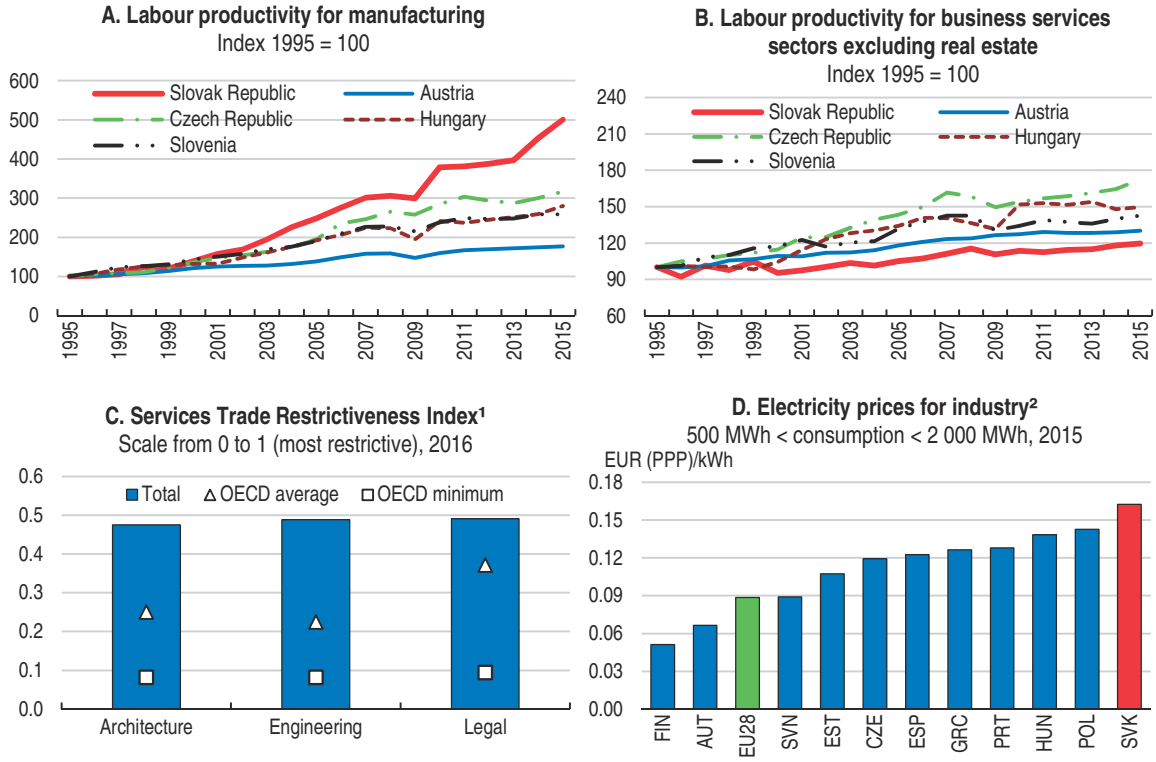
closing the legal loopholes and good practices for strengthening integrity in the public sector. The assessment will also identify priority areas which should be further investigated in the second phase of this co-operation project.

Further enhancing the business environment in the non-tradable sectors

Productivity developments in the non-tradable sectors over the last two decades have been lagging those of Slovakia's central European neighbours, reflecting its dual economy (Figure 19, Panels A and B). Local services producers appear to have benefited little from the manufacturing sector's integration into global value chains. Despite remarkable progress in improving product market regulation since 2008, too little *ex post* regulatory evaluation is undertaken, and several services sectors still face substantial entrepreneurship barriers (Table 8). These affect professional services, including legal services, architects and engineers, where foreign competition is more limited than in the average OECD country (OECD, 2015b; EC, 2017) (Panel C). All the shares in law firms must, for instance, be owned by locally licensed lawyers, and their boards must comprise locally licensed lawyers. In architecture and engineering services the Slovak Republic imposes residency and nationality requirements as preconditions for obtaining a license to practice.

Moreover, the substantial involvement of the state in many network industries, despite the 2015 privatisation of Slovak Telecom, seems to have negative effects on their services.

Figure 19. **The business environment**



1. They are calculated on the basis of the Service Trade Restrictiveness Index (STRI) regulatory database. The STRI database records measures on a most-favoured-nation basis. Preferential trade agreements are not taken into account.
2. Prices excluding taxes and levies.

Source: OECD (2017), OECD Productivity Statistics (database); "Service Trade Restrictions Index by services sector" in OECD Industry and Services Statistics (database); and Eurostat (2017), Energy Price Statistics.

StatLink http://dx.doi.org/10.1787/888933500166

Table 8. **Past OECD recommendations on product market reforms**

Recommendations in previous *Surveys*	Action taken since September 2014
Ease regulation in professional services and retail trade.	No action taken.
Reduce bureaucratic costs, and make regulations more business-friendly. Establish a timetable for measures aimed at tackling business barriers. Strengthen regulatory impact assessment.	Since 2015 the administrative costs of information submission obligations has been measured yearly to reduce business administrative burdens on the basis of discussions with entrepreneurs and international reports on the business environment. In August 2015, for instance, a new legal form of firm (a simplified joint-stock company) was introduced to ease business start-ups and allow more flexible relations among shareholders. A unified methodology for regulatory impact assessment took effect in October 2015. It requires, among other things, consultations with stakeholders prior to the elaboration of regulations.
Strengthen competition in network industries. Ensure that price regulation does not deter the entry of new competitors in the energy market. Strengthen the independence of the telecommunications regulator.	Price regulation under the Network Industries Act has been aligned with EU legislation. The Regulatory Office for Network Industries sets maximum prices that take into account all costs and adequate profits in the regulated segment of delivery to vulnerable users.
Privatise the remaining government shares in the telecommunications incumbent. Pursue further entry of private capital in electricity generation and distribution and gas distribution sectors.	In 2015 the government's 49% stake in Slovak Telecom was sold.

Electricity, gas and mobile telecommunication prices are high for businesses (OECD, 2015c; Eurostat, 2017) (Panel D). Competition in the electricity sector is relatively weak due to a complex and opaque regulatory framework, which creates hurdles to new production and cross-border transmission and does not encourage productivity gains nor lower prices (EC, 2017). Moreover, end-user electricity prices are increased by costs not directly connected with production, transmission and distribution of electricity, including supporting domestic brown coal mining (by regulations that require producers to purchase such inputs at above-market prices), with resulting harmful impacts both on the economy and the environment. The subsidy for brown coal prices paid by consumers will amount to [euro] 95.4 million in 2017 or 3.5% of the average final electricity price for households.

The duality of the Slovak economy is also reflected in the performance of its entrepreneurs and SMEs, which are most often operating in traditional non-tradable sectors. Slovakia's firm structure is dominated by SMEs, many of which suffer from low innovative activity and weak productivity. Yet, SMEs can play an active role in achieving stronger and more inclusive growth since they employ more than 70% of workers (OECD, 2016b). This requires cutting the productivity gap between the mostly large firms at the technological frontier and SMEs (Saia et al., 2015). New legislation promoting better structured and simpler SME support schemes, including for administrative procedures, entered into force in 2017 (EC, 2017). This move is welcome, as long as it is well targeted and does not support non-viable firms, but it should be accompanied by better SME access to finance, which is one of the keys to unlocking SMEs' potential to innovate and become more productive. Access to finance by Slovak SMEs, which are over-reliant on bank credit, is particularly difficult: interest spreads on loans are relatively wide compared with their larger counterparts, loan rejections are common, and access to venture capital is poor (OECD, 2016c).

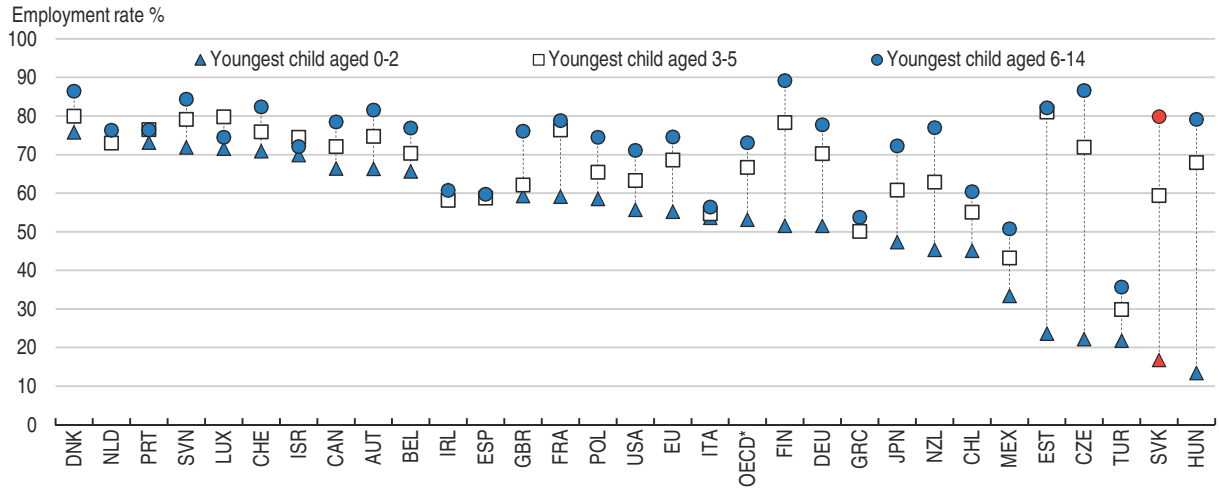
Improving labour market performance

Reforms are needed to make growth much more inclusive by widening the opportunity for women and disadvantaged groups to enhance and realise their potential in the labour market. This entails a search for removable barriers to employment. Despite recent improvements, employment rates remain below the OECD average, especially in the case

of women with small children (Figure 20) and disadvantaged groups, particularly Roma. The long-term unemployment rate is also high, and there are wide regional disparities in labour market outcomes.

Figure 20. **Mothers with young children tend to withdraw from the labour market**

Employment rates (%) for women with children by age of the youngest child, 2014



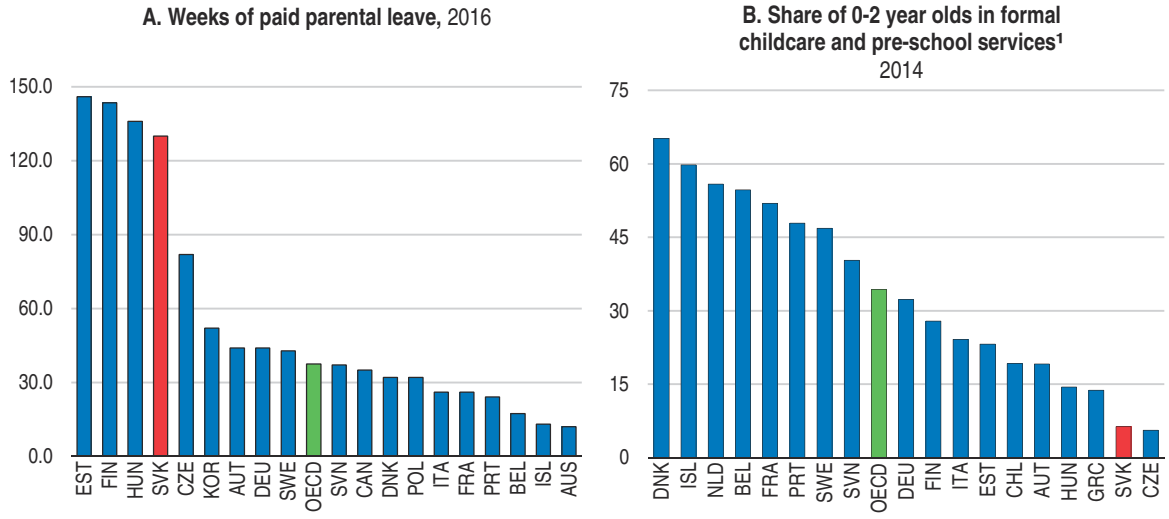
Note: OECD comprises 29 member countries.
Source: OECD Family Database (2017).

StatLink http://dx.doi.org/10.1787/888933500185

Encouraging women to join the labour market

Mothers with young children typically stay out of the labour market for long periods of time: Slovakia has one of the longest parental leaves in the OECD, mostly taken by mothers (Figure 21, Panel A). But, more importantly, a lack of childcare facilities tends to discourage

Figure 21. **Mothers with small children face incentives to work**



1. Data reflect children in day-care centres and pre-school (both public and private) and those who are cared for by liscensed childminders. It excludes informal services provided by relatives, friends or neighbours regardless of whether or not the service is paid for.

Source: OECD Family Database (2017).

StatLink http://dx.doi.org/10.1787/888933500204

mothers with small children from looking for jobs. Facilities for children under three are scarce, and only 3% of small children attend nurseries, compared to over 30% in the average OECD country (Panel B). As a result young families are often faced with a choice between employment and home child care. Extended periods of absence from the labour market tend to deteriorate their human capital leading to poor career prospects.

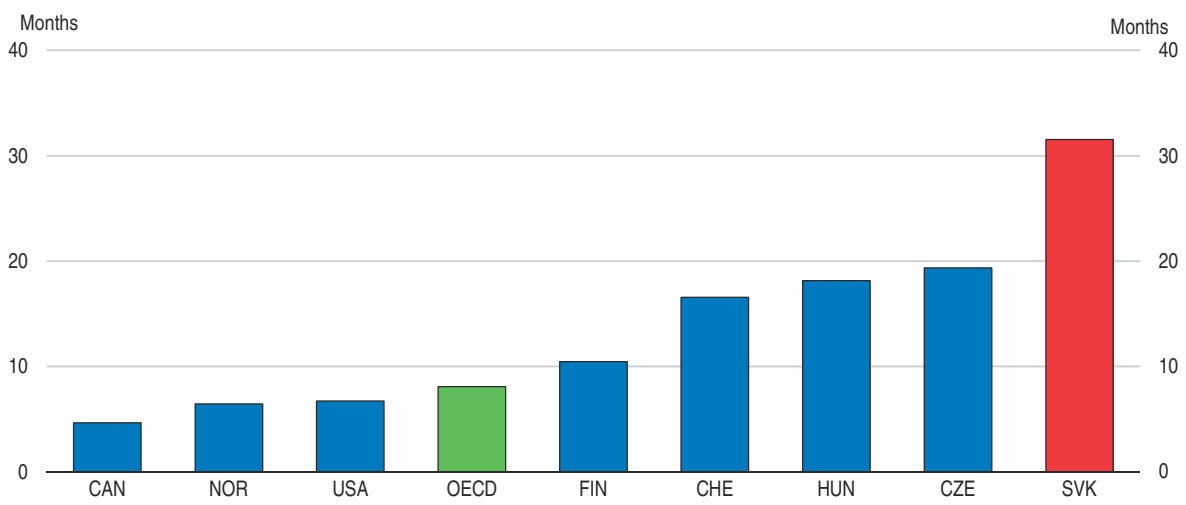
Reducing the length of parental leave would be politically difficult for cultural reasons, but to favour better gender balance of paid and unpaid work and encourage women to return to the labour market, a part of parental leave should be available for fathers only. A similar reform in Iceland increased the proportion of parental leave taken by fathers from 3% to around 35% (OECD, 2011a). Moreover, increasing the father's role in childcare is also associated with rising fertility rates and better child development later in life (Feyrer et al., 2008; Cools et al., 2015). For such a policy to have its greatest effect, early childcare facilities need to be expanded at a much faster pace. One way for mothers to get into the labour force could be part-time work, which is little used in Slovakia (3% of employees work part-time, against 20% in the OECD overall). Increasing part-time work in the public sector could provide an example for the private sector.

Reducing long-term unemployment

The other main challenge for the labour market is the integration of the long-term unemployed and the low-skilled into employment. Despite increasing employment, more than 60% of the unemployed have been out of work for more than a year, and the mean duration of unemployment is around 30 months, the highest in the OECD (Figure 22).

Figure 22. **Long-term unemployment is high**

Average duration of unemployment in months, 2015

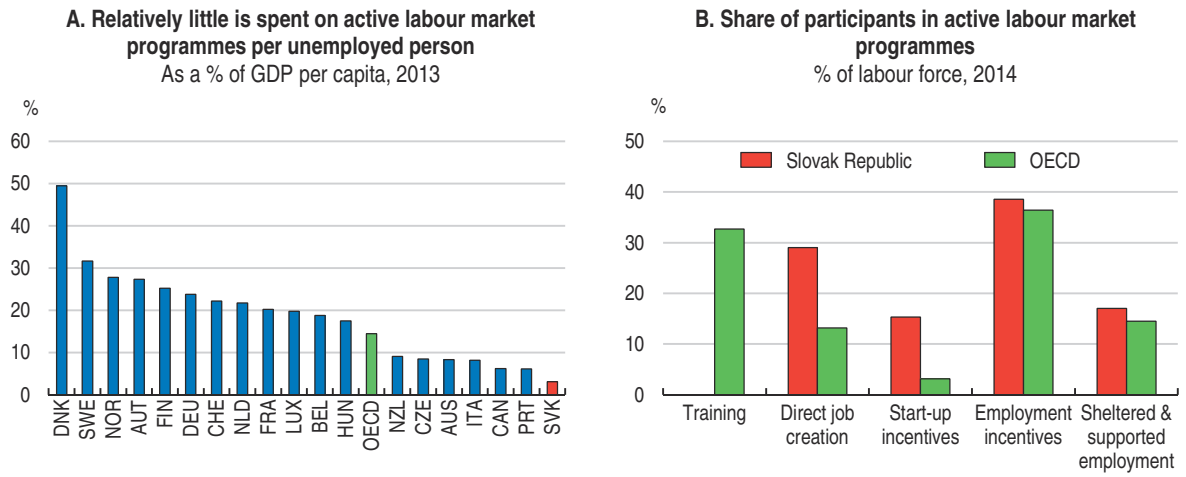


Source: OECD (2017), OECD Employment and Labour Market Statistics (database).

StatLink http://dx.doi.org/10.1787/888933500223

Spending on active labour market policies (ALMPs; for example, training and job search) is low by OECD standards (Figure 23, Panel A), and does not involve very much training, even though experience from other countries shows that training can be effective (Card et al., 2015). By contrast, public work schemes (so called activation works), which are heavily used in Slovakia for the low-skilled and long-term unemployed, have failed to improve their job

Figure 23. **Low spending in active labour market policies**



Source: OECD (2017), OECD Employment and Labour Market Statistics (database).

StatLink http://dx.doi.org/10.1787/888933500242

prospects (Hidas et al., 2016). This confirms other countries' experience that shows that participation in such schemes can lower the probability of finding employment after the programmes have ended, reflecting lock-in effects that prevent enrolees from job search or training activities (Card et al., 2015; Duell et al., 2010). Therefore, in line with recommendations in previous *Surveys*, training measures should be strengthened and job-creation programmes proposed only when no other options are available (OECD, 2012) (Table 9). The second value-for-money cycle focusing on labour-market-related spending provides an opportunity to implement such changes and to raise the effectiveness of ALMPs.

Table 9. **Past OECD recommendations on the labour market**

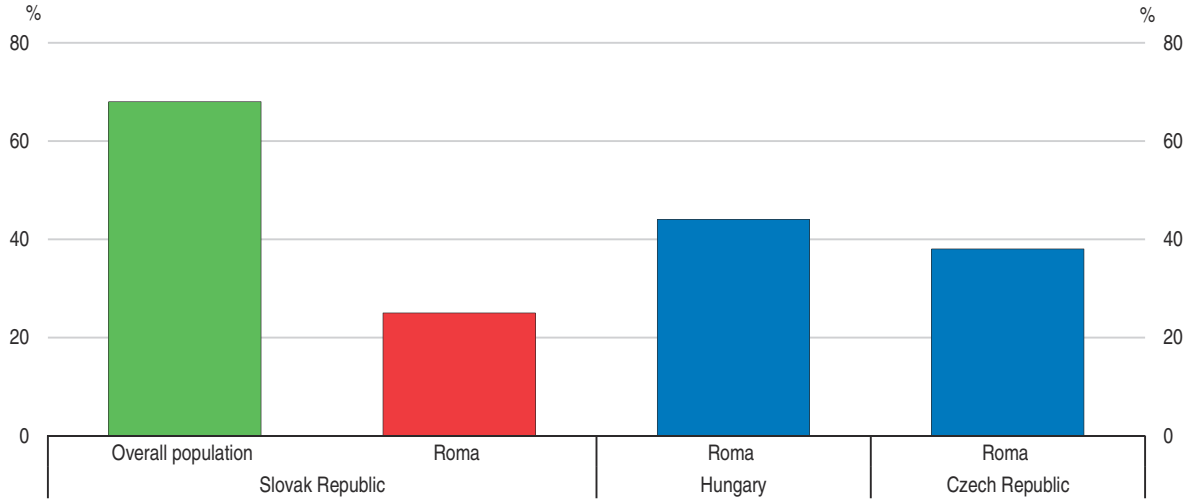
Recommendations in previous *Surveys*	Action taken since September 2014
Develop training as well as job-search support, and phase out public-works programmes.	As of October 2014 a new programme in the field of education and preparation for the labour market was introduced, which individualises requalification training. Changes to the Act on employment services effective 1 January 2016 and 1 May 2017 aim to improve the access of jobseekers to training and widen the range of available measures.
Implement systematic evaluations of ALMPs, and increase spending on programmes with demonstrated effectiveness. Continue to test new programmes with pilot projects before implementation at the national level.	A spending review of ALMPs was conducted at end-2016 and early-2017. The results have been published, but changes have not yet been implemented. An action plan to strengthen the integration of long-term unemployed in the labour market was published in early 2017.

Enhancing Roma integration

Roma have long been a particularly vulnerable and poorly integrated group. Their employment rate is only 25%, and they suffer heavily from long-term unemployment. Their labour market outcomes are much weaker not only compared to the general population, but also compared to Roma in neighbouring countries (Figure 24). These difficulties stem from inadequate education, a poor social environment and widespread discrimination

Figure 24. **Roma's employment is low**

2015



Source: EU (2016), Second European Union Minorities and Discrimination Survey, Roma – Selected findings, European Union, Agency for Fundamental Rights.

StatLink http://dx.doi.org/10.1787/888933500261

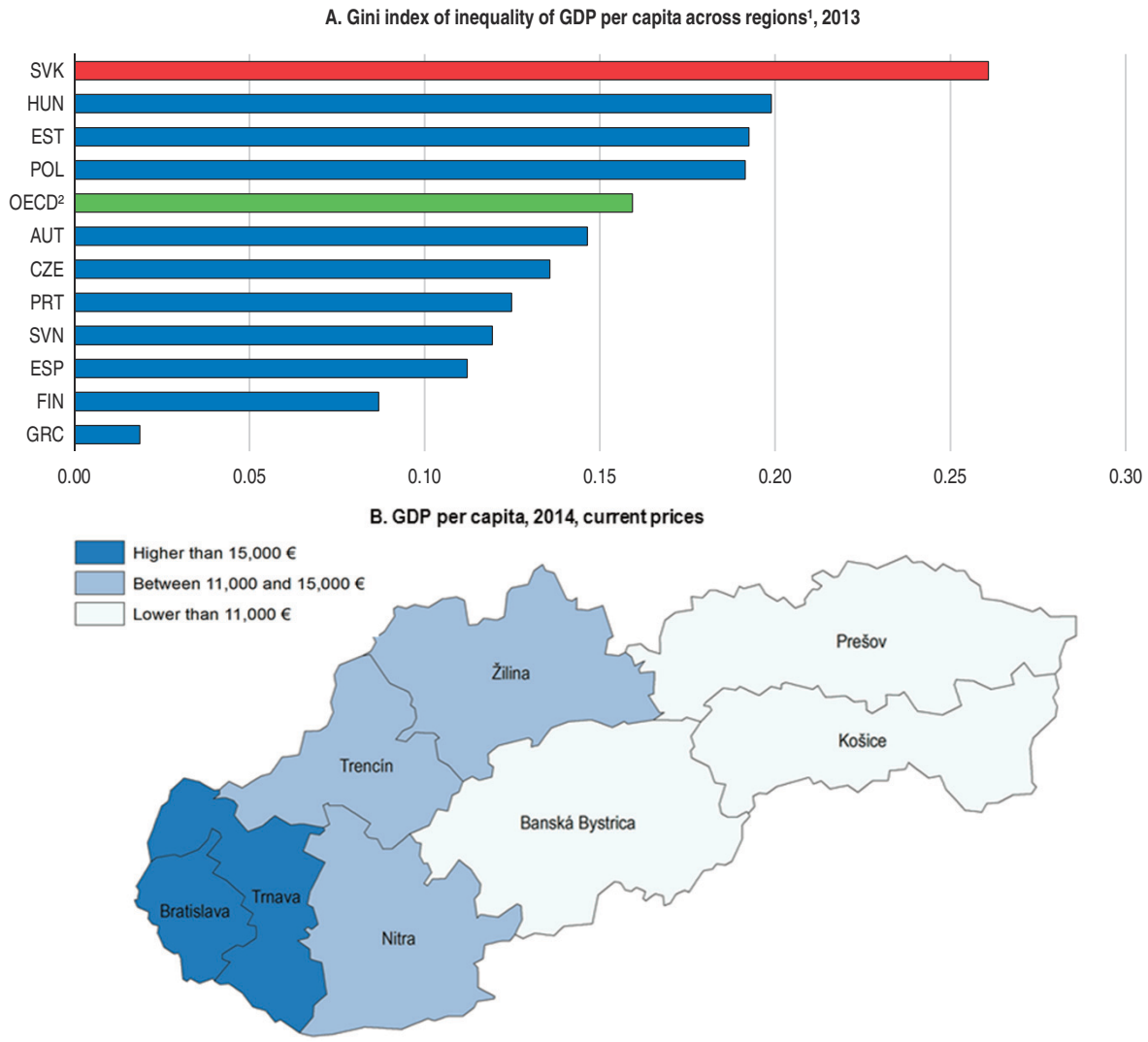
(Bartoš et al., 2014; Machlica et al., 2014). Roma live predominantly in rural areas, many do not speak Slovak, and their children usually do not attend pre-school (Gatti et al., 2016; UNDP, 2012). Moreover, Roma youth are overrepresented in special schools, which are designed for children with disabilities, although an initiative was launched in 2015 to prevent misdiagnosis of Roma students and their subsequent assignment to special schools (Chapter 1). Addressing this social challenge requires a multi-faceted approach in view of the complexity and persistence of their under performance.

The government has recognised the need for better integration of the Roma to give them a feeling of belonging to society and to save on future social welfare spending. In 2012 a strategy was put in place to this end, covering employment, education, health care and housing. In view of the limited progress made so far, the government has recently developed a more specific and detailed action plan and increased funding by 0.4% of GDP for the period 2016-18 (Ministry of Interior, 2017). Further efforts will probably be needed, including targeted labour market policies, high-quality education (Chapter 1), and increased enrolment of Roma children in pre-school (Roma enrolment rates are only half those of the general population). Indeed, following the example of several other EU member countries, such as Bulgaria, Poland, Romania and Hungary, obligatory pre-school education would be desirable. Hungary, with compulsory enrolment from the age of three, has almost the same enrolment rate in kindergartens for its Roma and non-Roma children. In any case, conditional cash transfers (CCTs) could improve pre-school attendance for children from poorer households following the Brazilian example. Empirical evaluations of CCT programmes and field experiments have shown positive effects on school attendance (EC, 2014a). For example, such a programme was introduced in Hungary in 2009, aiming to increase kindergarten enrolment of disadvantaged children aged 3 and 4. This led to much higher enrolment (Kertesi and Kézdi, 2013). Finally, statistics on the Roma are poor and unreliable, and better data would improve the design and evaluation of programmes for them (EC, 2016b).

Promoting a deeper rental housing market to improve workers' mobility and reduce regional imbalances

Regional inequalities are among the highest among OECD countries, with sharp differences between the per capita GDP in Bratislava and the rest of the western part of the country and the lagging central and eastern regions (Figure 25). This issue was discussed extensively in the 2014 *Survey* (OECD, 2014a), and the main manifestation of regional imbalances was found in sharp differences in labour market performance (Figure 26, Panel A). In response to this situation, in 2016 the authorities adopted a set of action plans covering the period to 2020 to support 12 out of the 79 districts that are most affected by high unemployment. It aims to support growth and employment in these regions with particular attention to marginalised Roma communities by improving municipal infrastructure,

Figure 25. **Regional economic inequalities**

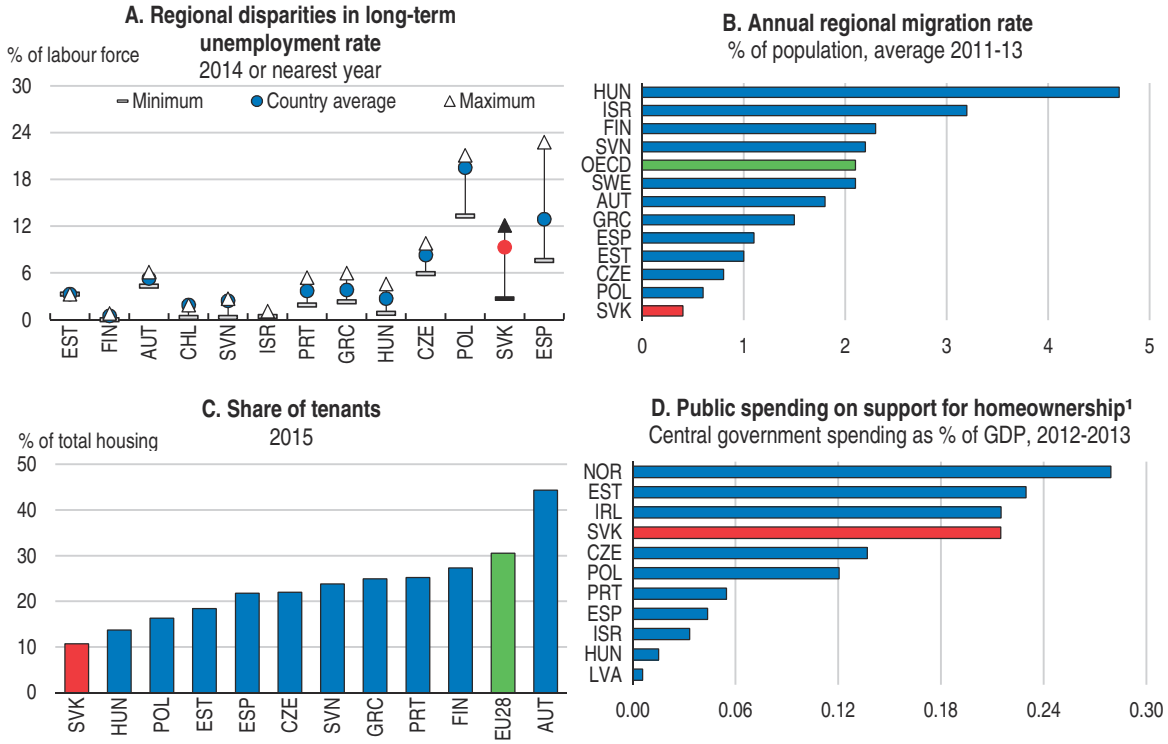


1. The Gini coefficient is calculated for GDP per capita across regions with equal weight to each region regardless of its size, and it has a range from zero (no disparity) to one. Increasing values of the Gini coefficient thus indicate higher inequality in regions.
2. Unweighted average.

Source: OECD (2016), *OECD Regions at a Glance 2016*.

StatLink http://dx.doi.org/10.1787/888933500280

Figure 26. **Regional mobility and housing indicators**



1. Data are based on OECD Questionnaire on Affordable and Social Housing 2014 except for the Slovakia data coming from the paper of P. Harvan et al., (2016). For Spain, spending data for some policy instruments are missing and the reported amount is a lower-bound estimate.

Source: OECD (2016), OECD Economic Outlook: Statistics and Projections (database); OECD Tax Statistics (database); OECD (2016), *OECD Regions at a Glance 2016*; A. Salvi del Pero, W. Adema, V. Ferraro and V. Frey, "Policies to promote access to good-quality affordable housing in OECD countries", *OECD Social, Employment and Migration Working Papers*, No. 176, OECD Publishing; Harvan, P., A. Jevčák, P. Pont'uch and V. Solanič, "The Impact of Rapid Credit Growth on Slovakia's Housing Market", *Economic Brief 006*, European Commission, December.

StatLink http://dx.doi.org/10.1787/888933500299

adopting specific training measures for youth and promoting entrepreneurship and the comparative advantages of these districts.

One reason for these labour market disparities is very low worker mobility, which is related to the lack of rental housing (Andrews et al., 2011) (Figure 26, Panel B). Rentals accounted for less than 10% of the property market in 2013 (Panel C). Lack of rental accommodation makes it financially very difficult for those in lagging regions to seize employment opportunities elsewhere. As recommended in the previous *Survey*, developing the rental sector would improve inter-regional mobility and access to employment (Table 10). This would be particularly beneficial for young people (25-34), who cannot afford to buy a dwelling (Harvan et al., 2015).

Table 10. **Past OECD recommendations on the housing sector**

Recommendations in previous *Surveys*	Action taken since September 2014
To develop the rental housing market, phase out support to home ownership, and expand means-tested rental housing allowances. Suppress grants allocated to youth for housing purchases, the state bonus on saving devoted to housing purchase and mortgage subsidies.	Loan conditions available to municipalities to develop social rental housing have become more favourable since January 2016.
Allow more flexibility for rental contracts, and develop the use of extendible fixed-term contracts.	No action taken.

Reducing financial incentives for homeownership and introducing a more balanced regulation of landlord-tenant rights would deepen the rental sector. This would involve reorienting current housing subsidies for homeownership (Figure 26, Panel D) to rental housing by introducing, for instance, a means-tested allowance for young people. Current rental regulations favour short-term rentals (up to two years), which do not offer a genuine alternative to ownership, while existing indefinite contracts protect tenants excessively against the risks of eviction, even if they do not pay their rent, which discourages rental supply (Vagac, 2013; Harvan et al., 2015).

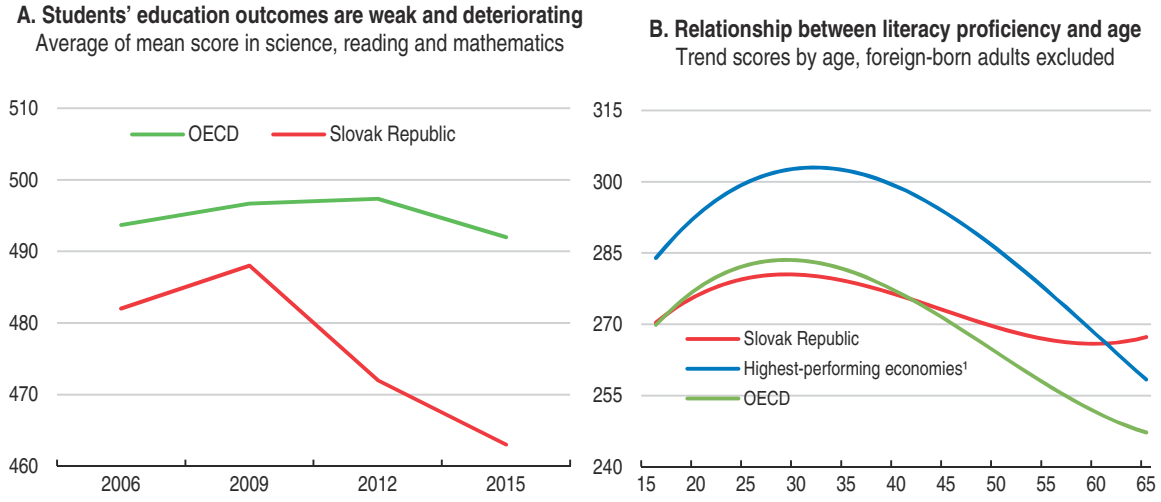
Reform of the Slovak rental market seems warranted and has been recommended in past *Surveys*. The introduction of regulations making medium-term renting a more reliable housing option would foster the development of a broader, more stable private rental housing market. In this sense, increasing minimum contract duration beyond two years and limiting the right of landlords to evict their tenants to only specific reasons (e.g. if the tenant fails to pay the rent or if the landlord wants to sell the dwelling or occupy it) would go in the right direction. Introducing a ceiling for the maximum annual increase of rents during the term of the lease would also increase the predictability of rents, but runs the risk of, over time, keeping rents too low and thereby constraining the supply of rental dwellings. Linking rent increases to economic conditions and allowing landlords to reset rents for new tenants would alleviate this problem. Relatively rapid legal eviction procedures for non-payment of rents or destruction of property would also probably help to ease potential bottlenecks of rental housing supply.

Enhancing skills to better meet labour market demand and foster inclusive productivity

Slovakia's educational outcomes are below the OECD average, and the education system does not prepare young people well for changes in the labour market. PISA outcomes for 15 year-olds are weak in international comparison and have deteriorated over time (Figure 27, Panel A). Similarly, skills of young people are falling behind, and their literacy results are lower than for average OECD youth and significantly worse than the best OECD performers (Panel B). Moreover, many people have very poor problem-solving skills and are not ready to use new information and communication technologies (ICTs). One quarter of the adult population is fully computer illiterate (PIAAC – National report, 2013), which is problematic given the growing importance of IT skills linked to the development of the digital economy.

Highly qualified and motivated teachers are the key to strong learning outcomes (Chetty et al., 2014). But Slovakian teachers are poorly paid, even in relation to other salaries (Figure 28), and only 4% of them reported that their profession is valued in society (OECD, 2013b). The government has recognised the problem and has increased teachers' salaries by 5% annually in the four years ending in 2015 and 10% in two steps in 2016. The government committed to raise teacher salaries by 6% per year on the average between 2016 and 2020 conditional on further structural reforms to boost quality of education (Table 11). While pay is not the only factor determining teacher quality, still further increases will be needed to attract good students to the profession. Making these or even faster pay increases conditional on improved teaching quality with a view to target the disadvantaged children would be beneficial. More teachers should engage in professional development (currently fewer than three in four do so annually), and its quality also needs to be raised. In other OECD countries managed professional development, with teachers

Figure 27. **Adult skills in literacy and problem solving**

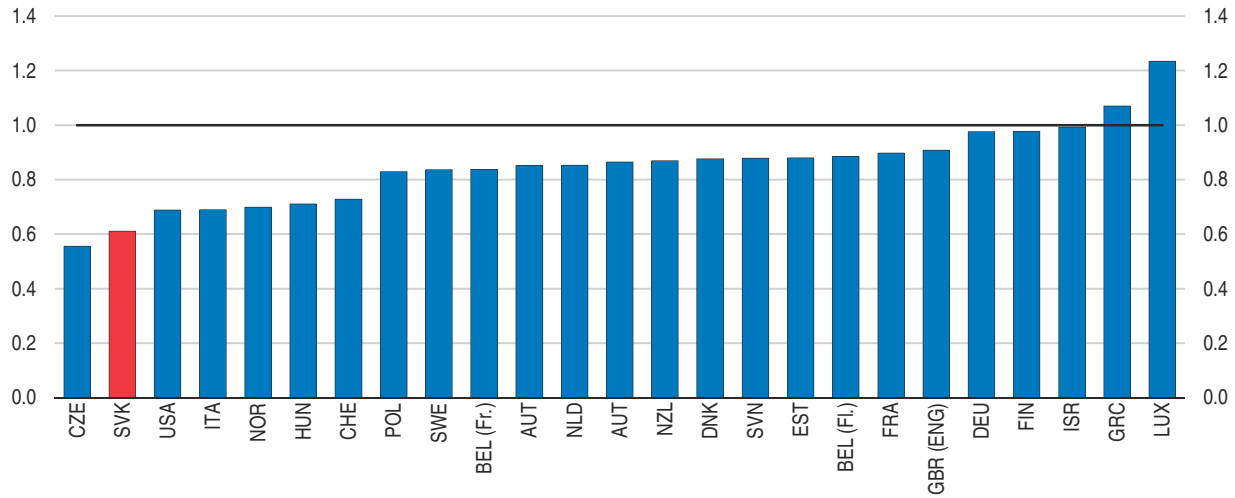


1. Unweighted average of Australia, Finland, Japan, New Zealand and Netherlands.
Source: OECD (2016), *Skills Matter: Further Results from the Survey of Adult Skills*; OECD (2013), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*; OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education.*

StatLink http://dx.doi.org/10.1787/888933500318

Figure 28. **Teachers are amongst the lowest paid in the OECD**

Ratio of average teachers' salaries[1] to the wages of workers aged 25-64 with tertiary education, 2014



1. Salaries of lower secondary teachers for general programmes in public institutions including bonuses and allowances.
Source: OECD (2016), *Education at a Glance 2016: OECD Indicators.*

StatLink http://dx.doi.org/10.1787/888933500337

receiving precise instruction together with specific, regular feedback under the mentorship of a lead teacher, has had large positive effects (Fryer, 2016). Teaching quality could also be enhanced by using more ICT.

Education attainment in the Slovak Republic is comparatively high, as almost two-thirds of adults have at least upper secondary education (compared to the OECD average of 40%), However, education policy should provide special support for students coming from disadvantaged backgrounds, particularly the Roma, as student background is a particularly important factor in student achievement in Slovakia (OECD, 2016d). Roma students'

Table 11. **Past OECD recommendations on education**

Recommendations in previous *Surveys*	Action taken since September 2014
Increase the wages of teachers, and take structural measures to increase the efficiency of the system. Improve the use of available evaluations to identify dysfunctional schools as well as best practices.	The teachers' salaries increased by 5% annually in the four years ending in 2015 and 10% in two steps in 2016. The government committed to raise teacher salaries by 6% per year on the average between 2016 and 2020 conditional on further structural reforms to boost quality of education.
Develop the provision and quality of early childhood education, and ensure wide access to children from low socio-economic backgrounds, especially Roma children.	In 2015 the government increased the funding for kindergartens, allowing more than 5 000 new kindergarten places to be created. Extension of pre-school capacity will be supported in the municipalities with the highest segregation.
Strengthen incentives for the integration of pupils with special needs in the standard system. Raise support to disadvantaged pupils. Further encourage participation of children from low-income families and Roma in pre-primary education and the integration of Roma in mainstream education.	Around 890 new teaching assistants for children with disabilities have been hired. In 2015 a law was approved to better control the diagnosis of students with special needs and prevent the misplacement of Roma children in special schools or classes for financial reasons. New action plans for integration of Roma were adopted in early 2017.
Make tertiary education more attractive to technical secondary school graduates: develop short (2-3 year) occupationally oriented programmes. Introduce tuition fees coupled with income-contingent repayments. Facilitate entry of new institutions. Make budgetary allocations to universities more dependent on outcomes.	No action taken. Accreditation standards for new occupationally oriented programmes are currently being developed.
Enhance incentives for employers to allocate more resources and time to training. Pursue initiatives aiming at easing the recognition of non-formal education. Establish training vouchers to boost participation in lifelong learning.	Discussions are currently taking place between working groups on the new law on lifelong learning about the design of training vouchers.

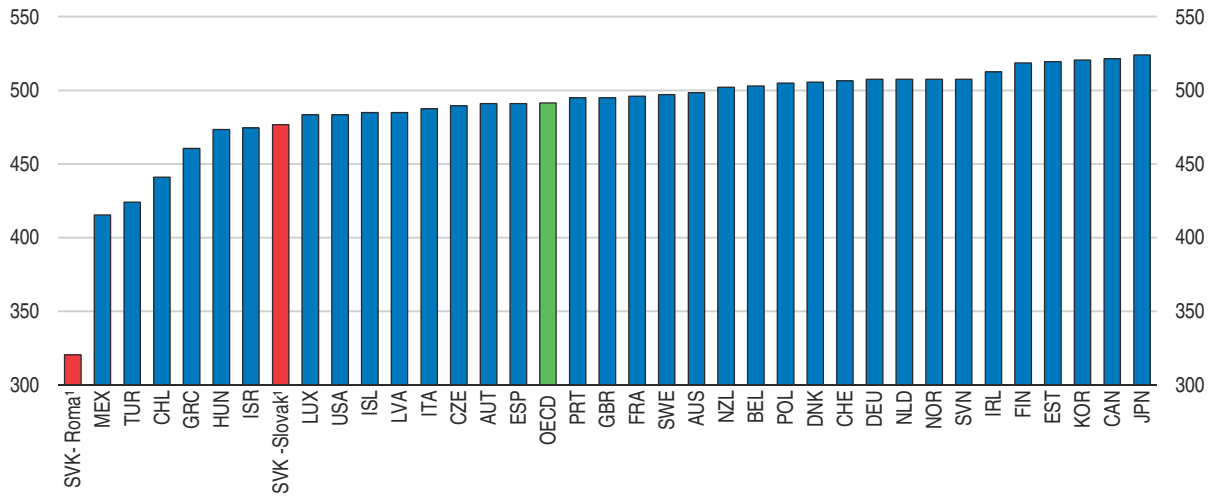
outcomes are significantly worse than those of the non-Roma population (Figure 29). Therefore, the incentives for qualified and experienced teachers to teach in disadvantaged regions should be strengthened by introducing special allowances or in-kind support. At the same time, poorly performing students should receive teaching adapted to their abilities and needs by increasing the number of teaching assistants, particularly those who can speak Roma.

Along with more R&D (which remains at only around 1% of GDP), tertiary education changes could also move Slovakia up the global value chain and stimulate productivity growth in an increasingly knowledge-driven global economy. Slovak tertiary institutions fail to prepare enough high-skilled workers for the needs of the labour market (Figure 30). The quality of tertiary education is among the weakest of Member countries, according to available international assessment (U21, 2016). Moreover, this quality is low even in regional comparison. Neighbouring countries have many more institutions among top universities in international rankings than Slovakia, and a growing number of talented Slovak students choose to study abroad (see below). The share of these students is one of the highest in the OECD, with most of them studying in the Czech Republic, as Czech tertiary institutions offer a better education according to a majority (82%) of them (Koucky, 2015).

There is substantial scope to raise the quality of university research. It produces a large volume of publications, but relatively few researchers are able to produce citable publications that could be considered as excellent (Figure 31). While funding for tertiary education is partly based on performance in research, assessment does not make a clear distinction between higher- and lower-quality research (Ministry of Education, 2016). To promote higher-quality research the transparency and autonomy of the Accreditation Committee, responsible for quality assurance, should be strengthened (EC, 2015b). This Committee

Figure 29. **Roma student performance is weak**

Average PISA scores in mathematics and reading, 2015



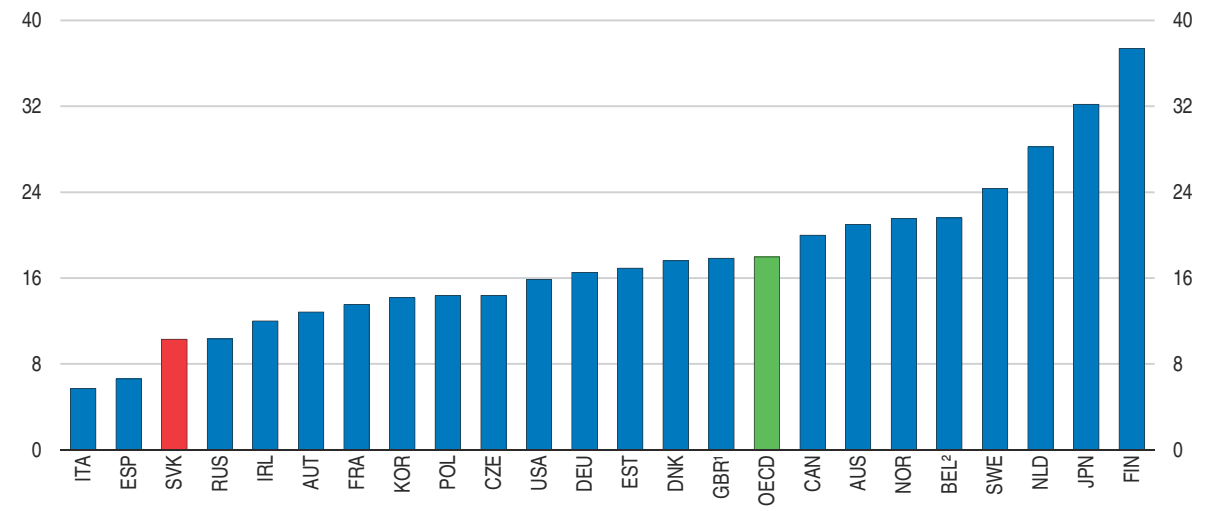
1. Each group is based on the same language spoken at home.

Source: OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*; and OECD calculations based on PISA 2015 Database.

StatLink http://dx.doi.org/10.1787/888933500356

Figure 30. **A low proportion of young adults have high-level literacy skills**

Percentage of adults aged 24-35 scoring at PIAAC literacy proficiency level 4 or 5, 2012



1. England and Northern Ireland only.
2. Flanders only.

Source: Haugh, D., Y. Jin and A. González Pandiella (2016), "Growing together: Towards a more inclusive Ireland", *OECD Economics Department Working Papers*, No. 1293.

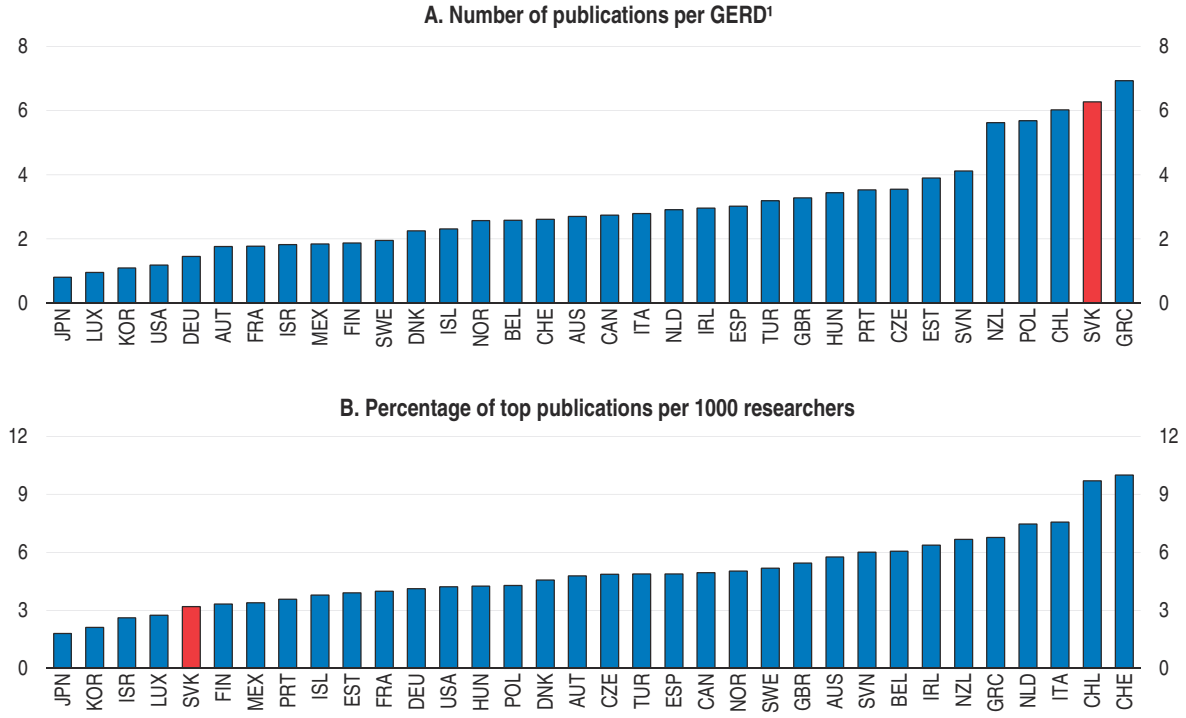
StatLink http://dx.doi.org/10.1787/888933500375

should be independent of the Ministry of Education, and its members should not have any relations with any institution they assess (ENQA, 2013). In addition, funding should favour internationally recognised research outputs.

Another major challenge for Slovakia's tertiary education system is to strengthen its links with the labour market. Transfers of knowledge and collaboration with the labour

Figure 31. **Slovak researchers produce many publications, but their average quality is poor**

Number of documents and percentage among world's 10% most cited, average 2003-12



1. Gross domestic expenditure on R&D in million constant USD (constant prices and PPPs).

Source: OECD (2016), OECD Science, Technology and R&D Statistics (database); OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society*; and Scimago, J.R. (*www.scimagojr.com*).

StatLink http://dx.doi.org/10.1787/888933500394

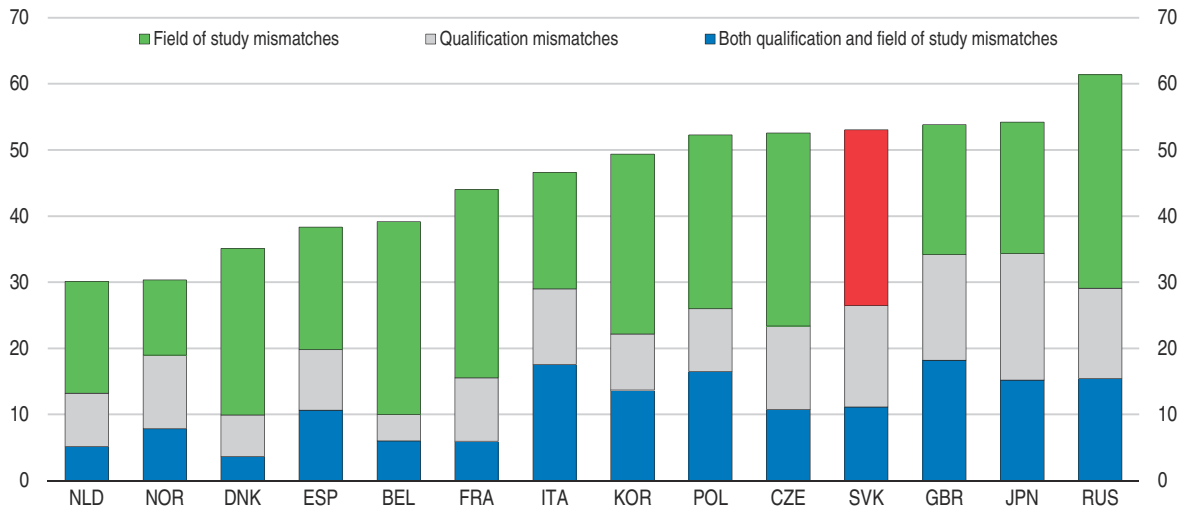
market are among the weakest in the OECD (WEF, 2016). A majority of students have academic-oriented studies and lack work experience, which slows skills acquisition. Only one-third of tertiary students gain some work experience during their studies, one of the lowest shares in the OECD. Moreover, most of these students work in areas outside their field of study, and skills mismatch is higher than in other OECD countries (Figure 32).

In most OECD countries the business sector participates more actively in the governance and teaching process than in Slovakia, particularly in the case of tertiary vocational schools. Boosting the co-operation between firms and schools could be achieved by introducing short (three-year) professionally oriented bachelor programmes. As well, authorities should consider linking funding to labour market outcomes. Schools that co-operate with the private sector in research or practical training could be financially rewarded. In some countries institutions receive a sizeable share of public funds through developmental programmes attached to specific policy objectives (OECD, 2008a). Students could also be incentivised to work in related fields alongside their studies to gain practical skills. Schools should be encouraged, for example, to increase academic credits for participation in work-based learning.

Another way to increase the supply of skilled workers is to attract foreign workers. However, the Slovak Republic now has the opposite problem: emigration of young talented workers. To a large extent, this reflects significant wage differentials, which ultimately can be corrected only through the long process of raising Slovakian productivity and, therefore,

Figure 32. **Qualification and education mismatches among young tertiary educated graduates are high**

Less than 35 year-olds



Source: OECD (2012), *The Survey of Adult Skills* (PIAAC).

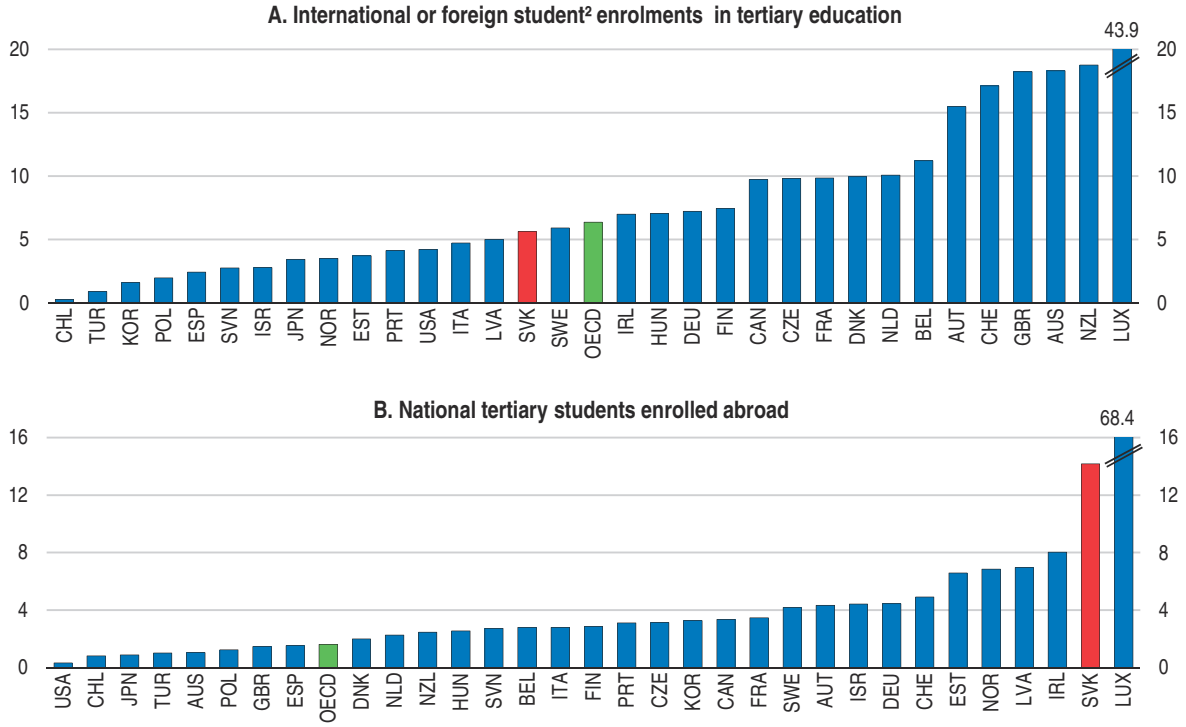
StatLink http://dx.doi.org/10.1787/888933500413

real wages. Nevertheless, the government should target skilled Slovaks working abroad, as return migrants can bring back skills, networks and financial capital, which can help spur innovation and growth (OECD, 2008b). Currently, there are two government schemes to attract return migrants, but their impact has been limited so far (see Chapter 1). The authorities should scale up these schemes and enhance their effectiveness, targeting especially skilled workers. In addition, the government should develop a comprehensive strategy to maintain ties with the large expatriate community. An information system should be set up to connect with the diaspora abroad and facilitate its engagement. The system should target and address emigrants soon after emigration, as the probability of return decreases after five years of living abroad (Pungas et al., 2012).

Immigration laws should be eased to attract more skilled workers. Given the Slovak Republic's membership in the European Economic Area (EEA), the scope for attracting skilled migrants is restricted for those from outside the EEA. However, these potential immigrants could be deterred by some of the strict features of Slovak immigration laws. The conditions for attributing Blue Cards, which grant special residency rights and work permits to highly-skilled migrants outside of Europe, are stricter than in other EU countries, and the public service allows only EU citizens to apply for a job (see Chapter 1). A recent initiative, currently being discussed in the parliament, aims to ease these regulations for non-EU workers. This is a welcome step and should ensure that it brings such laws and rules close to best practices (OECD, 2014b). Also, the government should step up efforts to attract international students, who can have a positive impact on the supply of skilled workers, as, on average, one-third of international students decide to remain in the host country after graduation (OECD, 2011b). However, Slovak tertiary education attracts fewer international students than other OECD countries (Figure 33). Therefore, the government should increase the provision of tertiary education programmes in foreign languages and strengthen scholarship programmes for talented foreign students.

Figure 33. **Many Slovak students study abroad and only few foreigners study in the Slovak Republic**

Percentage of total tertiary students, 2014[1]



1. 2013 for Canada.
2. International students refer to students who have moved from their country of origin with the purpose of studying. Foreign students refer to students who are not citizens of the countries in which they are enrolled, but may be long-term residents or were born in that country.

Source: OECD (2016), *Education at a glance 2016: OECD Indicators*.

StatLink http://dx.doi.org/10.1787/888933500432

Improving well-being and sustainable development

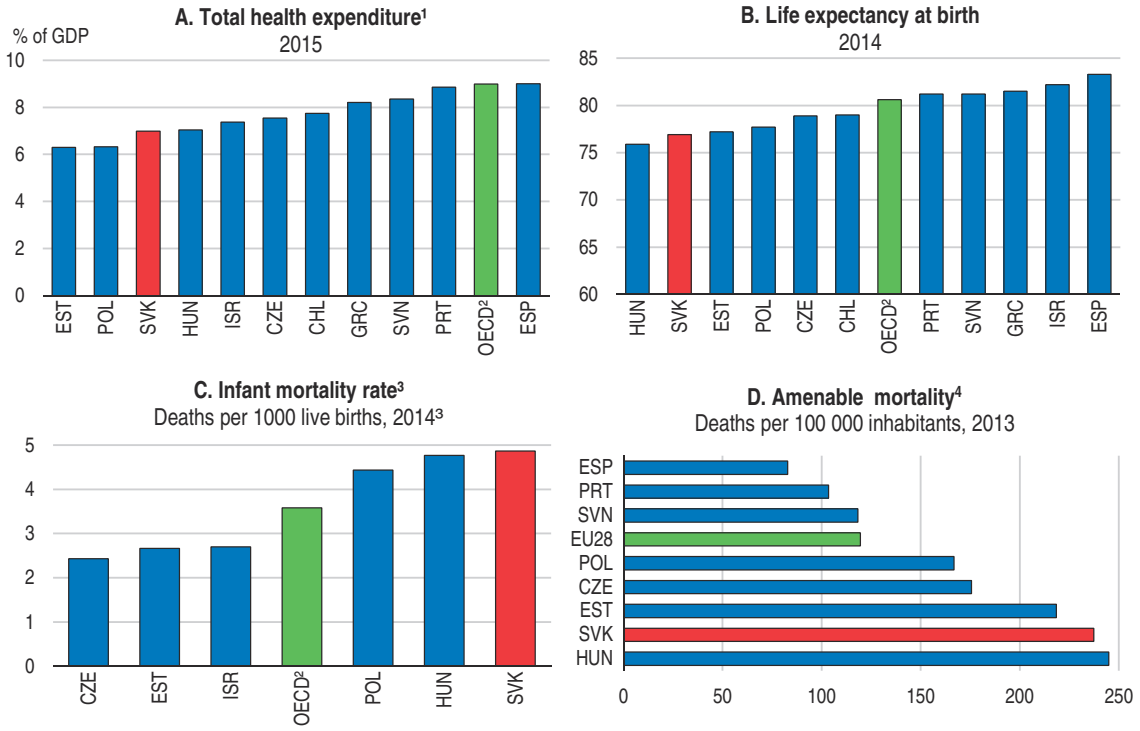
The policy challenge for the authorities is not only to enhance economic growth but also to improve citizens' well-being and make growth more inclusive and sustainable. Indeed, since the adoption of the 2030 United Nations Agenda for Sustainable Development, the Slovak government, like other OECD countries', has subscribed to achieving a series of sustainable development goals in a wide range of areas cutting across and complementing the OECD well-being indicators (Slovak Republic, 2016; OECD, 2016e). Achieving these objectives requires a whole-of-government approach. *Inter alia* this implies focusing on improving outcomes in areas such as education, access to adequate employment and housing, gender equity and the fight against corruption, as mentioned above. Progress is also needed to promote a more efficient health-care system, better health outcomes and improved environmental performance, as discussed below.

A more efficient health-care system would enhance well-being

The reduction of the gap in Slovak living standards with the OECD average over the last decade has not been matched by similar progress in health outcomes. Despite substantially increased health-care spending since 2000, health status remains poor in international comparison, even after controlling for differences in per capita income and lifestyle factors

(Figure 34). Although health statistics for Roma are often missing, available evidence indicates that large health inequalities exist between the Roma and non-Roma population, with an estimated gap in life expectancy at birth of 10 to 20 years, depending on the degree of integration of the Roma communities, partly reflecting sizable mortality-rate differences among young people (Figure 35, Panel A). Widely perceived mismanagement of public health-care spending is also a source of general discontent (Panel B), as are frequent informal payments, difficulty in accessing out-patient medical services in rural areas and long waiting lists for some elective surgeries.

Figure 34. **Health-care spending and outcomes**



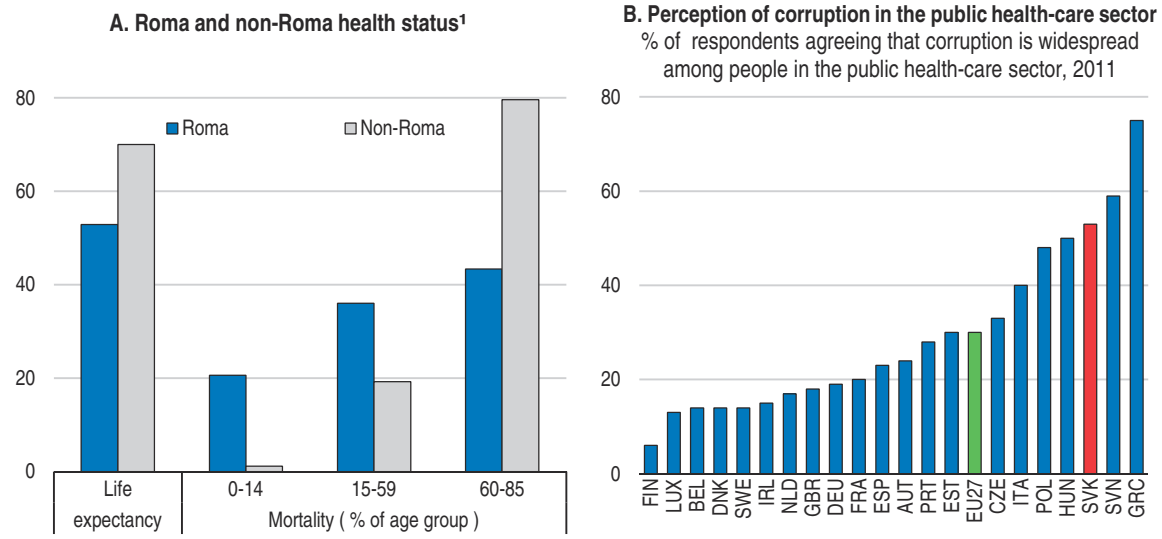
1. Excludes investment. All data in 2015 are estimated or provisional.
2. Unweighted average.
3. Based on the minimum threshold of 22 weeks of gestation period (or 500 grams birthweight). Three-year average (2012-14).
4. Defined as deaths from selected disease groups that could have been potentially avoided through good quality health care. Data based Eurostat's list.

Source: OECD (2016), OECD Health Statistics (database), Eurostat (2016), Health Statistics (database).

StatLink http://dx.doi.org/10.1787/888933500451

Gains in average life expectancy at birth could be much greater than elsewhere in the OECD if medical spending was as efficient as in the top-ranking countries (Figure 36). Healthy people are more productive and more active, with less absenteeism and longer working lives, resulting in higher lifetime incomes and well-being. Promoting efficiency is also necessary to contain public health-care spending, which will otherwise rise as the population ages (Filko et al., 2012). Improving the health of underprivileged communities also matters because it will help to reduce the high rate of amenable mortality and ultimately boost inclusiveness. However, better health outcomes especially for vulnerable groups, while keeping spending under control, requires reforms in several areas. Aware of this need, after the 2016 elections, the new government has introduced 26 reform projects which aim to address several of the deficiencies of Slovak health care system, as discussed below.

Figure 35. **Health inequalities and perceived mismanagement**



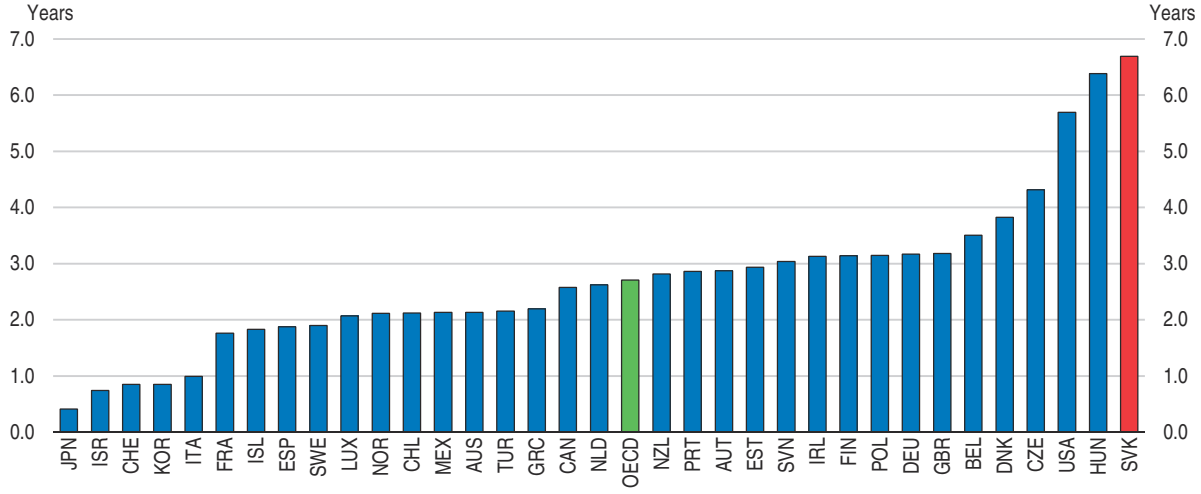
1. Research based on field work in three areas with each Roma community representing 10 to 25% of the total population.

Source: European Commission (2012), Special Eurobarometer 374: Corruption (fieldwork September 2011); and B. Gavurová et al. (2014), "Meranie zdravia a zdravotných rizík vo vybraných rómskych osadách na Slovensku – fakty a reflexie", in Nerovnost' a chudoba v Európskej únii a na Slovensku, 22-24 October, Košice.

StatLink http://dx.doi.org/10.1787/888933500470

Figure 36. **Potential efficiency gains in health care**

Potential gains in life expectancy[1], 2013



1. Data envelopment analysis (DEA) was performed with one output (life expectancy at birth) and two inputs (a composite indicator of the socio-economic environment and lifestyle factors and health-care spending). Potential gains are measured if efficiency in a country were to be raised to the level implied by the estimated efficiency frontier while holding inputs constant and under the assumption of non-increasing returns to scale.

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

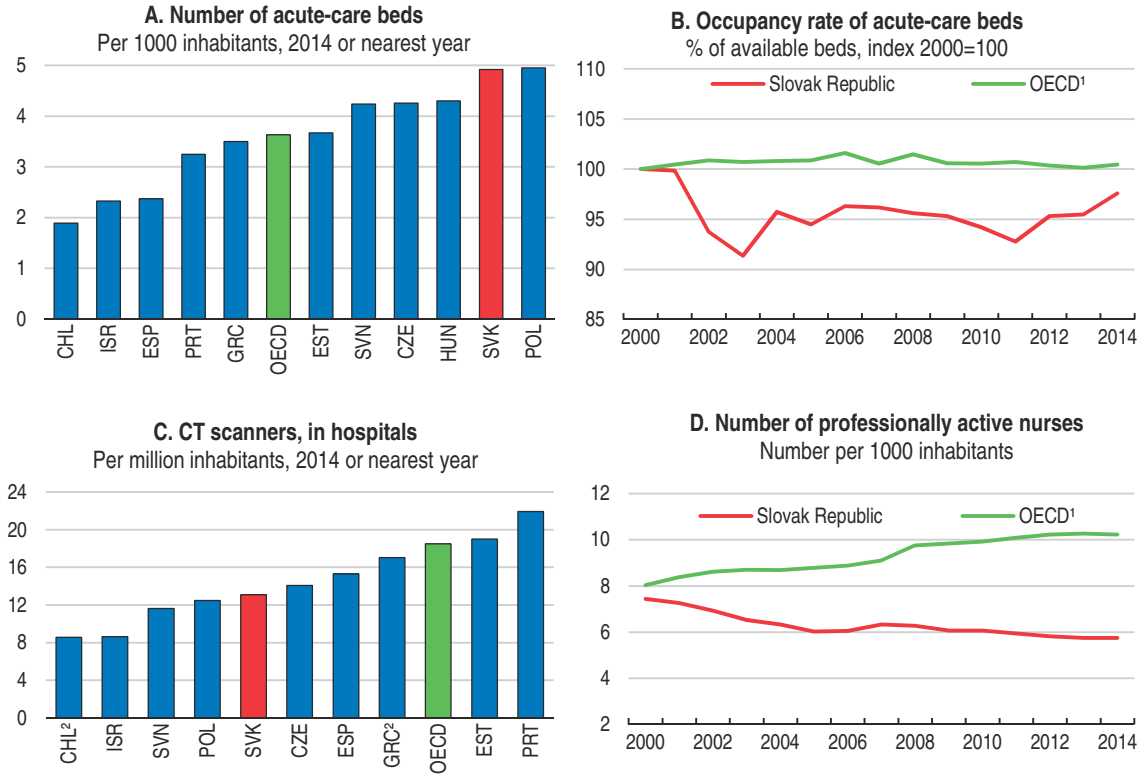
StatLink http://dx.doi.org/10.1787/888933500489

The system of public health insurance has three health insurance companies, including a public health insurer, covering almost two-thirds of the population. Health insurance premiums are fixed by law, and there is no supplementary health-insurance market. This public insurer can legally benefit from the state backing when it suffers losses, according to

EC rules, in view of the nature of the Slovak health insurance system, which is based predominantly on the principle of solidarity (EC, 2014b). On the other hand, the state lacks direct control over the entire health-care chain, and management costs are higher than they would be in a single-payer system (Chapter 2). According to available research, there is no single best health-care model, and model selection depends on history and social preferences (OECD, 2010), but the Slovak system would benefit from clarification of the roles of regulated competition and public provision. In this spirit, the new government has defined reform projects to further restrict the profits generated by health insurance companies and distributed to the private shareholders of health insurers as permitted by the Slovak Constitution and EU law, with a view to lower their management costs and improve the transparency in health care.

There is a case for rationalising hospital care. The number of acute-care beds per capita is high, and their occupancy rate is low (Figure 37, Panels A and B). Public procurement procedures are deficient and a source of waste (Zachar and Danciková, 2014), so the government has engaged efforts to solve this problem with the introduction of price referencing of medical devices and equipment and centralised procurement for CT scanners. After the 2016 election, the authorities have also prepared measures to modernise the emergency services and reduce the waiting times in hospitals through financing optimisation and better bed management. However, hospitals are still underequipped in terms of advanced technologies (Panels C and D) (Pažitný et al., 2014). Efficiency gains will be achieved if the 2017 introduction of a system of prices for treating diagnostic-related groups

Figure 37. **Hospital care**



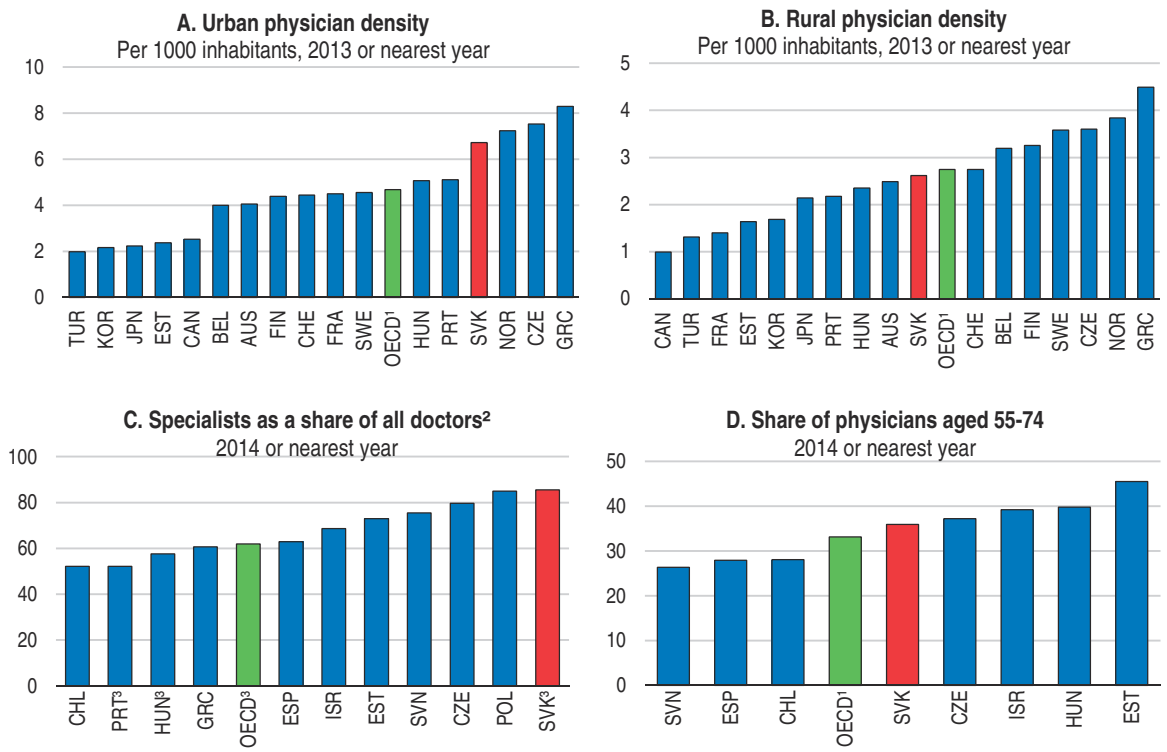
1. Unweighted average of data of the nearest available year.
Source: OECD (2016), OECD Health Statistics (database).

StatLink http://dx.doi.org/10.1787/888933500508

(DRGs) is transparently implemented, with audits to ensure proper DRG coding and pricing and penalties in case of fraud (Shah et al., 2015). The geographical distribution and specialisation of care in the hospital network also needs to be rationalised, reduced and geographically and functionally optimised, while ongoing efforts to streamline hospital procurement and to cut the number of acute-care beds should be pursued, even more vigorously. Moreover, political appointments of hospital directors should be ended and hospital management further professionalised. Decoupling salaries of medical staff in hospitals, mainly doctors, from average wage in the whole economy and introducing a more flexible system for setting pay, including a variable part related to the hospital performance in order to incentivise staff to adopt new working methods would be beneficial for hospital efficiency. On the other hand, serious consideration should be given to improving nurses' pay and working conditions, thereby reducing their incentive to emigrate.

Improving the efficiency and quality of primary health care is also crucial. Doctors are not evenly distributed between urban and rural districts across the country (Figure 38, Panels A and B). The share of general practitioners (GPs) is low compared to specialists, and many of them are close to retirement (Panels C and D). GPs also face restrictions regarding their competences and prescription-writing authority, which are unusual in OECD countries. Moreover, because their remuneration is essentially based on capitation, they have an incentive to increase the number of enrolled patients, but also to reduce the services

Figure 38. **Primary care indicators**



1. Unweighted average.
2. Specialists include paediatricians, obstetricians/gynaecologists, psychiatrists, medical, surgical and other specialists.
3. 2010 for Hungary and 2007 for Slovak Republic. Unweighted average of data for OECD countries for 2014 or nearest year. In Portugal, there is some double-counting of doctors with more than one specialty.

Source: OECD (2016), OECD Health Statistics (database); OECD (2015), *Health at a Glance 2015: OECD Indicators*; and OECD (2013), *Health at a Glance 2013: OECD Indicators*.

StatLink http://dx.doi.org/10.1787/888933500527

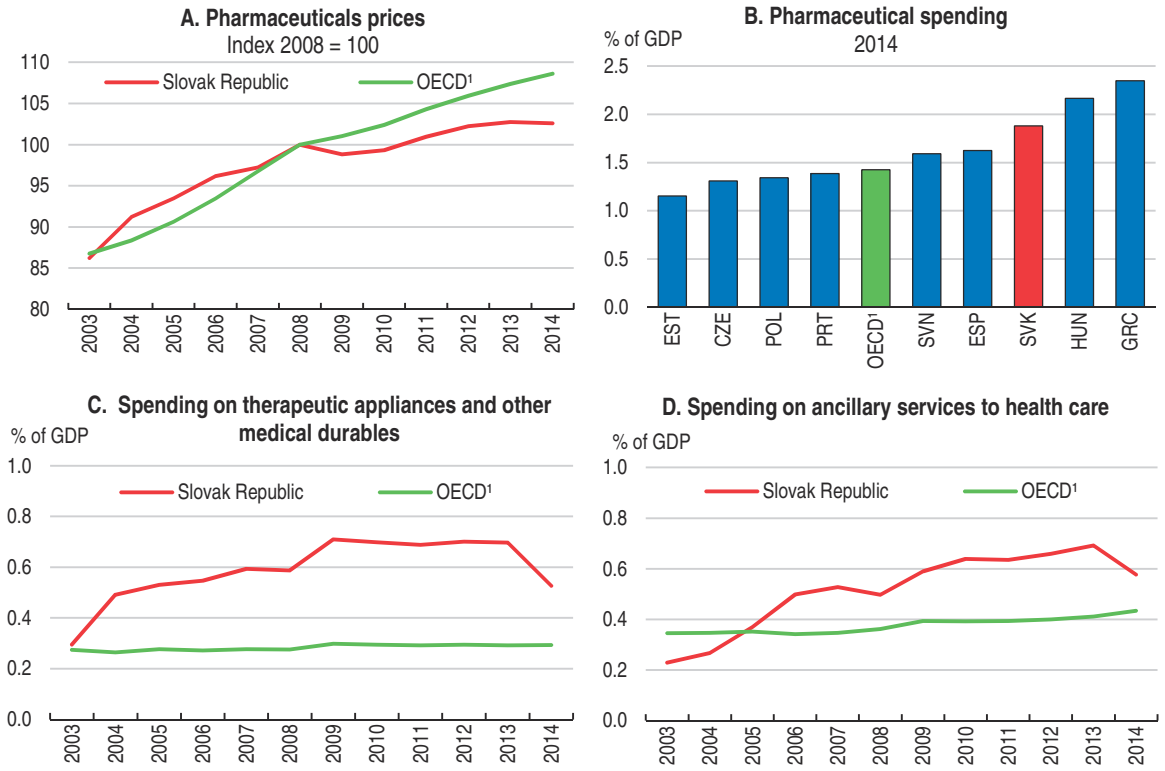
provided to each of them (OECD, 2016f). Available estimates suggest that almost 80% of consultations result in a referral to a specialist, which is high by international comparison and implies little use of GPs' gatekeeping function (MoH, 2013; Ringberg et al., 2013). Addressing these difficulties would enhance the quality of primary care, reduce amenable mortality, which is high (Figure 34, Panel D), and save on costs.

Some measures have been taken to address these issues. They include the development of the "Residential Programme" since 2014 to increase the attractiveness of being a GP or paediatrician to prevent a decline in their numbers due to retirements. GPs' skills are also being upgraded, including for the treatment of patients suffering from chronic diseases, such as diabetics. However, the restrictions on GPs' prescription-writing authority, which are unusually strict, should be lifted. Medical study places for GPs or paediatricians should be increased further and financial incentives introduced to attract them to rural areas (OECD, 2016g). Another reform option to consider is the widening of nurses' competences and responsibilities to perform some of the basic tasks of the GPs. A better balance between capitation and fee-for-service remuneration would improve patient care. Although some positive steps have been recently made by the government to better specify the payments and co-payments between physicians and patients, the scale of payments for specific services should be reviewed to ensure doctors have the right incentives. Finally, improved co-ordination with specialists in following standard clinical protocols, with closer management of many minor health issues by GPs thanks to a more rapid implementation of electronic personal health records, currently planned for 2021, would be desirable.

Efforts to lower pharmaceutical and other health-care spending should continue. Progress has been achieved over the last few decades thanks to the introduction of co-payments, the adoption of a reference-price system and the promotion of generics (Figure 39, Panel A). Nevertheless, pharmaceutical spending remains high (Panel B) and risks being increasingly difficult to control, given the development of costly speciality medicines, demand for which is growing with the rising incidence of chronic diseases. It would be hard to cut prices any further, because Slovak drugs already tend to be re-exported due to their low cost. However, the recent creation of a health technology assessment agency to analyse clinical effectiveness, safety and cost-effectiveness of new devices and drugs is a positive step. Ensuring that e-prescriptions are introduced as planned in the coming year will help avoid overconsumption through better coordination among providers. Consideration should be given to ban all "gifts" from pharmaceutical firms and testing labs to doctors. Research into the causes of the high level of spending on ancillary health services, including lab tests and patient transport, also seems warranted (Panels C and D) (MoF, 2016b).

The supply of long-term care is underdeveloped and fragmented (Figure 40, Panel A). Municipalities, which are responsible for the provision of these services, often lack the financial resources to respond adequately to the needs of dependent people, which are very frequently met by informal assistance. Access to long-term care now involves multiple existing channels of aid (health care, social support in cash or in kind), which depend on different bodies, making the system opaque and difficult for users to navigate (Vagac et al., 2014). Creating one-stop shops at the regional level with adequately trained personnel would help people navigate the system and lead to a better allocation of patients to services. Increasing the supply of home care delivered by adequately compensated family members or properly trained professional carers would also help families who currently shoulder most of

Figure 39. **Pharmaceutical and other medical goods and service spending**



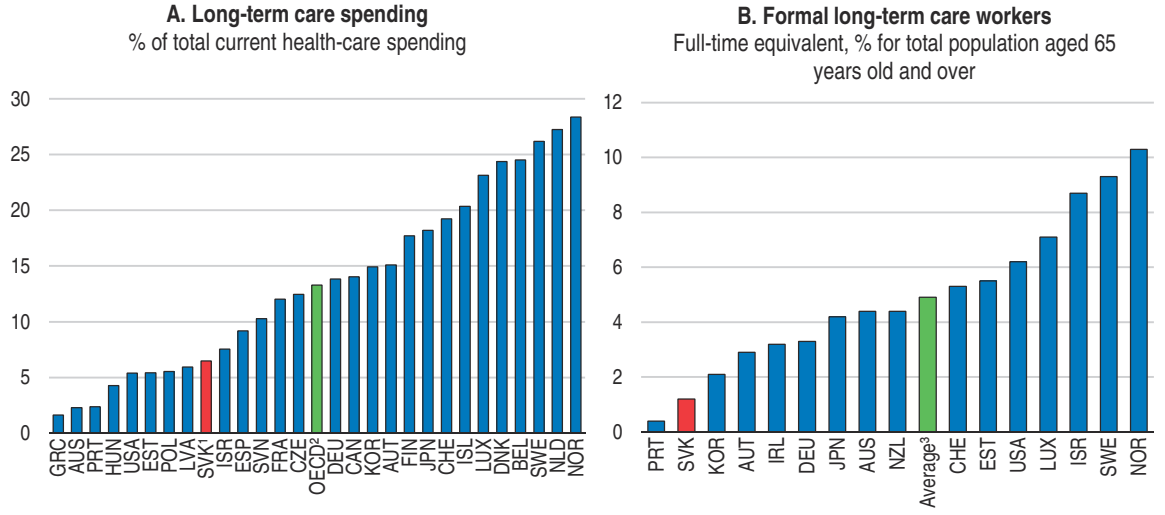
1. Unweighted average of data of the nearest available year.

Source: OECD (2016), OECD Health Statistics (database).

StatLink http://dx.doi.org/10.1787/888933500546

Figure 40. **Long-term care**

2014 or nearest year



1. Data from 2013. They include long-term care spending of EUR 344 million by the Slovak Ministry of Labour, Social Affairs and Family. Data for the Slovak Republic include social spending and are not fully comparable with other countries.
2. Unweighted average.
3. Unweighted average of the 12 countries shown in the figure.

Source: OECD (2016), OECD Health Statistics (database); Slovak Ministry of Labour, Social Affairs and Family.

StatLink http://dx.doi.org/10.1787/888933500565

the burden and could save costs as home care can be cheaper than institutionalised care. If not enough carers are forthcoming, the authorities could consider opening this market to immigrants, including from non-EU countries.

Finally, promoting healthier lifestyles would also improve health outcomes. Beyond tax measures to reduce consumption of alcohol and sugary beverages mentioned above, actions are needed to promote healthier behaviour among the Roma. Working alongside NGOs, the authorities have called on trained mediators from within the Roma communities to help patients to manage their own health and encourage up-take of vaccinations by accompanying them to the doctor and helping them to understand their prescribed treatments. This is important and welcome, because direct involvement of Roma mediators will help target the needs of the community and increase its sense of empowerment in health and well-being. The authorities should ensure that this programme is adequately resourced. In general, they should seek to involve the Roma community in other initiatives to improve their health outcomes through better water treatment, infrastructure access and housing (Gatti et al., 2016).

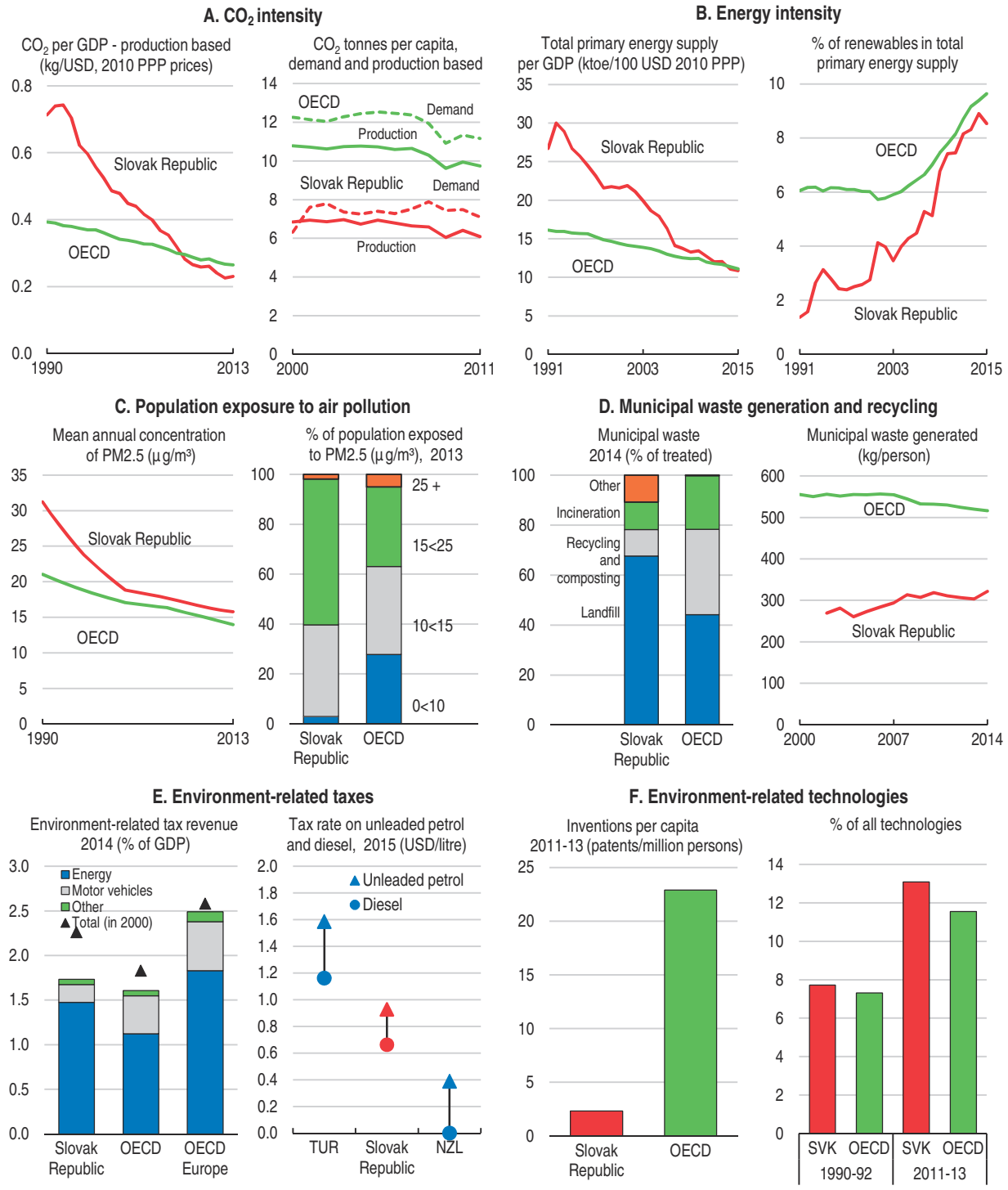
Improving environmental outcomes

Over the past few decades Slovakia has made good progress in shifting from fossil fuels to renewables in power generation and energy consumption. The country has substantially reduced its greenhouse gas (GHG) emissions and the energy intensity of its economy and also enhanced its air quality (Figure 41). It will fulfil its commitment to the EU 2020 targets of reducing emissions by 20% compared to 1990. For sectors not covered by EU ETS, 2013 emissions had also declined by 24% from 2005, although the national target is for an increase by 13% by 2020.

The share of people exposed to the worst level of pollution is lower than the OECD average. Nevertheless, few people escape from a significant degree of air pollution (Figure 41, Panel C), entailing comparatively high mortality risks (Figure 42). The implicit tax rate on energy remains one of the EU's lowest, and there are several tax exemptions, such as on household electricity consumption, and harmful environmental subsidies to domestic coal production for electricity generation and heating (OECD, 2014a). Making the tax system more environmentally friendly by removing these exemptions and coal subsidies and increasing fees or taxes linked to air pollution would be desirable, both from an economic and public-health perspective (Table 12). Slovakia should in particular base its car registration fee on vehicles' emissions as is already done in most EU countries (Acea, 2016).

Also, while household waste generation in Slovakia is well below the OECD average, the share that goes to landfill is much higher than average (Figure 41, Panel D), and the rate of recycling is only growing slowly (EC, 2017). A National Waste Act entered into force in January 2016 to bring waste management closer to European norms by shifting the recycling costs to producers and the responsibility for collecting and separating waste to municipalities. The 50% recycling target for 2020 set by the law seems to be overly ambitious, but higher landfill taxes would expedite the adjustment process.

Figure 41. **Green growth indicators: Slovak Republic**

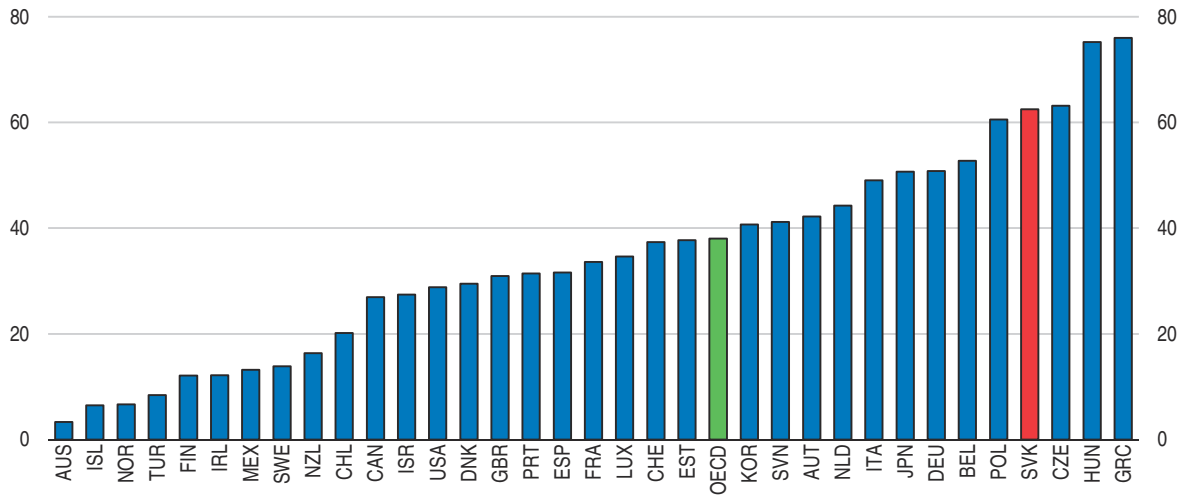


Source: OECD (2016), Green Growth Indicators (database). For detailed metadata click here.

StatLink http://dx.doi.org/10.1787/888933500584

Figure 42. **Deaths from ambient air pollution**[1]

Per 100 000 population, 2013



1. Deaths from ambient particulate matter and ozone pollution.
Source: Institute for Health Metrics and Evaluation.

StatLink http://dx.doi.org/10.1787/888933500603

Table 12. **Past OECD recommendations on the environment**

Recommendations in previous *Surveys*	Action taken since September 2014
Gradually phase out coal subsidies and tax concessions for energy use. Consider introducing a CO_2 tax in sectors not covered by the EU ETS and raising the tax rate on diesel fuel.	No action taken.
Regularly assess the efficiency of support for renewable energy. Phase out support to renewables as they become competitive.	Financial support to households for the installation of small renewable energy sources (photovoltaic panels, heat pumps, wind turbines) amounted to [euro] 115 million in 2015. Feed-in tariffs for solar energy have declined by 15% since 2014.
Clean up contaminated sites, applying the polluter pays principle. Prioritise sites with the greatest risk to human health and the environment.	Between 2012 and 2015 geological surveys of the environment were conducted at 312 locations, and remediation of environmental burdens was carried out at 19 locations. In January 2016 the government approved the continuation of this programme for the 2016-21 period.

Bibliography

Acea (European automobile manufacturers association), (2016), "Overview of CO_2-based motor vehicle taxes in the EU", May, *www.acea.be/publications/article/overview-of-co2-based-motor-vehicle-taxes-in-the-eu*.

Andrews, D., A. Caldera Sánchez and Å. Johansson (2011), "Housing Markets and Structural Policies in OECD Countries", *OECD Economics Department Working Papers*, No 836, OECD Publishing. *www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP(2011)5&docLanguage=En*.

Bartoš, V., M. Bauer, J. Chytilová and F. Matejka (2014): "Attention Discrimination: Theory and Field Experiments with Monitoring Information Acquisition", *IZA Discussion Papers* 8058, Institute for the Study of Labor.

Card, D., J. Kluve and J. Weber (2015), "What Works? A Meta Analysis of Recent Active Labour Market Program Evaluations", *NBER Working Papers*, No. 21431, *www.nber.org/papers/w21431*.

Cernenko, T., P. Harvan and J. Kubala (2017), "Viac peňazí pre samosprávu?", Ministry of Finance of the Slovak Republic, Economic University of Bratislava, forthcoming.

Chetty, R., J. Friedman and J. Rockoff (2014), "Measuring the Impacts of Teachers I: Evaluating Bias in Teacher Value-Added Estimates," *American Economic Review*, Vol. 104, No. 9, pp. 2593-2632.

Cools, S., J. Fiva and L. Kirkebøen (2015), "Causal Effects of Paternity Leave on Children and Parents", *The Scandinavian Journal of Economics*, Vol. 117, pp. 801-28.

Duell, N., P. Tergeist, U. Bazant and S. Cimper (2010), "Activation Policies in Switzerland", *OECD Social Employment and Migration Working Papers*, *www.oecd.org/els/workingpapers*.

Dutu, R. and P. Sicari (2016), "Public Spending Efficiency in the OECD: Benchmarking Health Care, Education and General Administration", *OECD Economics Department Working Papers*, No. 1278, OECD Publishing, Paris, *www.oecd-ilibrary.org/economics/public-spending-efficiency-in-the-oecd_5jm3st732jnq-en*.

EC (2014a), "Study on Conditional cash transfers and their impact on children", European Commission, June.

EC (2014b), "State aid: Commission finds Sloavk system of compulsory health insurance involves no state aid", 15 October, *http://europa.eu/rapid/press-release_IP-14-1158_en.htm*.

EC (2015a), *The 2015 Ageing Report*, European Commission, March, *http://ec.europa.eu/economy_finance/publications/european_economy/2015/pdf/ee3_en.pdf*.

EC (2015b), "University quality indicators: A critical assessment", DG for Internal Policies, *www.europarl.europa.eu/RegData/etudes/STUD/2015/563377/IPOL_STU(2015)563377_EN.pdf*.

EC (2016a), "Country Report Slovakia, 2016", *Commission Staff Working Document*, February, *http://ec.europa.eu/europe2020/pdf/csr2016/cr2016_slovakia_en.pdf*.

EC (2016b), "Accelerating the Process of Roma Integration", December, *http://data.consilium.europa.eu/doc/document/ST-14294-2016-INIT/en/pdf*.

EC (2017), "Country Report Slovakia, 2017", *Commission Staff Working Document*, February, *https://ec.europa.eu/info/publications/2017-european-semester-country-reports_en*.

ENQA (2013), *Standards and Guidelines for Quality Assurance in the European Higher Education Area, www.enqa.eu/wp-content/uploads/2013/06/ESG_3edition-2.pdf*.

Eurobarometer (2015), "Businesses and corruption – Slovakia", Flash 428, *http://ec.europa.eu/COMMFrontOffice/publicopinion/index.cfm/Survey/getSurveyDetail/instruments/FLASH/surveyKy/2084*.

Eurostat (2017), *Energy Price Statistics, http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy_price_statistics*.

Feyrer, J., B. Sacerdote and A. Stern (2008), "Will the Stork Return to Europe and Japan? Understanding Fertility within Developed Nations", *Journal of Economic Perspectives*, Vol. 22, No. 3, pp. 3-22.

Filko, M., J. Mach and M. Zajíček (2012), "Málo zdravia za vel'a peňazí: Analýza efektívnosti slovenského zdravotníctva (Not enough health for a lot of money: Analysis of expenditure efficiency of Slovak Health Care System)", Institute of Financial Policy, *http://hpi.sk/cdata/Documents/IFP_EA28_Efektivnost.pdf*.

Fournier, J.-M. (2016), "The Positive Effect of Public Investment on Potential Growth", *OECD Economics Department Working Papers*, No. 1347, OECD Publishing, Paris, *www.oecd.org/eco/public-finance/The-positive-effect-of-public-investment-on-potential-growth.pdf*.

Fryer, R., Jr. (2016), *The Production of Human Capital in Developed Countries: Evidence from 196 Randomized Field Experiments*, National Bureau of Economic Research, Cambridge, Mass.

Gyomai, G. and P. van de Ven (2014), "The Non-Observed Economy in the System of National Accounts", *OECD Staistics Brief*, No. 18, June, *www.oecd.org/std/na/Statistics%20Brief%2018.pdf*.

Government (2016), "Government manifesto 2016-2020", *www.vlada.gov.sk/programove-vyhlasenie-vlady-sr-na-roky-2016-2020/*.

Gatti, R., S. Karacsony, K. Anan, C. Ferré and C. de Paz Nieves (2016), *Being Fair, Faring Better. Promoting Equality of Opportunity for Marginalized Roma*, World Bank Group, Human Development, *www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2016/01/27/090224b084103a5f/2_0/Rendered/PDF/Being0fair00fa0or0marginalized0Roma.pdf*.

Haluš, M., M. Hlaváč, P. Harvan and S. Hidas (2017), *Odliv mozgov po slovensky, Institut financnej politiky*, Ministerstvo Financii Slovenskej republiky, *www.finance.gov.sk/Default.aspx?CatID=11308*.

Harvan, P., A. Jevčák, P. Pont'uch and V. Solanič (2015), "The Impact of Rapid Credit Growth on Slovakia's Housing Market", *European Economy Economic Briefs*, December, *http://ec.europa.eu/economy_finance/publications/eeeb/pdf/eb006_en.pdf*.

Hidas, S., P. Harvan and K. Val'ková (2016), "Vel'a práce na úradoch práce: Efektivita a účinnost' služieb zamestnanosti", *www.finance.gov.sk/Default.aspx?CatID=11228*.

Haugh, D., A. Kopoin, E. Rusticelli, D. Turner and R. Dutu (2016), "Cardiac Arrest or Dizzy Spell: Why is World Trade So Weak and What Can Policy Do About It?", *OECD Economic Policy Paper*, No. 18, September, *www.oecd.org/eco/outlook/Cardiac-arrest-or-dizzy-spell-why-is-world-trade-so-weak-OECD-Paris-21-September-2016.pdf*.

Machlica, G., S. Hidas and B. Žúdel (2014), "Unemployment in Slovakia", Institute for Financial Policy, Economic Analysis, *Policy Paper*, No. 30, Bratislava, *www.finance.gov.sk/en/Components/CategoryDocuments/s_LoadDocument.aspx?categoryId=698&documentId=605)*.

IMF (2016a), "The Slovak Republic, Selected Issues paper: Macroprudential measures for tackling excessive credit growth: the counter-cyclical buffer (CCB) and beyond", *IMF Country Report*, No. 16/14, January, *www.imf.org/external/pubs/ft/scr/2016/cr1614.pdf*.

IMF (2016b), "Corruption: Costs and Mitigating Strategies", Fiscal Affairs and Legal Departments, May, *www.imf.org/external/pubs/ft/sdn/2016/sdn1605.pdf*.

Itas (2016), *Importance of the ICT sector for Slovakia*, IT asociacia Slovenska.

Johansson, Å., C. Heady, J. Arnold, B. Brys and L. Vartia (2008), "Taxation and Economic Growth", *OECD Economics Department Working Papers*, No. 620, OECD Publishing, Paris, *www.oecd-ilibrary.org/economics/taxation-and-economic-growth_241216205486*.

Kertesi, G. and G. Kézdi (2013), "The Kindergarten Attendance Allowance in Hungary An evaluation of a conditional cash transfer program", *Budapest Working Papers on the Labour Market*, No. BWP – 2013/14.

Koucky, J. (2015) "Kvalita a zodpovednosť. Slovenské vysoké školstvo a potreby spoločnosti v medzinárodnom kontexte", podkladové štúdie ("Quality and Responsibility: Slovak Higher Education and Societal Needs within the International Context", background studies), CVTI Bratislava.

Ministry of Education (2016), *Dlhodobý zámer vo vzdelávacej, výskumnej, vývojovej a ďalšej tvorivej činnosti pre oblasť vysokých škôl na roky 2016-2020*, forthcoming.

MoF (Ministry of Finance) (2016a), *Draft Budgetary Plan of the Slovak Republic for 2017*, *http://ec.europa.eu/economy_finance/economic_governance/sgp/pdf/dbp/2016/2016-10-12_sk_dbp_en.pdf*.

MoF (Ministry of Finance) (2016b), "Revízia výdavkov na dopravu", *www.finance.gov.sk/Default.aspx?CatID=11375*.

MoF (2016c), "Summary Note on the Spending Review on Health Care", document provided by the authorities.

Ministry of Health (MoH) (2013), "Strategic framework for health for 2014-2030", *www.health.gov.sk/?Key-publications*.

Ministry of Interior (2017), "Updated strategy action plans for Roma integration to 2020 for the years 2016-2018", *www.rokovania.sk/File.aspx/ViewDocumentHtml/Mater-Dokum-206836?prefixFile=m_*.

Mourougane, A., J. Botev, J.-M. Fournier, N. Pain and E. Rusticelli (2016), "Can an increase in public investment sustainably lift economic growth?", *OECD Economics Department Working Papers*, No. 1351, OECD Publishing, Paris, *www.oecd.org/eco/public-finance/Can-an-increase-in-public-investment-sustainably-lift-economic-growth.pdf*.

NBS (2016a), *Financial Stability Report*, May, *www.nbs.sk/_img/Documents/ZAKLNBS/PUBLIK/SFS/FSR_052016.pdf*.

NBS (2016b), *Quarterly Commentary on Macroprudential Policy*, July, *www.nbs.sk/_img/Documents/_Dohlad/Makropolitika/Quaterly_commentary_2016_July.pdf*.

OECD (2008a), *Tertiary Education for the Knowledge Society: Volume 1 and Volume 2*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264046535-en*.

OECD (2008b), *International Migration Outlook 2008*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/migr_outlook-2008-en*.

OECD (2010), *Health Care Systems: Efficiency and Policy Settings*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264094901-en*.

OECD (2011a), *Doing Better for Families*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264098732-en*.

OECD (2011b), *Taxation and Employment*, OECD Tax Policy Studies, No. 21, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264120808-en*.

OECD (2012), *OECD Economic Surveys: Slovak Republic 2012*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eco_surveys-svk-2012-en*.

OECD (2013a), *Interconnected Economies: Benefiting from Global Value Chains*, OECD Publishing, Paris, *www.oecdilibrary.org/docserver/download/9213011e.pdf?expires=1480946132&id=id&accname=ocid84004878&checksum=57836749E8CDD98A5489E53D9191B5FD*.

OECD (2013b), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, PISA, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264201156-en*.

OECD (2014a), *OECD Economic Surveys: Slovak Republic 2014*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eco_surveys-svk-2014*

OECD (2014b), *International Migration Outlook 2014*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/migr_outlook-2014-en*

OECD (2015a), *Tax Administration 2015: Comparative Information on OECD and Other Advanced and Emerging Economies*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/tax_admin-2015-en*

OECD (2015b), "OECD Services Trade Restrictiveness Index (STRI): Slovak Republic", December, *www.oecd.org/tad/services-trade/STRI_SVK.pdf*.

OECD (2015c), *OECD Digital Economy Outlook 2015*, OECD Publishing, Paris, *http://pacfiles.oecd.org/acrobatebook/9315041e.pdf*.

OECD (2016a), *OECD Economic Outlook, Volume 2016 Issue 2: Preliminary version*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eco_outlook-v2016-2-en*.

OECD (2016b), *Entrepreneurship at a Glance 2016*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/entrepreneur_aag-2016-en*.

OECD (2016c), *Financing SMEs and Entrepreneurs 2016: An OECD Scoreboard*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/fin_sme_ent-2016-en*.

OECD (2016d), *PISA 2015 Results (Volume I): Excellence and Equity in Education*, PISA, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264266490-en*.

OECD (2016e), "Measuring Distance to the SDG Targets – A pilot assessment of where OECD countries stand", July, *www.oecd.org/std/OECD-Measuring-Distance-to-the%20SDGs-Target-Pilot-Study-web.pdf*.

OECD (2016f), *Innovation in provider payment: New levers to drive health system performance*, OECD Publishing, Paris.

OECD (2016g), *Health Workforce Policies in OECD Countries: Right Jobs, Right Skills, Right Places*, *OECD Health Policy Studies*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264239517-en*.

OECD (2017a), *Economic Policy Reforms 2017: Going for Growth*, OECD Publishing, Paris.

OECD (2017b), "Memorandum of understanding for cooperative activities between the Government of the Slovak Republic and the OECD in order to strengthen the fight against corruption and increase the transparency in public procurement in Slovakia", January.

Palumbo, G., G. Giupponi, L. Nunziata and J. Mora Sanguinetti (2013), "The Economics of Civil Justice: New Cross-Country Data and Empirics", *OECD Economics Department Working Papers*, No. 1060, OECD Publishing, Paris, *www.oecd-ilibrary.org/economics/the-economics-of-civil-justice_5k41w04ds6kf-en*.

Pažitný, P., T. Szalay, A. Szalayová, K. Morvay, R. Mužik, M. Pourová, D. Kandilaki, P. Balík and T. Sivák (2014), "Modernization of Slovak Hospitals, Basic Frameworks of Health Care Policy 2014-2016", Health Policy Institute, *http://hpi.sk/cdata/Publications/hpi_zakladne_ramce_2014.pdf*.

PIAAC – National Report (2013), *Slovakia 2013 PIAAC*, Survey of Adult Skills (PIAAC), OECD Publishing, Paris.

Pungas, E., O. Toomet, T. Tammaru and K. Anniste (2012), "Are Better Educated Migrants Returning? Evidence from Multi-Dimensional Education Data", *NORFACE Migration Discussion Paper*, No. 2012-18, *www.norface-migration.org/publ_uploads/NDP_18_12.pdf*.

Rigobon, R. and D. Rodrik (2005), "Rule of law, democracy, openness, and income. Estimating the interrelationships", *Economics of Transition*, Vol. 13, No. 3, *http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0351.2005.00226.x/epdf*.

Ringberg, U., N. Fleten,T. Deraas, T. Hasvold and O. Førde (2013), "High referral rates to secondary care by general practitioners in Norway are associated with GPs' gender and specialist qualifications in family medicine, a study of 4350 consultations", *BMC Health Services Research*, Vol. 13, No.147, *http://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-13-147*.

Saia, A., D. Andrews and S. Albrizio (2015), "Productivity Spillovers from the Global Frontier and Public Policy: Industry-Level Evidence", *OECD Economics Department Working Papers*, No. 1238, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5js03hkvxhmr-en*.

Schneider, F. (2015), "Size and Development of the Shadow Economy of 31 European and 5 other OECD Countries from 2003 to 2015: Different Developments", Department of Economics, Johannes Kepler University, *www.econ.jku.at/members/Schneider/files/publications/2015/ShadEcEurope31.pdf*.

Shah, J., A. Couffinhal, H. Nguyen, G. Schieber, D. Prokopov, S. Nenkov and P. Atanasov (2015), *Final action plan for the implementation of DRG-based payments*, World Bank Group, Washington, DC, *http://documents.worldbank.org/curated/en/2015/11/25465748/final-action-plan-implementation-drgs-based-payments*.

Slovak Republic (2011), "Constitutional Act of 8 December 2011 on Fiscal Responsibility", *www.rozpoctovarada.sk/images//constitutional_act_493_2011.pdf*.

Slovak Republic (2016), "Východiská implementácie Agendy 2030 pre udržateľný rozvoj" ("Basis for the implementation of Agenda 2030 for sustainable development"), *www.rokovania.sk/Rokovanie.aspx/BodRokovaniaDetail?idMaterial=25381*.

Sprocha, B. (2014), *Reprodukcia rómskeho obyvateľstva na Slovensku a prognóza jeho populačného vývoja*, INFOSTAT – Výskumné demografické centrum.

Trend (2017), *Kazimir: Kažimír: V prípade Bašternák ide o našu dôveryhodnosť*, 1/2017.

U21 (2016), *Ranking of National Higher Education Systems*, Melbourne Institute of Applied Economic and Social Research, University of Melbourne.

UNDP (2012), "Roma education in comparative perspective: Findings from the UNDP/World Bank/EC Regional Roma Survey", *Roma Inclusion Working Papers*, United Nations Development Programme (UNDP) Europe and the CIS, Bratislava Regional Centre, *www.eurasia.undp.org/content/dam/rbec/docs/Roma-education-in-comparative-perspective.pdf*.

Vagač, L. (2013), "Internal Labour Mobility in Slovakia", European Employment Observatory, June.

Vagač, L., P. Goliaš and D. Zachar (2014), "Country Document Update 2014: Pensions, health and long-term care, Slovakia, March 2014", European Commission, Brussels.

WEF (2016), *The Global Competitiveness Report 2016-2017*, World Economic Forum, *www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017_FINAL.pdf*.

Zachar, D. and Z. Dančíková (2014), "Vo veľkých nemocničných tendroch sa súťaží málo: Analýza verejného obstarávania nemocníc v rokoch 2012-2014)" (Little competition in large hospital tenders: Analysis of public procurement in Slovak hospitals, 2012-2014), INEKO, Transparency International Slovakia.

© OECD 2017

ANNEX

Progress in structural reform

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

Recommendations in previous *Surveys*	Action taken since September 2014
Fiscal framework	
Give ministries more freedom in the allocation of funds between agencies and programmes. Reduce the number of line items in the budget, and allow carry-forward of current spending items.	No action taken.
Stabilise the functioning of the pension system: refrain from any opening-up of the two pension pillars. Consider making participation in the DC pillar mandatory for all persons joining the labour market for the first time.	No action taken.
Public sector efficiency	
Modernise management, via performance budgeting and e-government. Ensure employees are trained in computer and internet skills.	New e-cards have been issued to enable Slovak citizens to communicate securely online with their government. By the end of 2015 there were nearly 1 300 000 cards issued. Three basic registers were implemented – one of natural persons (individuals), one of addresses and one of legal entities – as well as common modules of the central public administration portal serving as a single point of access to e-government services. Early in 2016 electronic communication with payers of excise duties was launched. By the end of 2015, the Ministry of Finance launched a unique project DCOM (Datacenter of cities and villages) including 138 cloud services for local municipalities accessible via the Internet in a single information system. There are already 1500 municipalities interested in this project.
Encourage joint public-service delivery for small municipalities and strengthen the revenue-raising power and spending responsibility of viable local government.	The relevant current legislation provides conditions for ensuring joint public services (in all municipalities) preferably by so-called *joint municipal offices* (JMO). Such JMOs exercise concrete agreed competences for several municipalities. The establishment of JMOs is entirely on a voluntary basis and with the agreement of municipalities.
For a better use of EU funds	
Streamline administrative procedures, and strengthen capacities to manage EU funds.	Following 2014 and 2015 government resolutions, it was decided to increase by 808 the number of employees working in entities responsible for the European Structural and Investment Funds. Still, there was a significant decrease in investment co-financed from EU funds in 2016 due to the closure of the 2007-13 programme.
Provide the poorer regions with a higher share of EU funds and a stronger role in the design of programmes. Build adequate capacity for more evidence-based decision making.	The Analytical Unit of Central Coordination Body was created in June 2015. The main aim of this body is to provide input for evidence-based policy-making, with a special emphasis on the study of the effectiveness of EU funds.
Product markets	
Make the disbursement of subsidies to the rail industry more conducive to competition. Use subsidies to lower network access prices or to increase contestability through the public tendering of public service obligations.	No action taken.
Foster the spread of e-business and e-commerce. Consider the involvement of business and industry associations to gain economies of scale and to better tailor the services to the needs of specific industries.	A new system of low-cost, simple and quick dispute resolution for consumers and traders introduced in February 2016 increases and facilitates cross-border trade and e-commerce.
Labour market	
Reallocate resources across public employment services (PES) offices according to local unemployment rates. Accelerate the pace of implementation of PES reform. Outsource part of job-search support activities to offset weak capacities.	The 2015 plan aims to promote the "placement of long-term unemployed on the labour market with the use of non-government employment services".

Recommendations in previous *Surveys*	Action taken since September 2014
Remove barriers to higher female labour participation: reduce the tax wedge on second earners in two-earner households by lowering the marital income allowance. Consider introducing a surcharge on health insurance for non-working spouses.	No action taken.
Narrow the eligibility of wage subsidies to youth. Make permanent the lower tax wedge for low-paid jobs. Suppress the mandatory work in municipalities for social assistance recipients. Make work pay by implementing in-work benefits.	No action taken.
Ensure that further increases in the minimum wage do not have negative impacts on employment opportunities. Take into account advice from an independent expert commission. Phase out the differentiation of minimum wages by degree of work difficulty. Make sure minimum wages and legal extension are implemented without damaging employment prospects in lagging regions.	No action taken.
Innovation	
Provide financial incentives for adopting new technology and innovation spending. Develop innovation vouchers, and reform the R&D tax credit to make it refundable. Promote cluster facilitators and a competition-based funding process.	Since 2013 several initiatives such as the development of clusters and innovation vouchers to foster co-operation between research and business sectors exist, but they receive only limited funding. On January 2015 a new tax relief, called "super deduction" was introduced, allowing private companies to deduct 125% of their expenses for R&D from their tax base. In 2016 it was decided to launch three new international co-operation programmes (linked to Horizon 2020 European funding programme) in applied research and experimental development. Co-operation between Slovak and Israeli companies and research institutions is also in a pilot phase.
Provide technical assistance to regional authorities to develop their capacities and involvement to assess and steer innovation policies at the regional level.	No action taken.
Environment and Green Growth policies	
Strengthen capacity to efficiently attract, absorb and allocate EU funds for environmental purposes	In October 2014 the framework for the absorption of EU funds for the environment was improved with the adoption of the Operational Programme Quality Environmental (OP QE). In order to strengthen the absorption capacity under OP QE, eligible beneficiaries were expanded to include government entities (e.g. financial, budgetary organisations, municipalities, autonomous regions) and private sector actors (e.g. physical and legal entities, NGOs, foundations). The Managing Authority for OP QE also adopted several measures to better attract EU funds. These measures include the adoption of a results-oriented approach in the selection and implementation of projects (based on the "Value for Money" principle), the simplification and clarification of management documentation, and the implementation of targeted information activities for potential applicants.
Adjust water management plans to increase synergies between policies. Complete institutional arrangements for river-basin management and ensure effective implementation of plans.	The Danube and Vistula river basin management plans for the years 2016-21 were drawn up in close co-operation with particular sectors: agriculture, economy, transport and health. Representatives of towns and villages were involved in the plans' approval, especially as to flood-risk management.
Develop a comprehensive strategy for protected areas, taking account of the benefits and costs of different options. Further develop the monitoring and information system for nature and biodiversity protection.	Currently, there is no comprehensive strategy for protected areas. The development of a concept of nature and landscape protection in 2015 was delayed. Monitoring was carried out during the years 2013-15 in six monitoring seasons (winter and summer season monitoring in each year), during which there were more than 16 800 field visits of permanent monitoring sites.

Thematic chapters

© OECD 2017

Chapter 1

Enhancing advanced skills to better meet labour market demand

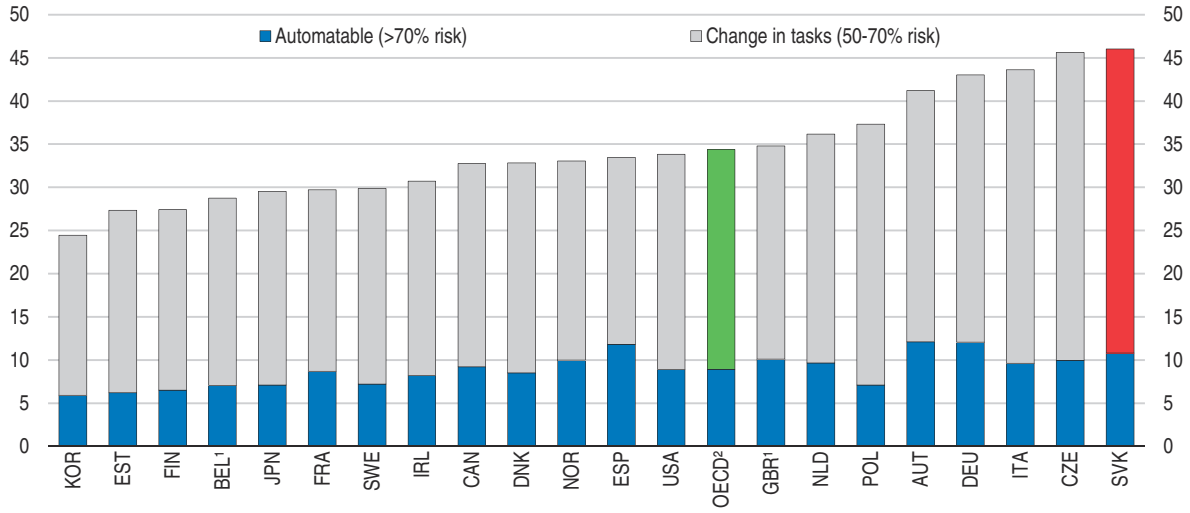
Changing labour market demand and moving up the global value chain requires high-skilled workers. However, the share of adults with high skill levels in the Slovak Republic is one of the lowest in the OECD. Improving the education system would raise quality and better align students' skills with new labour market needs and help them face further changes in the work environment. The contribution of the tertiary education system to skills improvement is one of the lowest in the OECD. It has to open itself more to the outside world: by easing the conditions for foreign professors and researchers to teach at Slovak universities, promoting internationally respected research and intensifying the co-operation with the business sector. Another challenge is to secure an adequate supply of skilled workers in the face of rapid population ageing and increasing emigration of young high-skilled workers. Ageing of the population will not only lead to shrinking labour supply, but a growing part of the workforce will need to be retrained. Bolstering the supply of skills requires lifelong learning and attracting skilled migrants, including returning Slovaks.

Better skilled workers will be needed

Skills needed in the labour market are changing significantly. Almost half of the workers in the Slovak Republic work in jobs that are introducing new technologies or are undergoing significant restructuring (OECD, 2013a). As the overall skills content of work is increasing, a growing share of workers need to have a tertiary education. New tasks often require solving unforeseen problems, and the demand for ICT skills is growing across all occupations. Even manual workers need some digital skills to handle basic work with computers (Velšič and Janotík, 2016). In contrast, routine and manual tasks are becoming less prevalent, and the share of such jobs in overall employment is gradually decreasing. These changes are probably going to influence a comparatively large share of Slovak workers who are at risk due to automation (Figure 1.1). It does not necessarily mean that these jobs will disappear entirely, but workers will almost certainly need to adapt to changing tasks (Arntz et al., 2016).

Figure 1.1. **Risk of job loss due to automation**

Percentage of workers in jobs at high and medium risk of automation



1. Data cover only Flanders region for Belgium and England and Northern Ireland for the United Kingdom.
2. Unweighted average of the data shown.

Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012) and M. Arntz, T. Gregory and U. Zierahn (2016), "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis", *OECD Social, Employment and Migration Working Papers*, No. 189, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888933500622

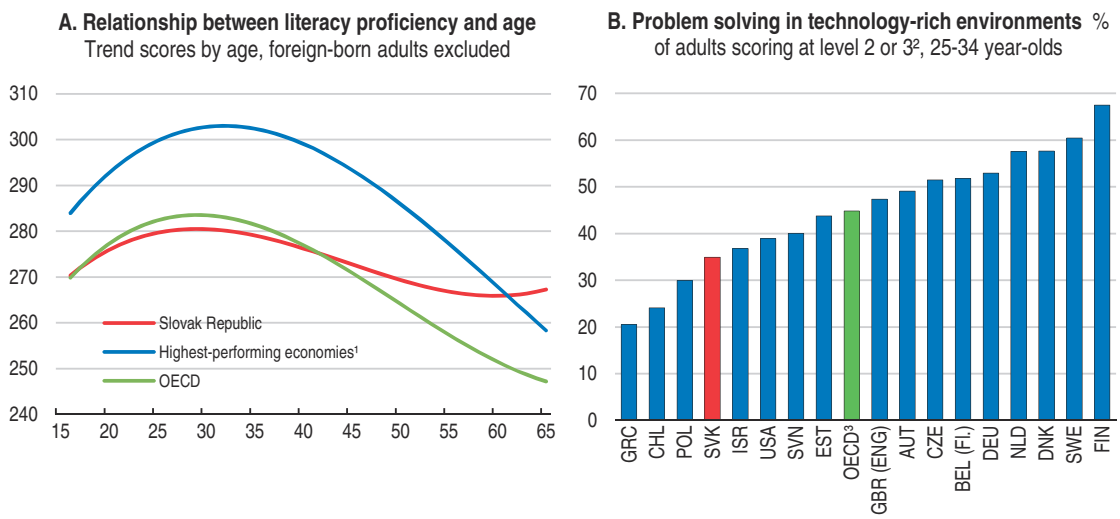
Workers are likely to benefit from technological changes if they can supply skills that complement automation (Autor, 2015). Skills are crucial for adults to keep up with technological developments and maintain their employability in a rapidly changing and inter-dependent world. High-skilled workers will be occupying new jobs in the future if they can learn to work with new technologies. By contrast, workers lacking skills will suffer from job polarisation and are likely to occupy low-productivity jobs with low pay. Indeed,

most of the new job opportunities in the Slovak Republic in the near future will require high-level qualifications (European Commission, 2015a). Improving the education system will therefore give workers the opportunity to improve their economic situation and get access to higher-quality employment.

The education system does not presently prepare young people for changes in the labour market

Skills are a major driving force of growth through their effect on labour productivity. They are essential for young people to enter the labour market, access good-quality jobs and embark on successful careers. However, the skills of many younger Slovaks are weak. Although the OECD's recent survey of adult skills shows Slovaks have better numeracy and writing skills than the OECD average, this is mostly due to the solid performance of older people. Younger people are falling behind, and their results in literacy are slightly lower compared to youth in the OECD and significantly worse than the best OECD performers (Figure 1.2, Panel A). The youngest age cohorts have even worse numeracy skills than their older counterparts (PIAAC – National report, 2013).

Figure 1.2. **Adult skills in literacy and problem solving**



1. Unweighted average of Australia, Finland, Japan, New Zealand and Netherlands.
2. Four levels of proficiency are defined by particular score-point ranges and the level of difficulty of the tasks within these ranges (Levels 1-3 and below level 1). Level 1 is the lowest.
3. The data cover only Flanders region for Belgium and England and Northern Ireland for the United Kingdom. The OECD aggregate covers all member countries participating in the problem solving in technology-rich environments assessment.

Source: OECD (2016), *Skills Matter: Further Results from the Survey of Adult Skills* and OECD (2013), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*.

StatLink http://dx.doi.org/10.1787/888933500318

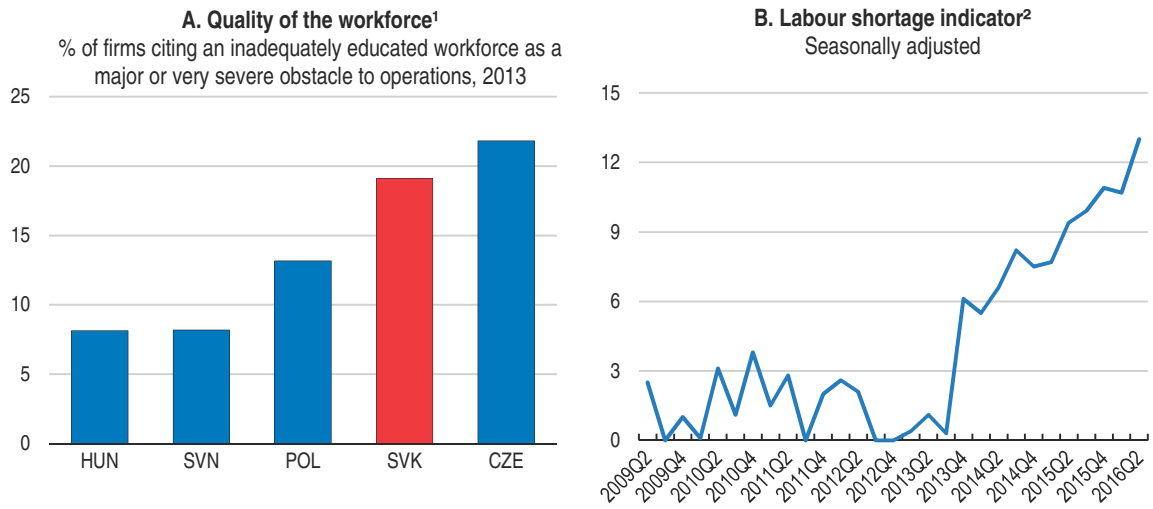
Furthermore, Slovak adults are insufficiently prepared to perform tasks such as solving non-routine problems or those requiring computer use. One-quarter of the adult population is fully computer illiterate (PIAAC – National report, 2013). Those lacking proper ICT skills face higher unemployment rates and lower wages (OECD, 2015a). More worryingly, the gap between the OECD average and the Slovak Republic is even higher in the case of young adults (Figure 1.2, Panel B; PIAAC – National report, 2013). This can be explained by insufficient training in school: almost 40% of youths claim that school is not preparing them to use

ICT skills in their future jobs (Velšič and Janotík, 2016). Surveys of adults' skills show that the best performers in problem-solving have access to jobs in the occupations with the strongest employment creation (OECD, 2014a).

This leads to labour shortages and high structural unemployment

These weaknesses result in severe skills mismatch problems. Despite high unemployment, companies are experiencing shortages of skilled labour. Many firms cite an inadequately educated workforce as a significant obstacle to their operations (Figure 1.3, Panel A). This leads to increasing shortages in the labour market (Panel B). The demand for qualified IT workers is said to be four times greater than the supply. Despite high wages for IT workers, ICT employer groups claim that they are already lacking 10 000 specialists and that this number will double within the next five years (ITAS, 2016). Increasing shortages are occurring in the manufacturing sector as well, affecting over half of all companies, particularly in the automotive sector. This year, more than 80% of suppliers signalled that the availability and quality of labour is a major problem for production. Almost 40% of automotive suppliers stated that this is limiting their ability to win new production contracts (PWC, 2016). Overcoming skills shortages could help firms meet growing demand and boost incomes for workers.

Figure 1.3. **Companies are increasingly having problems to find skilled and educated workers**



1. Calculations are based on 243 firm responses for Czech Republic, 267 for Slovak Republic, 516 for Poland, 269 for Slovenia and 307 for Hungary.
2. Percentage of manufacturing firms pointing to labour shortages as a factor limiting production.

Source: OECD calculations based on EBRD-World Bank Business Environment and Enterprise Performance Survey 2013 and Eurostat (2016), Business surveys-NACE Rev.2.

StatLink http://dx.doi.org/10.1787/888933500641

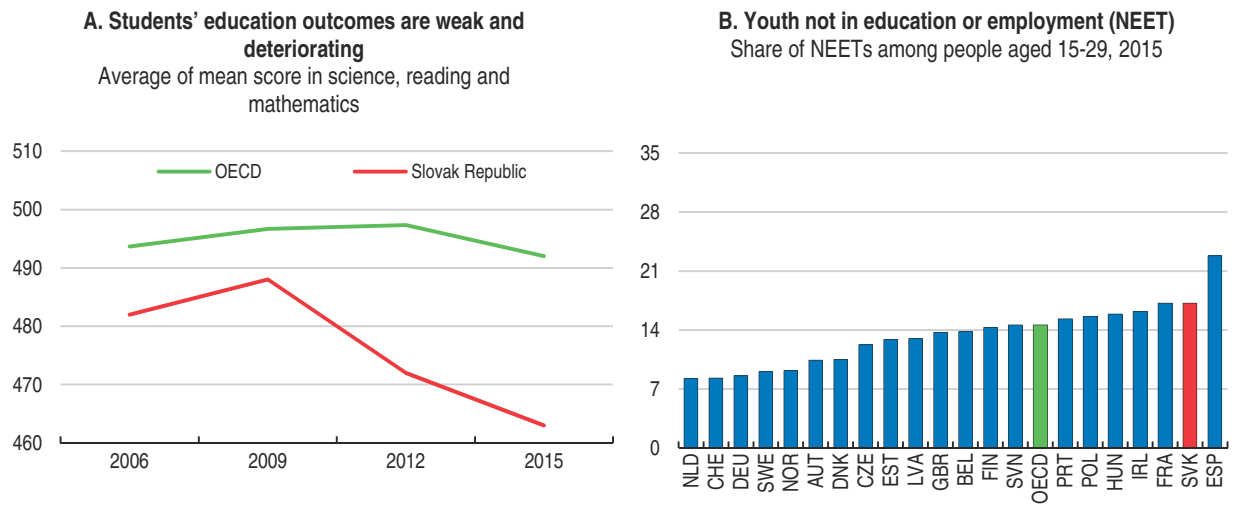
Despite increasing labour shortages the unemployment rate remains at around 10%. Particularly worrying is long-term unemployment, since 60% of the unemployed have been out of the labour market for more than a year. Long-term unemployment affects mostly workers with poor and obsolete skills as low educational attainment accompanied by a low level of skills increases the probability of being unemployed. The difference in labour market outcomes between low-skilled and high-skilled Slovak workers is one of the largest in the OECD (OECD, 2014b).

Improving skills formation at secondary schools

The secondary education system is essential for developing relevant skills, as it serves as an important input for tertiary education and provides graduates with knowledge that is useful for the labour market. Attainment in Slovak secondary schools is impressive, as the share of 25-34 year-olds with at least an upper secondary education is among the highest in all OECD countries (92%, compared to the OECD average of 83%). Also, the early school-leaving rate remains low in comparison with other countries.

However, 15 year-old Slovaks' PISA outcomes are weak in international comparison and have deteriorated over time (Figure 1.4, Panel A). In addition, a large share of young people who are neither in employment nor in education suggests that the secondary education system leaves many graduates without an appropriate skill set (Panel B).

Figure 1.4. **Schools and labour market outcomes are weak**



Source: OECD (2014), PISA 2012 Database, Table I.2.3b and OECD (2017), Education and Training (database).

StatLink http://dx.doi.org/10.1787/888933500660

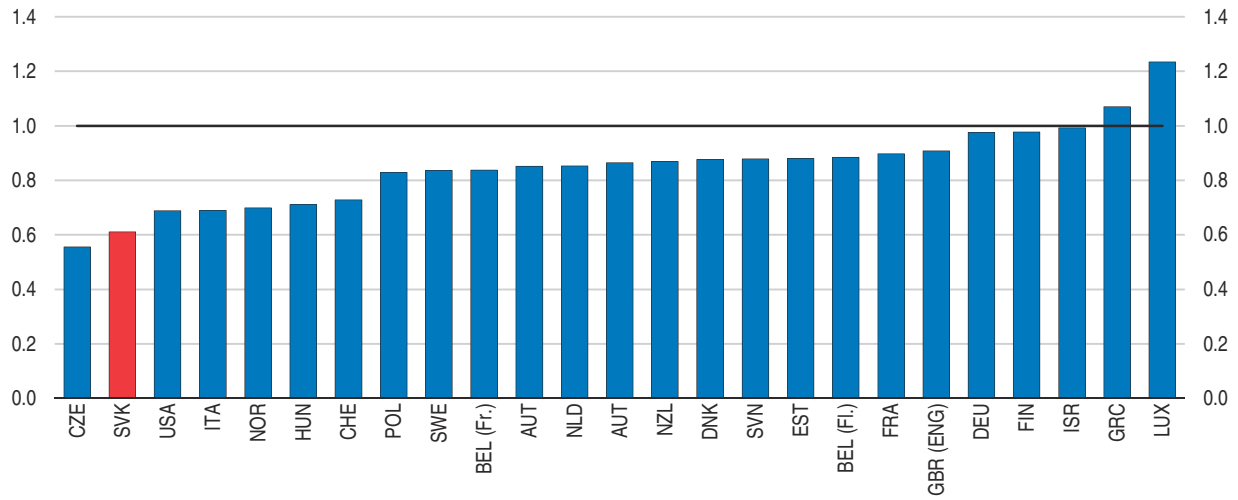
Upgrading the quality of teaching

Improving skills of the younger generation requires highly qualified and motivated teachers (Chetty et al., 2014). However, the Slovak teaching profession remains unattractive, with one of the lowest average salary levels in the OECD, equivalent to 61% of average tertiary graduate earnings (Figure 1.5). The gap is even more pronounced in the case of young teachers (Figure 1.6, Panel A). A few years ago almost half of current teachers and students in teacher education claimed that teacher salaries must increase to raise the attractiveness of teaching profession (Panel B), a share that was higher than in other European countries. Moreover, only 4% of Slovak teachers reported that their profession is valued in society (OECD, 2013b). As a consequence, weaker students are choosing the teaching profession. Indeed, students applying for teacher education programmes have worse education outcomes than other applicants, and overall skills of teachers are considerably lower than those in other professions (Martinak, 2016).

Higher salaries would increase the attractiveness of the profession, although many factors enter into students' career decisions. The government has been increasing teachers' salaries by 5% annually in the four years ending in 2015 and 10% in two steps in 2016. The

Figure 1.5. **Teachers are amongst the lowest paid in the OECD**

Ratio of average teachers' salaries[1] to the wages of workers aged 25-64 with tertiary education, 2014

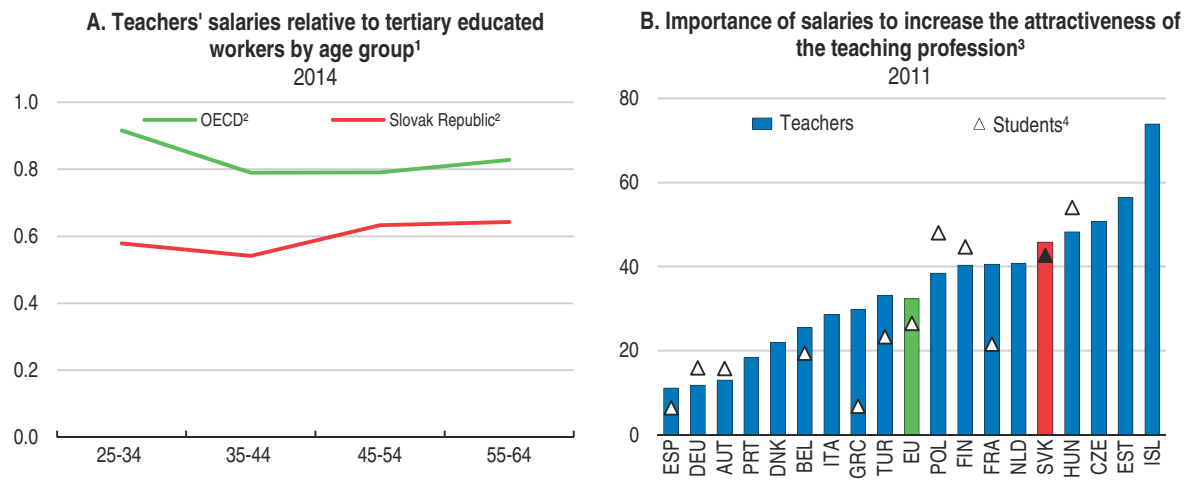


1. Salaries of lower secondary teachers for general programmes in public institutions including bonuses and allowances.

Source: OECD (2016), *Education at a Glance 2016: OECD Indicators*.

StatLink http://dx.doi.org/10.1787/888933500337

Figure 1.6. **Higher salaries are important to raise the attractiveness of the teaching profession**



1. Salaries of lower secondary teachers for general programmes in public institutions.
2. The OECD aggregate covers 21 OECD member countries, excluding the Slovak Republic. The data for the Slovak Republic are calculated from national quarterly survey of the Information System of Labour Costs (ISCP) by the Ministry of Education, Science, Research and Sport.
3. Percentage of respondents perceiving a higher salary as the most important type of change needed for raising the attractiveness of teacher profession.
4. Students in initial teacher education preparing for a teaching career.

Source: Ministry of Education, Science, Research and Sport of the Slovak Republic (2015), Možnosti zvyšovania platov učiteľov, Komentár 04/2015, OECD (2014), *Education at a Glance 2014: OECD Indicators*, and European Commission (2013), Study on Policy Measures to improve the Attractiveness of the Teaching Profession in Europe, Final report, Volume 2.

StatLink http://dx.doi.org/10.1787/888933500679

government committed to raise teacher salaries by 6% per year on the average between 2016 and 2020 conditional on further structural reforms to boost quality of education. Nonetheless, they will need to rise further to attract the best students to the profession. Further increases to teachers' salaries should be conditional on improved teaching quality

through high-quality professional development and increased focus on disadvantaged pupils. In some other OECD countries, Israel for example, substantial increases in teachers' pay have been accompanied by longer working hours and adoption of new teaching methods, with more time spent in small-group teaching (OECD, 2013c). In countries where teachers have relatively low pay, an element of performance-based pay can improve student performance (OECD, 2012a).

In addition, administrative burdens should be reduced. Around one-third of Slovak teachers find extensive administrative burdens a hindrance to their profession (Vašíčková, 2014). Measures to identify and decrease this work need to be implemented. For example, the UK Department for Education implemented teachers' suggestions to reduce unnecessary workloads, which were gathered by an online questionnaire within the extensive campaign "Workload Challenge". Furthermore, the schools inspectorate issued a myth-busting document, which clarifies what inspectors expect schools to provide. The UK department plans to repeat this exercise every two years (Kozák and Rehúš, 2015).

Teacher quality could be enhanced through further training, particularly in using ICTs in teaching. Students' ICT skills remain weak even for younger age cohorts, despite a relatively high proportion of teachers using ICTs for class work (European Commission, 2015b). This suggests that ICT skills are not being adequately taught in secondary schools. Therefore, teacher ICT training should be strengthened via professional development programmes. Teaching ICT skills has already been identified by teachers as one of the main areas for their professional development (OECD, 2014c). In other OECD countries, managed professional development, where teachers receive precise instruction together with specific, regular feedback under the mentorship of a lead teacher, has had large positive effects (Fryer, 2016).

Teaching ICT in schools needs a more general approach, connecting it with other subjects rather than treating it as a distinct subject. This approach reflects how ICTs are used in the workplace. In Australia, a high performing country in terms of students' digital skills, ICT instruction is embedded across learning areas of the curriculum. This helps ensure that students develop useful skills in planning, searching for, locating and evaluating the usefulness of information and assessing the credibility of the sources (OECD, 2015a). Experience from other high performing countries in digital skills suggests that they can be acquired more easily if the students are proficient in higher-order thinking and reasoning processes in other domains.

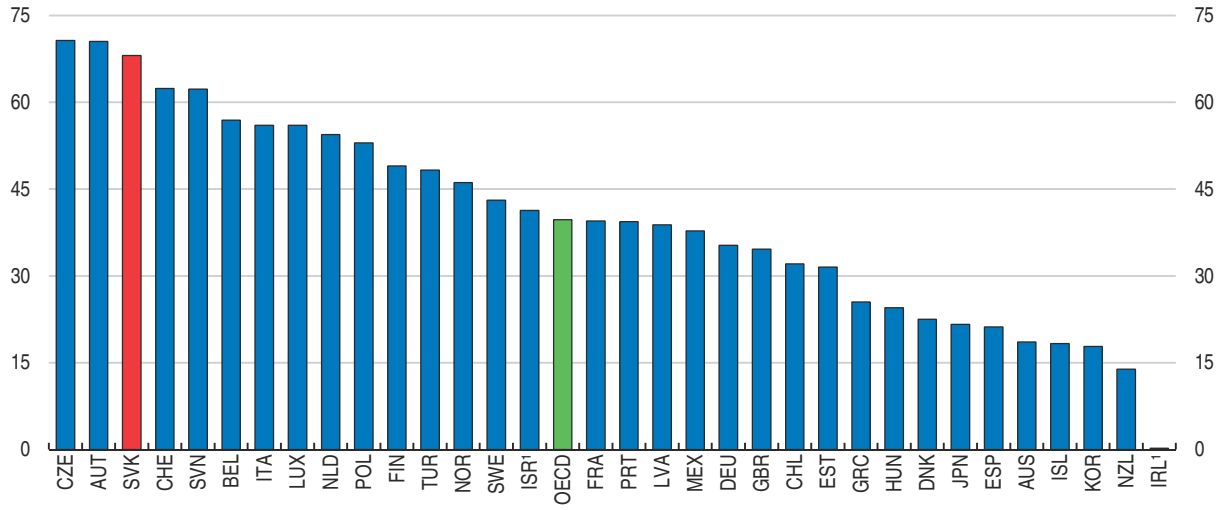
A more challenging task is to improve teaching methods and strengthen problem-solving skills in the curriculum. The skills needed to solve non-routine tasks and complex problems cannot be reduced to rules, and they are difficult to teach and assess. Empirical research suggests that teaching these skills out of context is not a solution. A more promising approach is to encourage students and teachers to reflect on solution strategies when dealing with subject-specific problems and applying the knowledge in different contexts (OECD, 2014a). Students should be encouraged to collect information, examine evidence and experiment with alternatives. Frequent questioning by teachers helps students to be aware and actively reflect on their own thoughts. Several high performing countries have recognised the importance of problem-solving skills and have prioritised them throughout their curricula. For example, Singapore has an explicit curricular focus on problem-solving. Its mathematics students are guided to apply mathematical models and concepts in real-world contexts, while science students are provided with the opportunities to engage with scientific problems, conduct investigations and make decisions (OECD, 2014a).

Vocational schools should provide a mix of general and practical skills

Secondary schools are predominantly vocationally oriented. Upon its formation the Slovak Republic inherited an extensive system of secondary vocational schools, which still educate more than 70% of all students (Figure 1.7). This is one of the highest shares in the OECD. The remaining secondary students pursue the strongly academically oriented general education stream. Enrolment into different tracks is based on performance in primary schools and admission exams.

Figure 1.7. **Share of vocational programme enrolment rates in upper secondary education**

15-19 year-olds, 2014



1. For Israel and Ireland, data from 2013.
Source: OECD (2017), Education at a Glance 2015 (database).

StatLink http://dx.doi.org/10.1787/888933500698

However, vocational training is mostly school-based, isolated from the labour market. The government has already taken steps to support more practical learning by launching a reform that supports more work-based learning with a dual style apprenticeship system (Box 1.1). This is a step in the right direction and should be accompanied by aligning VET outputs with the skills needed in the labour market. As was already recommended in previous OECD work (Fazekas and Mytna Kurekova, 2016), the government should introduce a nationwide VET graduate survey measuring labour market outcomes that could help underpin informed student decisions.

Box 1.1. **VET reform**

In 2015 the National Council approved the *New Act on Vocational Education and Training*, which introduces the provision of VET in a dual system based on collaboration between employers and vocational schools.

Under the dual system, employers will provide and cover the costs of practical training for students in the workplace, while vocational schools will be responsible for general and theoretical vocational subjects. The rights and duties of all actors involved in the dual system are on a contractual basis, with contracts between the school and the employer, and between students and employers. The reform aims to encourage employers to provide sufficient high-quality, work-based learning through the following incentives and control mechanisms:

Box 1.1. **VET reform** *(cont.)*

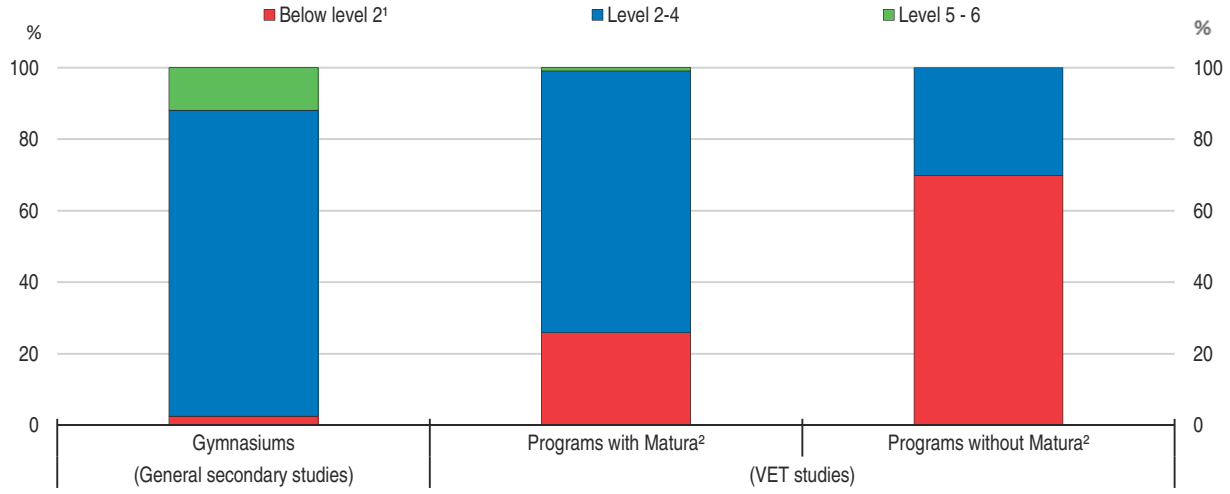
- per-student tax exemptions for employers fixed according to the extent of practical training provided per year (EUR 3 200 per pupil for more than 400 hours of work-based learning, half that for 200-400 hours);
- direct employer influence on educational content at school level through design of the school curricula in co-operation with partner vocational schools;
- certification of employers entering the dual system to verify their ability to provide training at their workplace (e.g. the necessary material, technical and personnel requirements), conducted by employers' chambers and associations and the Ministry of Education; and
- control of educational and training processes in the workplace by designated employees of the partner vocational school and external control by the State Inspectorate.

The reform represents a first step towards implementing the dual system on a wider scale. Further action will be taken in consultation with relevant stakeholders based on the experience acquired over the coming years. The text in this box was extracted from OECD (2015), *Education Policy Outlook: Slovak Republic*, available at: *www.oecd.org/education/policyoutlook.htm*.

At the same time, vocational students have generally lower levels of literacy and numeracy proficiency than general education graduates, as practical training crowds out broader academic skills (Figure 1.8; OECD, 2013a). However, with more and more VET graduates entering tertiary education the need for general skills is increasing. Skills acquired through VET may become obsolete rapidly, as technology is evolving fast, and demand is shifting towards more sophisticated tasks. Therefore, work-based learning should be balanced with sufficient instruction time for general skills acquisition. This can also be developed in practical contexts, though this requires careful planning among teachers to

Figure 1.8. **Slovak VET students' skills are unsatisfactory**

Share of 15 year-old students in individual levels of reading proficiency by school type (PISA 2015)



1. Students performing below level 2 in PISA reading proficiency may have learned to read but struggle with using reading for learning, and are classified as a particularly vulnerable group.
2. Secondary school-leaving certificate, which entitles students to apply for admission at university.

Source: OECD calculations based on PISA 2015 Database.

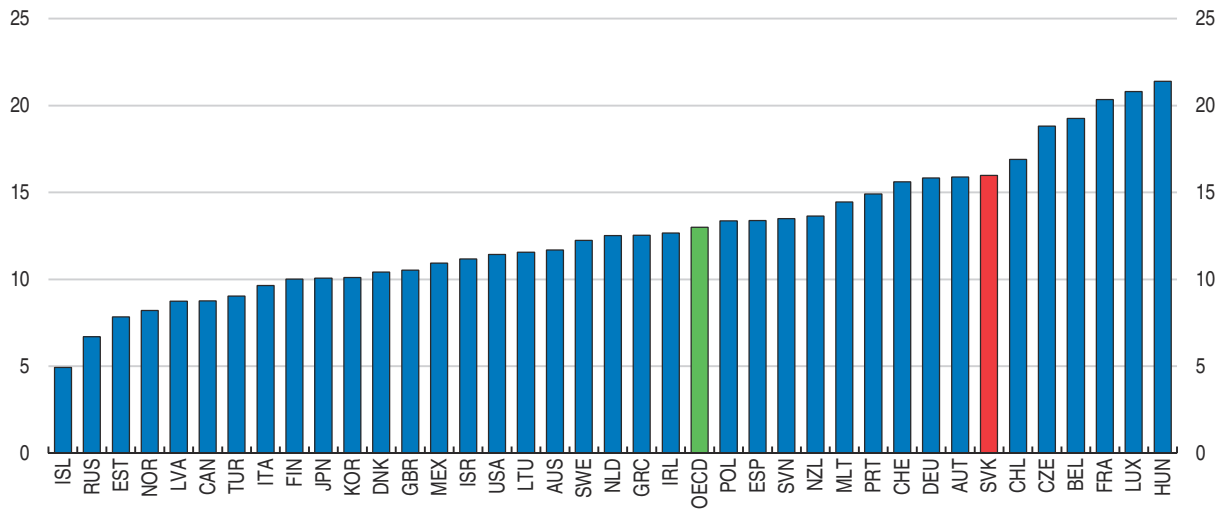
StatLink http://dx.doi.org/10.1787/888933500717

integrate practical training and acquisition of general skills (Fazekas and Kurekova, 2016). In addition, students should be systematically assessed upon entering VET to ensure basic minimum competencies and provide targeted support if needed.

Selectivity is harming skills formation

Secondary schools fail to overcome the differences in learning outcomes stemming from students' socio-economic backgrounds. The impact of socio-economic background on student outcomes in the Slovak Republic is one of the highest in the OECD (Figure 1.9). Almost one-third of 15 year-old Slovak students did not obtain even a basic level of proficiency in assessed subjects (OECD, 2016a). This can significantly limit their access to tertiary education. Children from the families with the highest socio-economic status have a 13 times higher probability to get tertiary education than those from the lowest-status families. Only 5% of recent tertiary graduates have parents who lack secondary school attainment (Koucky, 2015). This is worrying, as weaker students have limited access to employment and better paying jobs. Thus, education policy needs to play a much greater role in ensuring equity in learning opportunities.

Figure 1.9. **Impact of socio-economic status[1] on students' learning outcomes**



1. A student's socio-economic status is estimated by the PISA index of social, cultural and economic status, which is based on such indicators as parental education and occupation, the number and type of home possessions that are considered proxies for wealth and the educational resources available at home.
2. Unweighted average.

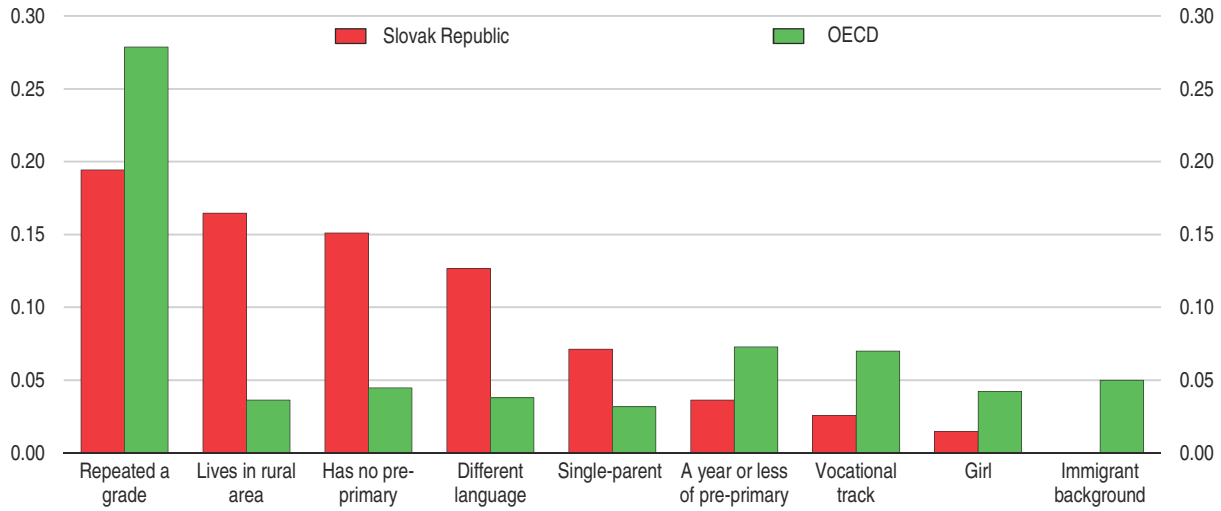
Source: OECD, PISA 2015 Database, Table I.6.3a.

StatLink http://dx.doi.org/10.1787/888933500736

The government should provide special support for the most vulnerable youths, who are at the highest risk of becoming low-performing students. PISA analyses show that poor performance is not a result of any single factor but is rather a combination of various barriers that affect students. As in other OECD countries, those students who repeat grades are most likely to become low performers (Figure 1.10). However, in the Slovak Republic other significant risk factors are apparent: living in rural areas, speaking a different language at home and not receiving pre-primary education. Such students are at higher risk than those in other OECD countries. In contrast, gender and immigration background are less significant risk factors. Hence, Slovak policies should target socially disadvantaged students, namely

Figure 1.10. **Major risks for socio-economically disadvantaged children becoming low-performing students**

Probability of low performance in mathematics across risk profiles[1]



1. Coefficient estimates come from a multivariate logistic regression with low performance in mathematics as the outcome and each of the variables in the figure as a covariate.

Source: OECD (2016), *Low-Performing Students: Why They Fall Behind and How To Help Them Succeed* and PISA 2012 Database, Table 2.21.

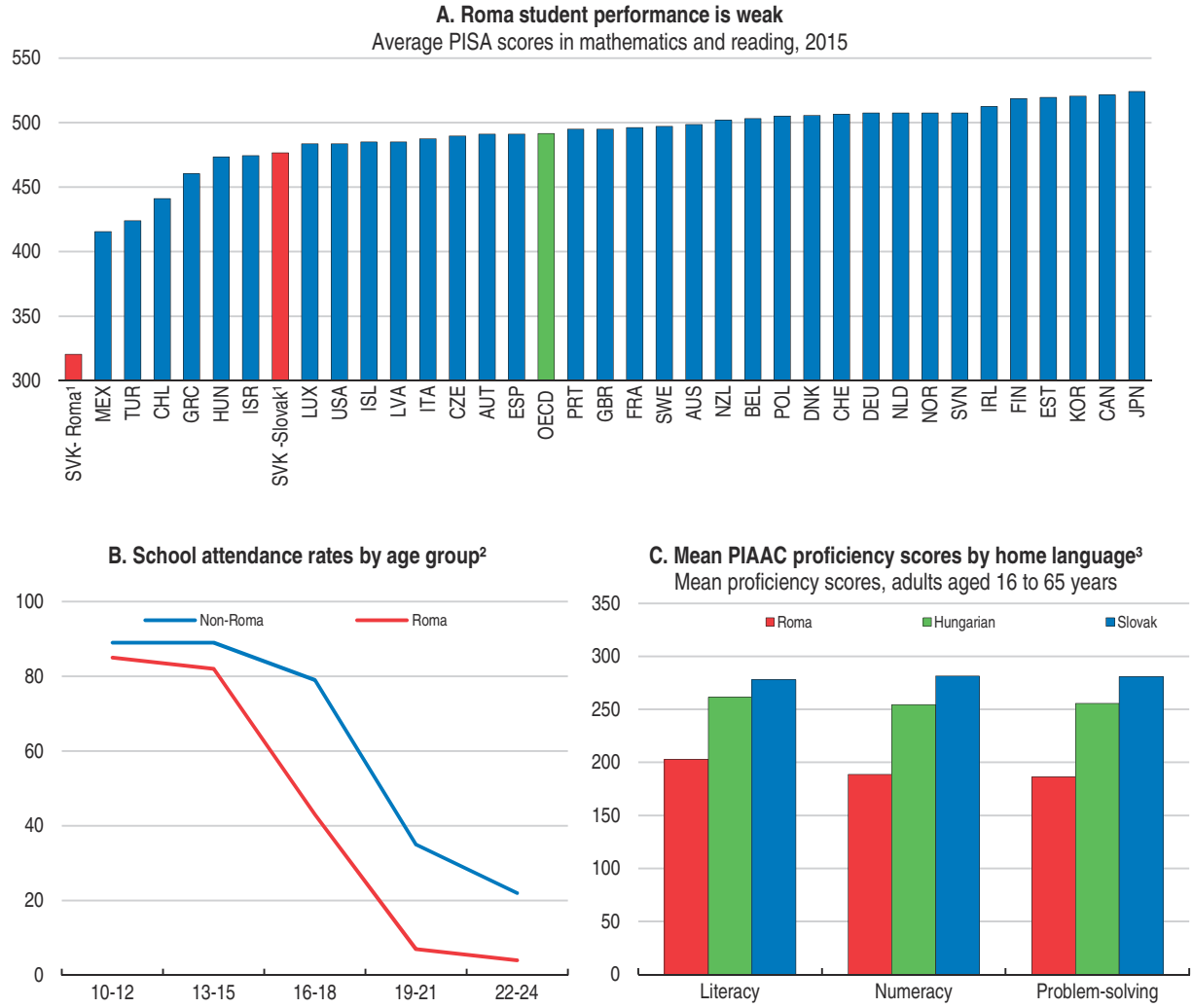
StatLink http://dx.doi.org/10.1787/888933500755

those who speak different languages and have no pre-primary education. More attention should also be given to those attending schools in rural areas.

Roma are particularly vulnerable in this regard. Roma represent almost 8% of the Slovak population and live predominantly in rural areas, many do not speak Slovak, and their children usually do not attend pre-school facilities (Gatti et al., 2016; UNDP, 2014). Roma students are overrepresented in special schools, which are supposed to provide education for children with disabilities. Special schools offer less demanding curricula, and there is almost no opportunity to transfer into mainstream schools. Those Roma students who are in mainstream schools often attend segregated classes, which further weaken their integration chances. Almost 60% of Roma students attend schools with a majority of Roma classmates, which is the highest proportion in Central Europe (UNDP, 2012). The early-school-leaving rate among Roma students from segregated settlements is 80% (Vantuch and Jelínková, 2013). These factors harm their education outcomes (Figure 1.11, Panel A), with only few Roma able to reach tertiary education (Panel B). Hence, most Roma graduates enter the labour market with a low level of skills and face a reduced probability of finding a job. Indeed, PIAAC data show that those households who predominantly speak Roma tend to have significantly lower skills (Panel C).

If the education system could reduce initial differences stemming from different socio-economic backgrounds, average skills acquisition would increase. The government approved new legislation that targets the misplacement of children in special schools by reducing potential financial incentives for placing the socially disadvantaged in special schools and by improving the diagnosis of special needs. However, its impact should be closely monitored, as there are some indications of limited impact on the routine practice (Amnesty International and European Roma Rights Centre, 2017). At the same time, the government has launched several EU-funded pilot projects targeted at socially disadvantaged pupils to improve their educational prospects. Supported activities include development and

Figure 1.11. **Roma have poor school attendance resulting in weak skills**



1. Each group is based on the same language spoken at home.
2. Share of Roma and non-Roma living in close proximity to Roma households who attend school by age group.
3. Language most often spoken at home.

Source: OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*; and OECD calculations based on PISA 2015 Database; OECD calculations based on Programme for the International Assessment of Adult Competencies (PIAAC) database and UNDP/WB/EC Regional Roma Survey (2011), Roma education comparative perspective.

StatLink http://dx.doi.org/10.1787/888933500774

implementation of all-day schooling and inclusive curricula supported by Roma teaching assistants as well as new professional programmes targeted at inclusive pedagogy practices. However, these are mostly time-bound pilot projects launched at a sample of schools. The government should extend good practices to the whole education system and make the positive impact sustainable (Santiago et al., 2016). Early tracking, streaming and low transferability between educational tracks should be changed, as has been emphasised in several previous OECD reports (OECD, 2012b; Santiago et al., 2016).

Qualified and experienced teachers should be incentivised to work in rural and socio-economically disadvantaged regions. The risk of weak performance increases significantly in schools in such areas. However, experienced teachers are in short supply in such schools (Santiago et al., 2016). Incentives for teachers to teach there should be strengthened by

introducing special allowances or in-kind support. In some other countries teachers are financial rewarded for teaching in disadvantaged schools. For example, real teachers' salaries in Brazil increased by 13% on average in the last decade, but by more than 60% in poorer regions, while in Estonia new teachers are offered an allowance for three years if they are located in rural areas (OECD, 2014d). At the same time, teachers should be prepared to teach students from diverse backgrounds. For example, in Finland, all teachers are trained in adapting their teaching to the varying learning needs and styles of their students (OECD, 2012c).

Poorly performing students should receive teaching adapted to their abilities and needs. The government is increasing the number of teaching assistants, which should help promote integration in mainstream schools. This should be complemented by other measures that enhance individualised support for students with learning difficulties. Support classes can help struggling students catch up, and high-dose targeted tutoring is one of several practices that have been shown to improve outcomes in low-performing US charter schools (Fryer, 2011). Specific support should address Slovak-language deficiencies by increasing the number of assistants who can also speak Roma and help the low achievers.

More flexibility and responsibility for schools and teachers can help adapt their teaching to students' abilities. Therefore, schools should have a higher degree of autonomy in curriculum and assessment, which, research has shown, combined with accountability, should lead to better student performance (OECD, 2011a). But greater autonomy should be combined with accountability. Those schools which post student achievements publicly tend to have better results.

Participation of the socially disadvantaged in pre-school education should be boosted. Longer pre-school attendance effectively reduces achievement gaps later in life, especially for children from disadvantaged backgrounds (Kertesi and Kézdi, 2014). Indeed, following the example of several other EU countries, such as Bulgaria, Poland, Romania and Hungary, obligatory pre-school education would be desirable. Hungary, with compulsory enrolment from the age of three, has almost the same enrolment rate in kindergartens for its Roma and non-Roma children. In any case conditional cash transfers (CCTs) could improve pre-school attendance for children from poorer households following the Brazilian example. Empirical evaluations of CCT programmes and field experiments have shown positive effects on school attendance (European Commission, 2014). For example, in Hungary a conditional cash transfer programme was introduced in 2009 that succeeded in increasing kindergarten enrolment of disadvantaged children aged 3 and 4, particularly in areas with an excess supply of kindergarten slots (Kertesi and Kézdi, 2013). Therefore, these measures should be accompanied by expanding the provision of early childcare facilities, as was recommended in the last *Survey* (OECD, 2014b).

Boosting skills in tertiary education

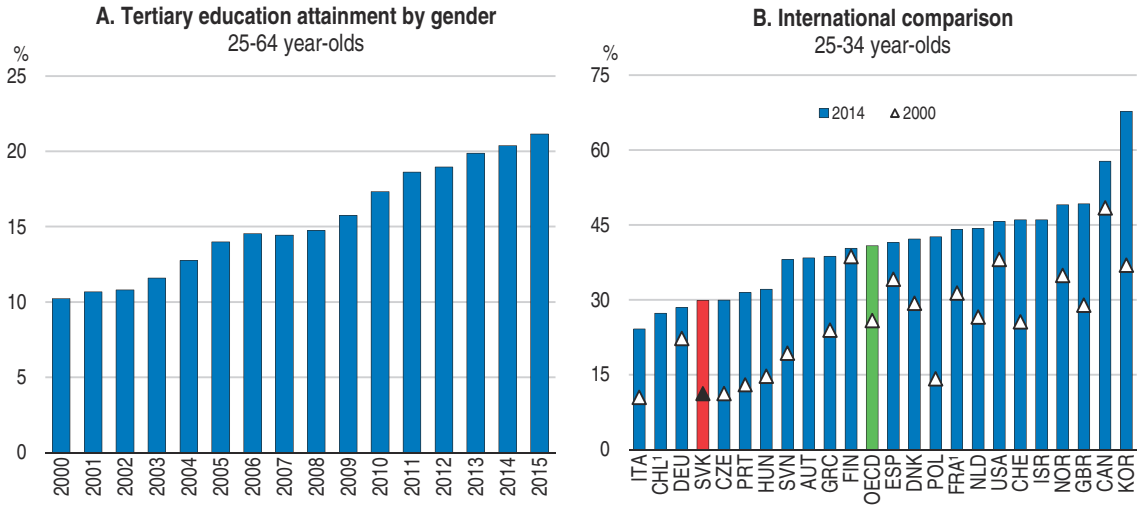
Tertiary education is essential to move a country up the global value chain as it stimulates the take-up, adoption, and improvement of technological innovations in an increasingly knowledge-driven global economy. Particularly for the Slovak Republic, it is important to raise high-level job skills to sustain the income convergence process and better adapt to rapid labour market changes. The main challenges for tertiary education in this regard are: i) improving the quality of its institutions and ii) linking students' skills to labour market needs.

Improving the quality of tertiary education institutions

Tertiary education has expanded, but its quality remains weak

There has been a rapid expansion of Slovak tertiary education since the early 1990s. The number of students enrolled has been rising steadily, from just over 150 000 in 1990 to today's 400 000. While in the past tertiary education was intended for a narrow elite group, today more than 60% of young people are expected to enrol in it at some point in their life (OECD, 2015b). The number of people in the Slovak Republic holding tertiary education degrees has doubled since 2000 (Figure 1.12). As a consequence, the wage premium earned by the tertiary educated has been decreasing but remains above the OECD average.

Figure 1.12. **Tertiary education has expanded**



1. 2013 for Chile and France.

Source: OECD (2015), Education at a Glance 2015 Database and Eurostat (2016), Population by educational attainment level (database).

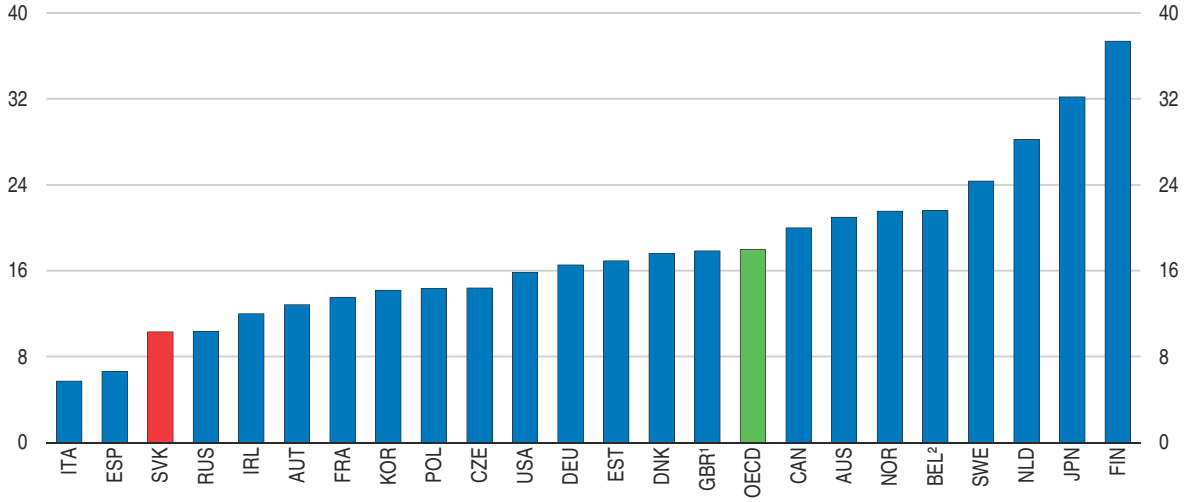
StatLink http://dx.doi.org/10.1787/888933500793

In order to absorb increasing demand, tertiary education institutions have started to open new programmes, often with questionable quality. For instance, some companies in their job advertisements have explicitly identified certain tertiary programmes whose graduates would not be acceptable. In an international assessment of quality, Slovak tertiary education is among the weakest in the OECD (U21, 2016). University research quality as measured by international rankings is low even in a regional comparison (Šiškovič, Játi, 2015). As a result, an increasing number of students choose to study abroad to get a better education. The share of these students is one of the highest in the OECD, with most studying in the Czech Republic. According to the survey, the majority (82%) of these students have chosen Czech tertiary institutions because of their better quality (Koucky, 2015).

As a consequence, tertiary education prepares not enough high-skilled workers. The OECD Survey of adult skills, PIAAC, shows that tertiary education is not able to take graduates from secondary schools to the highest levels on literacy, numeracy and problem-solving scales. The difference between the average student's level of literacy between secondary level and tertiary education level is small (PIAAC-National report, 2013). Indeed, the share of young adults with a high level of skills is one of the OECD's lowest (Figure 1.13).

Figure 1.13. **A low proportion of young adults have high-level literacy skills**

Percentage of adults aged 24-35 scoring at PIAAC literacy proficiency level 4 or 5, 2012



1. England and Northern Ireland only.
2. Flanders only.

Source: Haugh, D., Y. Jin and A. González Pandiella (2016), "Growing together: Towards a more inclusive Ireland", *OECD Economics Department Working Papers*, No. 1293.

StatLink http://dx.doi.org/10.1787/888933500375

Improving the system of quality assurance is crucial

Slovakia has 35 tertiary education institutions, of which 23 are public and 12 are private. Quality is assured by the Accreditation Committee (AK). It assesses all tertiary education institutions every six years, their research performance in particular, and approves the existence of individual study programmes.

However, the quality-assurance process is too formal and its effectivity is questionable given the short amount of time spent on the overall assessment. AK has to assess almost 4 900 tertiary programmes within 14 months. Given the short period of time, it is impossible to assess all programmes thoroughly, and in many cases all that is assessed is whether the institutions meet the formal conditions. The study programmes do not have to prove their labour market relevance.

Furthermore, the Accreditation Committee is lacking transparency and autonomy. AK is not fully independent of the Ministry of Education (European Commission, 2015c), whose Minister approves AK members and the criteria it uses for accreditation. Moreover, the vast majority of AK members are working in Slovak higher education institutions, and there are no external/foreign members. This raises the serious risk of conflicts of interest. As a result, AK was not admitted to the European Association for Quality Assurance in Higher Education (ENQA) due to its lack of independence, insufficient quality assurance and potential for conflicts of interest (ENQA, 2013).

The Accreditation Committee should be reformed to make its members fully independent. The authorities should ensure that AK members do not have any relation with any institution they assess. This is one of the conditions of *The Standards and guidelines for quality assurance in the European Higher Education Area* (ENQA, 2013). External experts should be appointed independently from higher education institutions and government. One way forward might be appointing foreign experts or representatives of employers or

students, which is a common practise in many other European countries. In addition, AK would benefit from better material, financial and technical conditions. It needs to have its own budget, independent from that of the Ministry of Education. Furthermore, several assessments such as those of management systems or student services could be outsourced to improve efficiency.

Funding should increase

Total public spending on tertiary education is much lower than in other OECD countries. In 2012 it amounted to 0.9 % of GDP, while other OECD countries spent 1.5% of GDP on average. Slovak public tertiary education is in general free of charge. Only part-time students and students exceeding the standard length of study are subject to fees. Income from business activities is negligible. In 2014 around 80% of the total income of public higher education institutions (HEIs) came from the state budget, 10% from fees and the rest from other sources such as dormitories or canteens. Private HEIs do not receive any support from the state budget, except for social and motivation scholarships.

In several OECD countries tertiary education funding is supported by greater student financial participation. Wider application of fees for tertiary education at public institutions increase their funding streams and may provide incentives to better respond to the labour market's demands, as it may encourage students to align their study choices with labour market prospects and to demand higher quality. Tuition fees are often complemented with means-tested state grants provided to those students coming from disadvantaged and poorer families. OECD research suggests that student financial-support systems that provide both loans with income-contingent repayments and means-tested grants promote access to and equity in higher education, and lead to better outcomes for weak students (OECD, 2012d). For example, Australia and New Zealand have used this approach to mitigate the impact of high tuition fees and to encourage disadvantaged students to enter higher education (OECD, 2012d). However, introduction of tuition fees in the Slovak Republic bears a risk of further exacerbation of brain drain, which is already significant (see discussion below). The share of Slovak students studying abroad is one of the highest in the OECD, and wider application of fees could motivate students to study abroad, particularly in the Czech Republic due to low cultural and language barriers and free-of-charge studies. Therefore, introduction of tuition fees should be carefully analysed.

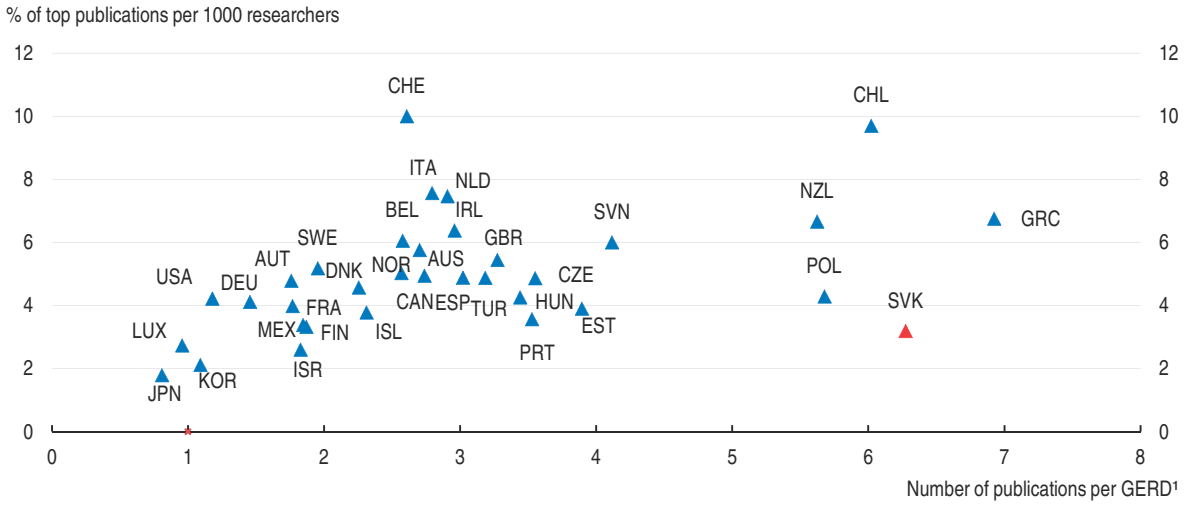
Funding should be allocated towards better quality research

Slovak academic research produces a large volume of publications, most of which are of low quality. The number of research publications by Slovak academics is one of the highest among the OECD countries (Figure 1.14). However, relatively few researchers are able to produce an above-average number of citable publications, and very few could be considered as excellent. Indeed, the number of top-cited publications per researcher is one of the lowest in the OECD (Figure 1.14).

Tertiary education institutions are funded based on the number of enrolled students and graduates, and performance in research (Box 1.2). This leads to higher enrolments and more intensive research activity. However, there is no clear distinction between higher- and lower-quality research (MoE, 2016). Hence, universities receive the same funding for research outputs of differing quality. Therefore, many HEIs are trying to keep their university status and produce as many research outputs as possible, even at the cost of reduced quality. Out of 23 public HEIs 17 have university-research-oriented status.

Figure 1.14. **Slovak researchers produce many publications, but they could be improved in terms of quality**

Number of documents and percentage among world's 10% most cited, average 2003-12



1. Gross domestic expenditure on R&D in million constant USD (constant prices and PPPs).

Source: OECD (2016), OECD Science, Technology and R&D Statistics (database), OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society* and Scimago, J.R. (*www.scimagojr.com*).

StatLink http://dx.doi.org/10.1787/888933500812

Box 1.2. **Tertiary education funding – main features**

Allocation of funding: All public HEIs receive subsidies from the state budget in one of four forms: for accredited study programmes (55%), research (33%), development (0.3%) and social support of students (12%). The total sum represents core institutional funding, which is allocated among all HEIs according to a mix of input and output indicators (performance). The largest part is the subsidies for accredited study programmes, which is divided up according to input indicators, which mostly include the number of enrolled students and the status of the institution (university or vocational institutions); output criteria include the number of graduates. Most of the allocation is provided in the form of a block grant, which means the money can be spent on any purpose. If a HEI attracts relatively fewer students or decreases its share of research output, it receives a smaller share from the total budget envelope. Institutions are motivated to accommodate and retain as many students as possible during the whole five-year study cycle. For a master's student, institutions get twice as much as for a first-year bachelors student and 50% more than for a second-year bachelors student (Ministry of Education, 2016). This contributes to higher participation in masters programmes. However, this system encourages institutions to favour the number of students over the quality of teaching and research.

Research subsidies: Research subsidies are apportioned as follows: i) Institutional funding (92%) is allocated according to the evaluation of quality assessed by the Accreditation Committee and the Ministry of Education; ii) Institutional project funding (8%) is allocated according to the internal grant schemes of the Ministry of Education, which focus on basic and applied research. Only public HEIs may compete for grants.

In addition, university researchers and PhD students are not motivated to produce high-quality research. Minimal conditions to obtain a doctoral degree are not centrally regulated. In general, a university sets the conditions for the minimal number of credits to

obtain the degree through research. These can be collected by publishing a large number of low-quality conference papers without standard peer review. Usually, students opt for this option and publish in journals of questionable quality. Furthermore, doctoral students receive only a fixed monthly allowance, independent of the quality of their research.

The tertiary education system should reward such higher-quality research. The funding distribution should favour internationally recognised research outputs. Research outputs should be more clearly weighted by their quality. For example, the funding formula should strongly differentiate among the outputs of the same category (e.g. according to SJR indicator in case of articles). Articles from journals of questionable quality should be disregarded. Pay for researchers and PhD students should reflect publishing activity, with a steep reward curve for high-quality outputs. For example, Czech tertiary institutions reward their PhD students for publications in top journals.

Barriers preventing foreign professors and researchers from teaching at Slovak universities should be abolished. They can help strengthen local skills and research. However, candidates must meet rigid conditions, such as writing a habilitation thesis or a textbook in the Slovak language. This can deter high-quality academics from abroad from coming to the Slovak Republic. Therefore, researchers and teachers should be able to obtain the docent or professor title on the basis of their research quality. It would also be useful to open up positions to experts from business to intensify co-operation with the private sector.

The tertiary education system should be more linked to the labour market

Tertiary education needs more vocationally oriented courses

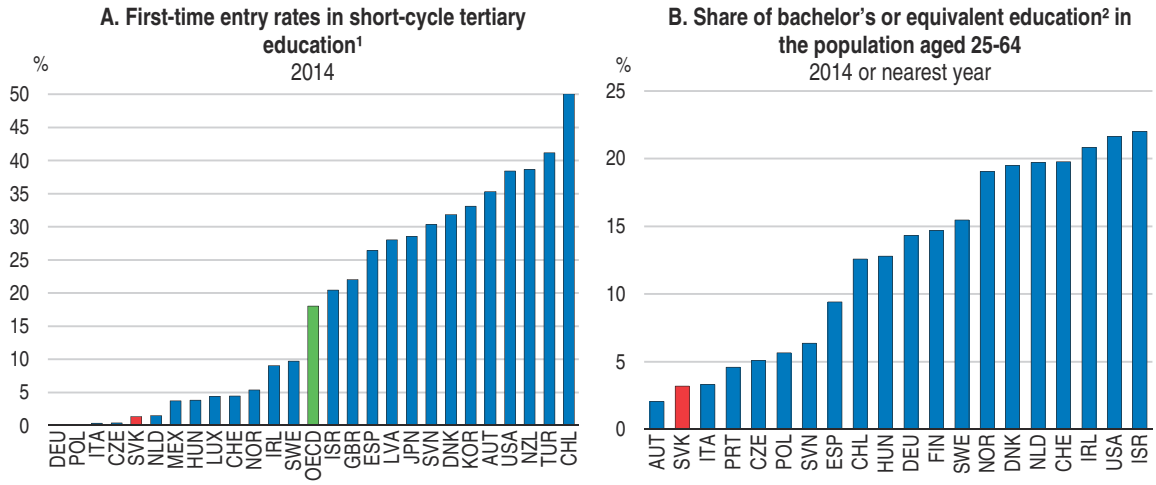
The transition from elite to mass participation in tertiary education has not been accompanied by much needed diversification of the structure of the relevant institutions. Most are organised as traditional academically oriented universities. The system has thus remained homogeneous, with educational programmes providing studies unlinked to the labour market and preparing students in more theoretical than practical ways.

There are almost no professional oriented bachelor programmes, and graduates usually pursue their masters programmes at the same university (Figure 1.15, Panel A). This is in stark contrast with the fact that the Slovak Republic has one of the highest shares of vocationally oriented secondary schools in international comparison. At the same time, as mentioned above, employers complain of significant shortages of technically skilled labour. The share of bachelors graduates in the working-age population is the second lowest in the OECD (Panel B).

Professionally oriented bachelor programmes should be developed. They would reduce the length of studies, while being more accessible to graduates from VET secondary schools who are willing to continue their studies. The government should motivate HEIs to develop bachelors programmes with more practical experience suitable for various professions in, for example, the automotive industry. International experience suggests that these short-cycle vocational programmes tend to be more successful in countries where a set of institutions other than universities delivers them, such as, for example, community colleges in the United States (Fazekas and Kurekova, 2016).

In addition, having funding that favours longer masters studies should be reconsidered. Funding allocation motivates tertiary institutions to produce a large number of students with masters degrees, since universities get twice as much funding for a masters student as a first-year bachelors student. However, employers in several fields do not seem to value masters qualifications, and bachelors degrees seem sufficient for several professions.

Figure 1.15. **Tertiary education system lacks vocational bachelor programs**



1. ISCED 2011 level 5 (short-cycle tertiary education).
2. ISCED 2011 level 6 (Bachelor's or equivalent education).

Source: OECD (2016), OECD Education Statistics (database).

StatLink http://dx.doi.org/10.1787/888933500831

Intensify collaboration with the private sector

Besides developing vocational bachelors programmes, the tertiary education system should in general pursue closer interactions with the business sector. More than 80% of surveyed university and industry representatives acknowledged that the demand for better co-operation is on the rise (Koucky, 2015). However, the collaboration and transfers of knowledge between the two sectors is one of the most limited in the OECD (WEF, 2016). A large part of tertiary-level practical studies takes place within schools rather than in on-the-job experience. The ability of employers to influence quality assessments or the curricula is limited.

As a result, a large share of students lack work experience, which slows skills formation. Only one-third of tertiary students has some work experience during their studies, which is one of the lowest in the OECD (Quintini, 2015). In addition, most of these students work in areas outside their field of study. However, working in study-related areas can better develop skills. A PIAAC study shows that working students score about five points higher in literacy than those who only study (Quintini, 2015). The combination of study and work can ensure that youth develop the skills required on the labour market. Analyses show that working a moderate number of hours helps students find better paid jobs without compromising school achievement (Dundes and Marx, 2006). Empirical evidence from the Slovak Republic confirms that those graduates who have worked during their studies needed much less time to find their first job (Srnakova, 2014). However, this applies only to students working in study-related areas.

Authorities should consider improving the link of funding to labour market outcomes with greater funding to schools that are able to co-operate with the private sector in research or practical training. In some countries institutions receive a sizeable share of public funds through programmes attached to specific policy objectives (OECD, 2008a). In the case of the Slovak Republic these developmental programmes can support those universities that collaborate with the private sector.

In addition, increasing the weight of academic credits for participation in work-based learning could lead to greater student participation in study-related work experience. Academic credits could be achieved for participation in work placements or through volunteering and extra-curricular activities. Experience in other OECD countries shows that these activities can represent a tangible way of linking student learning to employability skills (BIS, 2011). US practice shows a strong belief in the benefits of internships: some tertiary institutions have made one a necessary requirement for completion (BIS, 2011).

In other OECD countries the business sector participates more actively in the governance and teaching process, particularly in a case of tertiary vocational schools. In French University Technological Institutes (*Instituts universitaires de technologie*) employer representatives are members of their governing councils. Besides, at least 20% of modules must be taught by private-sector experts. A dual German school system in one German state (Dualhochschule Baden-Württemberg) requires all professors to have at least three years of non-academic experience. Half of the studies in each semester must take place in partner companies, which are considered to be part of the academic community.

Skills mismatches are prevalent

A sharp increase in tertiary education graduates has led to an increase in skills mismatches, which are much more pronounced among young tertiary graduates. Empirical evidence confirms that the Slovak Republic is one of the few OECD countries with a positive relationship between tertiary education and skills mismatches, suggesting misallocation of high-skilled labour (Adelet McGowan and Andrews, 2015). These mismatches are even more pronounced in the case of young tertiary graduates (Box 1.3). Indeed, more than half of them are in some form of mismatch: they are either working in positions that do not require tertiary education or in occupations not related to their initial field of study (Figure 1.16).

Tertiary graduates are increasingly employed in jobs that do not necessarily require tertiary education. More than a quarter of young graduates currently work in low-skilled occupations compared to almost none in 2000 (Koucky, 2015). Over-qualified graduates earn significantly less than well-matched graduates, and this difference has been increasing over time (Figure 1.17). This is a concern, particularly for some tertiary education programmes whose graduates' wages are comparable to those of upper-secondary graduates. Social work, rehabilitation and nursing are among the education programmes that produce many graduates with low wages working mostly in low-skilled jobs.

Many graduates are also working in positions that do not correspond to their initial field of study. In particular, graduates from agricultural and veterinary studies or humanities struggle to find jobs corresponding to their education (Habrman, 2015). In contrast, relatively few students pursue tertiary programmes in ICT studies, despite growing shortages in the sector and better labour market prospects. This strongly suggests imperfect labour-market information for youths making their educational decisions.

Skills mismatches imply heavy costs for the economy in terms of productivity and sunk costs of training and education. The most harmful is the combination of qualification and field-of-study mismatches. It is difficult for individuals who start their career in jobs not requiring a tertiary qualification and outside their field to get a well-matched job later. Total costs of field-of-study mismatches in the Slovak Republic are estimated to represent 0.4% of GDP per year (Montt, 2015).

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

This box examines the relationship between over-qualification, over-skilling and various worker characteristics. Column 1 shows a significant positive impact of tertiary education on the probability of being over-qualified. Workers educated in the field of services are more likely to be over-qualified (Columns 2-3). Extension of the model by tertiary fields of study (Column 3) suggests a positive relationship between over-qualification and tertiary education in the fields of "Social sciences, business and law", "Humanities, languages and arts", and "Health and welfare". Columns 4-6 generally follow logit models from Adalet McGowan and Andrews (2015) with extension by the area of study. If we consider over-skilling as a dependent variable, the field of study variables becomes insignificant. A possible explanation is that many Slovak workers are working in positions that do not require their level of their education. This suggests that many workers with tertiary education are employed in jobs requiring skills that are below their level of study.

Dependent variable	Over-qualified			Over-skilled		
	1	2	3	4	5	6
Female	0.023	0.033*	0.034*	0.015	0.019	0.019
	(0.017)	(0.019)	(0.019)	(0.013)	(0.016)	(0.016)
Age 25-34	-0.074**	-0.074**	-0.078**	-0.002	-0.002	-0.003
	(0.032)	(0.032)	(0.033)	(0.025)	(0.025)	(0.025)
Age 35-44	-0.082**	-0.082**	-0.085**	-0.012	-0.013	-0.013
	(0.036)	(0.036)	(0.036)	(0.027)	(0.027)	(0.027)
Age 45-54	-0.072*	-0.078**	-0.074*	-0.082***	-0.083***	-0.083***
	(0.037)	(0.038)	(0.038)	(0.028)	(0.028)	(0.028)
Age 55-65	-0.056	-0.054	-0.050	-0.138***	-0.140***	-0.140***
	(0.037)	(0.039)	(0.039)	(0.033)	(0.033)	(0.033)
Basic education	-	-	-	-0.113***	-0.110***	-0.109***
				(0.038)	(0.038)	(0.038)
Post-secondary, non-tertiary education	0.248**	0.308***	0.430***	0.070	0.074	0.069
	(0.104)	(0.104)	(0.129)	(0.058)	(0.059)	(0.063)
Tertiary education	0.056***	0.109***	0.038	0.091***	0.081***	0.085***
	(0.019)	(0.020)	(0.027)	(0.015)	(0.015)	(0.023)
Firm size: 11-50	-0.011	-0.005	-0.004	0.012	0.008	0.008
	(0.023)	(0.023)	(0.023)	(0.022)	(0.022)	(0.021)
Firm size: 51-250	-0.051*	-0.044	-0.043	0.010	0.005	0.005
	(0.029)	(0.029)	(0.029)	(0.025)	(0.026)	(0.025)
Firm size: over 250	-0.020	-0.010	-0.010	0.041**	0.037*	0.037*
	(0.028)	(0.028)	(0.028)	(0.019)	(0.019)	(0.019)
Public sector/NGO	-0.084***	-0.070***	-0.073***	-0.042***	-0.036**	-0.035**
	(0.020)	(0.021)	(0.021)	(0.016)	(0.015)	(0.015)
Studied humanities		-0.064	-0.264*		0.001	0.013
		(0.039)	(0.152)		(0.028)	(0.048)
Studied social sciences		-0.096***	-0.168***		0.023	0.017
		(0.026)	(0.037)		(0.024)	(0.032)
Studied sciences		-0.096***	-0.117**		0.030	0.046
		(0.036)	(0.056)		(0.026)	(0.033)
Studied teaching		-0.084*	-0.048		-0.012	-0.016
		(0.044)	(0.045)		(0.035)	(0.036)
Studied services		0.078***	0.065***		-0.032	-0.031
		(0.024)	(0.023)		(0.024)	(0.024)
Studied health and welfare		-0.084**	-0.199***		-0.028	-0.025
		(0.039)	(0.065)		(0.030)	(0.053)

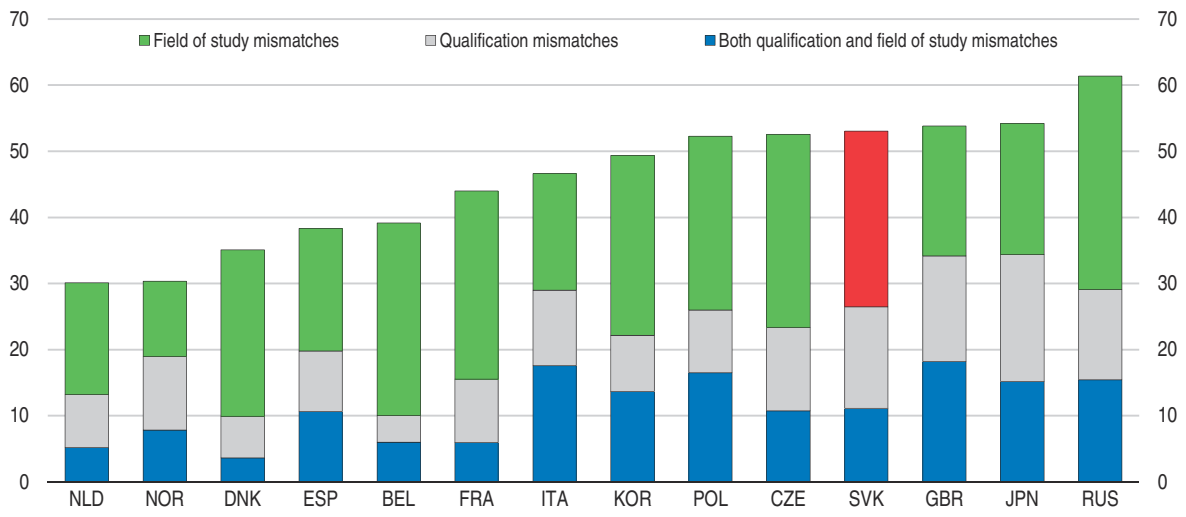
Box 1.3. **Skills mismatch and worker characteristics** *(cont.)*

Dependent variable	Over-qualified			Over-skilled		
	1	2	3	4	5	6
Tertiary education * Studied humanities			0.303*			-0.019
			(0.159)			(0.059)
Tertiary edu.*Studied social sciences			0.169***			0.008
			(0.052)			(0.043)
Tertiary education * Studied sciences			0.085			-0.031
			(0.072)			(0.042)
Tertiary education * Studied health and welfare			0.226***			-0.007
			(0.078)			(0.076)
Number of observations	2369	2369	2369	2602	2602	2602

Note: Estimates are from logit regressions. All variables are dummy variables. The omitted categories are: male; age 15-24; upper secondary education; firm of 1-10 employees; works in private sector; studied a general programme, engineering, agriculture and veterinary science. Values shown are marginal effects, corresponding to the impact of a change in the explanatory variable on the probability of mismatch (over skilling) at the mean of the explanatory variable. Robust standard errors are shown in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.
Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012).

Figure 1.16. **Qualification and education mismatches among young tertiary educated graduates are high**

Less than 35 year-olds



Source: OECD (2012), *The Survey of Adult Skills (PIAAC)*.

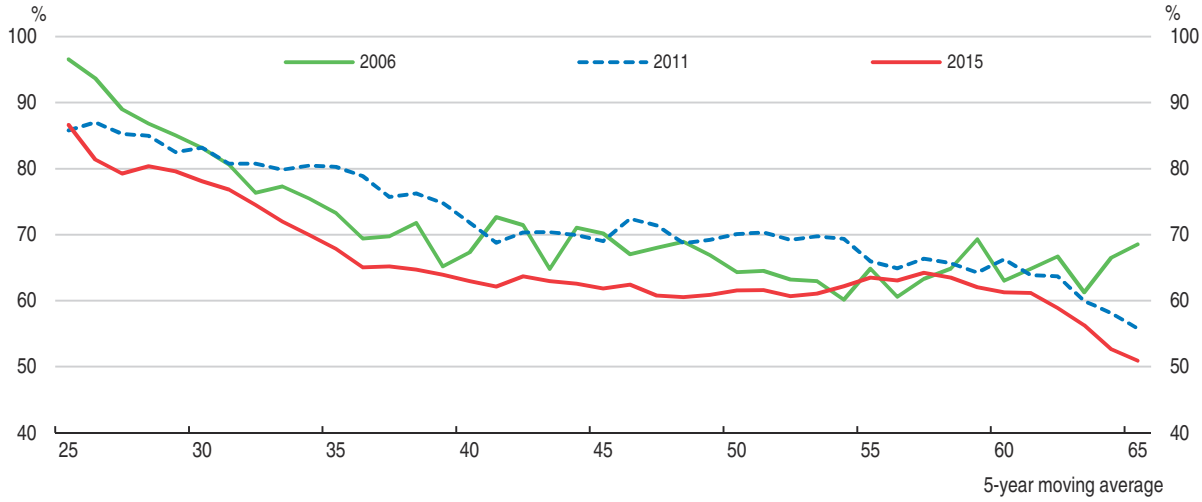
StatLink http://dx.doi.org/10.1787/888933500413

More information about graduates' labour market outcomes coupled with student counselling would help

The Slovak Republic has an underdeveloped statistical base of graduates' labour market outcomes. Collecting and publishing information about skills needs is considered good practice in the OECD (OECD, 2016b). However, the Slovak Republic uses only one measure and lacks proper statistical infrastructure (Figure 1.18). Countries such as Denmark, the Netherlands, and Norway with the lowest values of educational skills mismatches use various measures

Figure 1.17. **Mismatched workers suffer wage penalties, despite similar skills to well-matched workers**

Hourly wages of over-educated full-time tertiary graduates as a share of their well-matched counterparts by age

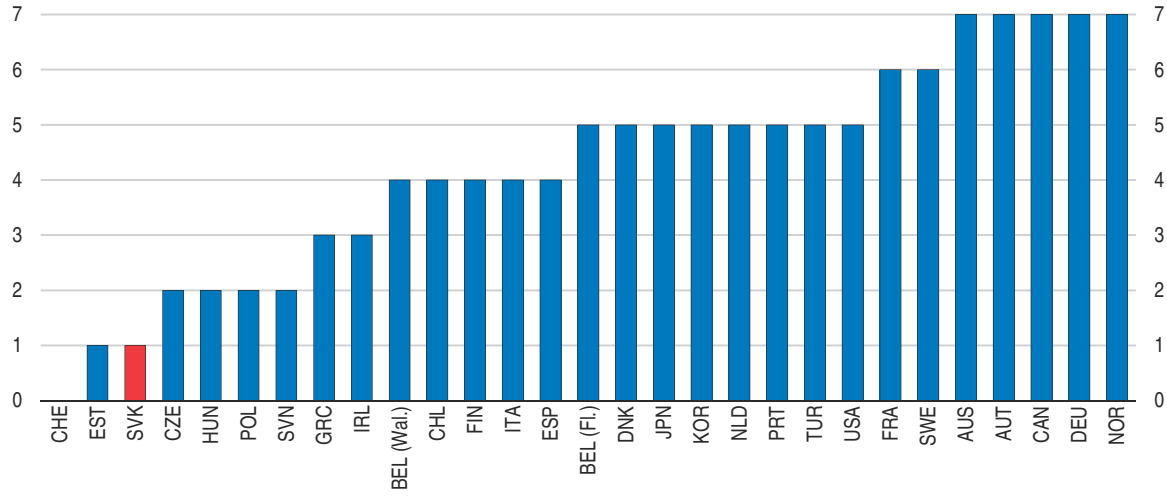


Source: Slovak quarterly survey on labour costs conducted by TREXIMA.

StatLink http://dx.doi.org/10.1787/888933500850

Figure 1.18. **The skills assessment system is underdeveloped**

The number of methods and tools used in skills assessment and anticipation systems[1]



Note: The OECD, the European Centre for the Development of Vocational Training (CEDEFOP), the European Training Foundation (ETF) and the International Labour Organization (ILO) developed a questionnaire called 'The Anticipating and Responding to Changing Skill Needs Questionnaire' to identify effective strategies among countries for improving skills governance and turning qualitative and quantitative information on skills needs into relevant action for policy. A questionnaire was distributed to governments (Ministry of Labour and of Education) as well as to social partners (employer organisations and trade union confederations).

Source: OECD (2016), *Getting Skills Right: Assessing and Anticipating Changing Skill Need.*

StatLink http://dx.doi.org/10.1787/888933500869

to increase relevant information about skills supply and demand, which can help students and employers improve the matching process. These include various employer and worker/graduate surveys, forecasting models, sector studies and qualitative measures. These countries also have a developed institutional framework responsible for assessing skills and providing relevant information to mitigate the information asymmetry.

One way to reduce the information shortage is to introduce a regular graduate tracking system. Such a system could provide useful information for students about the marketable skills acquired and labour market returns from different tertiary programmes. At the same time, employers could use it to acquire information about outcomes of particular courses. The government has introduced a pilot national project to collect data and provide information about graduates' labour market performance. However, it should extend it nationally and ensure that the results are regularly published. Graduates should be tracked not just shortly after graduation but also over longer periods of time to provide additional information about their longer-term labour market outcomes. For example, UK graduates are tracked for three and a half years after graduation. Furthermore, occupational surveys among employers should be introduced to provide information about skills needs in the labour market. In Italy an occupational survey provides information about shortages by occupation and about their skills requirements, the results of which are published regularly online.

Improved data collection has to be complemented with more effective career counselling. Working conditions of educational counsellors at secondary and also tertiary education level are insufficient (Beková et al., 2014). The main problem is that there are no dedicated staff for counselling activities – in most cases counselling is a side activity from teaching. Career guidance in Austrian schools is organised according to a three-level model containing lessons provided by career teachers, individual advice provided by student advisors and a school psychology service that can offer specialised assistance. English schools are responsible for providing independent guidance to students; they do this by securing services from external services or independent career development professionals.

Securing the skills of the workforce over time

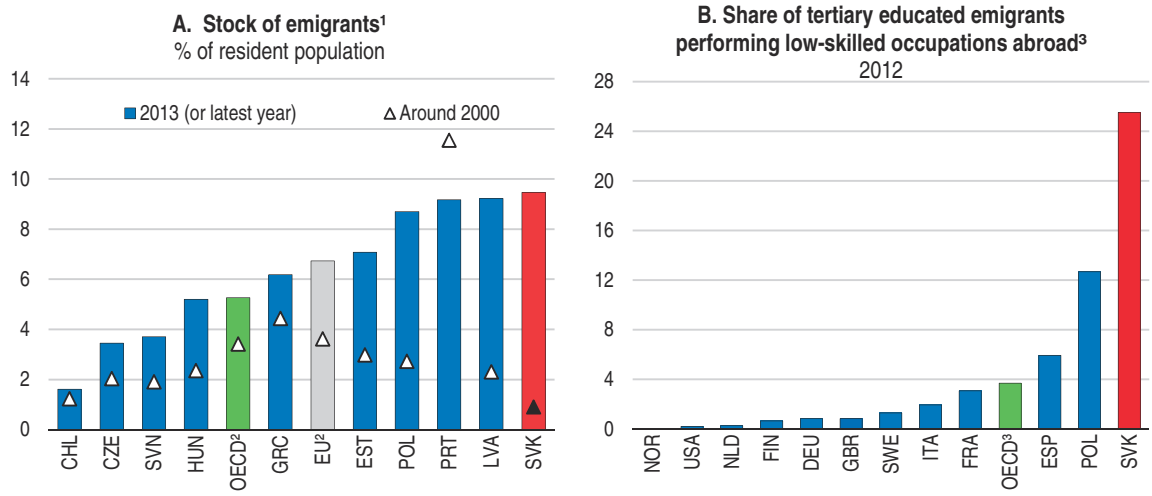
The supply of skilled Slovak workers is decreasing due to population ageing and rising emigration. Moreover, skills acquired in initial education can become obsolete over time. Therefore, to secure a skilled workforce in the future, the authorities should attempt to attract skilled labour, including returning migrants, and strengthen lifelong learning.

Attracting skilled workers, including returning migrants

The number of Slovak emigrants living abroad has been expanding rapidly over the last decade. It has increased tenfold since 2000. Almost one-tenth of the population now lives abroad, which is well above the OECD average (Figure 1.19, Panel A). Emigration has intensified since the Slovak Republic's accession to the EU, but even in recent years, the number of emigrants continues to rise, though in 2016 the number of returning migrants slightly exceeded that of emigrants. Slovak emigrants are mostly young and educated. One-third are 18-26 years old. Tertiary educated individuals are more likely to leave (Halus et al., 2017). Emigration propensities are particularly strong among medical and technical university graduates, with around one-fifth of graduates leaving the country (Halus et al., 2017). Currently, Slovakia has one of the highest shares of doctors and nurses working in other OECD countries (Chapter 2). In addition, already 14% of all tertiary students study abroad, mostly in the Czech Republic.

This has negative economic consequences. With growing numbers of Slovaks living abroad, the domestic labour force is shrinking, exacerbating population ageing. Skilled workers are in short supply in the labour market. Many firms report that emigration of well-educated and skilled people is harming economic competitiveness (Figure 1.20). It

Figure 1.19. **The stock of emigrants has increased significantly**



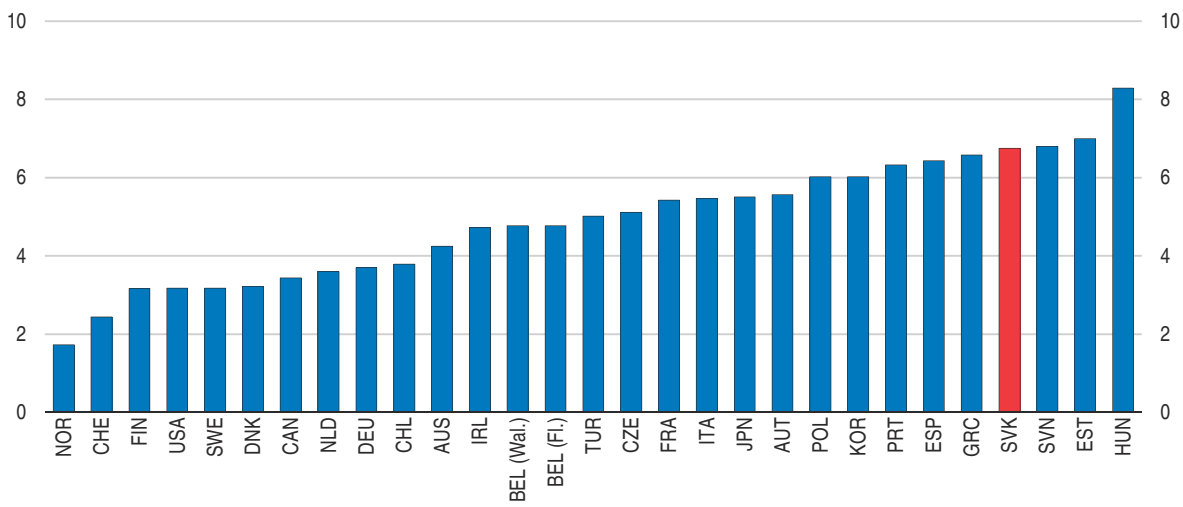
1. Emigration stocks are computed with reference to a sample of 34 OECD countries of destination for which immigrant data by country of birth (stocks) are available.
2. Unweighted average.
3. Skilled and elementary occupations are defined based on the ISCO classification.

Source: OECD (2016), OECD International Migration Statistics (database), OECD (2016), OECD Economic Outlook: Statistics and Projections (database),Eurostat (2016), Population Statistics (database), OECD (2013), OECD Skills Outlook 2013 Database and OECD calculations.

StatLink http://dx.doi.org/10.1787/888933500888

Figure 1.20. **The impact of brain drain on the competitiveness[1] is substantial**

Scale from 0 to 10, 2015



1. Survey among companies asserting that the brain drain of well-educated and skilled people hinders economic competitiveness.

Source: IMD World Competitiveness Center (2016), IMD World Talent Report 2015.

StatLink http://dx.doi.org/10.1787/888933500907

also represents sunk costs for the education system. Moreover, many Slovak emigrants with tertiary education work in low-skilled jobs (Figure 1.19, Panel B). Higher emigration of youth also has negative effects on the mental health of remaining parents (Antman, 2010).

Rising emigration can signal the need to improve the overall socio-economic situation. In areas of potential skill shortages, especially health-care sectors, targeted measures are needed to ensure sufficient labour supply, as recommended in Chapter 2. Another way to

increase the supply of skilled workers and counter the ageing population trend is to encourage emigrants to return home. Return migrants can bring home skills, networks and financial capital, which can help spur innovation and growth (OECD, 2008b). Currently, there are two schemes to attract return migrants, both with only limited impact. Since 2015 the "Return home" scheme with a budget of 1 million euros has been providing subsidies of 10 000 or 50 000 euros for top university graduates who commit themselves to work at least one year in the public sector. However, the limited budget can support only a limited number of individuals. The second measure offers a full scholarship for two or three students at top ranked foreign universities in exchange for three years' work in the public service. The scholarship started in 2006 but was poorly administered. Many participants received a full scholarship to finance their studies, but they did not receive any public-sector job offers upon graduation. The programme's management has improved since then and the budget has doubled, but it still remains limited. After ensuring the effectiveness of these schemes, the authorities should scale them up.

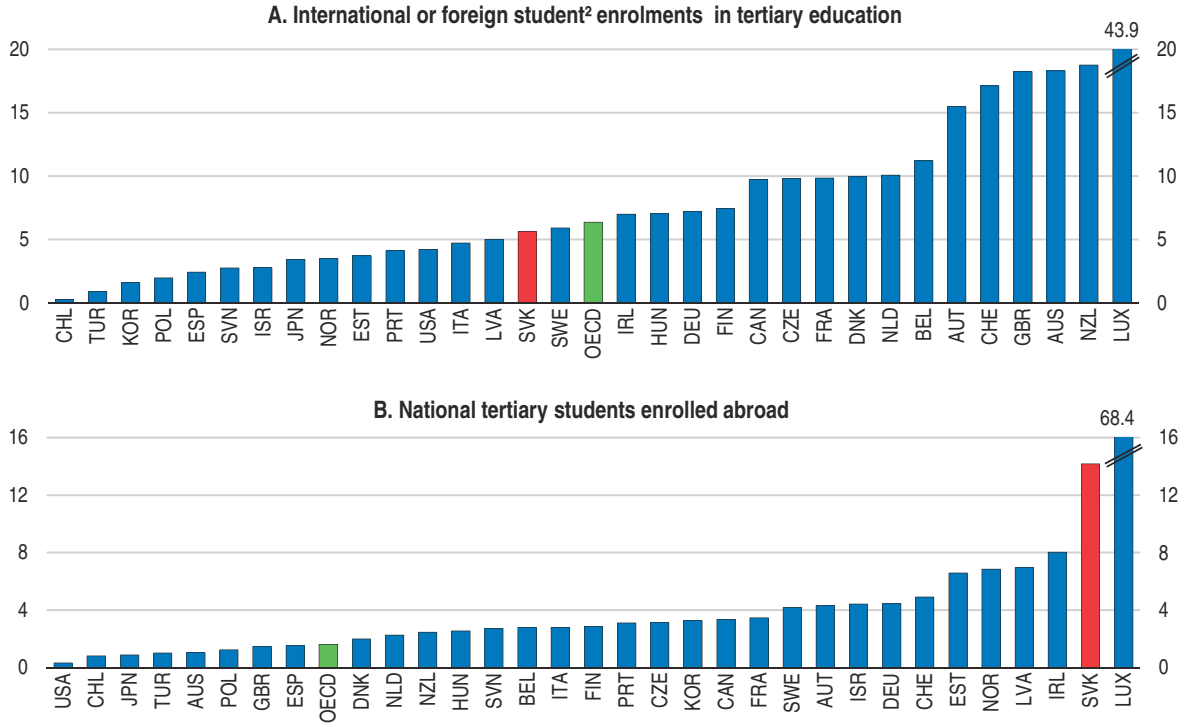
The government should also develop a comprehensive strategy to keep ties with the large expatriate community. An information system should be set up to connect with the diaspora and facilitate its engagement. The system should be able to target and address emigrants soon after emigration, as the probability of return decreases after five years of living abroad (Pungas et al., 2012). The Irish government has created a "Global Irish" online hub with a regular newsletter that has details on job, training and business opportunities in Ireland (DFA, 2015). In 2010 Estonia launched an internet portal, where talented young adults studying abroad could find information about work and internship offers in Estonia, and companies could use the contact network to find employees among those studying abroad. At the same time, the system should also target those emigrants who won't return, to at least keep them in contact with the country of origin for economic and scientific links (OECD, 2016c).

In addition, the government should increase its efforts to attract foreign workers. One group of readily available high-skilled immigrants are international students studying in the Slovak Republic. They are particularly attractive, as they have already acquired some cultural and linguistic knowledge during their studies. However, Slovak tertiary education attracts fewer international students than do other OECD countries (Figure 1.21). Attracting foreign students can have a positive impact on the supply of skilled workers, as one-third of all international students decide to remain in the host country after graduation (OECD, 2011b). The government should increase the provision of tertiary education programmes in foreign languages and strengthen scholarship programmes for talented foreign students. This should be supplemented with measures to retain the students after graduation. Many OECD countries have simplified working visas and temporary residence procedures for international students and graduates. Finland and Norway, for example, now take into account the years of residence spent by students when they assess immigration eligibility. In France enrolment of international students in advanced research programmes shortens the period of residence required for eligibility for naturalisation (OECD, 2014e).

Immigration laws should be eased to attract more skilled workers. Given the Republic's membership in the European Economic area (EEA), the scope for attracting skilled migrants is restricted to those from outside the EEA. However, these potential immigrants could be deterred by some of the strict features of the Slovak immigration laws. The conditions to get a Blue Card, which grants special residency rights and work permits to highly-skilled migrants outside of Europe, is more difficult compared to other EU countries. Only four Blue Cards were issued in 2016. The salary threshold for Blue Cards is set relatively high,

Figure 1.21. **Many Slovak students study abroad and only few foreigners study in the Slovak Republic**

Percentage of total tertiary students, 2014[1]



1. 2013 for Canada.
2. International students refer to students who have moved from their country of origin with the purpose of studying. Foreign students refer to students who are not citizens of the countries in which they are enrolled, but may be long-term residents or were born in that country.

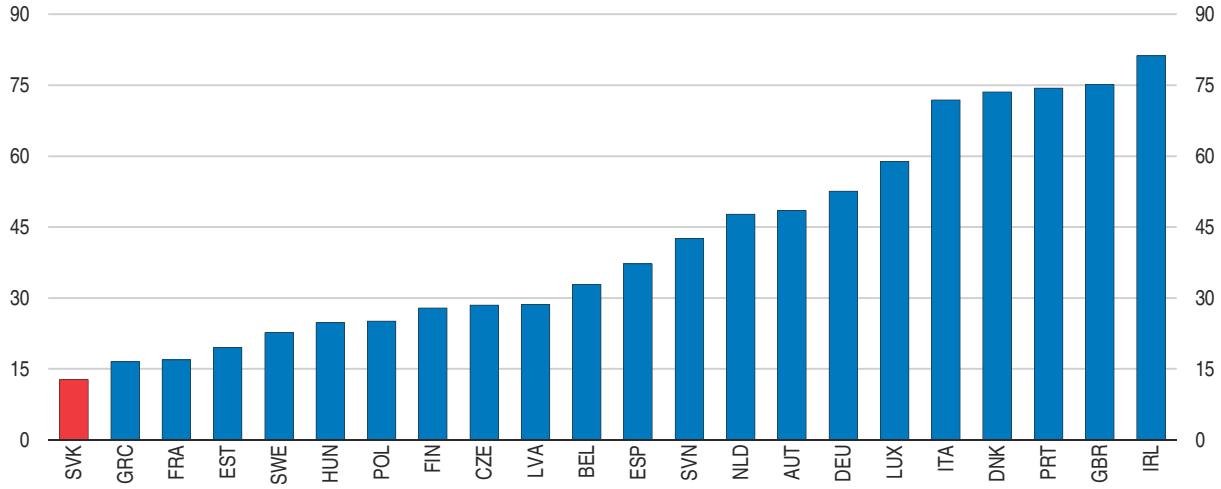
Source: OECD (2016), *Education at a glance 2016: OECD Indicators*.

StatLink http://dx.doi.org/10.1787/888933500432

given that only 12% of current tertiary-educated workers earn more than that amount (Figure 1.22). A lower threshold for occupations experiencing shortages could be introduced, which would broaden access. In addition, foreign skilled workers requesting a Blue Card need to meet stricter recognition requirements than other countries. For example, proof of the higher education or professional qualifications should be issued by the Slovak Republic's Centre for Recognition of Diplomas, translated into Slovak and authenticated, which together often lengthen the procedure (OECD and EU, 2016). The labour market test, which requires potential employers to prove that no Slovak jobseeker is suitable for the job, can be dropped for occupations experiencing shortages. Although the Blue Card Directive allows for a labour market test, exemptions are applied by several EU Member states (OECD and EU, 2016). Regarding access to the labour market, the Act on public service allows only EU citizens to apply for a job. As a result, the Slovak immigration rate remains one of the lowest in the OECD (OECD, 2014e). In contrast, Poland, the Czech Republic and Hungary have been able to attract large numbers of skilled Ukrainian workers every year. However, a new legislation effective from May 2017 will result in some easing of the rules for foreign workers. At the same time, Slovakia has one of the least favourable regimes within the European Union in providing foreign workers access to its labour market. This is a welcome step, but further changes are needed to ensure that it brings such laws and rules close to best practices (OECD, 2014e).

Figure 1.22. **The Blue Card treshold is more restrictive in the Slovak Republic than in other selected OECD countries**

Share of full time workers earning more than the Blue Card threshold, in percent



Source: OECD and EU (2016), *Recruiting ImmigrantWorkers: Europe 2016.*

StatLink http://dx.doi.org/10.1787/888933500926

The Slovak Republic should carefully consider any tax concession for high-skilled workers, as it bears a risk for increasing room for tax avoidance, which is already one of the highest in the OECD. Many OECD countries have in place tax concessions to attract or retain high-skilled workers. Italy, for instance, provides a 90% exemption on income tax for researchers, while Belgium and Canada provide a 75% concession. Poland also provides a 50% deduction of income from artistic, scientific, sports or experts' activities. However, the Slovak Republic should carefully consider following this path, which may have little impact on migration decisions because of cultural and linguistic barriers (OECD, 2011b). In addition, such tax reliefs and exemptions complicate the tax system.

Strengthening lifelong learning is necessary to secure the supply of skills over time

Technological change will continue to generate shifts in the structure of labour demand in all OECD countries. This will require that workers update their skills more frequently than in the past. In this context, current and future workers are exposed to a risk of depreciation of their qualifications and skills obsolescence.

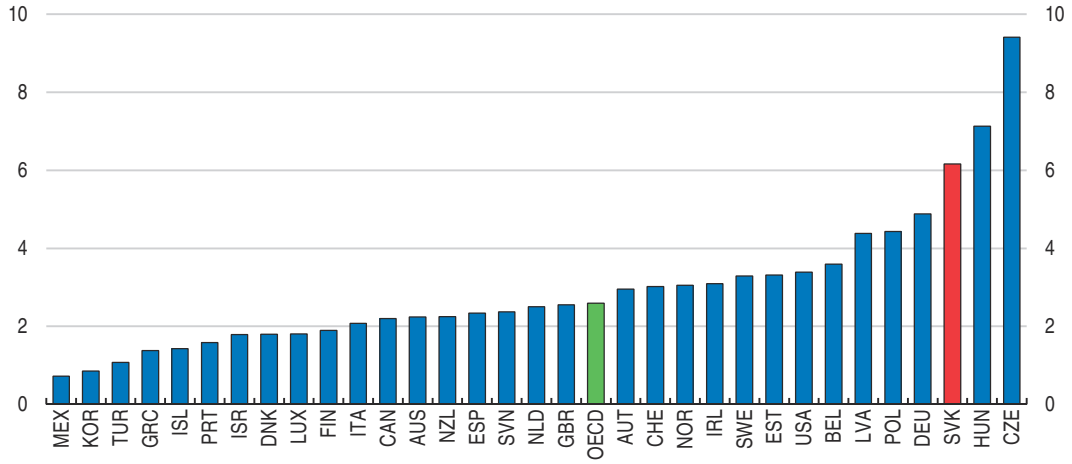
A particularly vulnerable group in this respect are the unemployed. Long periods of unemployment can have "scarring" effects, especially for those who are out work for more than a year. Unemployed workers risk seeing their skills eroded to the point of losing attachment with the labour market. In the Slovak Republic unemployment persistence remains the most pressing concern with the long-term unemployed over 60% of the total.

Lifelong learning can play an important role in preserving skills. It is a way to increase labour productivity by broadening the level of skills (OECD, 2011c). Furthermore, lifelong learning can be a significant tool to provide a second chance for those who did not get very far with their initial education. This is particularly important in the Slovak Republic where education is such a strong determinant of labour market outcomes (Figure 1.23).

Less than 5% of the Slovak adult population participate in further education, a low figure compared to other OECD countries (Figure 1.24). The government has recognised the

Figure 1.23. **The relative unemployment rate of individuals with lower secondary versus tertiary education**[1]

25-64 years-olds, 2015



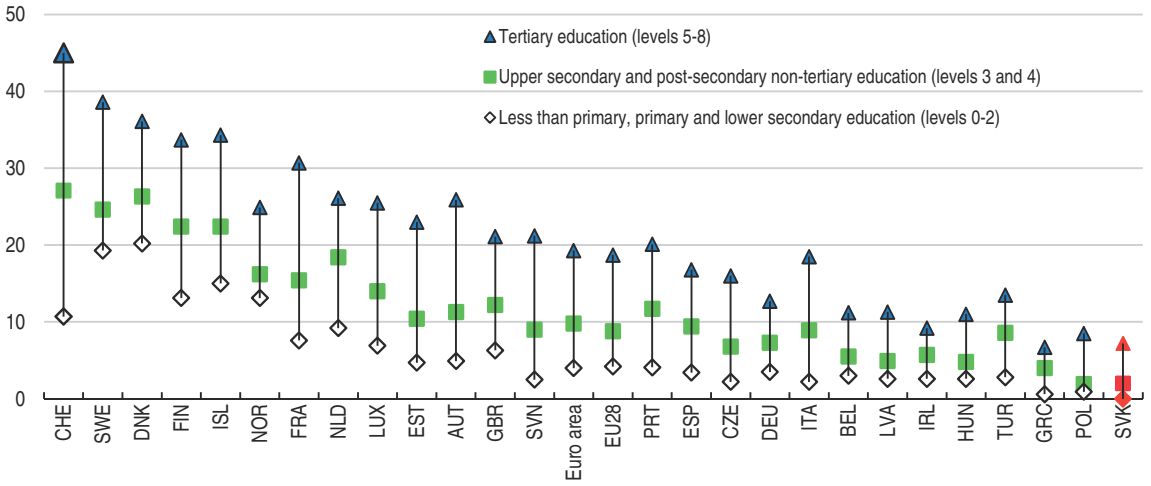
1. ISCED-97. A tertiary degree refers to tertiary-type A or advanced research programmes.

Source: OECD (2016), Education at a Glance (database).

StatLink http://dx.doi.org/10.1787/888933500945

Figure 1.24. **Participation in life-long learning across Europe by educational attainment**

Per cent of population aged 26-64, 2016



Source: Eurostat, (Labour Force Survey 2016).

StatLink http://dx.doi.org/10.1787/888933500964

problem and has already introduced measures to increase participation. New schemes implemented in 2015 provide financial incentives to employers to invest in further learning. Furthermore, a new national qualification system is intended to improve the recognition of non-formal and informal learning. The new framework will be oriented to learning outcomes and will include all qualifications gained outside formal education. The government should ensure effective implementation and evaluation of the effectiveness of these measures.

These measures should be complemented by more effective training and re-training programmes targeted at the unemployed. Experience from other OECD countries shows that well designed training can be one of the most efficient activation programmes (Card et al., 2015).

Training keeps skills up to date and improves labour market matching. However, very few unemployed take part in training programmes (0.4% in 2014), and, more worryingly, in most cases the training does not seem to provide relevant skills for the labour market. Empirical research suggests that training measures in the Slovak Republic, particularly those conducted in the capital city, may even harm the employability of jobseekers (Stefanik et al., 2014).

Jobseekers should be allowed to choose the training provider in order to increase competition. This can lead to offers better suited to jobseekers' demands and to labour market needs. Experience in other OECD countries indicates that allowances and vouchers, which are used in Austria, Denmark, Germany and Switzerland, can be effective in facilitating adult learning. The training vouchers can provide individuals with a training subsidy that gives them more responsibility and control, allowing for a better match between individual needs and appropriate training. This should be accompanied by quality assessments. The training providers should be evaluated every year, with the results published regularly. With improved quality, authorities should consider allocating more resources towards training measures, as has already been recommended in previous OECD Surveys (OECD, 2012b and 2014b).

Recommendations to enhance advanced skills

(Key recommendations included in the Executive Summary are in bold italics)

Securing school-based skills formation

Enhance the attractiveness of the teaching profession

- *Further increase teachers' salaries, particularly for starting teachers, conditional on improved teaching quality through high-quality professional development and increased focus on disadvantaged pupils.*

Improve equity outcomes of the education system

- *Raise pre-school attendance of the poor with conditional cash transfers.*
- *Develop statistics to monitor the effectiveness of support to the Roma.*
- Postpone early tracking in primary schools.
- Increase the number of teaching assistants.

Boosting skills in tertiary education

Raise the quality of tertiary education

- *Increase the transparency and independence of the tertiary quality-assurance framework to international standards.*
- *Increase the funding of internationally-recognised research.*
- Ease the conditions for foreign professors and researchers to teach at Slovak universities.
- Shift funding towards internationally-recognised research.

Link tertiary education more tightly to the labour market

- *Introduce a graduate tracking system to improve responsiveness of tertiary education to labour market needs.*
- Develop professionally-oriented vocational bachelors programmes.
- Strengthen career counselling.

Securing the skills needed by the labour market over time

Attract highly skilled labour, including returning migrants

- *Simplify work visa and residence procedures for skilled workers.*
- Develop a system of information and cultural outreach to expatriate communities.

Recommendations to enhance advanced skills *(cont.)*

(Key recommendations included in the Executive Summary are in bold italics)

- Attract foreign students by expanding the number of tertiary courses in foreign languages, and strengthen scholarship programmes.

Strengthen lifelong learning

- Evaluate the recent government measures aimed to increase participation in lifelong learning.
- Increase spending on those training programmes for the unemployed whose effectiveness has been demonstrated.
- Encourage participation in adult training programmes through a system of vouchers.

Bibliography

Amnesty International and European Roma Rights Centre (2017), *A lesson in discrimination segregation of Romani children in primary education in Slovakia*, *www.errc.org/cms/upload/file/report-lesson-in-discrimination-english.pdf*.

Autor, D.H. (2015), "Why Are There Still So Many Jobs? The History and Future of Workplace Automation", *Journal of Economic Perspectives*, 29(3), 3-30.

Arntz, M., T. Gregory and U. Zierahn (2016), "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis", *OECD Social, Employment and Migration Working Papers*, No. 189, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jlz9h56dvq7-en*.

Adalet McGowan, M. and D. Andrews (2015), "Skill Mismatch and Public Policy in OECD Countries", *OECD Economics Department Working Papers*, No. 1210, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5js1pzw9lnwk-en*.

Antman, F. (2010), "Adult Child Migration and the Health of Elderly Parents Left Behind in Mexico", *American Economic Review: Papers & Proceedings*, Vol. 100, pp. 205-8.

Beková, L., Š. Grajcár, D. Lepeňová, E. Uhríková and M. Zvariková (2014), "Kariérové poradenstvo v Slovenskej republike", Slovenská akademická asociácia pre medzinárodnú spoluprácu, centrum Euroguidance, Bratislava.

BIS (2011), "Supporting Graduate Employability: HEI Practice in Other Countries", *BIS Research Paper,* No. 40, June.

Card, D., J. Kluve and J. Weber (2015), "What Works? A Meta Analysis of Recent Active Labour Market Program Evaluations", *NBER Working Papers*, No. 21431, *www.nber.org/papers/w21431*.

Chetty, R., J. Friedman and J. Rockoff (2014), "Measuring the Impacts of Teachers I: Evaluating Bias in Teacher Value-Added Estimates", *American Economic Review*, Vol. 104, No. 9, pp. 2593-2632.

Department of Foreign Affairs (DFA) (2015), *Global Irish: Ireland's Diaspora Review*, Dublin.

Dundes, L. and J. Marx (2006), "Balancing Work and Academics in College: Why Do Students Working 1019 Hours Per Week Excel?", *Journal of College Student Retention*, Vol. 8, No. 1, pp. 107-20.

European Commission (2014), "Study on Conditional cash transfers and their impact on children", June.

European Commission (2015a), *Skill supply and demand up to 2025*, Slovak Republic country forecast, European Centre for the Development of Vocational Training.

European Commission (2015b), "Education and Training Monitor 2015 – Slovakia", Brussels.

European Commission (2015c), "University quality indicators: A critical assessment", DG for Internal Policies, Brussels, *www.europarl.europa.eu/RegData/etudes/STUD/2015/563377/IPOL_STU(2015)563377_EN.pdf*.

ENQA (2013), *Standards and Guidelines for Quality Assurance in the European Higher Education Area*. *www.enqa.eu/wp-content/uploads/2013/06/ESG_3edition-2.pdf*

Fazekas, M. and L. M. Kurekova (2016), *A Skills Beyond School Review of the Slovak Republic*, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264233348-en*.

Fryer, R., Jr. (2011), "Injecting Successful Charter School Strategies into Traditional Public Schools: A Field Experiment in Houston", *NBER Working Papers*, No. 17494.

Fryer, R., Jr. (2016), *The Production of Human Capital in Developed Countries: Evidence from 196 Randomized Field Experiments*, National Bureau of Economic Research, Cambridge, Mass.

Gatti, R., S. Karacsony, K. Anan, C. Ferré and C. de Paz Nieves (2016), *Being Fair, Faring Better Promoting Equality of Opportunity for Marginalized Roma*, World Bank, Washington.

Haluš, M., M. Hlaváč, P. Harvan and S.Hidas (2017), "Odliv mozgov po slovensky", Institut financnej politiky, Ministerstvo Financii Slovenskej republiky, *www.finance.gov.sk/Default.aspx?CatID=11308*.

IMD (2015), *IMD World Talent Report*, Lausanne, Switzerland, *www.imd.org/uupload/IMD.WebSite/Wcc/NewTalentReport/Talent_2015_web.pdf*.

Itas (2016), *Importance of the ICT sector for Slovakia*, IT asociacia Slovenska.

Kertesi, G. and G. Kézdi (2013), "The Kindergarten Attendance Allowance in Hungary An evaluation of a conditional cash transfer program", *Budapest Working Papers on the Labour Market*, No. BWP – 2013/14.

Kertesi, G. and G. Kézdi (2014), "On the test score gap between Roma and non-Roma students in Hungary and its potential causes", *Budapest Working Papers on the Labour Market*, No. BWP – 2014/1.

Koucky, J. (2015) "Kvalita a zodpovednosť. Slovenské vysoké školstvo a potreby spoločnosti v medzinárodnom kontexte", podkladové štúdie ("Quality and Responsibility: Slovak Higher Education and Societal Needs within the International Context", background studies), CVTI Bratislava.

Kozák, M. and M. Rehúš (2015), "Papier nepustí? Analýza nadbytočnej administratívnej záťaže v školách", Komentár 03/2016, Inštitút vzdelávacej politiky, Ministerstvo školstva, vedy, výskumu a športu SR.

Martinak, D. (2016), *Filozof úradníkom*, učiteľ pokladníkom, IVP, Ministry of Education.

Ministry of Education (2016), "Metodika rozpisu dotácií zo štátneho rozpočtu na rok 2016 pre vejné školy", *www.minedu.sk/data/att/9255.rtf*.

Montt, G. (2015), "The causes and consequences of field-of study mismatch: An analysis using PIAAC", *OECD Social, Employment and Migration Working Papers*, No. 167, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jrxm4dhv9r2-en*.

OECD (2008a), *Tertiary Education for the Knowledge Society: Volume 1 and Volume 2*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264046535-en*.

OECD (2008b), *International Migration Outlook 2008*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/migr_outlook-2008-en*.

OECD (2011a), "School Autonomy and Accountability: Are They Related to Student Performance?", *PISA in Focus*, No. 9, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5k9h362kcx9w-en*.

OECD (2011b), *Taxation and Employment*, OECD Tax Policy Studies, No. 21, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264120808-en*.

OECD (2011c), *The OECD Skills Strategy*, OECD Publishing, Paris.

OECD (2012a), "Does performance-based pay improve teaching?", *PISA in Focus*, No. 16, OECD Publishing, Paris.

OECD (2012b), *OECD Economic Surveys: Slovak Republic 2012*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eco_surveys-svk-2012-en*.

OECD (2012c), *Equity and Quality in Education: Supporting Disadvantaged Students and Schools*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264130852-en*.

OECD (2012d), "How are countries around the world supporting students in higher education?", *www.oecd.org/education/skills-beyond-school/49729932.pdf*.

OECD (2013a), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264204256-en*.

OECD (2013b), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, PISA, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264201156-en*.

OECD (2013c), *OECD Economic Surveys: Israel 2013*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eco_surveys-isr-2013-en*.

OECD (2014a), *PISA 2012 Results: Creative Problem Solving: Students' Skills in Tackling Real-Life Problems* (Volume V), PISA, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264208070-en*.

OECD (2014b), *OECD Economic Surveys: Slovak Republic 2014*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eco_surveys-svk-2014*.

OECD (2014c), *Talis 2013 Results: An International Perspective on Teaching and Learning*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264196261-en*.

OECD (2014d), "How Much Are Teachers Paid and How Much Does it Matter?", *Education Indicators in Focus*, No. 21, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jz6wn8xjvvh-en*.

OECD (2014e), *International Migration Outlook 2014*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/migr_outlook-2014-en*.

OECD (2015a), *Adults, Computers and Problem Solving: What's the Problem?*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264236844-en*.

OECD (2015b), *Education at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eag-2015-en*.

OECD (2016a), *Low-Performing Students: Why They Fall Behind and How to Help Them Succeed*, PISA, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264250246-en*.

OECD (2016b), *Getting Skills Right: Assessing and Anticipating Changing Skill Needs*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264252073-en*.

OECD (2016c), *OECD Reviews of Labour Market and Social Policies: Latvia 2016*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264250505-en*.

OECD and EU (2016), *Recruiting Immigrant Workers: Europe 2016*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264257290-en*.

PIAAC- National report (2013), *Slovakia 2013 PIAAC*, Survey of Adult Skills (PIAAC), OECD Publishing, Paris.

Pungas, E., O. Toomet, T. Tammaru and K. Anniste (2012), "Are Better Educated Migrants Returning? Evidence from Multi-Dimensional Education Data", *NORFACE Migration Discussion Paper*, No. 2012-18, *www.norface-migration.org/publ_uploads/NDP_18_12.pdf*.

PWC (2016), "Prieskum dodávateľov automobilového priemyslu", PWC, Slovensky automobilovy institut, Zvaz automobiloveho priemyslu Slovenskej republiky.

Quintini, G. (2015), "Working and learning: A diversity of patterns", *OECD Social, Employment and Migration Working Papers*, No. 169, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jrw4bz6hl43-en*.

Santiago, P., G. Halász, R. Levačić and C. Shewbridge (2016), *OECD Reviews of School Resources: Slovak Republic 2015*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264247567-en*.

Srnánková, L. (2014), "Absolventi vysokých škôl na trhu práce Priebeţné výsledky z prieskumu", ACADEMIA.

Šiškovič, M. and M. Játi (2015), "Čo skutočne merajú medzinárodné rebríčky vysokých škôl", Komentár 01/2015, Inštitút vzdelávacej politiky, Ministerstvo školstva, vedy, výskumu a športu SR.

Štefánik, M., M. Lubyová, G. Dováľová and K. Karasová (2014), "Analýza účinkov nástrojov aktívnej politiky trhu práce", Centrum vzdelavania, Ministerstvo prace, socialnych veci a rodiny.

U21 (2016), *Ranking of National Higher Education Systems*, Melbourne Institute of Applied Economic and Social Research, University of Melbourne.

UNDP (2012), "Roma education in comparative perspective: Findings from the UNDP/World Bank/EC Regional Roma Survey", *Roma Inclusion Working Papers*, United Nations Development Programme (UNDP) Europe and the CIS, Bratislava Regional Centre, *www.eurasia.undp.org/content/dam/rbec/docs/Roma-education-in-comparative-perspective.pdf*.

UNDP (2014), *Atlas Romskych komunit na Slovensku 2013*, Regionálne centrum Rozvojového programu OSN Pre Európu a Spoločenstvo nezávislých štátov v Bratislave.

Vantuch, J. and D. Jelínková (2013), *VET in Europe, Country Report: Slovakia*, CEDEFOP.

Vašíčková, S. (2014), *Správa z merania klímy pedagogického zboru*, Výskum sprievodných aspektov vzdelávania, NÚCEM, Bratislava.

Velšič, M. and T. Janotík (2016), "E-skills and trh prace na Slovensku "("E-skills and the labour market in the Slovak Republic"), IVO, Accenture, Profesia.

WEF (2016), *The Global Competitiveness Report 2015-2016*, World Economic Forum *www3.weforum.org/docs/gcr/2015-2016/Global_Competitiveness_Report_2015-2016.pdf*.

© OECD 2017

Chapter 2

Improving the efficiency and outcomes of the Slovak health-care system

Despite improvements over the past few decades, Slovak health outcomes remain poor compared with most other OECD countries, even after controlling for differences in per capita income and other social, cultural and lifestyle factors. Disparities in access to care and health outcomes between the Roma and the rest of the population are large. Moreover, the health-care system is a source of general discontent because of high out-of-pocket payments, long waiting lists for some medical services and widely perceived mismanagement of public health-care spending. Health-care spending is currently about in line with the country's standard of living. However, improving the efficiency of this sector is key: meeting the rising demand for medical services in the coming decades while containing government spending to maintain sound public finances will be challenging. The most pressing issues to be addressed concern: enhancing the efficiency and quality of primary care; addressing the shortage of nurses and replacing the large number of retiring physicians; modernising hospital infrastructure and management; further tightening control over pharmaceutical and other ancillary spending; developing a comprehensive strategy for long-term care; promoting better care access for the Roma population; and improving lifestyles through well-designed public health and disease-prevention policies.

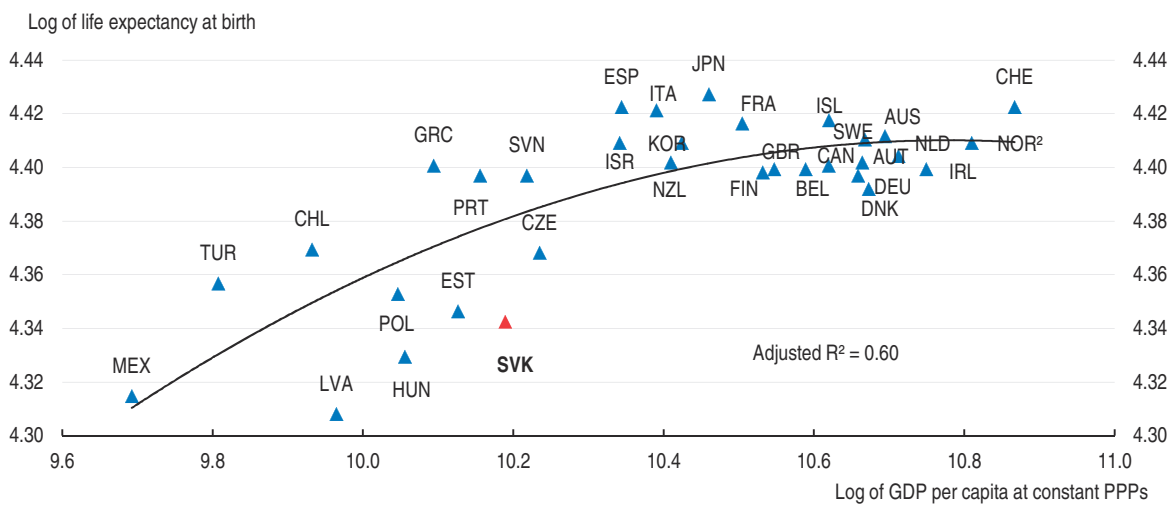
The health-care system needs to become more effective

Health outcomes are poor, and progress is slow

The Slovak Republic's health outcomes rank poorly in international comparisons. Life expectancy at birth is shorter than in countries with similar or lower living standards (Figure 2.1). The same applies to several other health indicators, which ought to be better for a country with the Slovak Republic's GDP per capita. Life expectancy at 65 and health-adjusted life expectancy (i.e. the average number of years that an individual is expected to live in a healthy state) are among the lowest in the OECD. Infant mortality is also high, as is amenable mortality, compared with countries with similar economic development (Figure 2.2). Moreover, the population's health status remains low compared with most other OECD countries, even after controlling for differences in social, cultural and lifestyle factors (Table 2.1)

Figure 2.1. **Slovak life expectancy at birth is comparatively low even adjusted for per capita incomes**

2014[1]



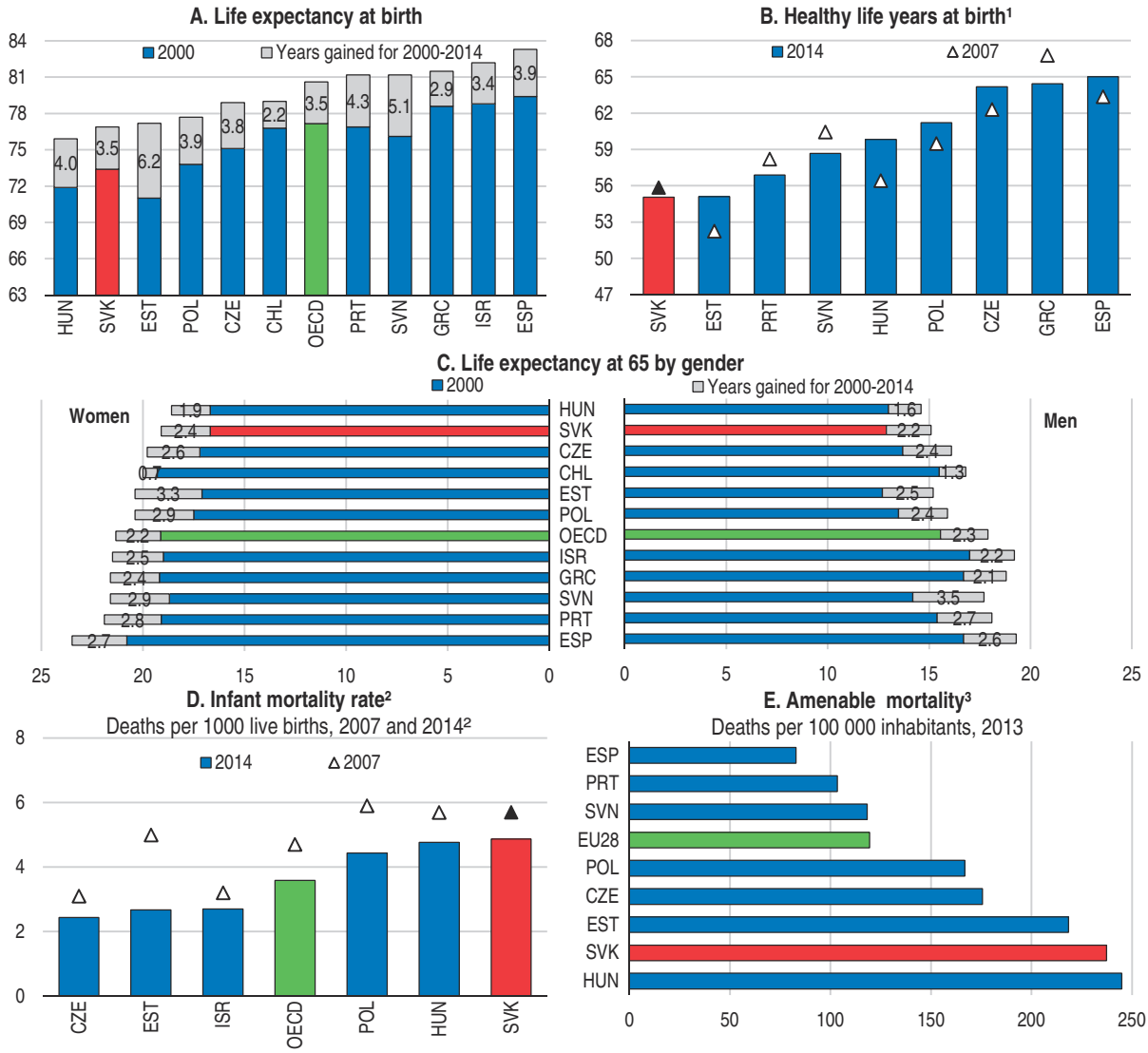
1. Luxembourg and United States are excluded. 2011 for Canada.
2. Mainland GDP for Norway.

Source: OECD (2016), OECD Health Statistics (database), OECD National Accounts Statistics (database) and OECD calculations based on OECD National Accounts Statistics (database).

StatLink http://dx.doi.org/10.1787/888933500983

Health outcomes have undeniably improved over the last ten years, but life expectancy and infant mortality have not progressed more rapidly than the OECD average, and health-adjusted life expectancy did not increase between 2007 and 2014 (Figure 2.2). Overall, the reduction in the gap in Slovak living standards with the OECD average over the last decade has not been matched by similar progress in health outcomes.

Figure 2.2. **Slovak life expectancy outcomes are relatively poor**



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). Three-year average (2012-14).
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 (2016), OECD Health Statistics (database) and Eurostat (2016), Health Statistics (database).

StatLink http://dx.doi.org/10.1787/888933501002

Large health inequalities exist between the Roma and non-Roma population

These health indicators also show wide disparities within the country, and especially between the Roma community and the rest of the population. Despite a lack of reliable statistics for the Roma people, who account for an estimated 8% of the population, available surveys highlight their poor health conditions. Recent research in three districts in the eastern part of the country reveal an average life expectancy shortfall of around 10-20 years relative to that of other local inhabitants (Figure 2.3, Panel A) (Soltès et al., 2014; Gavurová et al., 2014). The situation is even worse for communities living apart from the rest of the population, which account for one half of all Slovak Roma. In some districts

Table 2.1. **Health outcome performance**

	Life expectancy at birth, total population	Life expectancy, Male at 65, total population	Life expectancy, Female at 65, total population	Mortality rate, all causes	Infant mortality rate	Premature mortality	Average
Chile	0.6	1.1	0.4	1.6	-0.8	0.7	0.6
Czech Republic	-0.4	-0.7	-1.0	-0.8	0.9	0.6	-0.2
Estonia	-0.6	-0.9	0.3	-0.2	0.9	-1.0	-0.2
Greece	1.3	2.0	1.2	1.0	0.9	1.4	1.3
Hungary	-1.7	-1.6	-1.5	-1.8	-0.5	-0.9	-1.3
Israel	1.6	1.9	0.5	1.8	0.2	0.5	1.1
Poland	-0.3	-0.1	0.2	-0.1	-0.5	-0.5	-0.2
Slovak Republic	-1.1	-1.3	-1.6	-1.2	-1.3	-0.8	-1.2
Slovenia	1.3	0.8	0.9	0.6	1.2	0.9	1.0
Spain	1.4	1.0	2.2	1.4	1.5	2.1	1.6
OECD	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	-2.5	-2.2	-1.6	-1.9	-2.4	-3.5	-2.2
Maximum	1.6	2.0	2.2	1.8	2.1	2.1	1.6
Adjusted R^2	0.59	0.61	0.41	0.58	0.41	0.57	-

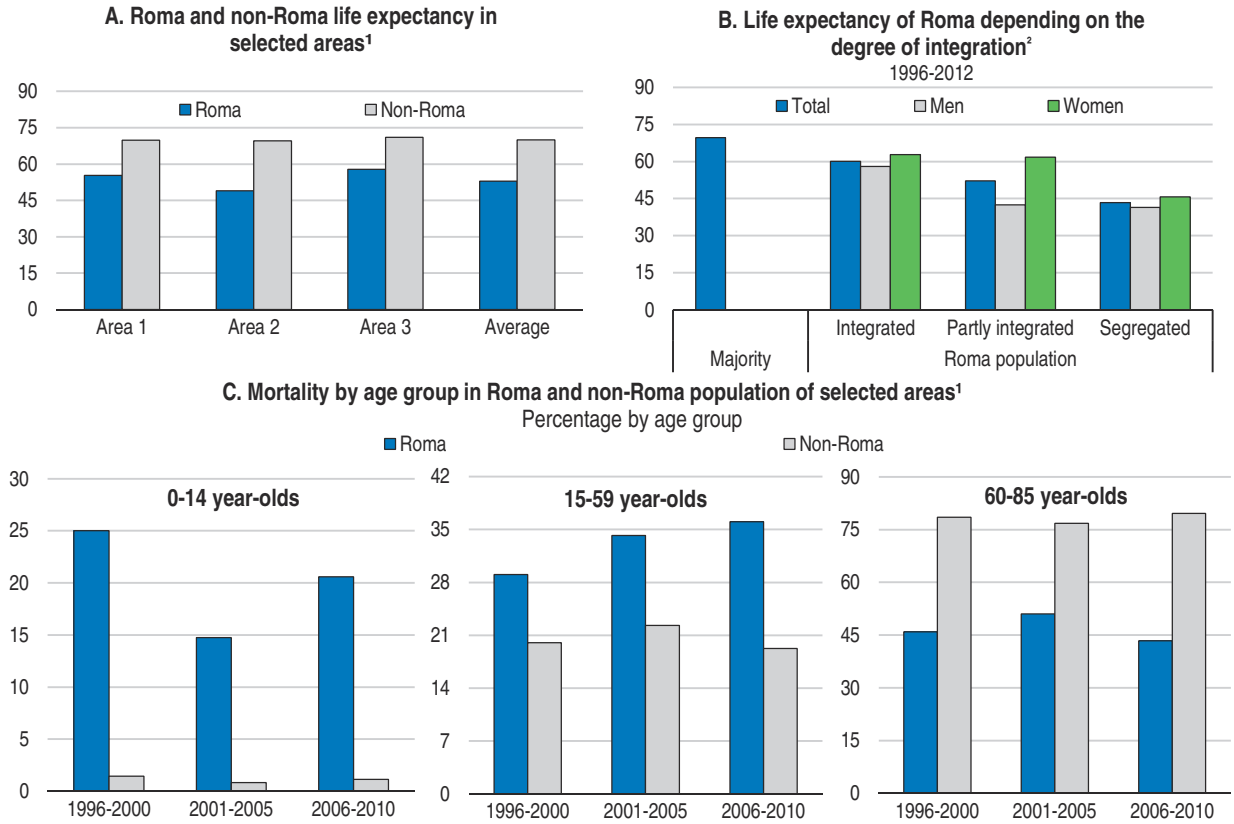
Note: This performance indicator is based on the estimation of regression residuals explaining the health system outcomes of 31 OECD countries evaluated by 6 different criteria by their per capita GDP and explanatory variables capturing lifestyle and/or social factors. These 6 criteria are those of the columns in the table above. For each criterion, the performance indicator is calculated as the residual of the corresponding regression divided by the standard deviation of the residuals. By construction, the average of each indicator across the sample of OECD countries is equal to 0. A negative residual indicates a below OECD average performance in terms of efficiency of health outcomes for the corresponding criterion analysed. For example, for the life expectancy at birth, the residual for Slovakia is 1.1 time the standard deviations of the residuals for the 31 OECD countries, controlling for GDP per capita and other explanatory variables.
The regression run for each criterion (in logs) on the available data for 31 OECD countries includes a constant and a set of the following explanatory variables (in logs) on the right hand side: GDP per capita in PPP terms; the share of the population aged 15+ who are daily smokers; alcohol consumption in litre per capita for the population aged 15+; share of the population aged 25 to 64 with at least upper secondary education; and share of the population aged 15+ for daily consumption of fruits and vegetables. The appendix provides more detailed information about the explanatory variables kept in each regression, which depend on their statistical significance. The "Adjusted R^2" row corresponds to the adjusted R^2 of that regression.
Source: OECD calculations based on OECD (2016), OECD Health Statistics (database).

these marginalised groups have a life expectancy of barely 43 years, compared with 70 years for non-Roma people (Panel B) (Soltès et al., 2014).

The Roma population's poor health indicators are attributable to very high mortality rates among young people, especially the 0-14 age group, but also 15-59 year-olds (Figure 2.3, Panel C). It is probable that the strong Roma presence in the central and eastern parts of the Slovak Republic is contributing to the significant regional disparities for infant mortality, although it is not known to what extent (Figure 2.4) (Ineko, 2015). It is, moreover, hard to assess the impact of the trend in Roma health outcomes since the mid-1990s on the Slovak Republic's lack of convergence with other countries' outcomes. This lack of information complicates the analysis, because the Roma people's poor health conditions only partly reflect failings in the health-care system: they are also the result of a considerable number of social problems afflicting this community, including poverty, malnutrition, deficient education, inadequate sanitation infrastructure and unhealthy lifestyles (Gavurová et al., 2014; Gatti et al., 2016).

Health inequalities related to socioeconomic status, on the other hand, are not especially large, which suggests they are probably limited within the non-Roma population. As in other OECD countries life expectancy is longer for those with a tertiary degree than those with less education, especially among men (Figure 2.5, Panel A). But the

Figure 2.3. **Selected health indicators of the Roma and non-Roma population**



1. Research based on field work in three areas with each Roma community representing 10 to 25% of the total population. Area 1 had a Roma population share of 10.5% of the total population, which was 104 411 on 31th December 2013; area 2 had a Roma population share of 26.1% of the total population, which was 71 977; and area 3 had a Roma population share of 14.8% of the total population, which was 33 444.
2. Roma population living in area 2.

Source: Gavurová, B. et al. (2014), "Meranie zdravia a zdravotných rizík vo vybraných rómskych osadách na Slovensku – fakty a reflexie", in Nerovnosť a chudoba v Európskej únii a na Slovensku, 22-24 October, Košice, and V. Šoltés et al. (2014), "Vývoj mortality v regiónoch s vysokou koncentráciou rómskeho obyvateľstva", in Nerovnosť a chudoba v Európskej únii a na Slovensku, 22-24 October, Košice.

StatLink http://dx.doi.org/10.1787/888933501021

differences in this domain are similar to the OECD average and smaller than for the other central European countries. Health inequalities by income, measured by differences in self-reported health, are also moderate (Panel B). The gap between the share of people reporting their health to be good in the top and bottom income quintiles is near the OECD average at about 17 percentage points in 2013: 78% as compared with around 60% (OECD, 2015a).

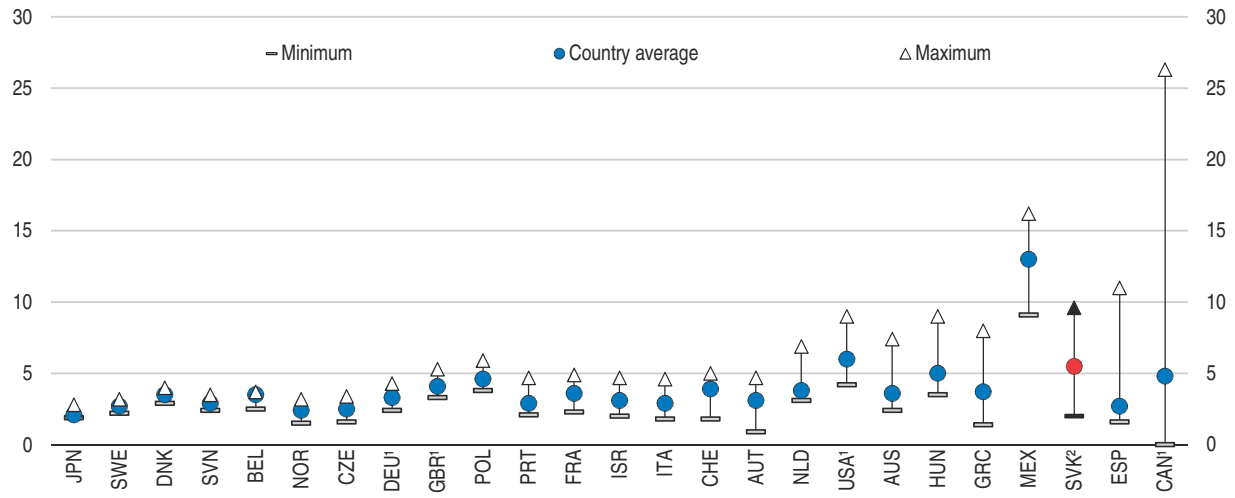
The operation of the health-care system is a source of deep discontent

These poor health outcomes are one reason why Slovaks are so dissatisfied with their health-care system compared with other Europeans (Figure 2.6). The high degree of dissatisfaction has not changed since 2007 despite several reforms. This reveals the system's ongoing failure to meet the basic standards expected by its users.

This discontent is partly driven by the non-negligible level of private health costs directly paid by consumers, for reasons that are often poorly understood. At somewhat above 20% of total health spending on average between 2012 and 2014, this slightly exceeded the OECD average (Figure 2.7). These out-of-pocket payments include the

Figure 2.4. **Regional disparities of infant mortality in OECD countries**

Deaths per 1000 live births, 2013

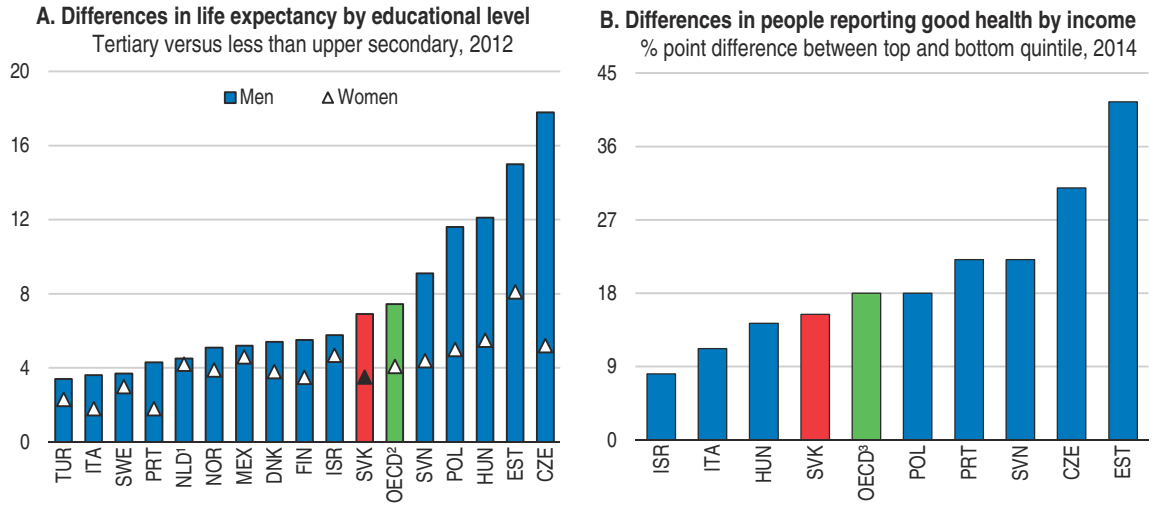


1. 2011 for Canada and 2012 for Germany, the United Kingdom and the United States.
2. In the Slovak Republic, East Slovakia has the highest value and the Bratislava Region the lowest.

Source: OECD (2016), OECD Regional Statistics (database).

StatLink http://dx.doi.org/10.1787/888933501040

Figure 2.5. **Health inequalities by socioeconomic status**



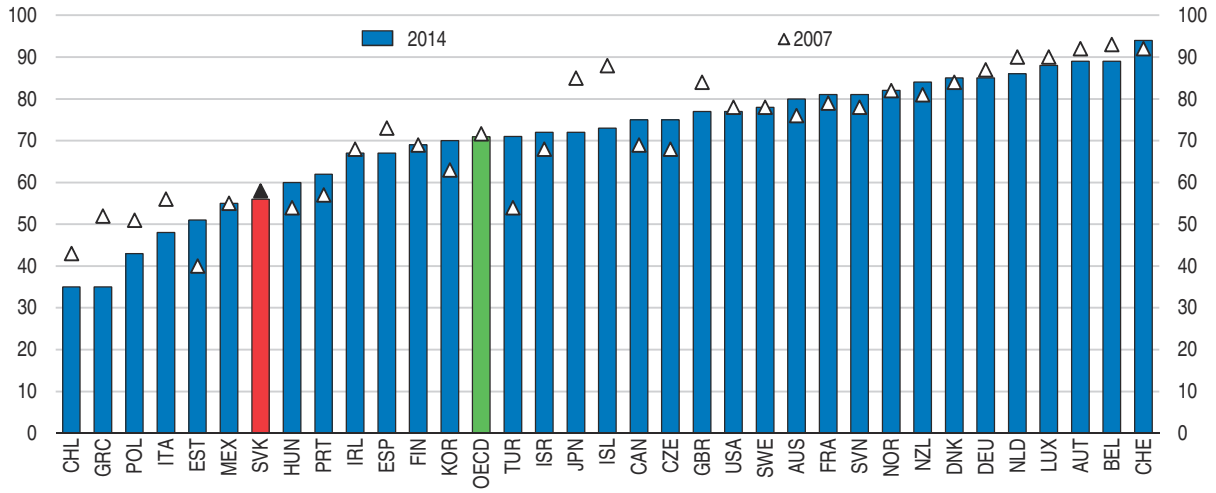
1. 2011 for Netherlands.
2. Unweighted average of the data shown.
3. Unweighted average.

Source: OECD (2016), OECD Health Statistics (database) and James C., et al. (2015), "Inclusive Growth and Health", DELSA/HEA(2015)14, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888933501059

purchase of medicines and administrative charges not covered by health insurance, the scope of which is not always clearly defined. In addition to co-payments for prescribed drugs, direct payments for OTC pharmaceuticals and user fees for various services that are not included in the healthcare basic package, the latter include requests for medical certificates and such services as care for "unco-operative children". The amount paid by patients varies between doctors for reasons that are hard to explain. The number of

Figure 2.6. **Satisfaction with the healthcare system**[1]



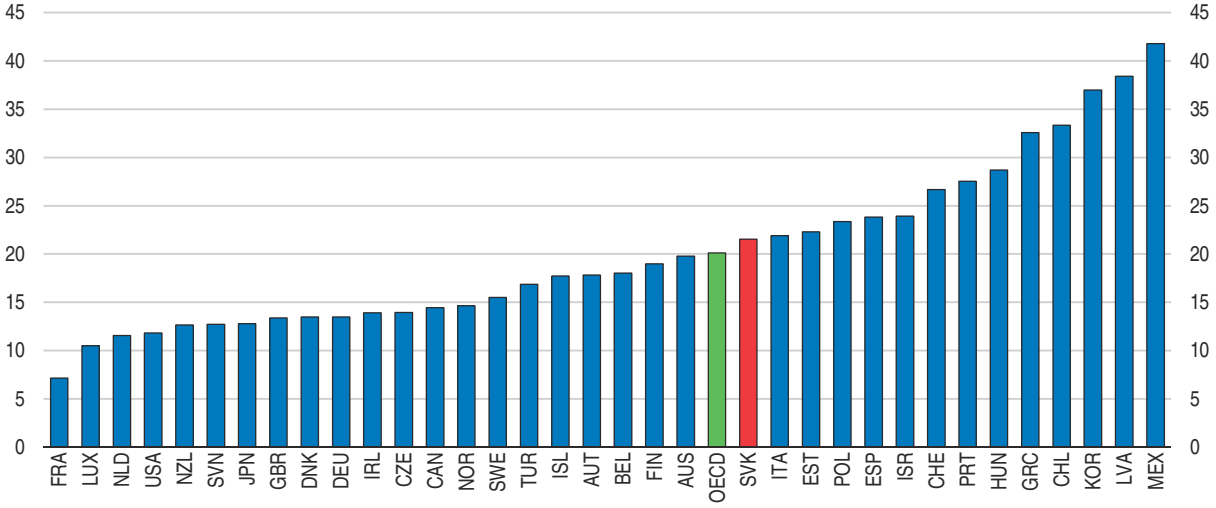
1. Data for Austria, Finland, Ireland, Norway, Portugal, the Slovak Republic, Slovenia and Switzerland are for 2006. Data for Iceland and Luxembourg are for 2008. Data for Australia, Canada, Chile, Hungary, Iceland, Japan and Korea are for 2013.

Source: OECD (2015), *Health at a Glance 2015: OECD Indicators*.

StatLink http://dx.doi.org/10.1787/888933501078

Figure 2.7. **Household**[1] **out-of-pocket expenditure on health care**

Percentage of total current expenditure on health care, 2012-14 average



1. Includes non-profit institutions serving households.
2. Unweighted average of the data shown.

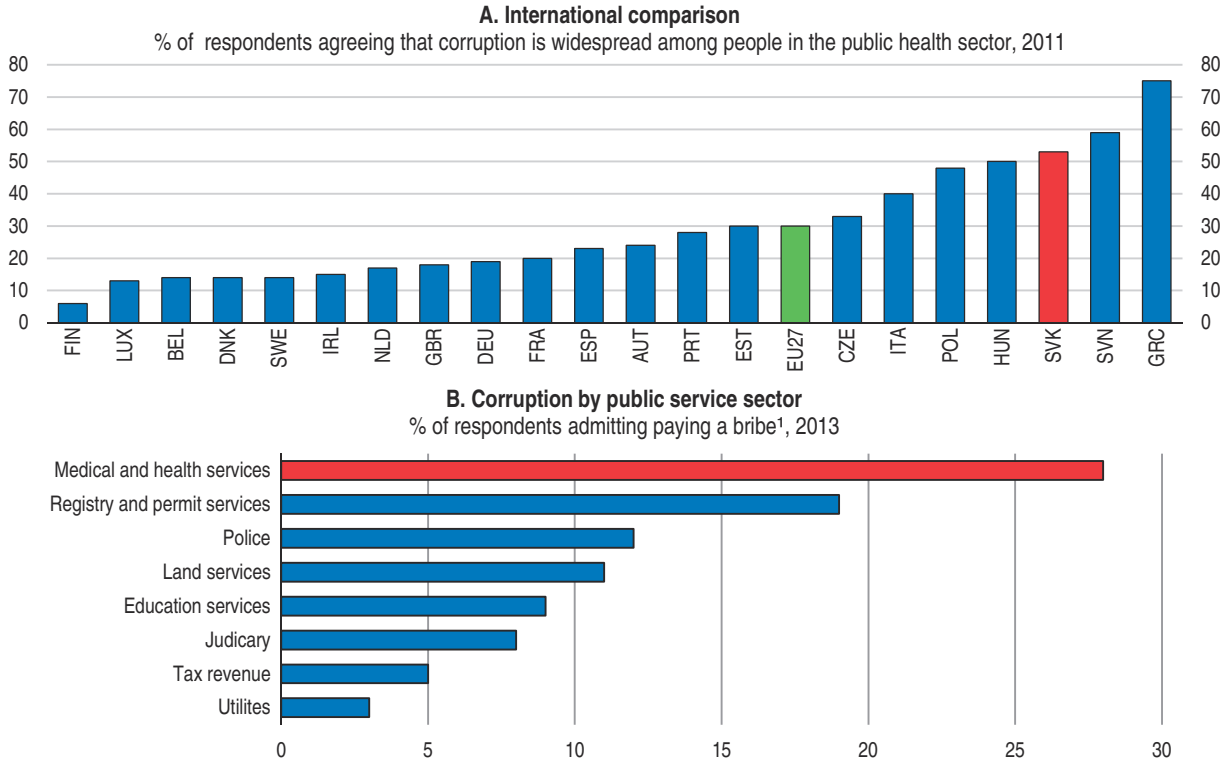
Source: OECD (2016), OECD Health Statistics (database).

StatLink http://dx.doi.org/10.1787/888933501097

complaints to regional watchdogs concerning payments that are felt to be arbitrary and unjustified is rising every year.

Slovaks perceive their health-care system as more corrupt than their counterparts in other EU countries and more corrupt than other areas of the administration (Figure 2.8). The main reason for this perception is the flawed management of public procurement, which is a serious problem in hospital purchasing (EC, 2013). These issues have occasionally triggered political scandals and often lead to price surcharges of between 50% and 100% (EC, 2013; The

Figure 2.8. **Perception of corruption in the public healthcare sector**



1. Results shown for those who came into contact with a service and who were asked a question such as "Have you or anyone in your household paid a bribe to one of these eight services in the last 12 months?".

Source: European Commission (2012), Special Eurobarometer 374: Corruption (fieldwork September 2011) and Transparency International (*www.transparency.org*).

StatLink http://dx.doi.org/10.1787/888933501116

Economist, 2014), a situation due to both weak policing and punishment of corruption, poor hospital management and inadequate regulation of public procurement (Ineko, 2012a and 2012b). The authorities recently started to address these failings (see below), but corruption takes other forms, including informal payments, which some studies suggest concern over 70% of doctors' visits. According to Muzik and Szalayova (2013), more than 20% of these payments are made as a kind of thank-you gift, which might be a box of chocolates or sweets, rather than a bribe. But almost half of patients felt they represented an act of corruption voluntarily offered by the patient or required by the doctor in return for better service, and in such cases generally consisted of a cash payment usually between EUR 100 and EUR 333, although far higher payments have been reported (The Economist, 2015). However, more recent research did not confirm such high numbers and concluded that approximately 25% of respondents gave informal payments, although estimates are stated to be uncertain (Transparency International, 2015).

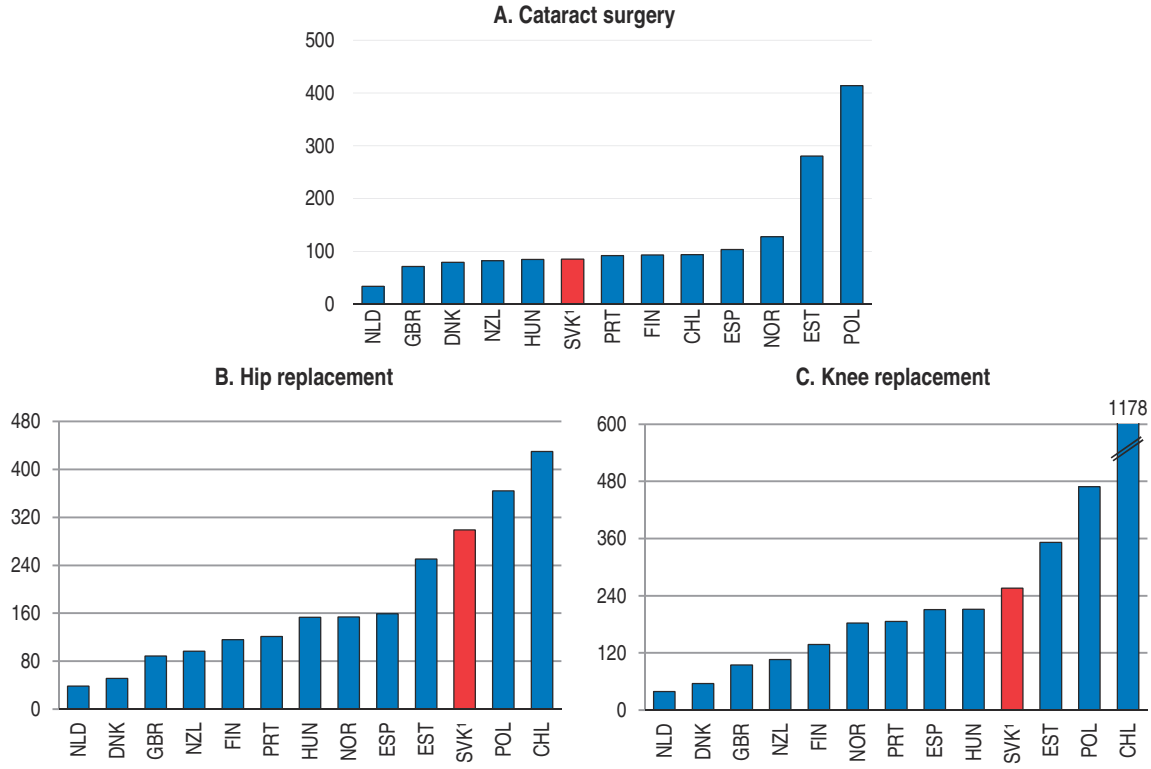
Public dissatisfaction with the health service also reflects a number of difficulties in accessing out-patient medical services. In theory the health-insurance system provides full medical cover for the whole of the population, but accessing these services is easier in big cities than rural areas, especially for Roma communities living in separate districts (i.e. areas where virtually only Roma are living). Slovak doctors, like those in other countries, are not attracted to rural areas, and as general practitioners (GPs) retire from rural practises it is hard to replace them. GPs in rural areas are few in number and often struggle with an excessive workload,

which prevents them from responding rapidly to requests for care, especially as GP visits are not normally governed by an appointment system, so that patients typically wait many hours to see the doctor. And while medical insurance companies are obliged to ensure that their care network employs a minimum number of specialists in every region, these providers are generally located in urban centres. Some people are therefore forced to travel long distances, which is itself complicated by the inadequacy of the transport infrastructure. Financial reasons are not the main drivers for unmet health needs in the Slovak Republic, but rather wait times and travel distances to the nearest medical specialists in some regions (WHO, 2016). Furthermore, specialists, who are remunerated by a fee-for-service system constrained by a monthly ceiling, often refuse non-urgent consultations if the monthly resources allocated to their remuneration by the insurance companies have been already exhausted before the end of the month. In that case, although patients have the right to benefit from health care services by another doctor contracted by their insurance company, they generally do not use this option either because they are not aware of it, or because they do not want to change doctor.

As in most other countries, there also exist waiting lists for many non-urgent hospital procedures. Wait times have fallen in recent years and vary according to the service provided. Against an international benchmark they may seem long for hip and knee replacements (Figure 2.9), for instance, but this may partly reflect Slovaks' ability to choose their doctor. Efforts have been made to improve information about waiting lists. However,

Figure 2.9. **Average waiting days for elective surgery**

Waiting times from specialist assessment to treatment, 2013



1. The Slovak data is based on a study of Mužík and Szalayová (2013), as unweighted average of data provided by the three health insurance companies. They do not follow the definition for data collected by OECD and are thus not be fully comparable with other countries' statistics.

Source: OECD (2016), OECD Health Statistics (database), except for Slovak Republic: R. Mužík and A. Szalayová (2013), "Časová dostupnosť vybraných elektívnych výkonov: Analýza čakacích dôb", Health Policy Institute.

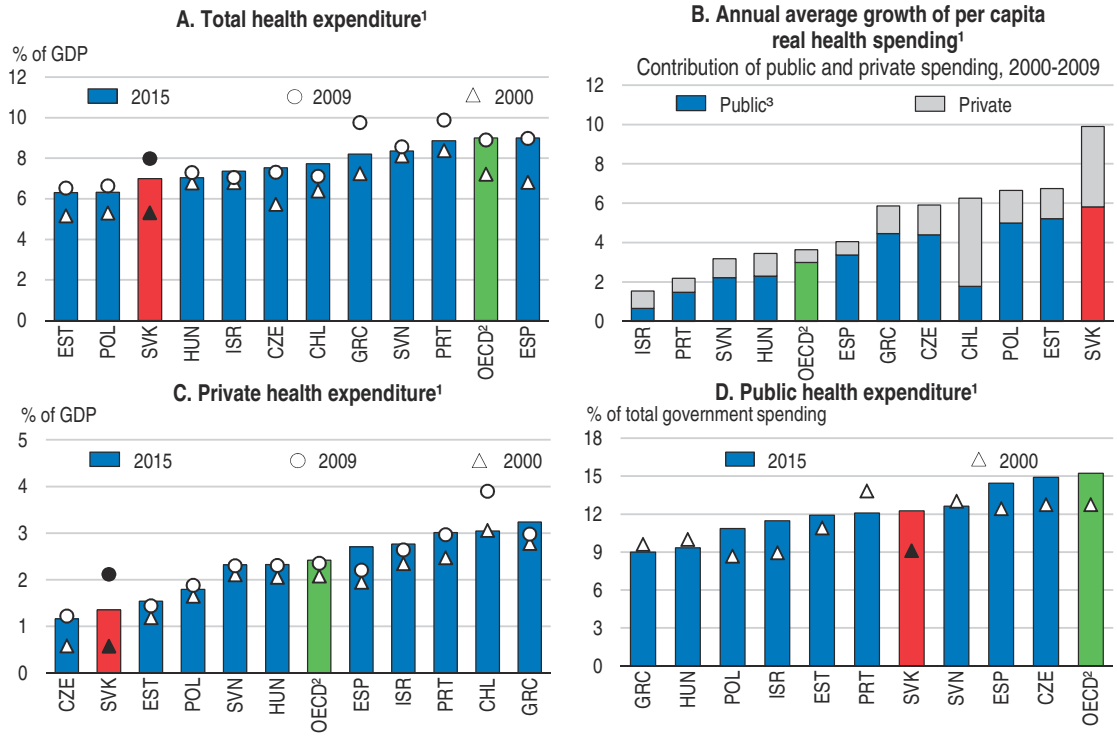
StatLink http://dx.doi.org/10.1787/888933501135

they cover only a very small proportion, less than 5%, of hospital services provided (Dovera, 2016), with the result that in most cases, patients do not know the wait time for many procedures, which causes stress and fuels corruption related to queue jumping.

Health spending has increased sharply since 2000

In the years leading up to the 2008-09 crisis, health spending rose sharply before declining somewhat since then (Figure 2.10, Panel A). This increase reached 10% per capita per annum in real terms between 2000 and 2009, much more than in other OECD countries (Panel B). Regulatory changes paved the way for a surge in private medical spending, which was initially low compared with other countries (Panel C), while the strong growth in budget revenues induced by the country's catching-up economy up to 2009 also allowed faster spending increases. As in most other OECD countries, moreover, new therapies and increased pay for medical staff have fuelled public health spending (de la Maisonneuve and Oliveira Martins, 2013). The share of this spending in total budget expenditure has therefore seen a marked increase, although it remains below the OECD average (Panel D).

Figure 2.10. **Growth of health-care spending**



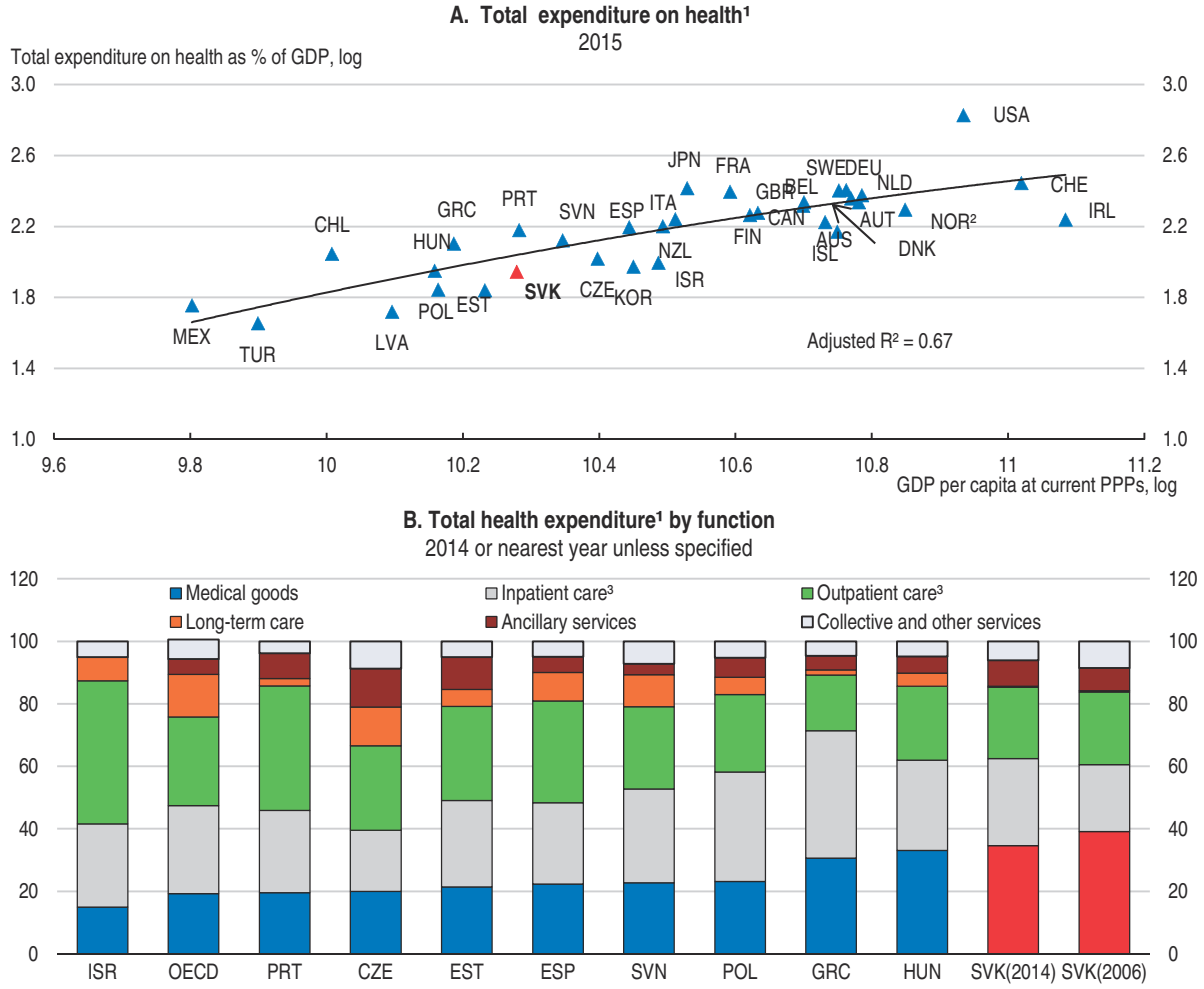
1. Excludes investment. All data in 2015 are estimated or provisional.
2. Unweighted average. For Panel D, government spending data in 2013 for Mexico and 2014 for Japan and New Zealand.
3. Government schemes and compulsory contributory health care financing schemes.

Source: OECD (2016), OECD Health Statistics (database) and OECD calculations based on OECD (2016), OECD Health Statistics (database) and OECD Economic Outlook: Statistics and Projections (database).

StatLink http://dx.doi.org/10.1787/888933501154

Slovak health spending stood at 7.0% of GDP in 2014, which is not high, given the country's GDP per capita, but is higher than spending in other central European countries (Figure 2.11, Panel A). The composition of medical spending also differs from the OECD average (Panel B), with a larger share for pharmaceuticals and a small share of spending on hospitals and long-term care, although the latter is probably underestimated (see below).

Figure 2.11. **Expenditure on health**



1. Excludes investment.
2. Mainland GDP for Norway.
3. Inpatient care includes curative-rehabilitative care in inpatient and day care settings. Outpatient care includes curative-rehabilitative care in outpatient and home-care services.

Source: OECD (2016), OECD Health Statistics (database) and OECD (2016), OECD National Accounts Statistics (database).

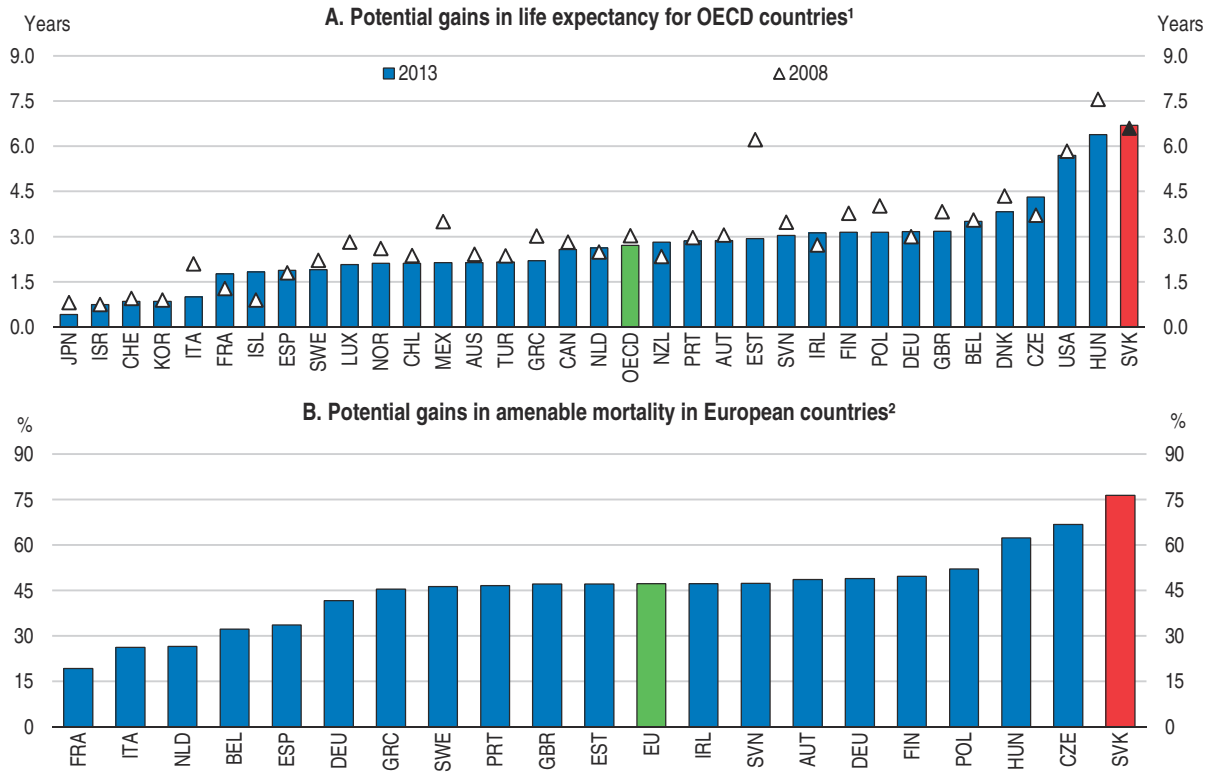
StatLink http://dx.doi.org/10.1787/888933501173

There seems to be significant room for improving the efficiency of the health-care system

Most international comparisons measuring the efficiency of health-care systems highlight the shortcomings of the Slovak system (Medeiros and Schwierz, 2015). These studies, which generally rely on data envelopment analysis, also reveal a deterioration in efficiency over the last 10 years (Dutu and Sicari, 2016; Filko et al., 2012) (Figure 2.12). In particular, amenable mortality has declined more slowly in the Slovak than in the Czech Republic, whereas the two countries had long displayed a comparable performance (Kossarova et al., 2012). As mentioned above, improvements in health outcomes since the early 2000s have indeed been modest in the light of the strong rise in health spending during this period.

The extent of this efficiency problem is nevertheless hard to ascertain. It is not easy to distinguish between the effects of a dysfunctional health-care system on a country's health

Figure 2.12. **Potential efficiency gains in health care**



1. Data envelopment analysis (DEA) was performed with one output (life expectancy at birth) and two inputs (a composite indicator of the socio-economic environment and lifestyle factors and health-care spending). Potential gains are measured if efficiency in a country were to be raised to the level implied by the estimated efficiency frontier while holding inputs constant and under the assumption of non-increasing returns to scale.
2. Data envelopment analysis (DEA) was performed with one health outcome variable (amenable mortality per 100 000 inhabitants in 2011 for which causes of death selected are based on AMIEHS, i.e. the project on Amenable mortality in the European Union: toward better indicators for the effectiveness of health systems, and availability in Eurostat) and different input variables in three models. Potential gains are estimated by measuring the proportion of amenable mortality that could be reduced, if a country moves from inside to the efficiency frontier, while holding inputs constant.

Source: Dutu, R. and P. Sicari (2016), "Public Spending Efficiency in the OECD: Benchmarking Health Care, Education and General Administration", *OECD Economics Department Working Papers*, No. 1278, with updated estimates provided by the authors and European Commission (2015), J. Medeiros and C. Schwierz, "European economy: Efficiency estimates of health care systems", *Economic Papers*, No. 549.

StatLink http://dx.doi.org/10.1787/888933501192

outcomes and those of the population's prevailing socio-economic conditions and lifestyles. Recent research, factoring in certain socio-economic metrics (GDP per capita, average level of adult education) and lifestyle indicators (consumption of fruit and vegetables, tobacco and alcohol) has found the Slovak health system to be one of the European Union's and OECD's least efficient (Dutu and Sicari, 2016; Medeiros and Schwierz, 2015). According to this analysis, if health spending was spent as efficiently as in the top-ranking countries, Slovaks' life expectancy at birth in 2013 would have been extended by over six years (Figure 2.12), or twice as much as the estimated extension for the EU or the average OECD country. These results seem, furthermore, to be fairly robust, since they are not much affected by the inclusion of unhealthy lifestyle measures, such as excessive tobacco and alcohol consumption and obesity, which are quite evenly distributed across most countries (EC, 2015a). Nevertheless, these aggregate measures of efficiency do not account for a wide range of non-medical determinants of health outcomes, including social and cultural factors, which influence life expectancy. In the case of the Slovak Republic, for instance,

Tunega (2013) and Hadad et al. (2013) find that the poverty and lifestyle difficulties of the Roma community play an important role in the country's poor overall health outcomes. Although these studies are not able to provide an in-depth analysis of this question because of the absence of relevant data, their results are plausible. The socio-economic and lifestyle problems affecting the Roma are far more severe than those of the rest of the population, and the share of the Roma community seems to be growing (Sprocha, 2014 and see Chapter 1).

A more effective health-care system would have economic and fiscal benefits and promote well-being

There are many potential benefits from a better health-care system: first, increased well-being of the population. More effective health-care supply also has a positive impact on the economy: healthy people are more productive and more active, with less absenteeism and longer working lives, which is especially important in the light of rapid population ageing. In this context, efficiency gains are also valuable because of increased income-sensitive demand for medical services and their higher costs, driven by technological advances and rising prices for such services, while the authorities need to contain public spending to maintain sound public finances. Public spending on health- and long-term care could increase by 3¾ percentage points of GDP by 2060, close to the OECD average of 3¼ percentage points (de la Maisonneuve and Oliveira Martins, 2013) (Table 2.2). Research produced by the European Commission confirms the intensity of these pressures, albeit with a different assessment of their extent (EC, 2015b).

Table 2.2. **Projected increases in public health and long term care spending by main source, 2010-60**

Percentage points of GDP

	OECD (2010-60)			European Commission (2013-60)		
	Health care	Long-term care	Total	Health care	Long-term care	Total
Australia	2.5	0.8	3.3	-	-	-
Austria	2.4	0.7	3.1	1.6	1.3	2.9
Belgium	1.9	0.7	2.6	0.5	1.5	2.0
Canada	2.5	0.7	3.2	-	-	-
Chile	3.2	1.5	4.7	-	-	-
Czech Republic	2.2	0.9	3.1	1.2	0.7	1.9
Denmark	2.0	0.6	2.6	1.0	2.2	3.2
Estonia	2.0	0.9	2.9	0.8	0.7	1.5
Finland	2.0	0.5	2.5	1.1	1.9	3.0
France	2.2	0.6	2.8	1.1	0.9	2.0
Germany	2.3	0.7	3.0	0.7	1.4	2.1
Greece	2.5	0.9	3.4	1.4	0.5	1.9
Hungary	1.9	1.0	2.9	1.0	0.4	1.4
Iceland	2.0	0.5	2.5	-	-	-
Israel	2.5	0.6	3.1	-	-	-
Ireland	2.5	0.7	3.2	1.3	0.9	2.2
Italy	2.6	0.8	3.4	0.8	1.0	1.8
Japan	2.5	0.8	3.3	-	-	-
Korea	3.7	1.3	5.0	-	-	-
Luxembourg	3.0	0.7	3.7	-	-	-
Mexico	3.0	1.5	4.5	-	-	-
Netherlands	2.4	0.8	3.2	1.2	3.3	4.5
New Zealand	2.4	0.8	3.2	-	-	-
Norway	2.2	0.5	2.7	1.2	3.5	4.7

Table 2.2. **Projected increases in public health and long term care spending by main source, 2010-60** *(cont.)*

Percentage points of GDP

	OECD (2010-60)			European Commission (2013-60)		
	Health care	Long-term care	Total	Health care	Long-term care	Total
Poland	2.6	1.0	3.6	1.3	0.9	2.2
Portugal	2.6	0.8	3.4	2.8	0.4	3.2
Slovak Republic	**2.6**	**1.1**	**3.7**	**2.2**	**0.4**	**2.6**
Slovenia	2.7	0.9	3.6	1.4	1.4	2.8
Spain	2.8	1.0	3.8	1.0	1.6	2.6
Sweden	2.0	0.5	2.5	0.6	1.6	2.2
Switzerland	2.6	0.7	3.3	-	-	-
Turkey	3.1	1.6	4.7	-	-	-
United Kingdom	2.0	0.5	2.5	1.5	0.4	1.9
United States	2.2	0.4	2.6	-	-	-
OECD average[1]	**2.5**	**0.8**	**3.3**	-	-	-

1. Unweighted average.

Source: de la Maisonneuve, C. and J. Oliveira Martins (2013), "A Projection Method for Public Health and Long-Term Care Expenditures", *OECD Economics Department Working Papers*, No. 1048; European Commission (2015), "The 2015 ageing report: Economic and budgetary projections for the 28 EU Member States (2013-2060)".

Ensuring universal access to high-quality health care while keeping spending under control will be challenging. The authorities are aware of the need to increase efficiency, and they started a broad public spending review in the first half of 2016, beginning with health care. The room for saving by reducing wasteful spending, which is estimated at 20% of health expenditure in the average OECD country, is considerable (OECD, 2017a). However, optimising the use of resources must form part of a comprehensive approach to health policy that pays close attention to the specific difficulties of the most vulnerable population groups. Improving the health of underprivileged communities matters not just because it improves effectiveness, but also because it is more inclusive and will help to reduce the high rate of amenable mortality.

Improving the health-care system will require reforms in several areas

Increasing the coherence of the organisation of the system

All OECD countries face difficult regulatory issues in the health-care arena. Demand for medical services must be channelled through an insurance mechanism to allow everybody to access care despite the potentially high cost by pooling the risk. The problem with such a system, which in the Slovak Republic is based on three insurance funds (Box 2.1), is incentives, a problem which is exacerbated by the asymmetry of information between insurers, providers and the insured (i.e. patients). Regulation has a central role to play in securing high-quality health-care provision at an affordable cost, particularly by encouraging insurers to promote these objectives without appropriating an excessive share of the funds devoted to health-care in the form of administrative costs or profits. Spending control and effectiveness also depend on the insurers' ability and incentives to negotiate low prices with providers and to encourage them to increase their efficiency and quality. In the presence of multiple insurers, as in the Slovak Republic, this in turn requires adequate and healthy competition between these funds. Furthermore, it is important to counter the moral hazard problem created by the insurance system, as it encourages people to over-consume. Another source of over-consumption to be resisted is supplier-induced demand. Hence, both supply and demand must be regulated.

Box 2.1. **The Slovak health-care system**

The organisation of the Slovak health-care system is the culmination of successive reforms adopted during the past 13 years. This box provides a short summary of these reforms followed by the main features of the current system.

A brief history of health sector reforms since the mid-2000s

The successive reforms that have reorganised the Slovak health-care system began with the Zajac reform in 2004, which was principally designed to replace the state health-care system with a more market-based system in order to solve the inefficiency problems and recurrent deficits in the country's health insurance system by making the following major changes (Colombo and Tapay, 2004; Szalay, 2011):

- Changing the insurance funds from non-profit organisations to private companies entitled to make profits,
- Contractualising relations between insurers and providers, with insurers given free rein in negotiations to exercise provider selection. Insurers were nevertheless required to sign contracts with all emergency care units, all pharmacies and all general practitioners, and to ensure a minimum medical network in every region.
- Introducing or increasing co-payments made by patients for drugs, consultations, hospital stays and the use of emergency services to prevent the overuse of medical care.

The changes to the system introduced in the wake of the Zajac reform largely consisted of attempts to roll back or restrict the range of these measures, or efforts to restore them, depending on which party was in power:

- The right of insurers to make profits was banned between 2008 and 2010. It was restored in 2011 when it was declared unconstitutional, and a renewed profits ban was among the proposals of the new government elected in 2016. The programme of the government in power between 2012 and 2016 included the replacement of the three health insurers by a single public insurer, i.e. the adoption of a single-payer system. But the proposal was never implemented, partly for financial reasons linked to the high cost of buying out the private insurers.
- In 2007 the leeway given to insurers for selective negotiations with health-care providers was reduced by requiring them to include all state hospitals in their minimum health-care networks. This clause was removed in 2010-11 and then restored in 2012.
- Co-payments for many services were abolished between 2006 and 2010, then partially reintroduced between 2010 and 2011 and restrained again since 2012.
- Similarly, the gatekeeper system for access to specialist care introduced in 2006 was abolished in 2010-11 and reintroduced in 2013.

The main features of the health system's current structure

Cover, rights to services and the financing of health insurance

The implementation of public health insurance in the Slovak Republic is an activity carried out in the public interest on the basis of the principle of solidarity. The activity of health insurers in the provision of health insurance is strictly regulated because they manage public funds, which requires close control by the state. The principle of solidarity means that the contribution to the health insurance system is not linked to the extent of the healthcare services received, nor determined by health insurance companies, but set by the state.

More specifically,

- Health insurance is financed from public resources, which are compulsory and redistributed on the basis of the principle of solidarity. The Health-insurance scheme is funded by contributions from employers and employees and a state contribution for the inactive. Work-related health-insurance contributions amount to 14% of gross pay (4% paid by the employee and 10% by the employer). The same 14% rate applies to the self-employed. People with disabilities enjoy a reduced rate of 7%. The state pays for the health insurance of the inactive – primarily children, the unemployed and pensioners. Its contribution amounts

Box 2.1. **The Slovak health-care system** *(cont.)*

to about 4% of average pay (Huefner, 2011), with some fluctuations from year to year, since the state generally adjusts its contribution to take account of specific factors affecting the funding of health spending, such as salary adjustments for hospital doctors.

- The health insurance system is universal. It guarantees to each individual the free choice of their health insurance company, and health insurance companies cannot reject insured persons.
- Healthcare is provided to every policyholder according to his/her needs, to the extent provided for by a specific regulation, and not according to his/her financial ability to pay.

In theory, this system entitles people to free health care, with some exceptions (such as cosmetic surgery and a significant proportion of dental care). In practice, however, the share of total medical costs paid directly by the consumer amounted to 18% in 2014, down from more than 23% in 2012. This figure includes medicines and care not covered by health insurance, as mentioned above.

How the insurance scheme works

People can choose between three insurance companies: the public insurer, *VSZP,* and two private insurers, *ZP Dovera* and *ZP Union*, whose share by number of policyholders were 64%, 28% and 8%, respectively, in 2015. Policyholders can change insurer every year, and insurers are not allowed to refuse customers. To prevent insurers selecting the most "profitable" patients ("cream skimming"), their funding includes an equalisation system to offset risk variation. It is based on the age and gender of the policyholder, economic activity and, since 2012, on the costs of their pharmaceutical spending, which helps to reflect their medical risks more accurately (Vagac et al., 2014). The regulator for the insurance scheme and the risk-compensation mechanism is the Health Care Surveillance Authority, HCSA.

The insurers do not influence the basket of basic services, the level of cover or the contribution rates. Moreover, given the broad, albeit imprecise, definition of the basket of basic insured services, there is no market for voluntary supplementary insurance, and competition between insurers is therefore based on the quality of their service offering (including differences in waiting times), which depends on the contracts they have signed with service providers, who can have different contracts with different insurers based on prices that are generally freely negotiated. As mentioned above, the government has defined a network of minimum service providers with which the insurers must sign contracts.

The organisation of care providers and their remuneration

Users are free to choose their care providers, although access to specialists is restricted by a gatekeeper system (a role played by general practitioners).

Care providers' remuneration is set by the contracts signed with the insurers, based on mechanisms that vary from sector to sector. In the out-patient sector, GPs are paid per patient (i.e. capitation), with a certain number of procedures paid on a fee-for-service basis, such as vaccinations. Specialists are paid on a fee-for-service basis, but their monthly remuneration is subject to a cap negotiated with the insurers. Hospital care is reimbursed according to the services provided, although it is based on a pricing system that does not reflect costs correctly. A reform to introduce financing according to the price of treatment by diagnostic-related groups is in the pipeline (see below). Hospital doctors earn a salary, with a minimum salary set in 2015 at 2.4 times the average wage of the economy in the case of specialists.

The prices of refunded pharmaceutical products are regulated by the Ministry of Health based on an average of the three lowest prices for the same product in EU countries. The average rate of co-payment for medicines is 14%. Annual co-payments are capped for pensioners, the disabled and children.

Pharmacies, testing laboratories and around 90% of out-patient care providers are private. Some specialists in the out-patient sector are employed by the hospitals. A little under half of all hospitals are public, but they account for 55% of admissions, because they include the major establishments, university hospitals, specialist medical centres and all psychiatric hospitals. Public hospitals are also those that have the biggest deficits.

To respond to this need, the Slovak Republic has adopted several health-policy reforms since the mid-2000s, which, however, pitted proponents of a market-based health system and regulated competition against supporters of a system of public provision and insurance. These developments demonstrate the lack of consensus on the best structure for the health system and can be seen in its current organisation.

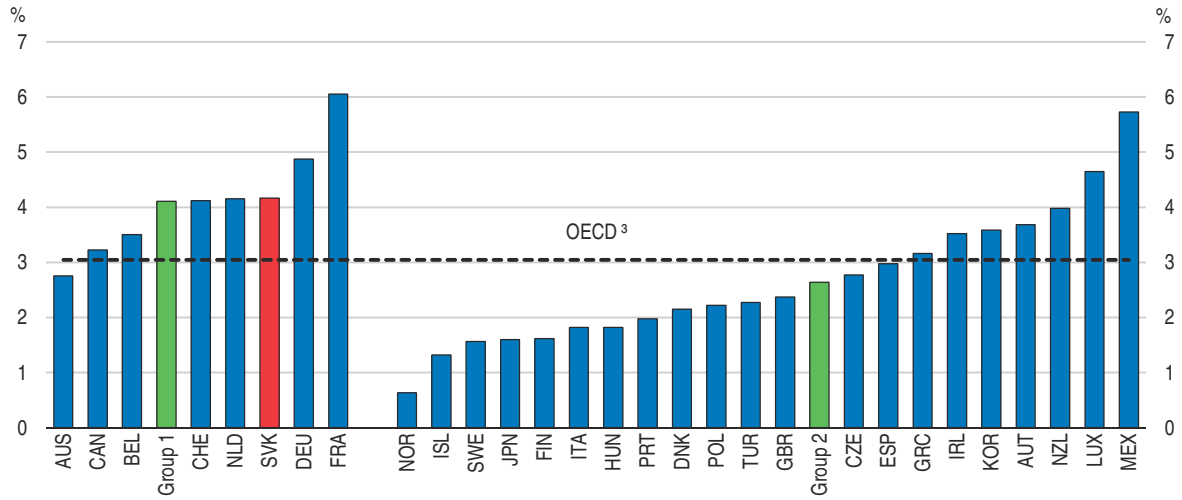
Many of the changes to the health-care system over the last 13 years have undermined its efficiency and made it less fair. The increase in health spending, especially private spending (co-payments) induced by the 2004 Zajac reform hit the poorest families most (Kiss, 2007). This reform also led to a marked increase in the management costs and profits of the private insurers without any improvement in health outcomes (Filko et al., 2012). These developments, combined with a lack of equal distribution of information for policyholders on insurer performance and weak regulation, which encourages risk-selection strategies, rather than healthy competition between insurers and providers, have reduced the system's efficiency. Measures that were subsequently adopted have corrected many of these shortcomings by reducing and capping co-payments, for example, and refining the formula for risk-compensation. However, the weak pricing regulation shows that the state hospitals do not effectively exercise their leverage against the health insurers when negotiating process. This lack of bargaining power of the hospitals against insurers results in efficiency losses. The major changes in the organization of health insurance companies proposed in reaction to the regulated competition introduced by the Zajac reform, with attempts to prevent health insurance companies from transferring profits generated from public funds to their shareholders in order to preserve the public nature of the Slovak health insurance system, have failed to meet their objectives for legal and financial reasons (Box 2.1). Yet, the authorities are still considering these reforms.

The way health insurance is currently organised, as a result of these developments, combines the drawbacks of systems incorporating some features of regulated competition with those of systems based on a single public insurer without harnessing their advantages. The structure of the system resembles that of Israel, Switzerland, the Netherlands and Germany, where competition between insurers improves efficiency and health-care supply provides targeted responses to the needs of different users. In the Slovak Republic, there is no market in the public health insurance system. The legal treatment covered by health-care is so extensive in all respects that health insurance companies have little room to compete, which does not change anything of its non-economic nature. The three health insurers cannot easily differentiate their offerings. Insurance premiums (i.e. contribution rates) are fixed, and there is no market for supplementary health insurance because there is no clear definition of the content of the basket of basic services. The requirement that insurers sign contracts with all public hospitals whatever their efficiency further restricts their room for differentiation. Moreover, the sector is dominated by the public insurer, which covers two thirds of the population. The result is that its decisions concerning the remuneration of health-care providers strongly affect its rivals. This loss-making company also enjoys the state's implicit financial guarantee, which weakens its efforts to improve efficiency and further distorts competition. The elements of competition and profit orientation present in the Slovak system of compulsory health insurance should be considered to pursue the prime objective of encouraging the insurance companies to operate in accordance with the principles of sound management in the interest of a proper functioning of that social security system, thereby contributing to ensure that the social and solidarity objectives of that system are attained. The Slovak health-care system is thus of a hybrid nature between

a competition-regulated model and a single public insurer system, with management costs higher than those normally seen in a single-payer system (Figure 2.13). The government's program statement states that the limitation of profit should be done in accordance with the law of the Slovak Republic (i.e. the Constitution of the Slovak Republic and the international legal obligations of the Slovak Republic) as well as EU law. Moreover, the state has no direct control over the entire care chain, including management and costs, as it would in a centralised system.

Figure 2.13. **Health administrative spending by type of healthcare system**[1]

Share of total health-care expenditure[2], 2014 or nearest year



1. Group 1 includes countries with a high reliance on private health insurance and Group 2 mainly includes countries relying on public provision and public insurance.
2. Excludes investment.
3. Unweighted average of the data shown for Group 1, Group 2 and OECD.

Source: OECD (2016), OECD Health Statistics (database) and OECD (2010), *Health Care Systems: Efficiency and Policy Settings*.

StatLink http://dx.doi.org/10.1787/888933501211

The available research suggests that there is no single best health-care model: the choice of model depends on decisions dictated by social preferences (OECD, 2010). But the organisation of the health-insurance system does have to be consistent, and seen in this light, the operation of the Slovak system would benefit from clarification between a system based on regulated competition or public insurance and provision. This is complicated by the lack of public consensus over the choice of model, limiting the potential efficiency gains from settling the issue. However, even if conditions are not met for making this decision, there is still plenty of room for improvement, both in terms of reducing operating costs and improving the quality and fairness of the supply of medical services and long-term care. The institutions and regulations seem to have contributed to a faster increase in public health spending in the Slovak Republic than in other OECD countries between 2000 and 2011 (de la Maisonneuve et al., 2016). Aware of the need to improve health outcomes, especially for vulnerable groups, while keeping spending under control, after the 2016 election the new Slovak government has introduced 26 reform projects, which aim to address several of the deficiencies of the health care system, as discussed below.

Modernising hospital management and services

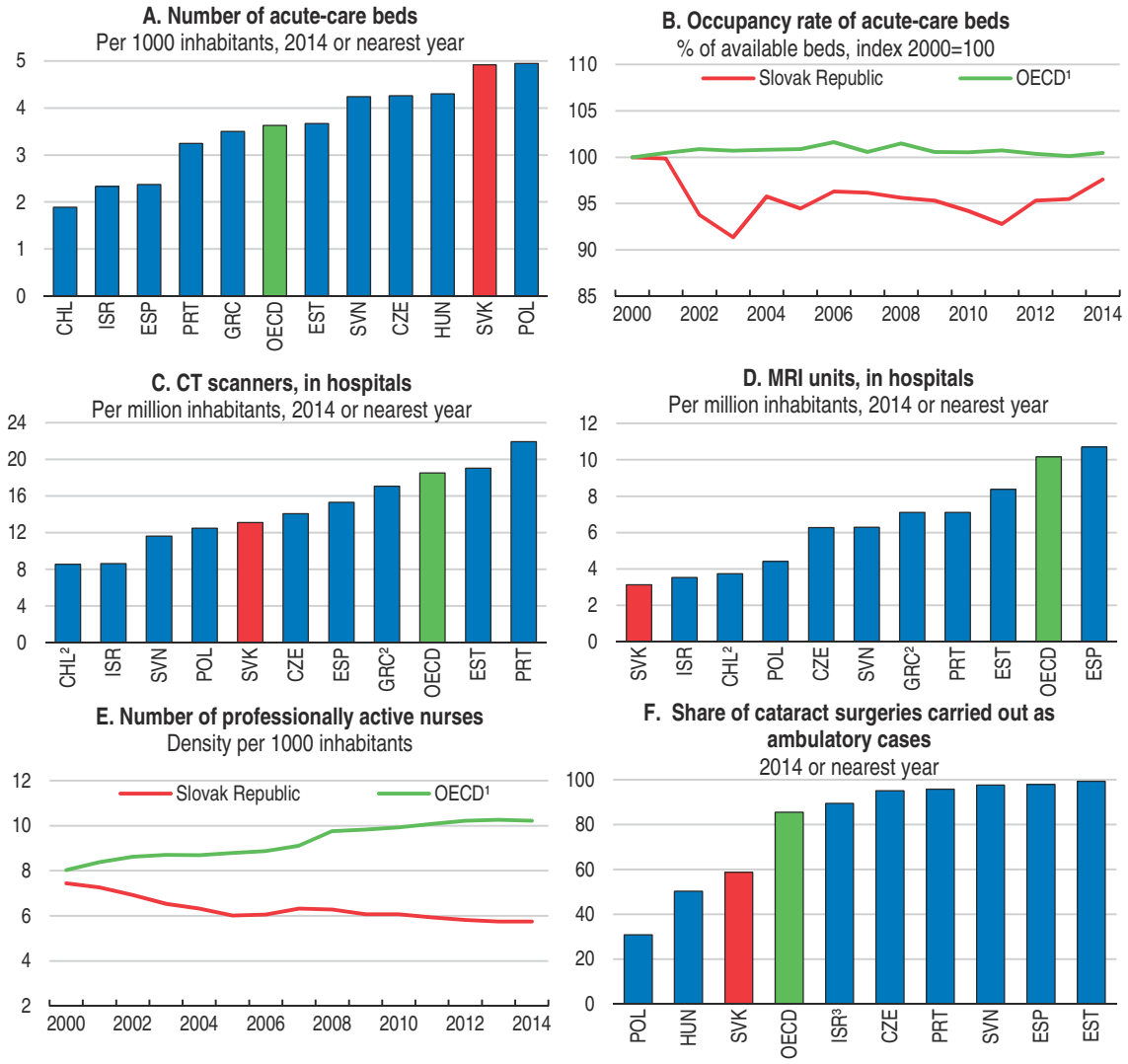
There is a case for rationalising hospital care, which is beset by efficiency problems that aggravate the financial difficulties affecting hospitals, whose resources are limited by international standards (Figure 2.11, Panel B, above). The sector's operational shortcomings are highlighted first by poor control of procurement spending. Public procurement procedures are deficient, despite the introduction of an e-procurement system for these contracts in 2010 (OECD, 2014). The most expensive medical equipment, such as MRIs, scanners and x-ray machines, which account for 55% of total hospital purchases, are not covered by this system because of their high costs, and these purchasing decisions are not only decentralised but also rather uncompetitive, with an average of 1.1 bids per contract (Zachar and Dancikavá, 2014). Other signs of hospital management failings are the high number of acute-care beds per capita and their low occupancy rate (Figure 2.14, Panels A and B). The excessive number of bureaucratic tasks required of providers is another source of inefficiency in the use of human resources.

Because of this situation, the hospital sector is facing ongoing financial problems, with which the state has to deal periodically. These developments have led to a budgetary deficit, estimated at almost 0.3% of GDP per year on average between 2000 and 2011, whereas hospital debt still stood at ¾ per cent of GDP in 2015. And they have also undermined the quality of health-care. Hospitals are relatively underequipped in terms of advanced technologies (Figure 2.14, Panels C and D), and there are long wait times for many therapies. Hospital buildings have an average age of 42 years and are generally outdated and poorly organised, with care services housed in different buildings and a high risk of hospital-acquired infections (Poprocky, 2010; MoH, 2013; Spectator, 2016a). Hospitals lack resources for investment and maintenance, despite often urgent needs to modernise insulation, heating and operating theatres (Ineko, 2015; Pazitný et al., 2014), while nursing staff numbers seem inadequate. The number of nurses relative to the population is low compared with other countries and has been falling for around 15 years, unlike the average trend in the OECD (Figure 2.14, Panel E). According to the president of the Slovak nurses' union, the health-care system lacks 12 000 nurses (Spectator, 2016b), a number which does not seem overestimated, since bringing the nurse density per thousand inhabitants to the OECD average level would require about 21 500 more professionals.

These problems have many different causes, including an inadequate and poorly supervised financing system. Until 2015 public hospitals were not required to keep transparent accounts (Zachar, 2013). It was decided in 2011 to finance hospital care based on prices for treating diagnostic-related groups (DRGs), but this has only started to be put in place in 2017. Hospital funding by the insurance companies was therefore based on prices for medical procedures, which can differ widely from their effective cost, since they rely on self-assessment of therapies by the hospitals according to a broad classification. As a result of these price distortions, resources have been misallocated as hospitals attempt to find patients with "profitable" diseases, even if they could be treated on an out-patient basis, such as with cataracts (Figure 2.14, Panel F) (Pažitný et al., 2014).

The political nature of hospital director appointments – they are usually replaced after every election – and the moral hazard engendered by the state's regularly paying off hospital debt do not encourage the search for efficiency and reforms. To make hospitals work better state intervention must be consistent, given the obstacles to overcome and the difficulty in implementing some measures. One such measure is the rationalisation of the hospital

Figure 2.14. **Hospital care supply**



1. Unweighted average of data of the nearest available year.
2. 2013 for Chile and Greece.
3. 2013 for Israel.

Source: OECD (2016), OECD Health Statistics (database), OECD/EU (2016), *Health at a Glance: Europe 2016: State of Health in the EU Cycle* and OECD (2015), *Health at a Glance 2015: OECD Indicators*.

StatLink http://dx.doi.org/10.1787/888933501230

network, meaning closing establishments that are too small, a move generally opposed by local authorities. Efficiency and hospital management would also benefit from a more flexible system for setting pay, including a variable part related to the hospital's performance in order to incentivise staff to adopt new working methods. A growing number of OECD countries are including some kind of performance variable in doctors' pay packages (OECD, 2016a).

Reforms have been implemented to solve some of these problems and cut hospital deficits. The finances of all public hospitals were audited in late 2015, paving the way for five-year plans to rationalise spending. The hospitals' plans include a reduction in the number of acute-care beds, half of which will be converted to long-term care beds. In June 2016 steps

were taken to re-examine the outsourcing contracts of some hospital activities, in particular with the replacement of private by public pharmacies on the hospital premises, so as to save financial resources (Adamovsky, 2016a). Some measures have also been taken to rationalise the management of public procurement: a reference price list for standard hospital supplies has been drawn up, and cost-effectiveness analyses have been introduced for the most costly and complex equipment. The adoption of this system in late 2015 is too recent for a performance assessment, but the Ministry of Health estimates that it could deliver savings of 15-17% on such items. After the 2016 election, the authorities have also prepared measures to modernise the emergency services and reduce the waiting times in hospitals through financing optimisation and better bed management.

Investment is set to rise, with the planned building of new hospitals, especially in Bratislava, to replace the old establishments that are being closed down (MoF, 2015). It is intended to modernise and transform several old establishments into specialized hospitals with more long-term beds. The authorities also want to rationalise the hospital network along geographic and specialisation lines, a process that should be made easier by the introduction of a DRG-based financing system in early 2017, after many years of planning. A well-designed DRG system should not only increase the transparency and fairness of hospital funding but also help identify the most efficient establishments and incentivise them to further increase their efficiency.

To be fully effective, however, these measures must be implemented carefully (Annear and Huntington, 2015; Shah et al., 2015). The authorities will implement the system gradually, which is helpful as it gives the hospitals time to adjust. In 2017, the first implementation year, the Ministry of Health will use hospital-specific reference price systems for treatments because there are wide gaps between hospitals, and there will be a convergence of these reference price systems over the next five years towards a single national system. There will also be a gradual increase of the proportion of DRG payments in hospitals' total revenues as this share will be no more than 2-5% in 2017. To promote efficiency gains and bring costs down, prices will indeed have to gradually converge, and DRGs will need to play a bigger role in hospital revenues following a transparent process designed in close consultation with the insurers and the hospitals. Their engagement is crucial to the success of this reform. To this end, it would be desirable to set a clear timetable for its implementation, which could take until around 2020 according to the authorities, in order to focus the rationalisation efforts of health-care providers. Consulting with the insurers and hospitals would also be useful in planning the adjustments that are often needed to take account of some cost gaps beyond the hospitals' control, such as those linked to different labour costs between rural and urban areas and the presence of underprivileged communities. It is also important to monitor implementation closely, prevent hospitals cutting costs too fast to the detriment of the quality of care and carry out audits to ensure that services are being correctly coded, with clear penalties as a deterrent against fraud (Shah et al., 2015).

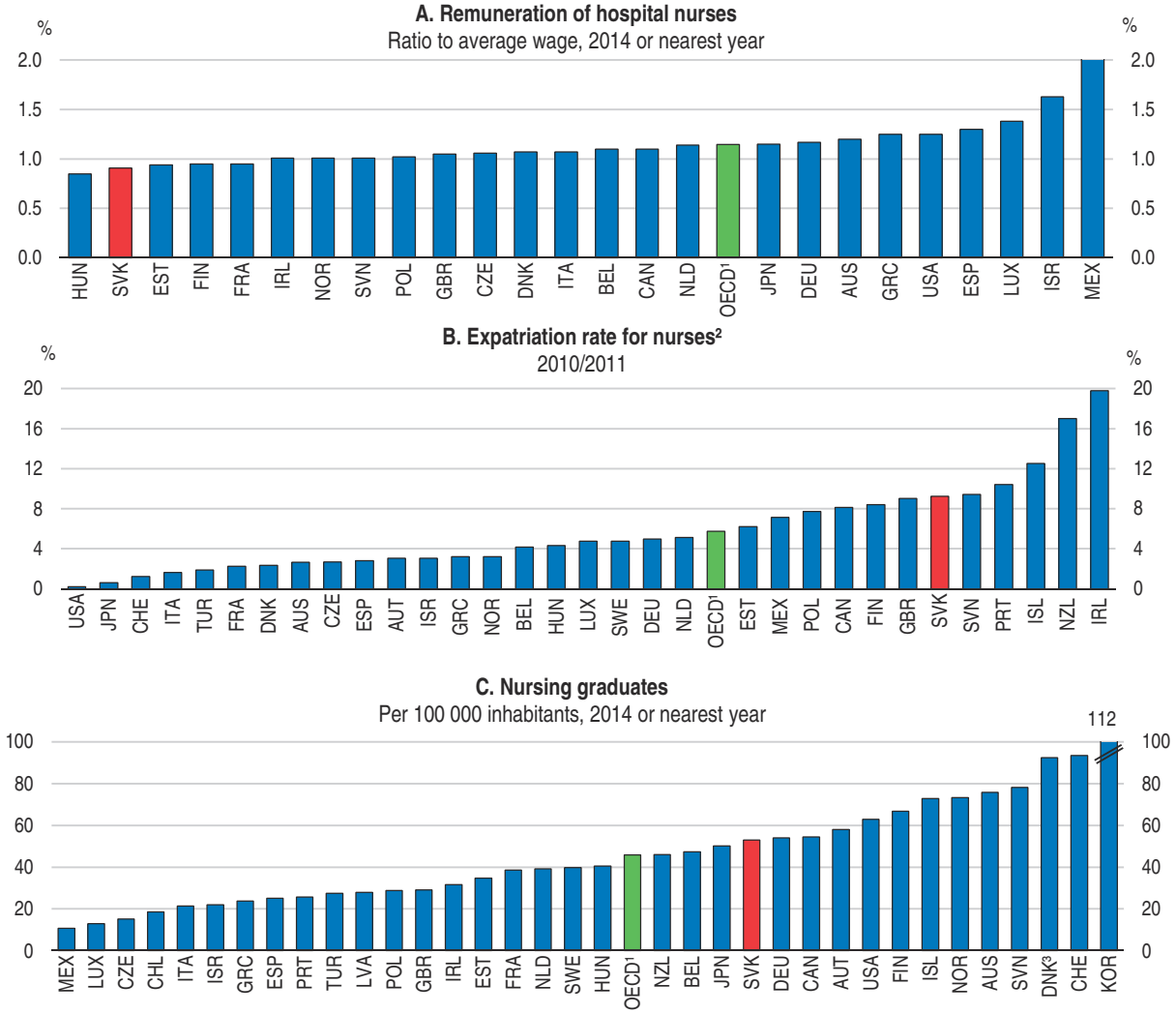
The authorities should also centralise hospital procurement as much as possible at the level of the Ministry of Health in order to reduce its cost. Alternatively, they could consider creating an independent agency responsible for monitoring hospital procurement management.

Professionalising hospital management would be another welcome development, which could be achieved, for example, by requiring the Ministry to appoint hospital directors

solely from a list of candidates preselected on the basis of their professional capacity. In this regard, the creation, since November 2016, of new supervisory bodies to oversee the state hospitals and emergency services, and control their activity and budget, is a welcome step. Improving the managerial skills of the heads of hospital departments, with special training designed for these doctors, could also have a positive efficiency impact.

Having enough nursing staff is a crucial factor in ensuring that hospitals perform well, but low pay and difficult working conditions, which were the cause of social protest movements in late 2015, imply few people are attracted to the profession. Despite pay increases since 2012, nurses still earn less than the economy-wide average salary and less than the OECD average in relative terms (Figure 2.15), despite a workload that is relatively high owing to their lower numbers. This explains why numerous Slovak nurses work abroad,

Figure 2.15. **Nurses related indicators**



1. 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 practice.

Source: OECD (2016), OECD Health Statistics (database) and OECD (2015), "Expatriation rates for doctors and nurses, 2010/11" in *International Migration Outlook 2015*.

StatLink http://dx.doi.org/10.1787/888933501249

mostly in Germany, Austria and the Czech Republic. Paradoxically, the number of newly trained nurses is higher than the OECD average. Since these courses are entirely state-funded, it appears that the public money invested in their education generates less of a return for the Slovak health system than for those of the country's main European partners, all of which suggests a need for further increases in nurses' pay, better working conditions and a more attractive scope of nursing work with a more developed content and more advanced tasks. The authorities are aware of these difficulties, and the creation in June 2016 of a new nursing department at the Health Ministry illustrates the emphasis put by the new government on addressing these issues (Spectator, 2016c).

Improving the efficiency and quality of primary health care

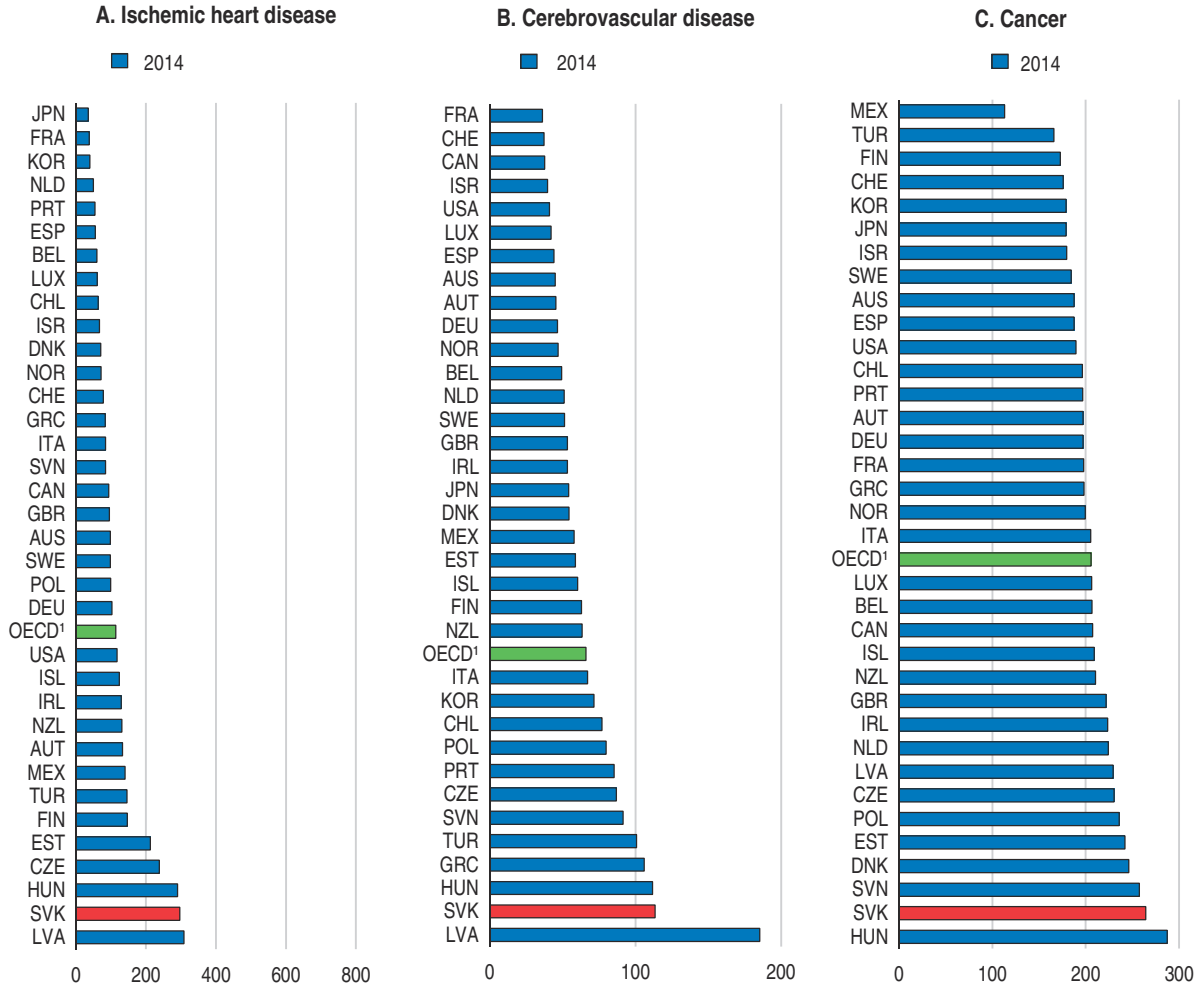
Solving the efficiency problems of the primary-care sector is one of the government's top priorities. Operational difficulties in this sector – poor screening and late treatment of pathologies such as cancer, high blood pressure and cardiovascular diseases – are fuelling the country's high level of amenable mortality and the failure to achieve any progress in recent decades (Figure 2.16). One of the keys to improving results is a sufficient number of motivated, well-trained medical staff, both GPs and specialists, evenly distributed across the country to provide good access to care for the whole population. It is also important to ensure a country-wide supply of primary-care physicians that meshes seamlessly with hospitals, clinical protocols and disease-management strategies based on best medical practice.

The Slovak Republic has enough doctors per capita, spends a relatively high share of health outlays on prevention and has a high vaccination rate (Figure 2.17). Yet, the primary-care system exhibits several shortcomings (WHO, 2016). Doctors are unevenly distributed across the country, with a greater imbalance between urban and rural districts than in most OECD countries (Figure 2.18). These disparities are of greatest concern in general practice and paediatrics, given the gatekeeper role played by these doctors for out-patient care. In some areas and for some communities, shortages cause accessibility problems, including for people suffering from chronic diseases.

There are fewer doctors in general practice than in other fields (Figure 2.18), which pushes up the number of consultations each undertakes and reduces the time they can spend with each patient. Because general practitioners are paid by capitation rather than the services they deliver to a patient, they have an incentive to increase the number of enrolled patients, but also to reduce the number of services provided to each of them (OECD, 2016a). Moreover, the legal restrictions on their ability to prescribe certain medicines undermine the effectiveness of their role in filtering and detecting diseases of at-risk patients. GPs are not allowed to prescribe almost 20% of available drugs, such as those used in cardiology, even though they are qualified to do so (these drugs can be prescribed only by specialists). There is no co-ordination with specialists in following standard clinical protocols and no adequate management of many minor health issues by GPs, and available estimates suggest that almost 80% of consultations result in a referral to a specialist, which is very high by international comparisons and implies little use of GPs' gatekeeping function (MoH, 2013; O'Donnell, 2000; Ringberg et al., 2013). This may be an overestimate, but there is no doubt that the out-patient workload is unevenly distributed between GPs and specialists, with an excessive number of specialist consultations. And, as mentioned above, specialists tend to ration this type of care when their monthly budget cap has been reached. Finally, the remuneration system for specialist care is based on a catalogue of procedures that has not been properly updated for more than a decade.

Figure 2.16. **Mortality from selected diseases**

2014 (or nearest year)



1. Unweighted average of the data shown.

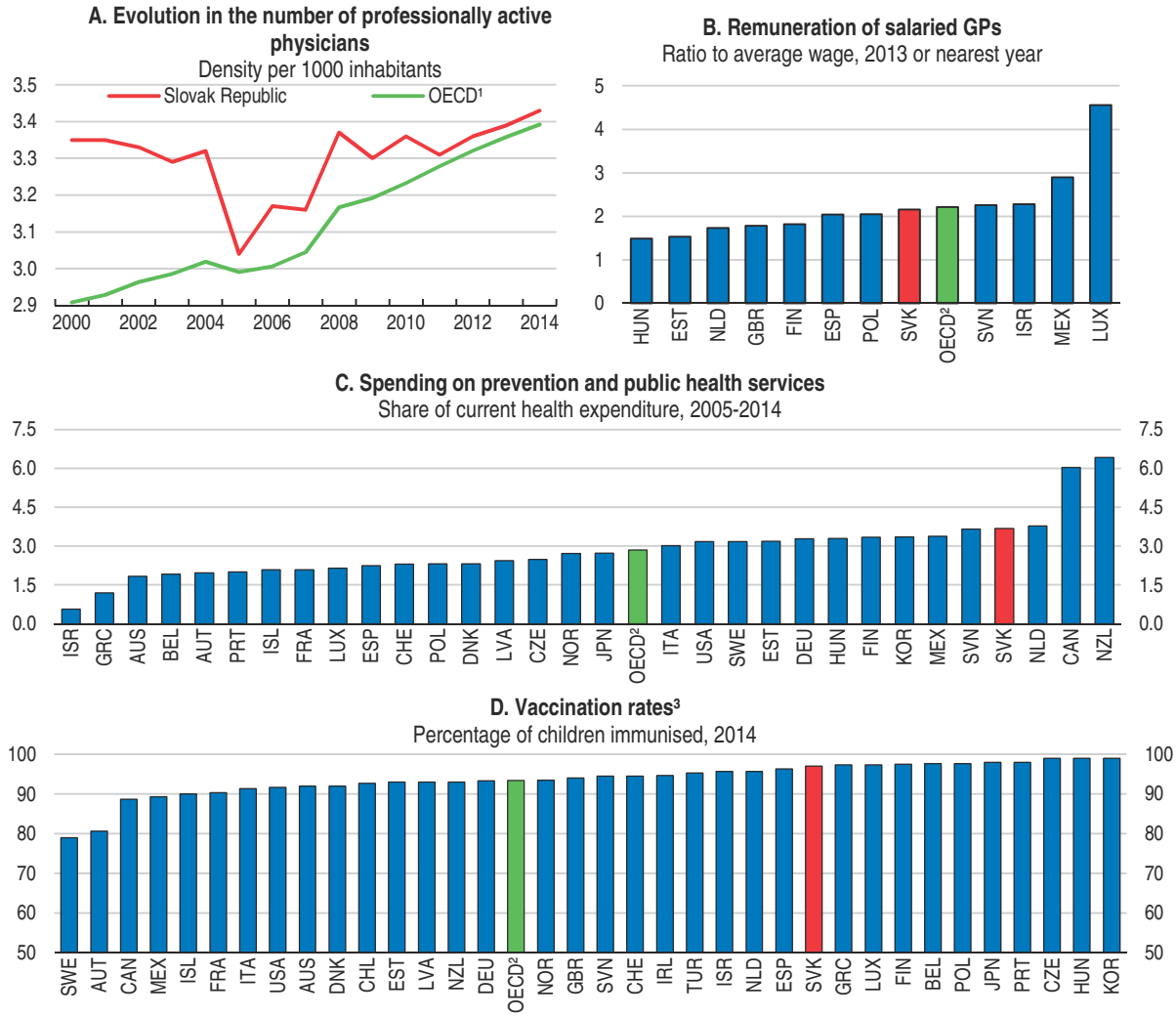
Source: OECD (2016), OECD Health Statistics (database).

StatLink http://dx.doi.org/10.1787/888933501268

These difficulties will worsen in the future as physicians age. The average age for doctors is close to 50, and the proportion of doctors aged over 55 exceeds the OECD average (Figure 2.19). GPs and paediatricians are even older, with an average age of 56-57 measured across the country, peaking in some districts at 63 for GPs and 68 for paediatricians. A high proportion of doctors are therefore close to retirement, raising the question of how to replace them, especially the relatively low number of gatekeeper doctors.

That the physician workforce is so old and the number of GPs so low has many causes. Slovak medical schools are not constrained in the number of doctors to be trained in each medical branch, and young doctors do not find general practice very appealing, which may be partly due to the restrictions imposed on their activity, as mentioned above. The capitation system also makes it hard for young GPs to set up a successful private practice unless they buy or take up the clientele of a retiring doctor. And even that is not particularly appealing, if the practice is in an isolated rural district. In contrast, emigration is often attractive for young doctors, given the ease of mobility within the European Union. The share

Figure 2.17. **Primary care indicators**



1. Unweighted average of data of the nearest available year.
2. Unweighted average of the data shown.
3. Unweighted average of vaccination rates for diphtheria, tetanus, pertussis, measles and hepatitis B. For Denmark, Finland, Hungary, Iceland, Japan, Norway, Switzerland and United Kingdom, average of diphtheria, tetanus, pertussis and measles.

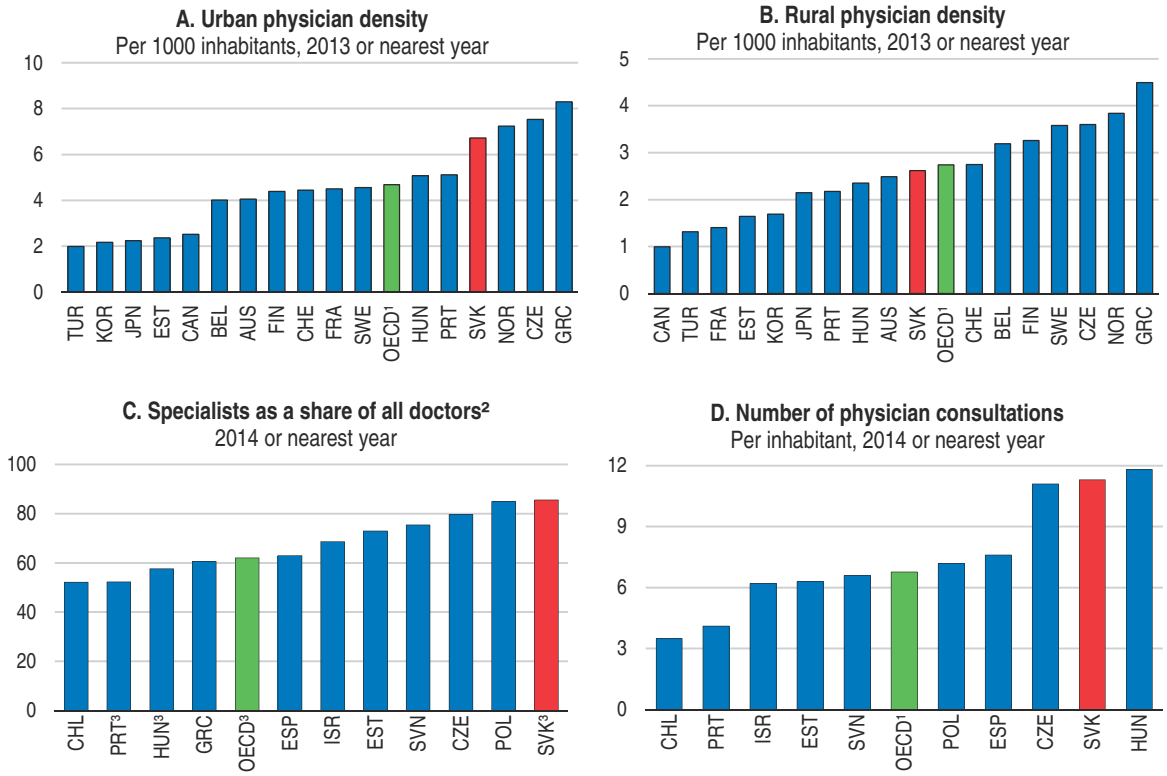
Source: OECD (2016), OECD Health Statistics (database).

StatLink http://dx.doi.org/10.1787/888933500527

of doctors trained in the Slovak Republic and practising abroad was 19% of the total number of Slovak doctors in 2014, which is high in international comparison (Figure 2.20). This brain drain is more pronounced among medical graduates than among those from other fields of study. It is estimated that about 20% of students who completed their medical studies between 2012 and 2014 left the country to practice abroad, essentially in the Czech Republic, Germany or Austria (see Chapter 1). This amounts to a waste of public money, since medical school and nursing training are entirely funded by the state.

The authorities have taken several steps to improve primary care and solve the problems related to doctors' demographics. Doctors' pay has been increased to reduce emigration. In 2014 they earned an average of 43% more than in 2009, and their level of pay compared with the economy-wide average was similar to the OECD average (Figure 2.17,

Figure 2.18. **Physician density and activity**



1. Unweighted average.
2. Specialists include paediatricians, obstetricians/gynaecologists, psychiatrists, medical, surgical and other specialists.
3. 2010 for Hungary and 2007 for Slovak Republic. Unweighted average of data for OECD countries for 2014 or nearest year. In Portugal, there is some double-counting of doctors with more than one specialty.

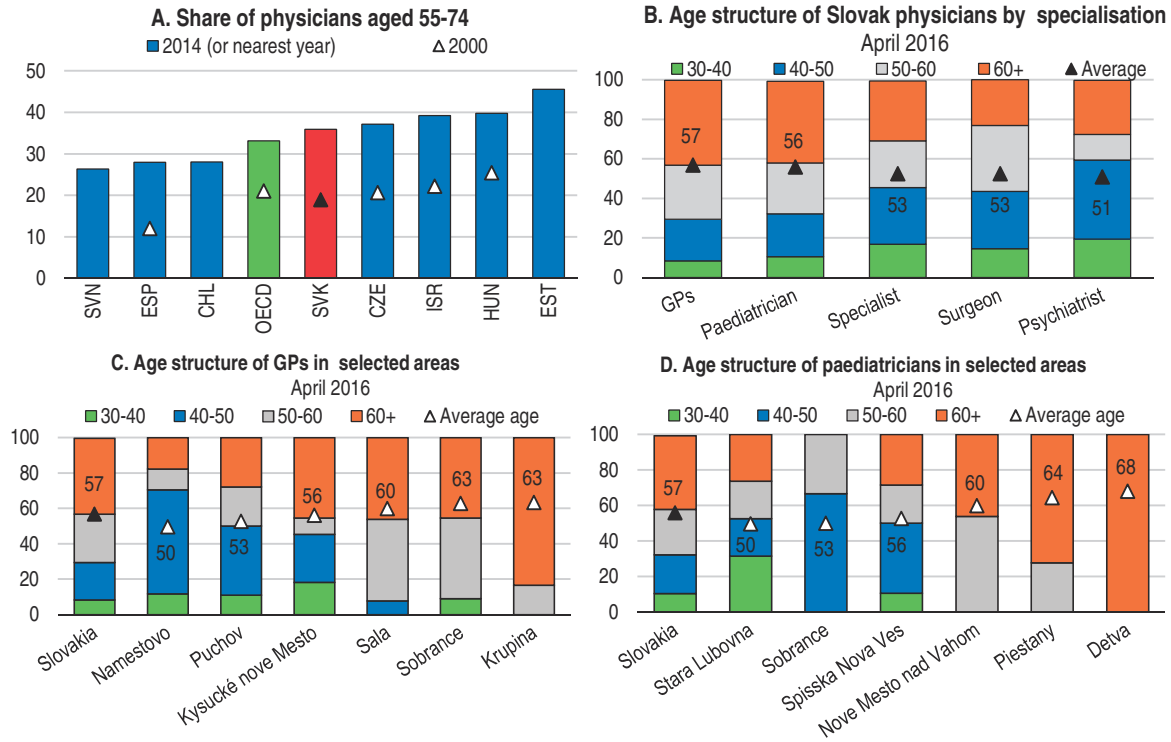
Source: OECD (2016), OECD Health Statistics (database), OECD (2015), *Health at a Glance 2015: OECD Indicators*, OECD (2013), *Health at a Glance 2013: OECD Indicators*, and Slovak Medical Chamber.

StatLink http://dx.doi.org/10.1787/888933501287

Panel B, above). A Residential Programme has also been developed since 2014 to increase the attractiveness of general practice and paediatrics and to make the gatekeeper role more effective. The degree course was shortened in this Programme, and a greater amount of work experience for students built into the syllabus, including internships with doctors in private practice. Most significantly, GPs' skills were upgraded, including in the domains of pre-operative examinations and the treatment of patients suffering from chronic diseases, such as diabetes. A third strategy for reform, launched in 2008, was to expand e-health, with the introduction of electronic personal health records and e-prescriptions. These changes initially planned for 2017 have been postponed to 2018 for e-prescriptions and 2021 for the complete diffusion of electronic health cards. They are costly (EUR 250 million, or 0.3% of GDP), but they should deliver improvements in the way providers interface with patient follow-up and reduce the number of medical examinations and administrative costs.

It is too early to assess the success of the Residential Programme, but initial results suggest that it should attract enough students to replace the GPs scheduled to retire in the coming years, according to the Ministry of Health. But aiming to improve and rebalance the primary-care supply between GPs and specialists by merely preventing a fall in the number of gatekeepers looks insufficiently ambitious. The number of these doctors should be increased to build up the resources needed for screening programmes and the early

Figure 2.19. **Age structure of physicians**



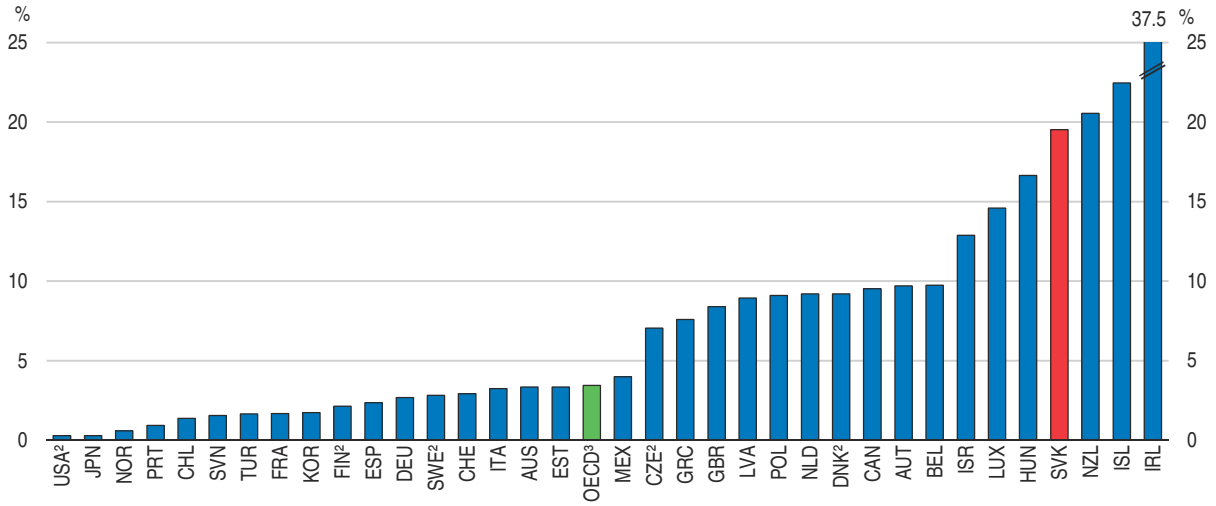
1. Unweighted average.

Source: OECD (2016), OECD Health Statistics (database) and Slovak Medical Chamber.

StatLink http://dx.doi.org/10.1787/888933501306

Figure 2.20. **Emigration rates of doctors**[1]

Percentage of total number of doctors, 2014 or nearest year



1. Share of doctors trained in the country, but working abroad.
2. 2013 for Czech Republic, Denmark, Finland, Sweden and United States.
3. Unweighted average.

Source: OECD (2016), OECD Health Statistics (database) and Statistical Office of the Slovak Republic.

StatLink http://dx.doi.org/10.1787/888933501325

management of diseases that pose a high risk to health. The authorities could achieve this by exercising greater control over the number of doctors trained per medical branch, as in most other OECD countries (OECD, 2016b). This would be useful both for the purposes of training enough GPs and paediatricians and for increasing the availability of some specialist care for which demand is likely to rise because of the ageing population. This shift could also usher in measures to distribute doctors more evenly across the territory: the authorities could, for example, restrict authorisations for doctors in very well served areas and introduce financial incentives (such as higher capitation payments) for them to move to areas lacking doctors (OECD, 2016b). Another reform option to consider is the widening of nurses' competences and responsibilities to perform some of the basic tasks of the GPs.

The improvement of GP and paediatrician training via the Residential Programme and the extension of their fields of competence should also improve primary-care quality. But the reform should go further and eliminate all restrictions on the competence, prescription writing and practice of gatekeeper doctors. Such restrictions are rare in OECD countries, given the responsibility doctors have to their patients, and they seem to respond more to the aim of partitioning and protecting the work of specialists than the promotion of public health. What is needed is increased care co-ordination between GPs and specialists. This could be promoted by speeding-up the diffusion of the electronic health card and the development of poly-clinics, which currently supply only 5% of total Slovak outpatient care, most of which is provided by independent private doctors. Bringing more GPs and specialists together in poly-clinics, as is the case in Israel, for example, would encourage them to interact and improve patient monitoring and case management.

It would also be advisable to change the way doctors are paid. This is overwhelmingly based on capitation for GPs, which keeps a tight rein on spending but does not promote care quality. Revenues based on this system account for over 90% of GPs' total incomes. Although some positive steps have been recently made by the government to better specify the payments and co-payments between physicians and patients, greater diversity of remuneration would help to correct the shortcoming, with more fee-for-service payments and the introduction of performance-related pay. The latter can take various forms and is being tested in several countries. It aims to link doctors' pay explicitly to precise targets in terms of results, coverage or care quality, by improving co-ordination among service providers, for example. This kind of pay does not normally cause a sudden and dramatic breakthrough in care quality or effectiveness, but it is a useful tool, which an increasing number of OECD countries are employing to achieve their health objectives through improved incentives (Cashin et al., 2014; OECD, 2016a). The use of bundled payments, for example, to several medical providers for the improved management of patients suffering from a chronic disease such as diabetes, is increasingly widespread and could be an interesting option (Struijs and Baan, 2011; Struijs et al., 2012; OECD, 2016a).

The specialists' fee-for-service system with a capped budget should also be reformed. The authorities might consider the German model, where the price of services is adjusted when the number of consultations reaches a certain level: this could limit needless consultations and reduce the quantitative rationing of care that now takes place at the end of every month. The list of procedures on which their pay is based should also be updated, as planned by the authorities.

Moreover, queues and long waits for appointments – which rose further after the abolition in June 2015 of the option to make a co-payment to obtain an appointment – are

frustrating for patients and have a non-negligible economic cost. The Health Ministry's decision to re-introduce in 2018 a fee to obtain an appointment is thus a step in the right direction, although it is accompanied by regulations limiting the use and revenues drawn by doctors for this service (Spectator, 2017). A simpler and probably more cost-effective solution could be to encourage doctors to acquire a medical appointment booking system online as a standard service. Assuming that every hour spent in the waiting room by every person that has to take time out of work reduces the total number of hours worked in the economy by around 0.3 hours, the lost revenue would be equivalent to EUR 85 million, or 0.1% of GDP, valuing these hours at the average hourly wage. The time lost in waiting for an appointment with a GP may be between one and three hours, but it can be far longer for a specialist.

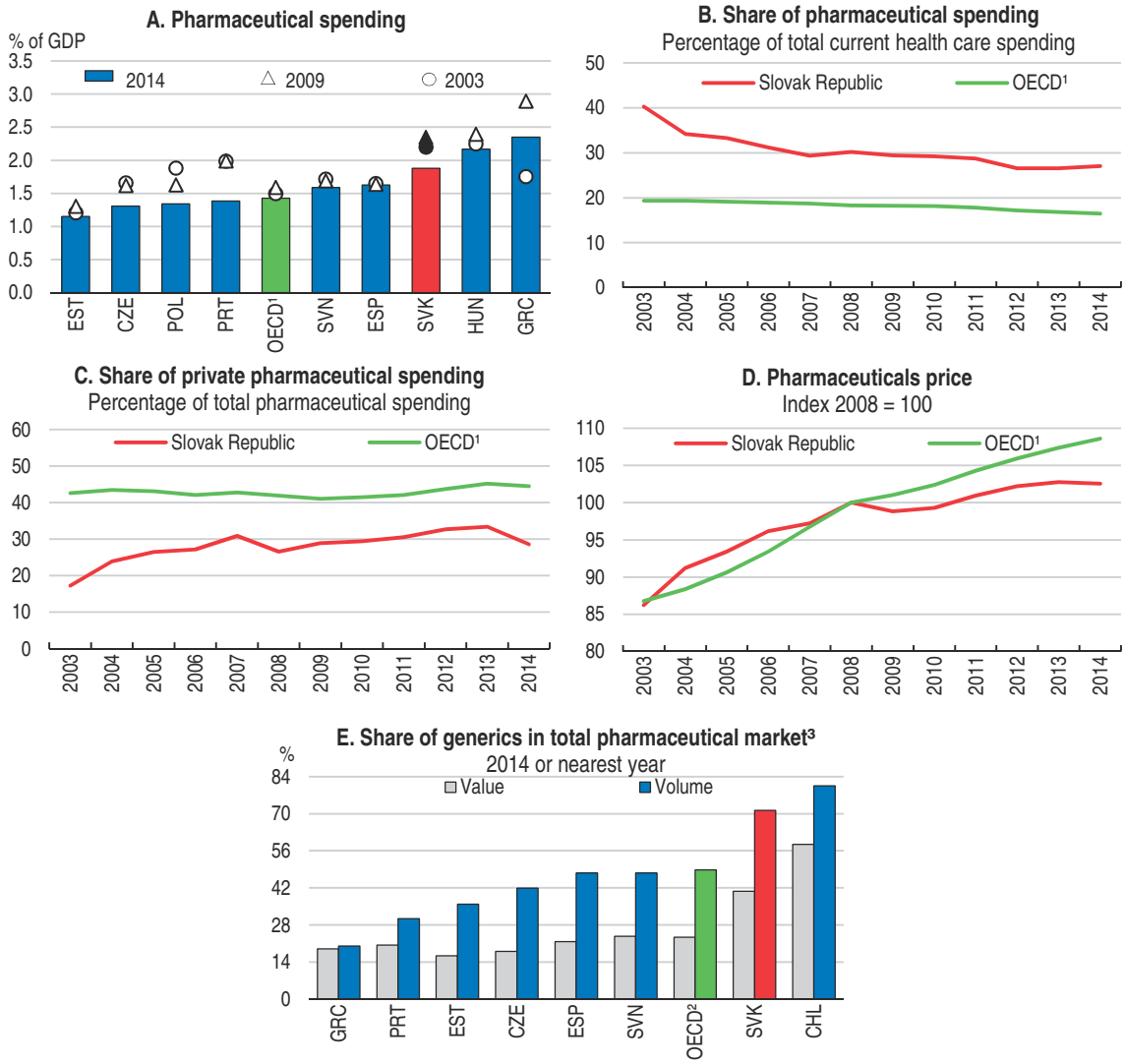
Finally, clarifying and rationalising co-payments for primary-care services, which lack transparency and are confusing for the public, would also be welcome. To this end, the Ministry of Health is introducing a more organized system of service payments with strong regulation and a public list of mandatory payments which will clarify the information at the patient level.

Pursuing efforts to bring down pharmaceutical expenditure and other ancillary health-care spending

Reforms over the last decade have led to major progress in curbing pharmaceutical spending. As a share of GDP this spending has not fallen by much since 2003, but it has dropped from 40% to 26% of all medical spending (Figure 2.21, Panels A and B). This development was the result of a series of initiatives that aimed to contain both consumption in volume and prices of prescription drugs. Between 2003 and 2007, co-payments for patients were increased, from a low level compared with other countries, before being capped for some groups of patients in 2011 to reduce the regressive impact of this measure (Panel C). In 2008 the authorities set up degressive margins for pharmacists and their distributors when drug prices increase to reduce their incentive to sell costly medicines. A reference price system for pharmaceutical products was introduced in 2009, based on the prices in the European Union where they are the lowest, which put a brake on the increases in the average prices for reimbursed medicines (Panel D). A requirement for doctors to prescribe generics was also adopted in 2011 to further increase up-take of these products (Panel E).

Although it has been brought under control, pharmaceutical spending is still difficult to manage. Total drug spending remains high as a share of GDP by comparison with the OECD average, and this situation reflects excessively high consumption volumes (WHO, 2016). The measures taken have pushed prices down to a low level relative to other countries, and it would be hard to cut prices any further. Because of their low cost, Slovak medicines tend to be re-exported to other European countries, which can occasionally lead to shortages for some products, although some recent measures announced by the government should help to better prevent these shortages (Šterbová, 2015; Szalayová et al., 2014, Adamovsky, 2016b; Spectator, 2016d). Moreover, it may prove difficult for the Slovak Republic, as for other OECD countries, to maintain the improved level of spending control acquired in recent years (OECD, 2015b; Belloni et al., 2016). The range of speciality medicines that open new avenues for the treatment of diabetes, cancer and hepatitis C, for example, has expanded considerably in the last few years, but these drugs are often costly, while demand for them is rising with the increasing incidence of chronic diseases linked to bad lifestyles and the ageing population. The consumption of medicines is five to eight times higher after the age of 65 than between 5 and 45 (OECD, 2015b).

Figure 2.21. **Pharmaceutical expenditure**



1. Unweighted average of data of the nearest available year.
2. Unweighted average.
3. Reimbursed pharmaceutical market for Greece and Spain. Community pharmacy market for Chile and Slovenia.

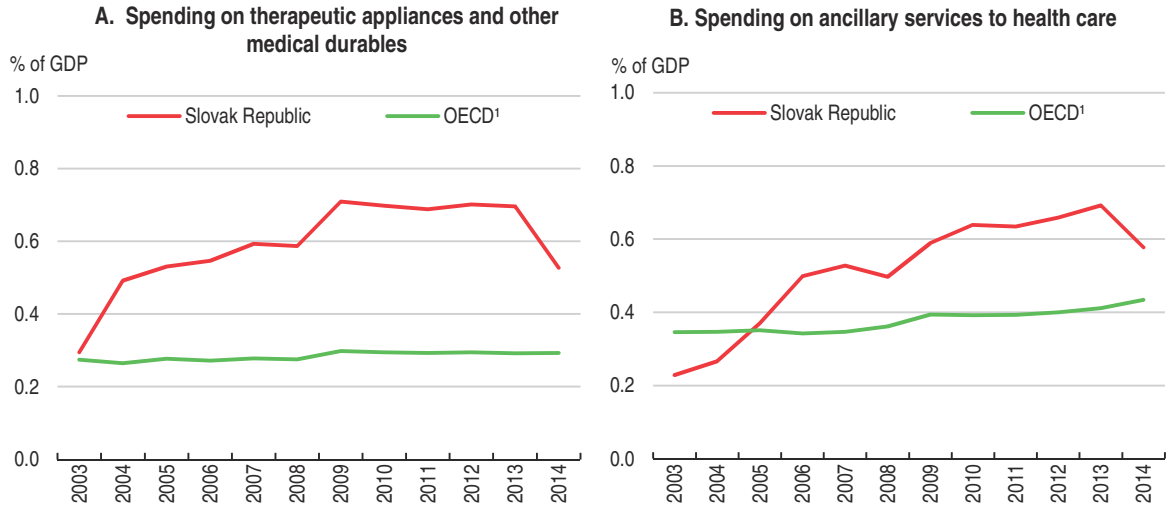
Source: OECD (2016), OECD Health Statistics (database).

StatLink http://dx.doi.org/10.1787/888933501344

Although spending control has improved for pharmaceuticals over the last 10 years, it has not done so for other patient medical services or for ancillary health spending. Since 2003 these expenditures have risen substantially as a share of GDP, and the figure is well above the OECD average (Figure 2.22). Spending has, for instance, risen sharply for ambulance services, emergency care and laboratory tests.

To improve control of spending on medical supplies, in January 2016 the authorities set up a reference price system based on average prices in the three EU countries with the lowest prices, akin to the current system for reimbursed medicines. The introduction of e-prescriptions as part of the tele-health development programme, planned for 2018, should improve control of the volume of spending on medicines. The new system should help health-care providers to better co-ordinate their actions and cut back on redundancy in

Figure 2.22. **Other medical goods and ancillary health services**



1. Unweighted average of data of the nearest available year.
Source: OECD (2016), *OECD Health Statistics* (database).

StatLink http://dx.doi.org/10.1787/888933501363

prescriptions and overconsumption of medical supplies and services, which should also be easier to track. These are positive measures, but to make the e-prescription system more effective, it would be useful to back it up with public information campaigns encouraging patients to change their behaviour and their expectation that they should automatically receive a prescription at every consultation.

It would also be wise to investigate spending on lab tests and patient transport with a thorough analysis of volume, price and geographical split. At first sight, it seems hard to justify ancillary health spending that is so high compared with other countries. The market for lab tests is highly concentrated, with the three main providers sharing three-quarters of the market. Insurers, led by the public company, should be encouraged to toughen their negotiations with the big medical labs over the cost of these tests, pointing to international price comparisons, for example. There also needs to be better control over lobbying by the dominant labs, which encourage doctors to increase prescriptions in exchange for rewards in cash or in kind. The pharmaceutical companies also engage in this sort of lobbying. In response the government requires all revenues paid to doctors by these firms to be declared to the tax authorities. Not much information about them is available, however, and the convoluted way these data are provided to the tax authorities makes their use difficult (Transparency International Slovakia, 2014), suggesting that their deterrent effect is too weak, and more transparency might be needed. More radically, the authorities could ban all "gifts" from pharmaceutical firms and testing labs to doctors, as the French have done.

It is also important to prepare for the probable emergence of new pressures on pharmaceutical spending: the rise in chronic diseases and the arrival on the market of innovative but costly new drugs. The potential rise in spending on new therapies is not necessarily a problem, if it improves the management of diseases (Lichtenberg, 2007). However, some drugs deliver significant benefits, while others offer only marginal improvements, whereas the cost of treatments is more often linked to the market situation (unsatisfied medical need, small target population) than to clinical and patient benefits (OECD, 2015b). Currently all new reimbursed drugs have to pass a cost-effectiveness test

measured on the basis of the so-called quality-adjusted life year indicator. In principle, this test requires that the benefits of new medicines prolonging a patient's life should not generate additional system costs exceeding 35 times the average monthly salary per year of quality-adjusted life. In practice, however, this test seems to have not always been rigorously applied, because of insufficient transparency in procedures and conflicts of interest of members of the Expert Working Group on Pharmacoeconomics, which is in charge of such evaluations (Adamovsky, 2016c).

As recently recognised by the authorities, to address this issue it will be important to promote a more transparent and independent system for assessing performance in order to select and offer cover for those with a cost-benefit ratio that meets well defined standards. This is consistent with recent OECD work stressing the need to promote better regulations to ensure that the prices paid for innovative drugs or new medical technologies reflect their real-world health benefits (OECD, 2017b). Therefore, the recent creation of a health technology assessment agency by the Ministry of Health to analyse clinical and cost effectiveness and safety of new health technologies and drugs is a positive step. In this context it would be advisable to also improve the available information about pharmaceutical consumption in hospitals, which are the biggest prescribers of these costly therapies, to have a better view of the ongoing relevant trends.

The authorities could also encourage the development of drug therapy, based on standardised therapeutic procedures and prescriptions. One way of doing this might be to require that patients taking more than a specified quantity of prescription medicines attend a mandatory consultation with a clinical pharmacologist in order to assess whether the prescriptions are justified, as well as potential interactions between various products. Last, although generics are already widely used in the Slovak Republic, there remains room for progress, and their mandatory prescription, which currently affects only those with one active ingredient, could be extended to all generic drugs with multiple active ingredients.

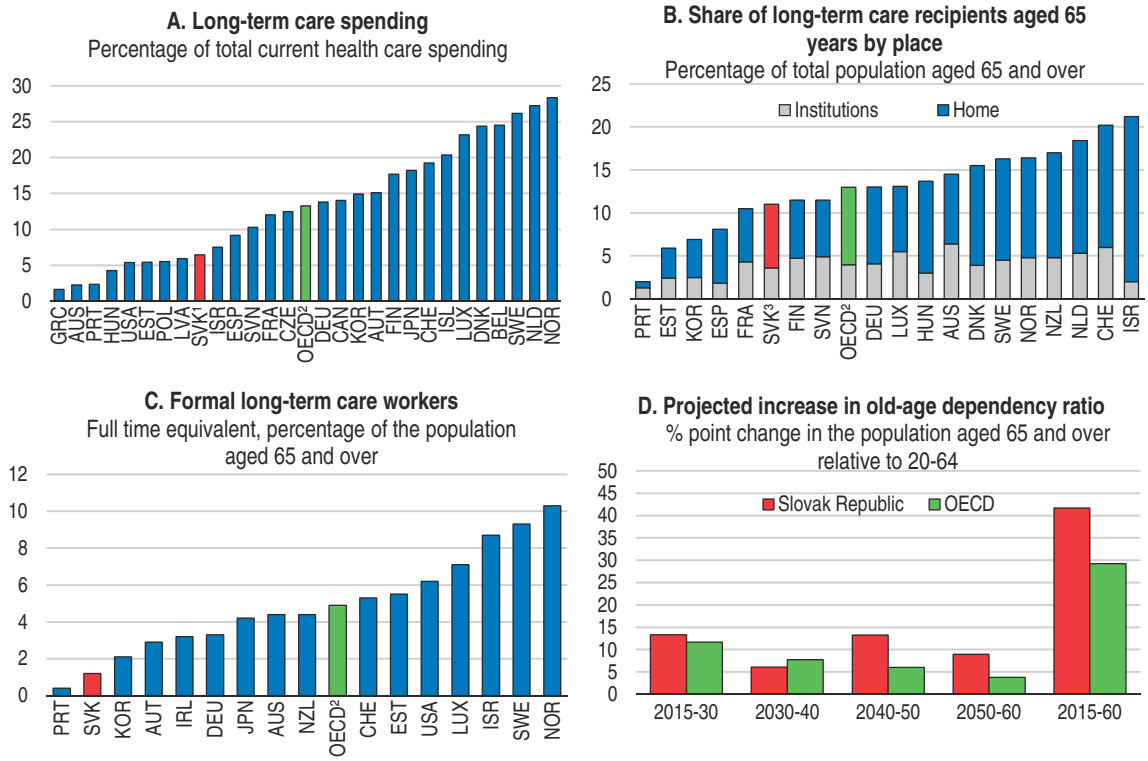
Developing a long-term care strategy

The supply of long-term care in the Slovak Republic is underdeveloped, mainly because of a lack of financing. Spending in this field is around 6.5% of total health spending, or 0.5% of GDP, which is half the OECD average (Figure 2.23, Panel A). Most of the supply consists of social support, and the medical system plays a fairly marginal role. Despite the limited resources devoted to this sector, the proportion of the over-65s benefiting from long-term care is similar to the average for OECD countries (Panel B). The majority of services (around 60%) is delivered through informal home care, generally by the beneficiary's friends or family, who receive a small financial allowance as compensation. Institutional care and residential services provided by professional carers, which account for around 30% and 10%, respectively, of total long-term care, employ relatively few people compared with other OECD countries (Panel C). The lack of in-home care capacity, which is vital for the most dependent people, means long waiting lists for places in state-owned institutions. Despite the absence of indicators for the quality of this care, such homes are widely perceived as sub-standard, because of a lack of financial and human resources (Vagac et al., 2014), and the cost of a place in a private home is generally very high.

The fragmented organisation of the long-term care system complicates its management and use by beneficiaries. Administration and financing are shared between the Ministry for Social Affairs, the Ministry for Health, and regional and local governments. The health-insurance system contributes to the long-term care system by funding a specific list of only

Figure 2.23. **Long-term care**

2014 or nearest year unless specified



1. Data in 2013. It includes long-term care spending of EUR 344 million by the Ministry of Labour, Social Affairs and Family of the Slovak Republic. Data for the Slovak Republic include social spending and is not fully comparable with other countries.
2. Unweighted average of the data shown.
3. The number of long-term care recipients at home aged 65 and over is estimated on the basis of the total number of long-term care recipients at home.

Source: OECD (2016), OECD Health Statistics (database), United Nations (2016), World Population Prospects: The 2015 Revision (database) and Ministry of Labour, Social Affairs and Family of the Slovak Republic.

StatLink http://dx.doi.org/10.1787/888933500565

nine medical procedures. Social services include assistance in cash and in kind funded from various sources. Cash benefits allow dependent people to pay for home help from outside or within the family and are financed from the state budget. Care in kind delivered at patients' homes is devolved to and partly financed by city and regional authorities. Access to these services and cash benefits is means-tested and conditional on the applicant meeting certain dependency criteria. The multiple channels for aid, managed by different bodies, make the system opaque and difficult for users to navigate (Vagac et al., 2014); the bureaucracy involved in evaluating an elderly person's needs is drawn out and cumbersome, and the different kinds of aid are poorly co-ordinated.

The financing of the long-term care system is also badly prepared to cope with demand pressures expected in the coming years due to the ageing population. In fact, the chronic financing problems have been worsening since 2009 under the impact of the economic crisis and the budgetary restrictions imposed on regional and city authorities, difficulties that forced the central government to step in with occasional bail-outs to prevent the closure of some care centres. The beneficiaries of these services were also asked to contribute directly to their funding, which, given the low level of pensions, engendered social tensions. And these financial pressures will intensify with the acceleration of population ageing,

which will be more pronounced than in many other OECD countries between now and 2030, and even more so between 2040 and 2060 (Figure 2.23, Panel D). Public spending on long-term care could increase from 0.4% to 1.1% of GDP by 2060, according to these projections (Table 2.2, above).

To cope with the expected rise in demand for long-term care the authorities will have to face the challenge of finding the additional resources they need, especially in terms of carers. It will probably be difficult to maintain the current structure of the care system, which relies mainly on informal care for dependent people by their friends and family, generally women. While this is not onerous for the public purse, such an approach reduces women's participation in the labour market and squanders their human capital. Moreover, formal jobs in this sector are poorly paid, despite difficult working conditions, and, as in nursing, a high proportion (an estimated 65%) of carers trained in the Slovak Republic work abroad, mostly in Germany and Austria, where there is high demand for these workers (Nadazdyova et al., 2013; Vagac et al., 2014).

Reforms will be needed to improve the system and meet the rising demand expected in the coming years. This may require increasing the resources of regional and local administrations to boost the quantity and quality of care provision. An alternative solution could be the introduction of a mandatory dependency insurance, similar to schemes adopted in some other countries, including Germany and Japan. There is also a need for better organisation of the different kinds of social and/or medical assistance required by dependent people. This could consist of the creation of one-stop shops at the regional level with adequately trained personnel centralising access to information, simplifying the application process for the various services available and helping to co-ordinate the different long-term care providers.

As a general rule, it is important to help elderly dependent people stay at home as long as they can, since this is usually what they want and is less costly than a place in a retirement home. However, increasing and improving the supply of institutional care seems to be necessary, which will mean adapting the number of available beds to demand and making sure that care meets minimum legal quality standards. This might be achieved by transforming some existing acute-care beds and other facilities for which there is an excess supply into long-term care centres. Strengthening the supply of home care delivered by adequately compensated family members or properly trained professional carers also seems to be desirable. If not enough carers are forthcoming, the authorities could follow the example of other OECD countries and consider the regulated opening of this market to migrant workers, including those from outside the European Union (Vagac et al., 2012; Nádaždyová et al., 2013). Such a policy would require recognising the professional qualifications of these workers, who would also have to be trained to learn and understand the specificities of Slovak lifestyle and culture to ease their integration into Slovak society.

Promoting healthier lifestyles

In addition to making the health-care system work better, the authorities also need to promote healthier lifestyles to improve the country's health outcomes. If Slovakia were to align itself with the European Union's most virtuous performers in terms of smoking, alcohol consumption, diet and obesity, estimates suggest that life expectancy could increase by almost four years (EC, 2015a). This would also bring significant economic benefits in terms of employment and productivity, even though the decline in medical costs linked to the reduction in disease induced by healthier lifestyles could be limited,

since it would be partly offset by the extra spending seen with greater longevity and the higher medical costs associated with the elderly.

There are several factors, however, holding Slovaks back from healthier living. Relatively low prices for alcoholic drinks, which are taxed less heavily than in most OECD countries, influence both drinking habits – with particularly high spirits consumption – and fatal diseases, which are prevalent by international standards (Figure 2.24, Panel A) (OECD, 2015c). The situation is similar for male smokers, given relatively low tobacco prices (Panel B). Also, the consumption of fruits and vegetables is low (Panel C), and while the Slovak Republic does not struggle as much as the average OECD country with obesity, including among young people, the situation has deteriorated considerably since the mid-2000s (Panel D).

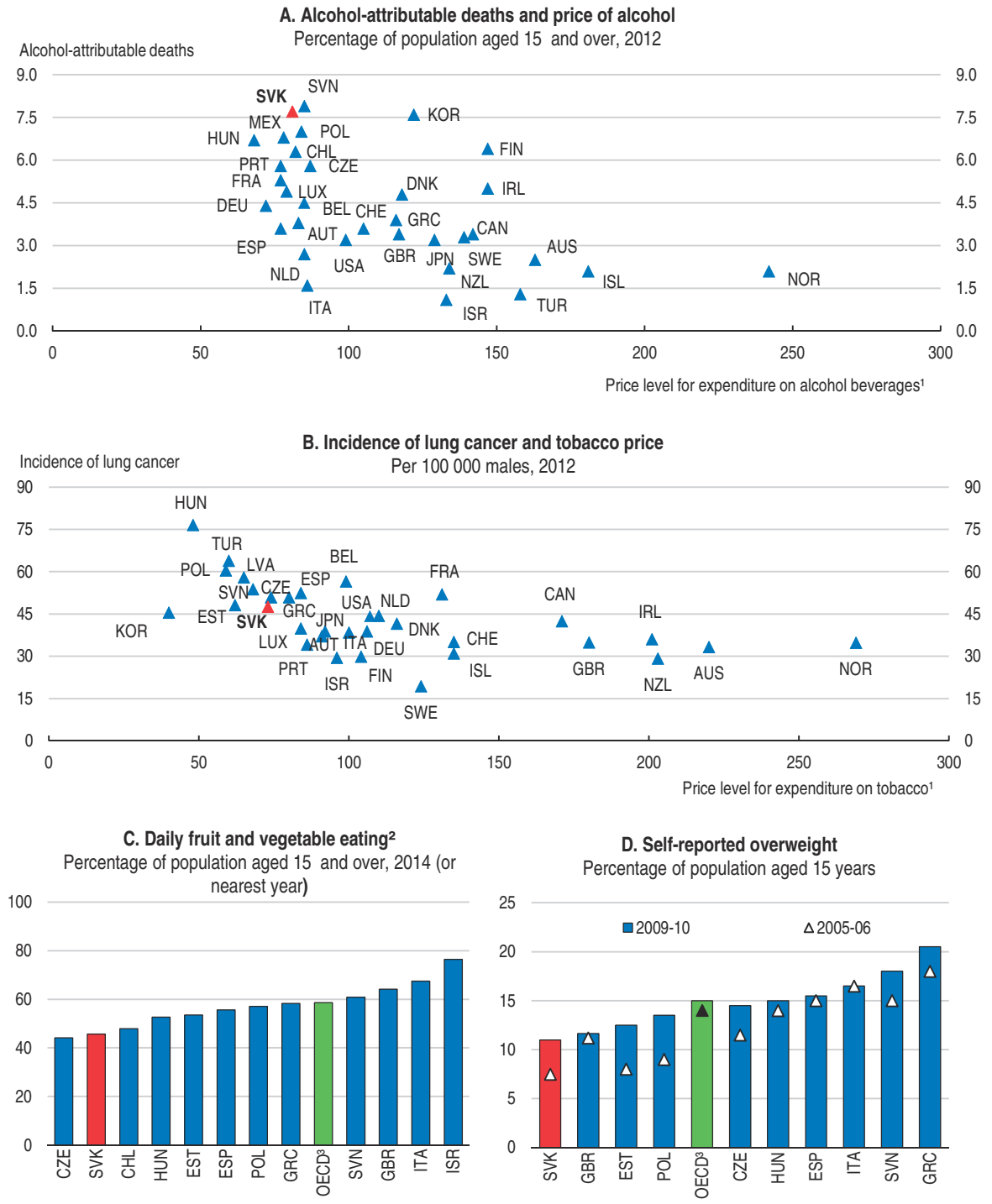
Higher excise taxes would reduce alcohol and tobacco consumption, thereby reducing the associated health problems. Taxing these items more heavily will not only help to change people's behaviour and reduce the mortality linked to drinking and smoking but is also likely to generate additional budgetary revenues. The recent cigarette tax increase, which increased their price by about 6%, is thus welcome. The positive impact of these measures on health ought to be greater for the poorest parts of the population, who suffer the most from the negative consequences of alcohol and tobacco abuse (Sassi et al., 2013), since they are the most likely to adjust their behaviour in response to price increases, given their financial constraints. One potential barrier to further changes is the risk of increased smuggling of black-market alcohol and tobacco, if the higher excises lead to significant price differences with neighbouring countries. Working with them, since they share the same public health issues surrounding alcohol and tobacco, could be a way to harmonise taxation on these products and remove this barrier.

Specific taxation for some non-alcoholic food and drink should also be considered. The frequent consumption of high-calorie products, saturated fats, trans fatty acids, sugar and salt boosts the risk of obesity and disease. Raising their prices with tax levies can influence people's eating habits and promote healthier diets (WHO, 2015). Consumers are more sensitive to variations in the price of sweetened beverages than other foodstuffs (Marron et al., 2015; Sassi et al., 2013), which suggests that moderate taxes can have a significant impact on consumption without generating markedly regressive effects, especially if there are healthier untaxed alternatives. Drinking fewer sugar-sweetened beverages, which are more popular among young people in underprivileged communities, would also help reduce health inequality. Sugar taxes have recently been imposed in Denmark, Hungary, Finland, France and Mexico.

The adoption of healthier lifestyles is also of crucial importance in the Roma community. The poor general health of this population, especially of marginalised Roma living in segregated areas, is partly linked to their difficult living conditions, which have many causes, including significant poverty, challenges accessing basic infrastructure and, often, sub-standard housing (Figure 2.25). This situation is compounded by discrimination and the Roma community's distrust of official Slovak institutions, including doctors, which constrains the adoption of healthier lifestyles and improved hygiene standards, with negative health repercussions (Gati et al., 2016). Morbidity rates linked to infectious intestinal diseases (such as dysentery), respiratory diseases, viral hepatitis and scabies are high in Roma communities, and mortality is high among young people, as mentioned above.

Given this situation, encouraging the Roma communities to adopt healthier behaviour will take wide-ranging action specifically targeted at their needs. Working alongside NGOs,

Figure 2.24. **Life style indicators**

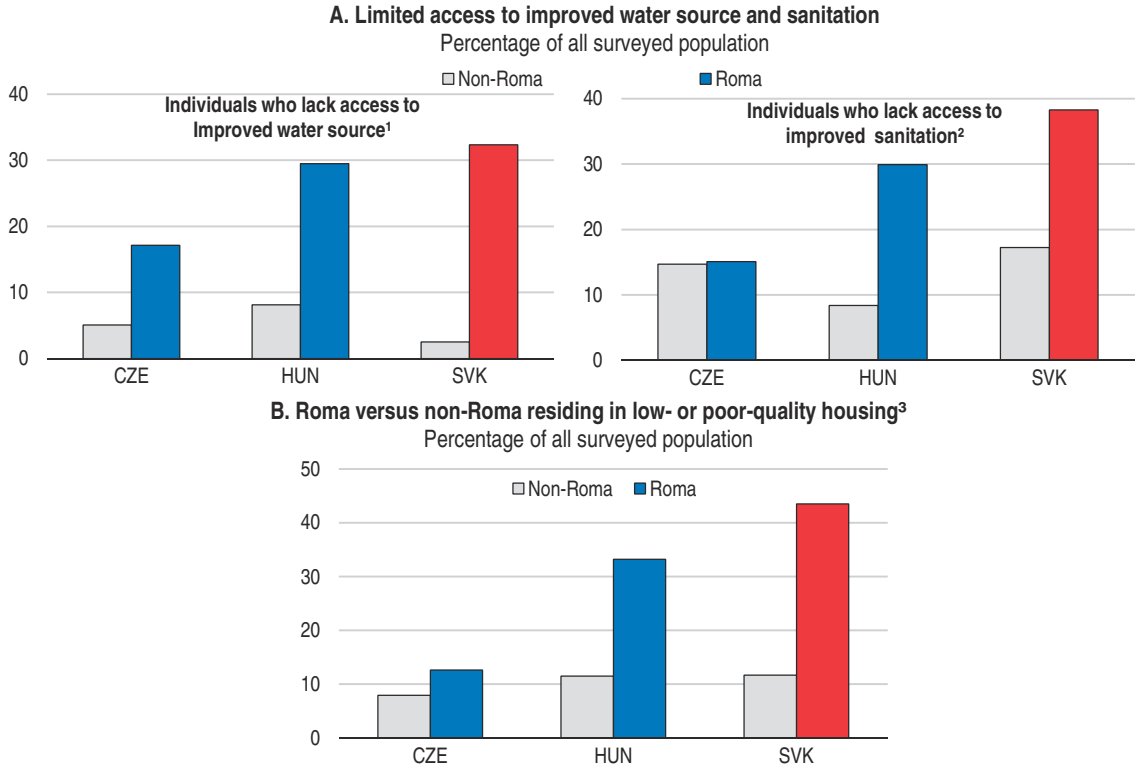


1. 2011 PPP benchmark results in US dollars. OECD = 100.
2. Unweighted average of daily consumption of fruits and vegetables.
3. Unweighted average.

Source: OECD (2016), OECD Health Statistics (database), OECD (2015), *Health at a Glance 2015: OECD Indicators*, OECD (2016), Purchasing Power Parities (PPP) Statistics (database) and F. Sassi (ed.) (2015), *Tackling Harmful Alcohol Use: Economics and Public Health Policy*, OECD Publishing, Paris.

StatLink http://dx.doi.org/10.1787/888933501382

Figure 2.25. **Selected indicators of Roma versus non-Roma living conditions**



1. Having piped water inside the dwelling or in the garden/yard.
2. Having a toilet and a shower or bathroom inside the dwelling.
3. Living in ruined houses or slums.

Source: United Nations Development Programme (2016), Database on vulnerability of Roma based on UNDP/ WB/EC Regional Roma Survey 2011 and Pilot survey 2011 conducted by the EU Agency for Fundamental Rights (FRA).

StatLink http://dx.doi.org/10.1787/888933501401

the authorities have taken some initiatives to raise awareness of the importance of hygiene and health and to improve their access to health-care providers. These initiatives include public information and education campaigns in the Roma language. Since 2014 they have also called on mediators from within these communities, trained by the Ministry of Health. At end-2015 there were some 250 mediators for 239 locations and a population of almost 68 000 living in segregated areas. They help patients to manage their own health, encourage up-take of vaccinations and contribute to the prevention of infectious diseases by accompanying them to the doctor, interpreting if necessary and helping them to appreciate the importance of their medical treatments.

These measures are a step in the right direction, and they seem to be bearing fruit. The direct involvement of Roma mediators in these initiatives matters, because they are better able to target the needs of the community and increase its sense of ownership and empowerment in community health and well-being. While it is still too early to measure the outcomes in terms of people's health, the additional resources and staff that the authorities seem to be prepared to make available will certainly be useful, given the size of the challenge. The authorities could also deploy mobile medical units for regular visits to remote communities, with financial incentives for the providers offering these services. As a general principle, the authorities should seek, as much as possible, to involve the Roma community in other initiatives to improve their health outcomes, such as the development of water

treatment, infrastructure access and improved housing. Such involvement would help to ensure that the new infrastructure and services meet the needs of Roma communities, by avoiding the obstacles that might restrict their use, such as financial impediments or excessive costs, and by informing Roma people of the advantages attached to them (Gatti et al., 2016).

Recommendations to improve the health-care system

(Key recommendations included in the Executive Summary are in bold italics)

Modernise hospital management and services

- ***Further centralise hospital procurement, professionalise their management and decouple salaries from national average wage.***
- ***Further cut the number of acute-care beds.***
- ***Phase in the diagnosis-related-group-based hospital financing system.***
- Closely monitor the implementation of this new financing system, and plan audits to ensure diagnosis-related groups are correctly coded and priced, setting adequate penalties in case of fraud.
- Rationalise the geographical distribution and the specialisation of care in the hospital network.
- Promote the management skills of heads of hospital departments.
- Seriously consider improving nurses' pay and working conditions.
- Introduce performance-related pay for hospital doctors.

Improve the efficiency and quality of primary health care

- ***Further increase medical school places for general practitioners, and expand their prescription-writing authority.***
- ***Expand fee-for-service payments for primary-care procedures of general practitioners***.
- Consider introducing an adjustable price system for specialists' fee-for-service payment with a capped budget, as in Germany.
- Restrict authorisation for doctors wishing to set up a private practice in well-served areas, and introduce financial incentives for them to move to poorly-served areas.
- Improve the coordination of services between providers, including through the development of poly-clinics and a more rapid implementation of electronic personal health records.
- Promote better management of queues in out-patient services by encouraging all doctors to implement an appointment system.

Pursue efforts to bring down pharmaceutical expenditure and other ancillary health-care spending

- Implement e-health and e-prescription programmes.
- Develop information campaigns to change doctors' behaviour and patients' expectations regarding drug prescriptions to cut the volume of pharmaceutical spending.
- Thoroughly check laboratory tests and ambulance services spending. Consider lowering prices in these fields.
- Investigate lobbying activities by pharmaceutical firms and testing labs, and improve transparency of their corporate tax data. Consider banning all "gifts" from pharmaceutical firms and testing labs to doctors.

Develop a long-term care strategy

- ***Create regional one-stop shops with well-trained personnel to coordinate and simplify access to long-term care services.***
- Consider a regulated opening of the long-term care market to qualified foreign workers.

Recommendations to improve the health-care system *(cont.)*

(Key recommendations included in the Executive Summary are in bold italics)

Promote healthier lifestyles

- ***Promote Roma access to health-care by increasing support for trained Roma mediator programmes***.
- Increase excises on alcohol and tobacco, engaging in discussion with other central European countries to harmonise the taxation of these products. Consider introducing specific levies on sweetened beverages.
- Deploy mobile medical units for regular visits to segregated Roma communities, with financial incentives for the providers offering these services.

Bibliography

Adamovsky, P. (2016a), "Health Minister pushed private pharmacies from hospitals", published in the Slovak Spectator on 16 June, *http://spectator.sme.sk/c/20192536/health-minister-pushes-private-pharmacies-from-hospitals.html*.

Adamovsky, P. (2016b), "Health Ministry to ban re-export of medicine", published in the Slovak Spectator on 13 July, *http://spectator.sme.sk/c/20212765/health-ministry-to-ban-reexport-of-medicine.html*.

Adamovsky, P. (2016c), "Licensing of prescription drugs flawed", published in the Slovak Spectator on 1 September, *http://spectator.sme.sk/c/20259158/licensing-of-prescription-drugs-flawed.html*.

Annear, P. and D. Huntington (eds.) (2015), "Case-based payment systems for hospital funding in Asia: An investigation of current status and future directions", Asia Pacific Observatory on Health Systems and Policies and OECD, *www.oecd.org/health/health-systems/case-based-payment-systems-for-hospital-funding-in-asia-9789290617327-en.htm*.

Belloni, A., D. Morgan and V. Paris (2016), "Pharmaceutical Expenditure and Policies: Past Trends and Future Challenges", *OECD Health Working Papers*, No. 87, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jm0q1f4cdq7-en*.

Cashin, C., Y-L. Chi, P. Smith, M. Borowitz and S. Thomson (2014), *Paying for performance in health care. Implications for health system performance and accountability*, European Observatory on Health Systems and Policies Series, Open University Press, *www.euro.who.int/en/about-us/partners/observatory/publications/studies/paying-for-performance-in-health-care.-implications-for-health-system-performance-and-accountability*.

Colombo, F. and N. Tapay (2004), "The Slovak health insurance system and the potential role for private health insurance: Policy challenges", *OECD Health Working Papers*, No. 11, OECD Publishing, Paris, *www.oecd.org/health/health-systems/29878719.pdf*.

de la Maisonneuve, C. and J. Oliveira Martins (2013), "A Projection Method for Public Health and Long-Term Care Expenditures", *OECD Economics Department Working Papers*, No. 1048, OECD Publishing, Paris, *www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP(2013)40&docLanguage=En*.

de la Maisonneuve, C., R. Moreno-Serra, F. Murtin and J. Oliveira Martins (2016), "The drivers of public health spending: Integrating policies and institutions", *OECD Economics Department Working Papers*, No. 1283, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jm2f76rnhkj-en*.

Dovera (2016), "Prehľad čakacích lehôt" (*Summary waiting times*), February, *www.dovera.sk/cakacie-listiny*

Dutu, R. and P. Sicari (2016) "Public Spending Efficiency in the OECD: Benchmarking Health Care, Education and General Administration", *OECD Economics Department Working Papers*, No. 1278, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jm3st732jnq-en*.

European Commission (EC) (2013), "Study on Corruption in the Health Care Sector", Country report on Slovakia, *http://ec.europa.eu/dgs/home-affairs/what-is-new/news/news/docs/20131219_study_on_corruption_in_the_healthcare_sector_en.pdf*.

EC (2015a), "Comparative efficiency of health systems, corrected for selected lifestyle factors", final report MACELI, *http://ec.europa.eu/health/systems_performance_assessment/docs/2015_maceli_report_en.pdf*.

EC (2015b), "The 2015 Ageing Report. Economic and budgetary projections for the 28 EU Member States (2013-2060)", *European Economy*, No. 3/2015, *http://europa.eu/epc/pdf/ageing_report_2015_en.pdf*.

Economist (2014), "Still Protesting after all these years", 21 November, *www.economist.com/news/europe/21634255-two-halves-former-czechoslovakia-are-both-angry-their-political-establishments-still*.

Economist (2015), "Patients Bearing Gifts", 24 March, *www.economist.com/news/europe/21647087-central-and-eastern-europe-low-paid-doctors-accept-bribes-and-patients-offer-them-patients-bearing*

Filko, M., J. Mach and M. Zajíček (2012), "Málo zdravia za veľa peňazí: Analýza efektívnosti slovenského zdravotníctva" ("Not enough health for a lot of money: Analysis of expenditure efficiency of the Slovak Health Care System"), Institute of Financial Policy. *http://hpi.sk/cdata/Documents/IFP_EA28_Efektivnost.pdf*.

Gatti, R., S. Karacsony, K. Anan, C. Ferré, and C. de Paz Nieves (2016), *Being Fair, Faring Better. Promoting Equality of Opportunity for Marginalized Roma*, World Bank Group, Human Development, *www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2016/01/27/090224b084103a5f/2_0/Rendered/PDF/Being0fair00fa0or0marginalized0Roma.pdf*.

Gavurová, B., V. Šoltés, and M. Šoltés (2014), "Meranie zdravia a zdravotných rizík vo vybraných rómskych osadách na Slovensku – fakty a reflexive" ("Measuring health and health risks in the chosen Roma settlements in Slovakia – facts and reflections"), in Nerovnosť a chudoba v Európskej únii a na Slovensku, 22-24 October, Košice.

Hadad, S., Y. Hadad and T. Simon-Tuval (2013), "Determinants of healthcare system's efficiency in OECD countries", *European Journal of Health Economics*, Vol. 14, No. 2.

Hüfner, F. (2011), "Increasing Public Sector Efficiency in Slovakia", *OECD Economics Department Working Papers*, No. 839, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5kgj3l0m0q0r-en*.

Ineko (2012a), "O častých výmenách riaditeľov štátnych nemocníc" ("The frequent changes of directors of public hospitals, July 2, *www.i-health.sk/inekomentare/1160_inekomentare-o-castych-vymenach-riaditelov-statnych-nemocnic*.

Ineko (2012b), "Assessment of the public procurement of hospitals in 2009-2012: Intensity of the competition for tenders is low", Zachar, D and Z. Dančíková, August.

Ineko (2015), "Ako Slovensko Zaplatí za neliečenie zdravotníctva" ("How Slovakia will pay for not treating its Healthcare: Analysis of population's health status, factors affecting it and long term prospects of Slovak healthcare financial sustainability"), June.

Kiss, S. (2007), *Equity in Health Care Finance in Slovakia – the Impact of the Reform*, Erasmus University, Rotterdam, *http://static.etrend.sk/uploads/tx_media/blogy/169/STEFAN-KISS-EQUITY-IN-HEALTH-CARE-FINANCE-THESIS-FINAL.pdf*.

Kossarova, L., W. Holland and E. Mossialos (2012), "Avoidable' mortality: A measure of health system performance in the Czech Republic and Slovakia between 1971 and 2008", *Health Policy and Planning*.

Lichtenberg, F. (2007), "Benefits and Costs of Newer Drugs: An Update", Columbia University and National Bureau of Economic Research Manage, published online in Wiley InterScience, *http://onlinelibrary.wiley.com/doi/10.1002/mde.1355/epdf*.

Marron, D., M. Gearing and J. Iselin (2015) "Should we tax unhealthy foods and drinks?", *Urban-Brookings Tax Policy Centre Working Paper*, December, *www.taxpolicycenter.org/sites/default/files/alfresco/publication-pdfs/2000553-Should-We-Tax-Unhealthy-Foods-and-Drinks.pdf*.

Medeiros, J. and C. Schwierz (2015), "European economy: Efficiency estimates of health care systems", European Commission, *Economic Papers,* No. 549, *http://ec.europa.eu/economy_finance/publications/*.

Ministry of Health (MOH) (2013), "Strategic framework for health for 2014-2030", *www.health.gov.sk/?Key-publications*.

Ministry of Finance (MOF) (2015), "National Reform Programme of the Slovak Republic 2015", April, *http://ec.europa.eu/europe2020/pdf/csr2015/nrp2015_slovakia_en.pdf*

Muzik, R. and A. Szalayova (2013), *Analyza neformalnych platieb v zdravotnictve na Slovensku,* ("Analysis of informal payments in healthcare in Slovakia"), Health Policy Institute, *www.hpi.sk/cdata/Publications/Analyza_neformalnych_platieb_2013.pdf.*

Nádaždyová, M., L. Brichtová, S. Mesároš, M. Laktišová and K. Repková (2013), "Filling the gap in long-term professional care through systematic migration policies: In search for win-win solutions in the LTC sector making use of managed migration", Comments paper – Slovak Republic, Germany, 23-24 October.

O'Donnell, C. (2000), "Variation in GP referral rates: What can we learn from the literature?", Family Practice, Oxford University Press, Vol. 17 No. 6, *https://academic.oup.com/fampra/article/17/6/462/507355/Variation-in-GP-referral-rates-what-can-we-learn*.

OECD (2010), *Health Care Systems: Efficiency and Policy Settings*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264094901-en*.

OECD (2014), *OECD Economic Surveys: Slovak Republic 2014*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eco_surveys-svk-2014*.

OECD (2015a), "Inclusive Growth and Health", Note by the Directorate for Employment, Labour and Social Affairs for the Health Committee, DELSA/HEA (2015)14, 16 November.

OECD (2015b), "Pharmaceutical spending trends and future challenges", *Health at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/health_glance-2015-en*.

OECD (2015c), *Tackling Harmful Alcohol Use: Economics and Public Health Policy*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264181069-en*.

OECD (2016a), *Innovation in provider payment: New levers to drive health system performance*, OECD Publishing, Paris.

OECD (2016b), *Health Workforce Policies in OECD Countries: Right Jobs, Right Skills, Right Places*, *OECD Health Policy Studies*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264239517-en*.

OECD (2017a), *Tackling Wasteful Spending on Health*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264266414-en*.

OECD (2017b), *New Health Technologies: Managing Access, Value and Sustainability,* OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264266438-en*.

Pažitný, P., T. Szalay, A. Szalayová, K. Morvay, R. Mužik, M. Pourová, D. Kandilaki, P. Balík and T. Sivák (2014), "Modernization of Slovak Hospitals, Basic Frameworks of Health Care Policy 2014-2016", Health Policy Institute, *http://hpi.sk/cdata/Publications/hpi_zakladne_ramce_2014.pdf*.

Poprocký, I. (2010), "Infraštruktúra slovenských nemocníc", *Zdravotná Politika,* Vol. 5, No. 2-4. *www.hpi.sk/cdata/IntoBalance/zdravotna_politika_09-2010.pdf*.

Ringberg, U., N. Fleten, T. Deraas, T. Hasvold and O. Førde (2013), "High referral rates to secondary care by general practitioners in Norway are associated with GPs' gender and specialist qualifications in family medicine, a study of 4350 consultations", *BMC Health Services Research,* Vol. 13, No. 147, *http://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-13-147*.

Sassi, F., A. Belloni and C. Capobianco (2013), "The Role of Fiscal Policies in Health Promotion", *OECD Health Working Papers*, No. 66, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5k3twr94kvzx-en*.

Shah, J., A. Couffinhal, H. Nguyen, G. Schieber, D. Prokopov, S. Nenkov and P. Atanasov (2015), *Final action plan for the implementation of DRG-based payments,* World Bank Group, Washington, DC, *http://documents.worldbank.org/curated/en/2015/11/25465748/final-action-plan-implementation-drgs-based-payments*.

Šoltés, V., M. Šoltés and B. Gavurová (2014), "Vývoj mortality v regiónoch s vysokou koncentráciou rómskeho obyvateľstva" ("Mortality development in the regions of high concentration of Roma population"), in Nerovnosť a chudoba v Európskej únii a na Slovensku, 22-24 October, Košice.

Spectator (2016a), "Health care in Slovakia deteriorates", Press article, 27 January, *http://spectator.sme.sk/c/20080934/health-care-in-slovakia-deteriorates.html*.

Spectator (2016b), "Health-care system already lacks around 12 000 nurses", Press article, 25 July, *http://spectator.sme.sk/c/20223270/health-care-system-already-lacks-around-12000-nurses.html*.

Spectator (2016c), "New 'Ministerial Nurse' to lead nursing as August", Press article, 27 July, *http://spectator.sme.sk/c/20225121/new-ministerial-nurse-to-lead-nursing-as-of-august.html*.

Spectator (2016d), "Parliament limits export of medicines", Press article, 19 October, *http://spectator.sme.sk/c/20361686/parliament-limits-export-of-medicines.html*.

Spectator (2017), "Doctor's appointments possible from 2018", Press article, 1 February, *https://spectator.sme.sk/c/20448885/doctors-appointments-possible-from-2018.html*.

Sprocha, B. (2014), *Reprodukcia rómskeho obyvateľstva na Slovensku a prognóza jeho populačného vývoja*, INFOSTAT – Výskumné demografické centrum.

Šterbová, K. (2015), "Čo zastaví reexport? Poradiť si nevie ani Európska únia" ("What will stop re-export? Even the EU has no solution"), Hospodárske Noviny, *www.adl.sk/Media/Napisali-o-nas/Co-zastavi-reexport-Poradit-si-nevie-ani-Europska-unia/*.

Struijs, J. and C. Baan (2011) "Integrating care through bundled payments – lessons from the Netherlands", *New England Journal of Medicine*, Vol. 364, No. 11, pp. 990-1. *www.nejm.org/doi/pdf/10.1056/NEJMp1011849*.

Struijs, J., S. Mohnen, C. Molema, J. de Jong-van Til and C. Baan (2012), "Effects of bundled payment on curative health care costs in the Netherlands: An analysis of diabetes care and vascular risk management based on nationwide claim data", National Institute for Public Health and the Environment, Bilthoven, *www.rivm.nl/dsresource?objectid=rivmp:188652&type=org&disposition=inline&ns_nc=1*.

Szalay, T. (2011), *Slovakia: Health System Review 2011*, *Health Systems in Transition*, Vol. 13, No. 2, European Observatory on Health Systems and Policies, Copenhagen. *www.euro.who.int/__data/assets/pdf_file/0004/140593/e94972.pdf*.

Szalayová A., K. Skybová, D. Kandilaki and T. Szalay (2014),"Analýza lekárenského trhu na Slovensku a v Českej republike: Vývoj za posledných 10 rokov" ("Analysis of the pharmaceutical market in Slovakia and in Czech Republic: Evolution over the past 10 years"), Health Policy Institute. *www.hpi.sk/cdata/Publications/hpi_analyza_lekarenskeho_trhu.pdf*.

Tunega, M (2013), "Širší pohľad na efektívnosť slovenského zdravotníctva: Viaceré pohľady na dostupné štatistické údaje z oblasti zdravotníctva v SR a v porovnateľných krajinách" ("A broader view of the effectiveness of Slovak health care: Several views of the statistical data available from the health sector in Slovakia and in comparable countries"), INEKO.

Transparency International Slovakia (2014) "Lekári prestali spolupracovať s farmabiznisom. Naozaj?" ("Doctors stopped cooperating with pharmaceutical companies. Really?"). *www.transparency.sk/sk/lekari-prestali-spolupracovat-s-farmabiznisom-naozaj/*.

Transparency International, (2015), "Základné výsledky (zdravotníctvo)" *[Key results (for healthcare)]*, *www.transparency.sk/wp-content/uploads/2015/02/Zakladne_vysledky_feb2015_zdravotnictvo.pdf*.

Vagač, L., P. Goliaš and D. Zachar (2012), "Country Document Update 2012: Pensions, health and long-term care, Slovakia, March 2012", European Commission, Brussels.

Vagač, L., P. Goliaš, and D. Zachar (2014), "Country Document Update 2014: Pensions, health and long-term care, Slovakia, March 2014", European Commission, Brussels.

WHO (2015), "Using price policies to promote healthier diets", World Health Organization, Geneva *www.euro.who.int/__data/assets/pdf_file/0008/273662/Using-price-policies-to-promote-healthier-diets.pdf*.

WHO (2016), *Health system in transition – Slovakia: Health system review*, European Observatory on Health Systems and Policies.

Zachar, D. (2013), "Zdravotnícky system v SR (2012-2013)" ("Slovak Health Care System [2012-2013]"), INEKO.

Zachar, D. and Z. Dančíková (2014), "Vo veľkých nemocničných tendroch sa súťaží málo: Analýza verejného obstarávania nemocníc v rokoch 2012-2014)", ("Little competition in large hospital tenders: Analysis of public procurement in Slovak hospitals, 2012-2014"), INEKO, Transparency International Slovakia.

APPENDIX 1.A1

Health outcome performance[1]

	Life expectancy at birth, total population	Life expectancy, Male at 65, total population	Life expectancy, Female at 65, total population	Mortality rate, all causes	Infant mortality rate	Premature mortality	Average
Australia	-0.1	-0.4	0.3	0.2	-0.2	0.3	0.0
Austria	-0.6	-0.1	-0.1	0.1	-0.1	0.2	-0.1
Belgium	-0.7	-0.7	0.1	-1.1	0.1	-0.5	-0.5
Canada	0.3	0.2	0.0	1.0	-1.5	-0.4	-0.1
Chile	0.6	1.1	0.4	1.6	-0.8	0.7	0.6
Czech Republic	-0.4	-0.7	-1.0	-0.8	0.9	0.6	-0.2
Denmark	-0.8	-0.8	-1.2	-1.3	-0.3	-0.3	-0.8
Estonia	-0.6	-0.9	0.3	-0.2	0.9	-1.0	-0.2
Finland	0.9	0.7	0.3	1.0	1.1	-0.3	0.6
France	0.8	1.4	2.2	1.5	0.1	0.1	1.0
Germany	-0.4	0.1	-0.4	0.0	-0.3	0.0	-0.2
Greece	1.3	2.0	1.2	1.0	0.9	1.4	1.3
Hungary	-1.7	-1.6	-1.5	-1.8	-0.5	-0.9	-1.3
Iceland	1.4	1.1	0.1	0.2	2.1	0.7	0.9
Ireland	-0.8	-0.8	-0.7	-1.0	-0.1	-0.1	-0.6
Israel	1.6	1.9	0.5	1.8	0.2	0.5	1.1
Italy	0.9	0.2	1.4	0.3	1.5	1.2	0.9
Korea	0.7	0.1	1.3	0.8	0.5	0.8	0.7
Mexico	-0.5	0.3	-0.4	-1.1	-0.9	-1.7	-0.7
Netherlands	0.0	0.0	-0.6	0.1	-0.3	0.1	-0.1
New Zealand	0.6	0.7	0.4	0.3	-0.8	0.2	0.2
Norway	-0.2	-0.8	-0.7	-0.7	0.6	-0.5	-0.4
Poland	-0.3	-0.1	0.2	-0.1	-0.5	-0.5	-0.2
Slovak Republic	-1.1	-1.3	-1.6	-1.2	-1.3	-0.8	-1.2
Slovenia	1.3	0.8	0.9	0.6	1.2	0.9	1.0
Spain	1.4	1.0	2.2	1.4	1.5	2.1	1.6
Sweden	0.8	0.2	-0.3	0.2	0.7	0.7	0.4
Switzerland	-0.3	0.0	0.2	0.4	-1.0	0.3	-0.1
Turkey	-1.4	-2.2	-1.5	-0.5	-0.6	-0.4	-1.1
United Kingdom	-0.4	0.0	-0.2	-0.7	-0.5	0.2	-0.3
United States	-2.5	-1.5	-1.6	-1.9	-2.4	-3.5	-2.2
Adjusted R^2	0.59	0.61	0.41	0.58	0.41	0.57	-

Note: This performance indicator is based on the estimation of regression residuals explaining the health system outcomes of 31 OECD countries evaluated by 6 different criteria by their per capita GDP and explanatory variables capturing lifestyle and/or social factors. These 6 criteria are those of the columns in the table above. For each criterion, the performance indicator is calculated as the residual of the corresponding regression divided by the standard deviation of the residuals. By construction, the average of each indicator across the sample of OECD countries is equal to 0. A negative residual indicates a below OECD average performance in terms of efficiency of health outcomes for the corresponding criterion analysed. For example, for the life expectancy at birth, the residual for Slovakia is 1.1 time the standard deviations of the residuals for the 31 OECD countries, controlling for GDP per capita and other explanatory variables.

1. A regression is run for each criterion (in logs; for mortality variables, minus log is used) with one or more explanatory variables (in logs) and a constant on the right hand side. The five candidate explanatory variables are: GDP per capita in PPP terms (GDP); share of the population aged 15+ who are daily smokers (DAYSMOK); alcohol consumption in litre per capita for the population aged 15+ (DRINK); share of the population aged 25 to 64 with at least upper secondary education (EDU); and share of the population aged 15+ for daily consumption of fruits and vegetables (DIETCON). Considering which explanatory variables are statistically significant at the 1% (*), 5% (**) and 10% (***) for each indicator, explanatory variables are chosen as : GDP*, DAYSMOK***, DEU*** and DIETCON for life expectancy at birth; GDP*, EDU* and DIETCON*** for life expectancy at 65 for male; GDP* for life expectancy at 65 for female; GDP*, EDU* and DIETCON** for mortality rate from all causes; GDP*** and EDU** for infant mortality; and GDP* and DRINK* for premature mortality. The performance indicator for each health outcome criterion is calculated as the residual of the corresponding regression divided by the standard deviation of the residuals. The "Adjusted R^2" row corresponds to the adjusted R^2 of that regression.

Source: OECD calculations based on OECD (2016), OECD Health Statistics (database).

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where governments work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Union takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16
(10 2017 14 1 P) ISBN 978-92-64-27753-3 – 2017

OECD Economic Surveys

SLOVAK REPUBLIC

OECD Economic Surveys are periodic reviews of member and non-member economies. Reviews of member and some non-member economies are on a two-year cycle; other selected non-member economies are also reviewed from time to time. Each Economic Survey provides a comprehensive analysis of economic developments, with chapters covering key economic challenges and policy recommendations addressing these challenges.

Slovakia's economy continues to perform extremely well both in terms of macroeconomic outcomes and public finances. Employment is rising, prices have been stable, and the external account is near balance. Poverty and income inequality are low, and the country's environmental footprint has improved markedly. However, population ageing, projected to be one of the steepest in the OECD on the basis of the expected change in the old-age dependency ratio, will pose policy and social challenges in the decades ahead. They will be compounded by the persistent emigration of young, particularly educated people, as well as the weak integration of the numerous Roma. Other concerns are the work disincentives faced by women and high long-term unemployment. Widely different labour market outcomes between Bratislava and the eastern part of the country also contribute to large regional per capita GDP gaps and a dual functioning of the economy. The authorities have continued their reform process over the last few years to address these issues, which require improving public-sector efficiency. Making growth more inclusive for the Roma, women and the chronically unemployed will require further reforms in education, health care and the labour market, along with better infrastructure.

SPECIAL FEATURES: ENHANCING SKILLS; IMPROVING THE HEALTH-CARE SYSTEM

Consult this publication on line at ***http://dx.doi.org/10.1787/eco_surveys-svk-2017-en***.

This work is published on the OECD iLibrary, which gathers all OECD books, periodicals and statistical databases. Visit ***www.oecd-ilibrary.org*** for more information.

Volume 2017/14
June 2017

OECD*publishing*
www.oecd.org/publishing

THE LONDON BOOK FAIR WINNER
INTERNATIONAL EXCELLENCE Awards 2017
IN PARTNERSHIP WITH THE PUBLISHERS ASSOCIATION

ISSN 0376-6438
2017 SUBSCRIPTION
(18 ISSUES)

ISBN 978-92-64-27753-3
10 2017 14 1 P

9 789264 277533