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

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BASIC STATISTICS OF SLOVAK REPUBLIC, 2017

(Numbers in parentheses refer to the OECD average)*

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	5.4		Population density per km²	110.8	(37.2)
Under 15 (%)	15.2	(17.9)	Life expectancy (years, 2016)	77.3	(80.6)
Over 65 (%)	15.0	(17.0)	Men	73.8	(77.8)
Foreign-born (%, 2016)	3.4		Women	80.7	(83.2)
Latest 5-year average growth (%)	0.0	(0.6)	Latest general election	March	2016
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	95.6		Primary sector	3.4	(2.5)
In current prices (billion EUR)	85		Industry including construction	34.9	(26.9)
Latest 5-year average real growth (%)	3.0	(2.1)	Services	61.7	(70.5)
Per capita (000 USD PPP)	32.4	(44.3)			
GENERAL GOVERNMENT					
Per cent of GDP					
Expenditure	40.2	(41.0)	Gross financial debt	58.4	(110.1)
Revenue	39.4	(38.8)	Net financial debt	36.0	(71.1)
EXTERNAL ACCOUNTS					
Exchange rate (EUR per USD)	0.885		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	0.494		Machinery and transport equipment	59.5	
In per cent of GDP			Manufactured goods	17.1	
Exports of goods and services	96.7	(55.6)	Miscellaneous manufactured articles	9.2	
Imports of goods and services	93.6	(51.2)	Main imports (% of total merchandise imports)		
Current account balance	-2.1	(0.4)	Machinery and transport equipment	47.6	
Net international investment position	-69.8		Manufactured goods	15.4	
			Miscellaneous manufactured articles	11.2	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate for 15-64 year-olds (%)	66.2	(67.7)	Unemployment rate, Labour Force Survey (age 15 and over) (%)	8.1	(5.8)
Men	72.0	(75.4)	Youth (age 15-24, %)	18.9	(11.9)
Women	60.3	(60.1)	Long-term unemployed (1 year and over, %)	4.8	(1.7)
Participation rate for 15-64 year-olds (%)	72.1	(72.1)	Tertiary educational attainment 25-64 year-olds (%)	23.1	(36.9)
Average hours worked per year	1 714	(1 759)	Gross domestic expenditure on R&D (% of GDP, 2016)	0.8	(2.3)
ENVIRONMENT					
Total primary energy supply per capita (toe)	3.1	(4.1)	CO_2 emissions from fuel combustion per capita (tonnes, 2016)	5.6	(9.1)
Renewables (%)	9.5	(10.2)	Water abstractions per capita (1 000 m³, 2012)	0.1	
Exposure to air pollution (more than 10 µg/m³ of PM2.5, % of population, 2015)	100.0	(75.2)	Municipal waste per capita (tonnes, 2016)	0.3	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2016)	0.241	(0.313)	Education outcomes (PISA score, 2015)		
Relative poverty rate (%, 2016)	8.5	(11.7)	Reading	453	(493)
Median disposable household income (000 USD PPP, 2016)	15.6	(23.1)	Mathematics	475	(490)
Public and private spending (% of GDP)			Science	461	(493)
Health care	7.1	(8.8)	Share of women in parliament (%, 2016)	20.0	(28.7)
Pensions (2015)	7.7	(8.5)	Net official development assistance (% of GNI)	0.12	(0.37)
Education (primary, secondary, post sec. non tertiary, 2015)	2.9	(3.5)			

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.

Executive summary

The economy is flourishing; strong growth is set to continue

Capacity constraints are beginning to bite

Population ageing is the key long-term challenge

Not everyone has benefited equally from growth

Slovakia's production focuses mainly on low value-added downstream activities

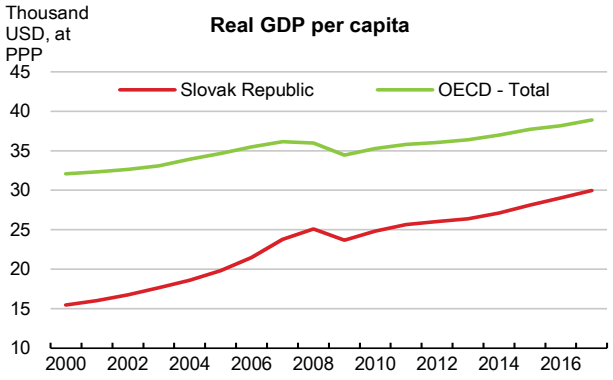
Improve education and training to develop tomorrow's skills

Foster entrepreneurship and innovation to support long-term growth

The economy is flourishing; strong growth is set to continue

The economy is in a phase of strong, broad-based expansion. Slovakia is benefitting from strong links with the world economy, especially EU Members, and has been catching up with higher-income countries. Unemployment has fallen below 7%, a historically low level. New automotive production capacity coming on stream will boost exports. Supportive financial conditions and new public infrastructure projects will enhance investment.

Figure A. GDP per capita performance has been strong



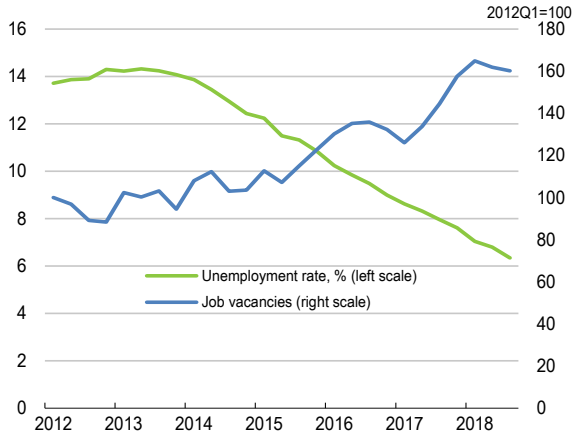
Source: OECD Productivity Database.
StatLink https://doi.org/10.1787/888933901142

Capacity constraints are beginning to bite; cautious fiscal policy is warranted

Strong employment growth due to inflows of investment and the booming economy have brought labour shortages in some areas. Wages have been growing fast, and inflation has increased due to rising demand pressure and higher food prices. The government plans to increase public-sector wages by 10% in each of 2019 and 2020. This could further push up private-sector wages, as the labour market is tight and vacancy rates are at historically high levels across the country. Foreign investors have already asked for additional immigration to ease the supply of skilled workers.

The central bank has tightened credit standards in a measured way, with some success. Household debt, particularly mortgage debt, has been growing fast. The ratio of debt-to-income, once much lower than elsewhere, has now overtaken all of Slovakia's neighbours, while still lower than in most OECD countries. The central bank's steps have reduced credit growth somewhat.

Figure B. The labour market is tightening



Source: Eurostat.
StatLink https://doi.org/10.1787/888933901161

Table A. Economic growth will remain robust

(annual growth rates, unless specified)	2018	2019	2020
Gross domestic product (GDP)	4.1	4.3	3.6
Private consumption	3.0	4.0	4.1
Government consumption	2.3	1.9	2.0
Gross fixed capital formation	13.2	4.1	4.1
Exports of goods and services	5.8	8.3	6.4
Imports of goods and services	5.9	7.7	6.5
Unemployment rate (*% of labour force*)	6.7	6.1	5.5
Consumer price index	2.5	2.7	3.0
Government net lending (% of GDP)	-0.7	-0.4	0.0

Source: *OECD Economic Outlook 104 database*, preliminary.

Mild fiscal consolidation is welcome in a context of such strong expansion. With a tight labour market and relatively low ECB policy interest rates for a fast-growing economy, the government should continue to consolidate, at least as fast as planned, to contain demand pressures. International trade tensions and volatility pose risks to Slovakia's open economy. A tighter budget baseline would make room for future action if any of these risks were realised.

Population ageing is the key long-term challenge

As the old-age dependency ratio will rise steeply in the longer term, fiscal pressure will intensify. In this context the weakening of the 2012-13 pension reform currently discussed in parliament

would hurt. Reinforcing spending reviews and integrating the results better into medium-term budget planning would increase efficiency, releasing funds for priorities such as education and social inclusion. Further improvement in tax administration is also needed. Perceptions of relatively widespread corruption is an additional handicap. More efficient and transparent public administration would help address this.

Enviromental challenges also need to be addressed. Increasing relatively low environmentally related tax rates and abolishing exemptions related to energy consumption would help improve air quality and reduce CO_2 emissions. This would pave the way to meet the goals of the 2015 Paris agreement.

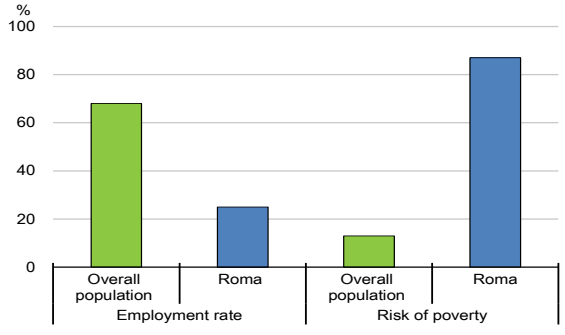
Not everyone has benefited equally from growth

Long-term unemployment remains prevalent in the east and some central regions. Regional differences in disposable income are still large. The socio-economic situation of the Roma calls for urgent policy action.

Active labour market policies need to move towards better identification of needs and a more tailored approach. To achieve this and move beyond reliance on public-works schemes, with their limited impact on employability, the public employment service needs more resources, notably to lower case-loads for job-placement staff.

The majority of the Roma (who make up around 8% of the population) live in poverty and face social exclusion in most aspects of everyday life. Most suffer from long spells of unemployment and low life expectancy.

Figure C. Roma employment and poverty, 2015



Source: European Union Agency for Fundamental Rights (2016).

StatLink https://doi.org/10.1787/888933901180

The Roma need better access to education, health, employment and other public services. Many live in isolated or segregated communities, have low educational levels and high school-dropout rates. Although public services are available in principle, language barriers, a lack of awareness of available programmes and discrimination hamper access.

Better services, above all better coordinated services, are a priority for the Roma. For example, it is urgent to improve children's education, but access to and retention in schooling depend on improved hygiene and health, which are in turn a function of easy access to clean water. The Plenipotentiary for Roma communities has only an advisory role. Strengthening this position within the government could help better coordinate national policies and ensure integrated provision of public services to Roma where they live. Increasing the number of trained personnel from Roma settlements will help facilitate dialogue and cooperation between these communities and public institutions. Successful EU-funded pilot programmes, like Roma health-care assistants, should be mainstreamed in national policy to ensure their continuity.

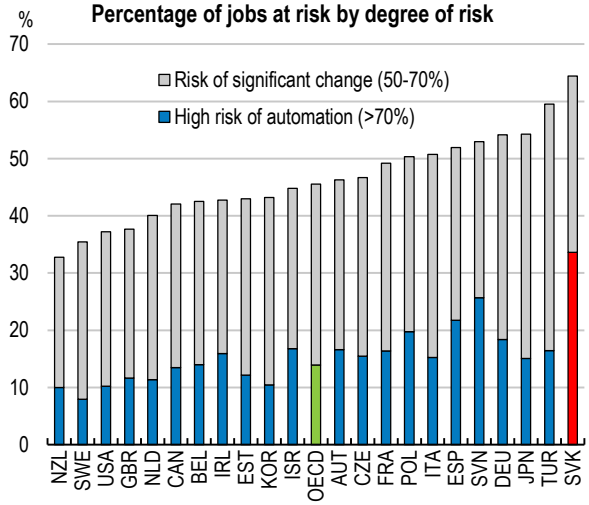
Slovakia's production focuses mainly on low value-added downstream activities

Slovakia's strong productivity growth has arisen from joining global value chains, mainly in labour-intensive segments, such as car assembly. Large foreign investment inflows have helped develop a competitive export-led manufacturing industry, with a strong specialisation in the automotive and electronics sectors, fostering robust growth and productivity performance.

To sustain its economic progress Slovakia will have to move beyond this approach. The local value added content of exports is relatively low, and skills shortages may deter future investment. Success has been based on a narrow range of industries. Smaller or domestically owned firms, especially in services, have not benefited from spill-overs, falling further behind in international productivity comparisons. Slovakia must invest in skills and adaptability to labour market developments, as the risk of automation is more acute than elsewhere. It also needs to develop its

own capacity to innovate and adopt new technologies.

Figure D. Slovakia's employment looks vulnerable to the likely increase in automation



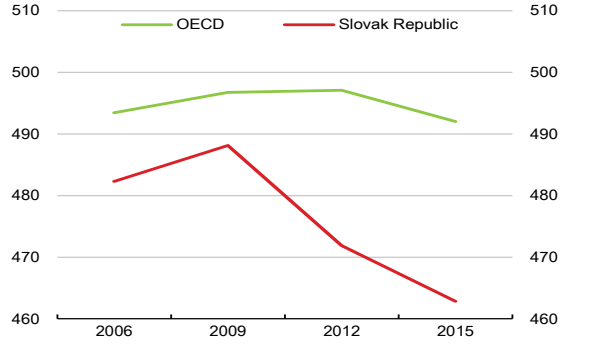
Source: L. Nedelkoska and G. Quintini (2018), "Automation, skills use and training".

StatLink https://doi.org/10.1787/888933901199

Improve education and training to develop tomorrow's skills

The decline in educational performance must be reversed, and more must be done to improve the chances of children from poorer backgrounds. Early childhood education, better-trained and -paid teachers are necessary parts of this transformation.

Figure E. Education performance is weak



Note: Average of mean scores in science, reading and mathematics.
Source: OECD (2016), PISA 2015 Results (Volume I): Excellence and Equity in Education.

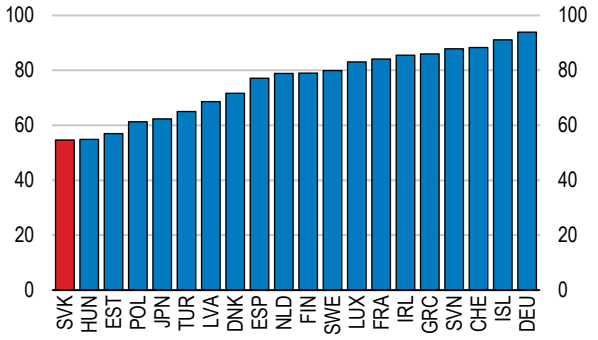
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Good vocational education is essential for improving the skills needed in the labour market. More children attend vocational schools than in most countries. But they do not receive enough work-based learning, while employers complain about the lack of professional and technical skills taught. General education and digital skills are under-weighted in vocational schools' curricula. More and better vocational courses are also needed at the tertiary level, in coordination with employers' needs.

Foster entrepreneurship and innovation to support long-term growth

The government needs to continue to improve the regulatory environment for business. Systemic reforms of the judiciary are ongoing; however, the judicial redress process is still lengthy, which imposes unnecessary costs on companies in enforcing contracts and dealing with insolvency. Slow public administration is also a problem, sometimes inciting companies to use personal connections or side payments.

Figure F. High R&D spenders, % of all large businesses, 2012-14



Source: OECD (2017), OECD Science, Technology and *Industry* Scoreboard 2017.

StatLink https://doi.org/10.1787/888933901237

Low research and development expenditure limits productivity growth going forward. Sustaining past productivity improvements, which were largely based on integration into global value chains, will require strengthening Slovakia's own capacity to innovate and adopt new technologies. The quality of the academic research system must be improved and collaboration with companies' R&D expanded. Resources devoted to tertiary education are low by OECD standards and are spread too thinly.

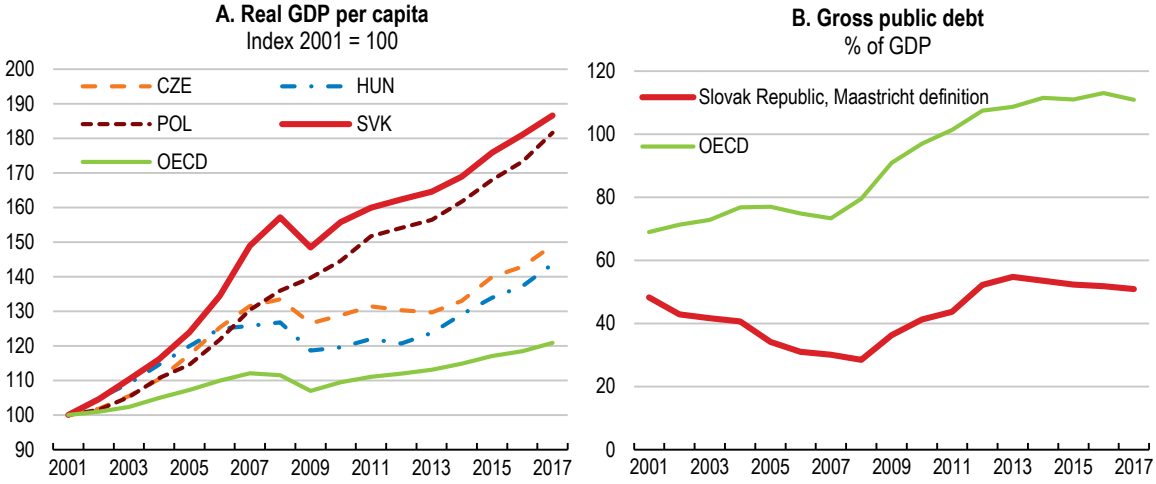
MAIN FINDINGS	KEY RECOMMENDATIONS
Fiscal policy, financial policies and public-sector reforms	
The economy is booming, with growing tensions on capacity, and household indebtedness has increased fast.	Proceed with the further reduction of public debt. Continue to undertake consolidation; at least as fast as planned, to contain the intensifying demand pressures.
Public spending efficiency is weak. Improving it would provide room to increase spending on priority areas.	Strengthen the Value for Money initiative, use the results to develop concrete proposals for efficiency improvements, and integrate them in medium-term fiscal planning.
Environmentally related tax revenue is low, while environmental outcomes need to improve.	Increase energy taxes. Align the implicit taxation on emissions of CO_2 and other pollutants across different fuels and uses.
Population ageing is the key long-term fiscal challenge. Changes in the constitution, currently discussed in parliament, could significantly weaken the 2012-13 pension reform.	Fully implement the 2012-13 pension reform including the link of the retirement age to life expectancy.
Improving skills	
Vocational education has little work-based learning and does not focus sufficiently on general and digital skills, which are necessary to diversify the economy and increase the domestic value added of exports.	Increase the time spent on general and digital training in vocational education.
Structural unemployment remains high, and spending on active labour market policies is low.	Increase spending on active labour market policies to further reduce the case-load for job counsellors, and continue to foster re-training measures in line with labour market needs.
Skilled workers are in short supply. Labour market participation of women of child-bearing age is low, impairing their career and earnings prospects.	Continue to simplify work visa and residence procedures for highly skilled workers. Make a significant part of a couple's parental leave available only to fathers, to allow them to better share child-rearing tasks and reduce the labour market disadvantage of mothers.
Enhancing the social integration of Roma	
Roma have poor access to public services, and their problems in various areas such as education, health and housing, are interconnected. The Plenipotentiary for Roma communities has only an advisory role, with little direct power.	Involve Roma in the development and operation of integrated health, education and employment services. Give the office of the Plenipotentiary a bigger role in coordinating national policies and ensuring integrated provision of public services to Roma where they live. Scale up successful EU-funded pilot programmes, such as community centres and health mediators, and ensure sustained financing through the national budget.
Pre-school facilities are insufficient, and participation is weak, especially for Roma.	Continue to expand the provision of high-quality early education and care, engage with parents to advertise its benefits, and remove financial barriers to attendance.
Schooling outcomes are weak and highly dependent on socio-economic background. Roma have exceptionally poor results.	Strengthen initial and continuing teacher training with a focus on methods to identify and address learning weaknesses. Increase the number of teaching assistants speaking Roma, and provide Slovak language support for Roma children.
Increasing the benefits of Slovakia's integration in global value chains	
Judicial redress is lengthy, hampering trust in institutions and business competition. This is likely to contribute to perceptions among the population that corruption is widespread.	Continue to work with the ongoing Council of Europe project on judicial reform, and implement its suggestions, such as further court specialisation, more attention to ethics awareness among judges and more technical and legal support staff for them.
The quality of tertiary education is low, and resources are too thinly spread. It is not well aligned with labour market needs.	Publish high-quality analysis of graduates' labour market outcomes.
Spending on research is weak, and the share of innovative companies is low, hampering the conditions for improving Slovakia's position in global value chains.	Include research collaboration with innovative companies in the assessment of universities and public research institutions.

Key Policy Insights

The Slovak economy remains strong. Employment has reached a record high, and unemployment is at its lowest level since 1993. Short-term growth prospects are good.

Thanks to sustained economic growth, almost 4% on average in the last two decades, living standards have converged towards the OECD average, and public debt has declined in relation to GDP (Figure 1). Export-led expansion has been driven by continuing inward investment in the car industry, strong integration into global value chains and resulting improvements in labour productivity. Growth has spilled over into the domestic services sector to some extent, but productivity gains there have been much lower. Strong wage growth is fuelling consumption, inflation and house prices. Household indebtedness has been rising rapidly. The authorities will have to continue to use fiscal and macro-prudential policies to avoid overheating.

Figure 1. Slovakia is performing strongly



Source: OECD (2018), OECD Economic Outlook: Statistics and Projections (database).

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Nearly all indicators of well-being have been improving over the past 10 years. However, in some areas Slovakia still lags considerably behind other OECD countries, particularly in health (Figure 2), as life expectancy at birth remains among the lowest in the OECD. While poverty and inequality are low overall, the majority of Slovakia's Roma, about 8% of the population, face extreme social exclusion, with very low employment, widespread poverty and low life expectancy (FRA, 2016). Providing better living standards and economic opportunities to the Roma will require well-coordinated efforts across social, housing, education and employment policies. Different government levels will have to

cooperate closely, and strong involvement of the Roma communities themselves will be needed.

Figure 2. In some well-being dimensions Slovakia lags considerably behind



Source: OECD Better Life Index 2017.

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Slovakia has benefitted from strong integration into global value chains, but the gains from integration are likely to decline in the future. Foreign direct investment has focused mainly on downstream activities, which, although generating high productivity growth in the past, have low value added. Strong productivity growth in the foreign-owned sector has not spilled over to most domestic firms. High wage increases and technological changes enabling the automation of routine skills will reduce the attractiveness of Slovakia and lower the benefits enjoyed by less skilled workers.

Slovakia's economic success is largely depended on the cars and electronic industries, where considerable automation is expected. This can help address labour shortages and increase productivity. But for everybody to benefit from new technologies, it will be crucial to give displaced workers good training opportunities to upskill. More generally, the demand for high skilled workers is expected to rise. However, Slovakia's adult training system is underdeveloped, and its vocational education is not sufficiently responsive to labour market needs. Already shortages of skilled workers are appearing in several sectors while – until recently – more workers were leaving than entering the country, and residential mobility is relatively low. Innovation and a better ability to adopt new technologies so as to move into higher value-added activities, would be fostered by policies to improve the quality of tertiary education and research. Population ageing is likely to accentuate labour shortages, as Slovakia faces one of the fastest declines in the working-age population in the OECD.

Weak public service efficiency, particularly in education and health care (OECD, 2017a), and a perception of relatively widespread corruption (Transparency International 2018) hinder Slovakia's economic development. There has already been some progress in terms

of anti-corruption legislation and procedures. The Prime Minister's office is developing a system to identify and address corruption risks in the administration. Efforts need to continue to improve the efficiency and quality of the judiciary and to make public administration more effective, efficient and transparent. In this context a free press and openness to non-government organisations play important roles (Transparency International, 2018); they help detect misconduct, ensure accountability, improve trust and thus enhance the ability of foreign and domestic entrepreneurs to get on with innovation and growth.

Against this backdrop this Survey has three main messages:

- The economy is strong, but fiscal consolidation should continue to contain demand pressures.
- Faced with rapid technological change and skill shortages, Slovakia needs to upgrade the skills of its workers to protect their longer-term employability and foster productivity gains.
- Improving the well-being of Roma will require stronger and better coordinated efforts across social, housing, education and employment policies.

Macroeconomic conditions continue to improve

The economy is growing strongly

The economy is set to grow at a robust pace in a broad-based expansion (Table 1). The launch of new production lines in the automotive sector is adding significantly to productive potential and fuelling gains in export market shares. New car plants are expected to affect production capacity in 2019, so growth will slow somewhat in 2020.

Employment growth has been strong, and unemployment has been falling fast (Figure 3, Panel A), though there remain pockets of widespread joblessness in some regions, and long-term unemployment has remained stubbornly high. A substantial portion of the unemployed are likely to be Roma, many of whom lack skills and employment experience. Labour shortages have started to arise in many areas, while the vacancy rate is at its highest level for many years and continues to rise. The labour shortages are concentrated in manufacturing and are related to currently strong growth. Wage growth has increased, particularly among highly skilled workers, though labour costs are still less than half those in Austria and Germany (Panel B). Strong labour demand has been met to some extent by increasing labour force participation of older workers and women, offsetting the decline in the working-age population. Immigration has increased, recently reaching parity with emigration; foreign workers still account for only 2% of the labour force, but this is four times the 2012 level (Panel C).

Labour market buoyancy and strong consumer confidence are contributing to robust private consumption. Investment picked up in 2018 after a slump related to the switchover in EU budget, as it took time for public- and private-sector workers to learn the rules allowing them to draw on the funds. Prospects for continued investment growth are good, thanks to accommodative financial conditions, strong business confidence and new foreign investment in the automotive sector.

Table 1. Macroeconomic indicators and projections

Annual percentage change, volume (2010 prices)

	2015 Current prices (EUR billion)	2016	2017	2018	2019	2020
Gross domestic product (GDP)	79.1	3.1	3.2	4.1	4.3	3.6
Private consumption	43.2	2.9	3.5	3.0	4.0	4.1
Government consumption	15.3	1.6	1.7	2.3	1.9	2.0
Gross fixed capital formation	19.2	-9.4	3.4	13.2	4.1	4.1
Housing	1.8	23.3	0.7	6.0	2.9	4.1
Final domestic demand	77.7	-0.4	3.1	5.2	3.6	3.7
Stockbuilding[1]	0.2	1.5	-0.5	-0.3	0.1	0.0
Total domestic demand	78.0	1.2	2.6	4.7	3.7	3.7
Exports of goods and services	73.1	5.5	5.9	5.8	8.3	6.4
Imports of goods and services	71.9	3.4	5.3	5.9	7.7	6.5
Net exports[1]	1.2	2.0	0.7	0.1	0.8	0.1
Other indicators (growth rates, unless specified)						
Potential GDP	. .	2.6	2.5	3.5	3.8	3.3
Output gap[2]	. .	-1.4	-0.5	0.0	0.5	0.9
Employment	. .	2.8	1.5	1.1	0.8	0.7
Unemployment rate[3]	. .	9.6	8.1	6.7	6.1	5.5
GDP deflator	. .	-0.5	1.2	2.3	2.8	3.0
Harmonised index of consumer prices	. .	-0.5	1.4	2.5	2.7	3.0
Harmonised index of core inflation[4]	. .	0.9	1.4	2.0	2.5	3.0
Household saving ratio, net[5]	. .	3.0	2.4	2.9	2.9	2.9
Terms of trade	. .	-0.4	-0.6	-0.4	0.0	0.0
Current account balance[6]	. .	-2.2	-2.0	-1.2	0.1	0.0
General government fiscal balance[6]	. .	-2.2	-0.8	-0.7	-0.4	0.0
Underlying general government fiscal balance[2]	. .	-2.2	-0.8	-0.7	-0.6	-0.4
Underlying government primary fiscal balance[2]	. .	-0.9	0.3	0.4	0.4	0.6
General government gross debt (Maastricht) [6]	41.3	51.8	50.9	49.8	47.9	45.9
General government gross debt [6]	47.2	59.8	58.2	57.0	55.1	53.2
General government net debt [6]	27.7	36.2	35.5	33.9	32.0	30.0
Three-month money market rate, average	. .	-0.3	-0.3	-0.3	-0.2	0.2
Ten-year government bond yield, average	. .	0.5	0.9	0.9	1.1	1.4

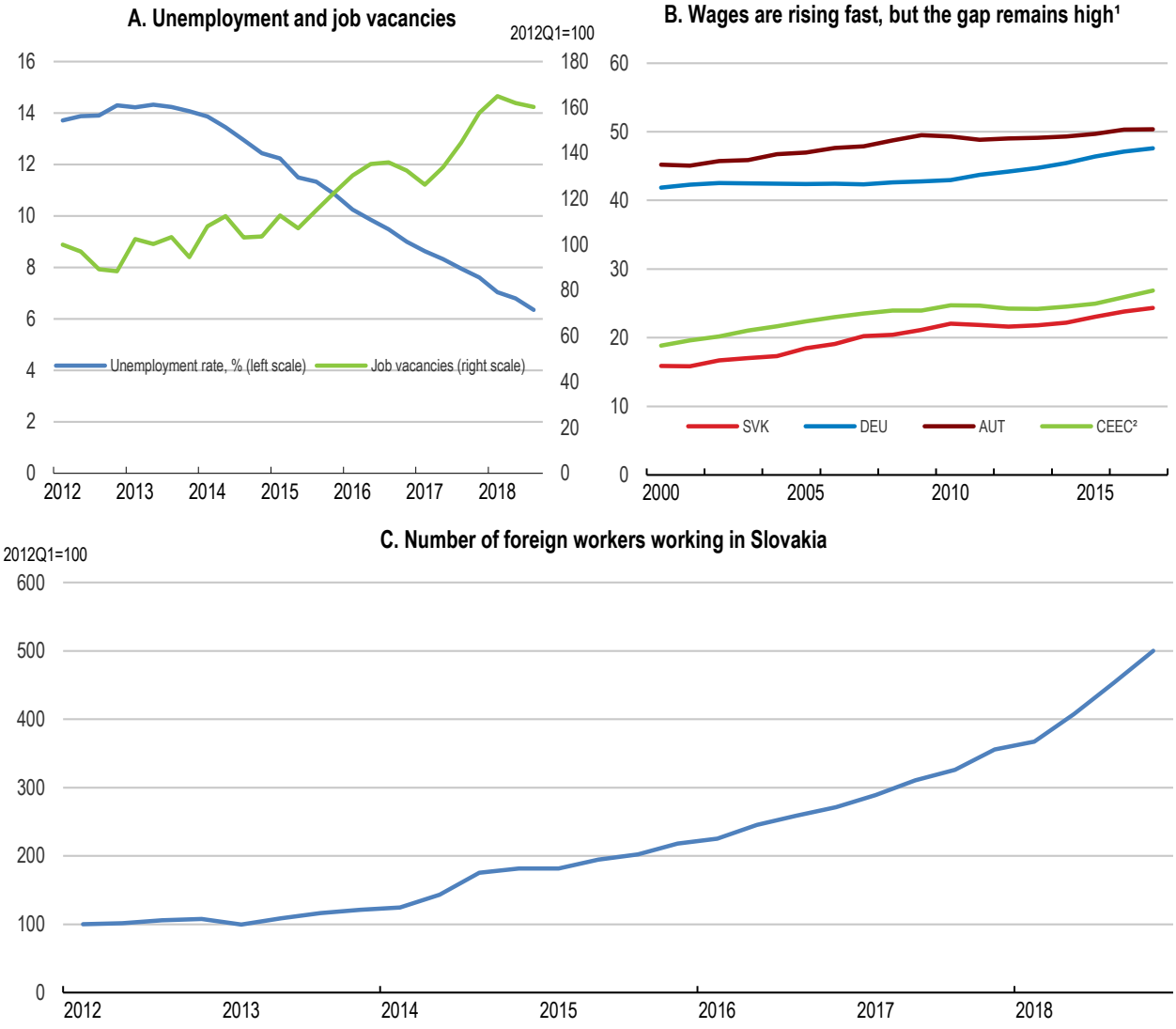
1. Contribution to changes in real GDP
2. As a percentage of potential GDP
3. As a percentage of the labour force
4. Harmonised index of consumer prices excluding food, energy, alcohol and tobacco.
5. As a percentage of household disposable income.
6. As a percentage of GDP.

Source: OECD (2018), *OECD Economic Outlook 104 database*, preliminary.

Inflation rose to 2.5% in 2018 (Figure 4), spurred by rising demand and higher food and electricity prices. While the pressure from commodity prices should diminish, wage pressure will keep inflation above 2% for some time. Wages have been rising fast, and the government plans large increases in public-sector salaries. This could set off an accelerating spiral in the private sector, pushing up inflation, which would undermine some

of the gains in price competitiveness that Slovakia has made in recent years. In the short term rising wages would probably further expand domestic demand, as the reduced profits would be felt mainly abroad, rather than in Slovakia.

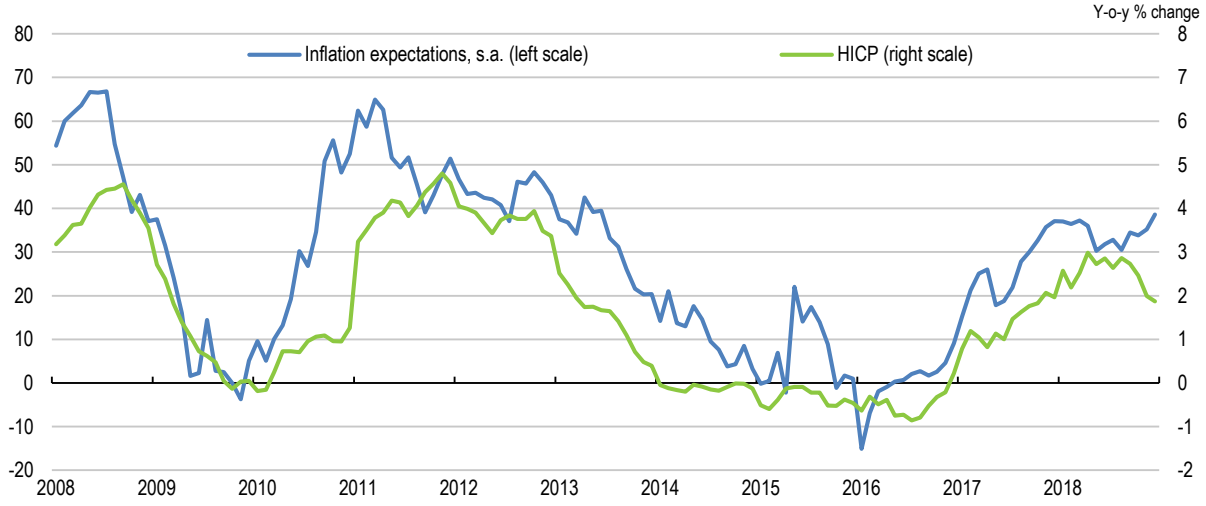
Figure 3. The labour market is tightening



1. Labour cost for LCI (compensation of employees plus taxes minus subsidies) in industry, construction and services, 2012 = 100. In 2017 constant prices at 2017 1 000 USD PPPs.
2. Central and Eastern European countries (CEEC) include Czech Republic, Hungary, Poland, Slovenia and Slovakia.
Source: Eurostat; OECD, OECD Economic Outlook 104 database; OECD Labour Earnings Database; Central Office of Labour, Social Affairs and Family.

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Figure 4. Inflation is rising

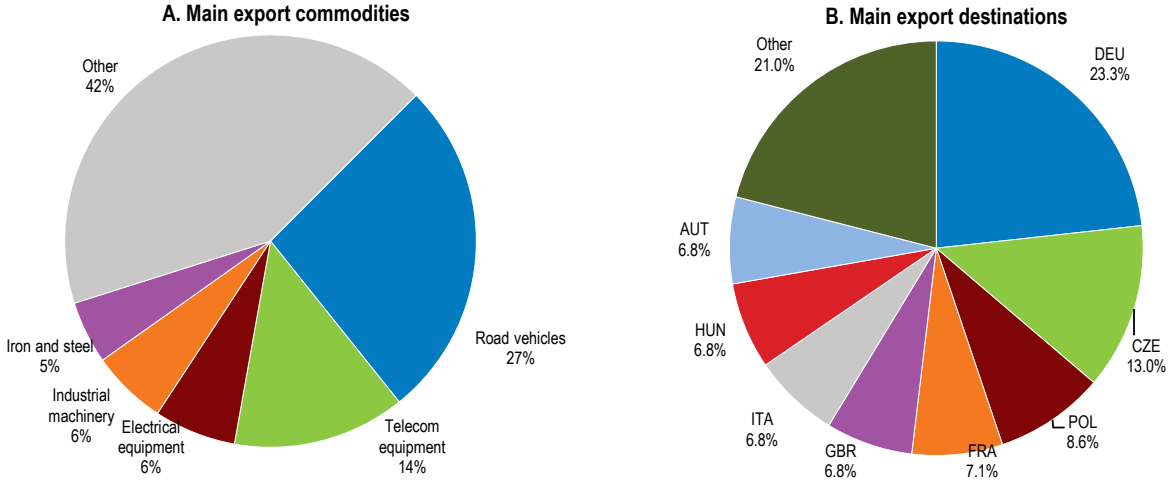


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There are both upside and downside risks surrounding the short-term outlook. Current rising tensions on capacity could lead to overheating, undermining international competitiveness and slowing growth. On the external side, the Slovak economy is particularly exposed to any disruption in trade, given its heavy inclusion in global value chains and significant reliance on the automotive sector (Figure 5). On the upside, supportive financial conditions and strong consumer confidence could strengthen private domestic demand even more than projected. If the euro area continues to complete the banking union, this would enhance stability and confidence improving conditions for sustainable growth.

Figure 5. Exports of goods by commodity and market

Share of total exports, 2017



Source: OECD (2018), *International Trade by Commodity Statistics, SITC Revision 3*.

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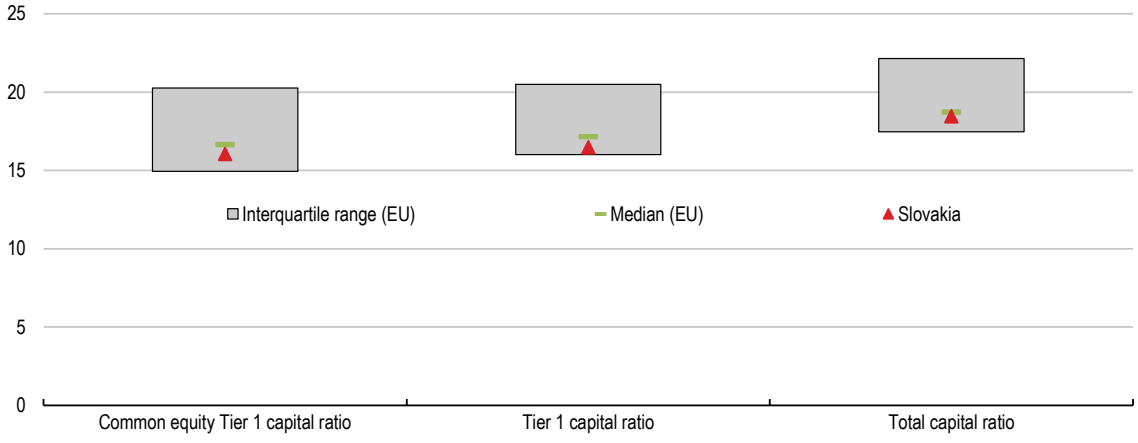
Table 2. Vulnerabilities for the Slovak Republic

Vulnerability	Potential impact
Disorderly escalation of trade tensions.	Rising protectionism would affect external demand from Slovakia's main trading partners.
Hard Brexit.	The Slovak economy is well integrated into global value chains and would be heavily affected by significant changes in the flow of goods and services across Europe.

The financial sector is stable, but increasing household debt poses a risk

Slovakia's financial system is healthy measured by bank capital and liquidity. The main banks are subsidiaries of Austrian and Italian institutions, and their profitability and provisioning for non-performing loans continue to be among the highest in the banking union (National Bank of Slovakia, 2018), though competition has been reducing margins on new loans. Loans are fully funded by domestic deposits, while capital ratios have been stable or rising slightly in recent years, remaining just below the EU median (Figure 6). Household borrowing has been running well ahead of income growth, faster than anywhere else in the OECD (Figure 7, Panel A). The ratio of household debt to disposable income rose from around 30% in 2006 to 78% by 2017, which is still much lower than in many other countries (Panel B), but the increase in Slovakia stands out.

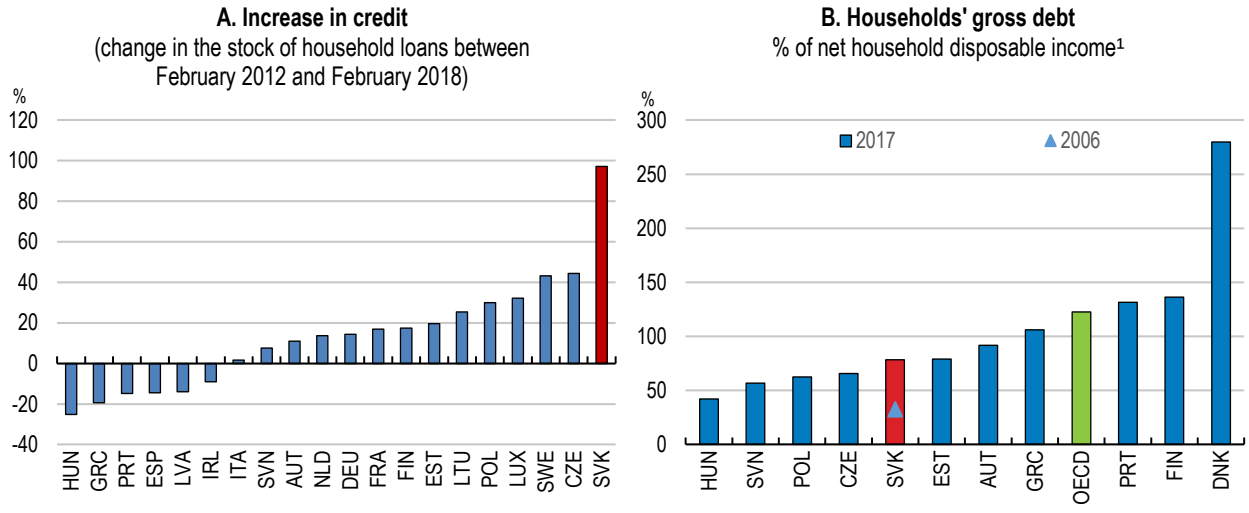
Figure 6. Solvency ratios are slightly below the EU median



Note: Data are as at September 2017.
Source: National Bank of the Slovak Republic.

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Figure 7. Household indebtedness is increasing, fuelled by housing loans

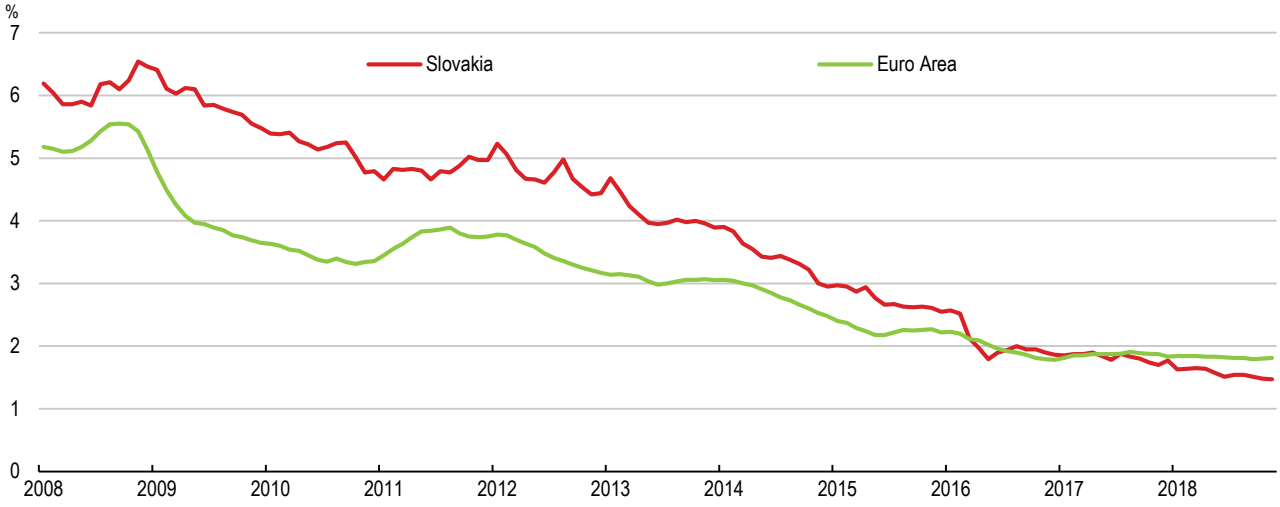


Note: Data for Austria, Estonia and OECD are for 2016.
Source: National Bank of the Slovak Republic; OECD

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About 80% of outstanding loans to households in 2016 were for house purchase, up from around 65% a decade earlier. House prices have risen in line with fundamentals, by around 15% since 2016. Household credit growth has been fuelled by rising incomes and a fall in the cost of borrowing. These costs were quite significantly above the euro-area average until 2014 but have since fallen sharply to a level somewhat below the average (Figure 8). As falling interest rates have put downward pressure on their profits, banks have sought to respond by stepping up their lending activity (National Bank of Slovakia, 2018).

Figure 8. Average cost of borrowing for house purchase has decreased significantly



Source: European Central Bank.

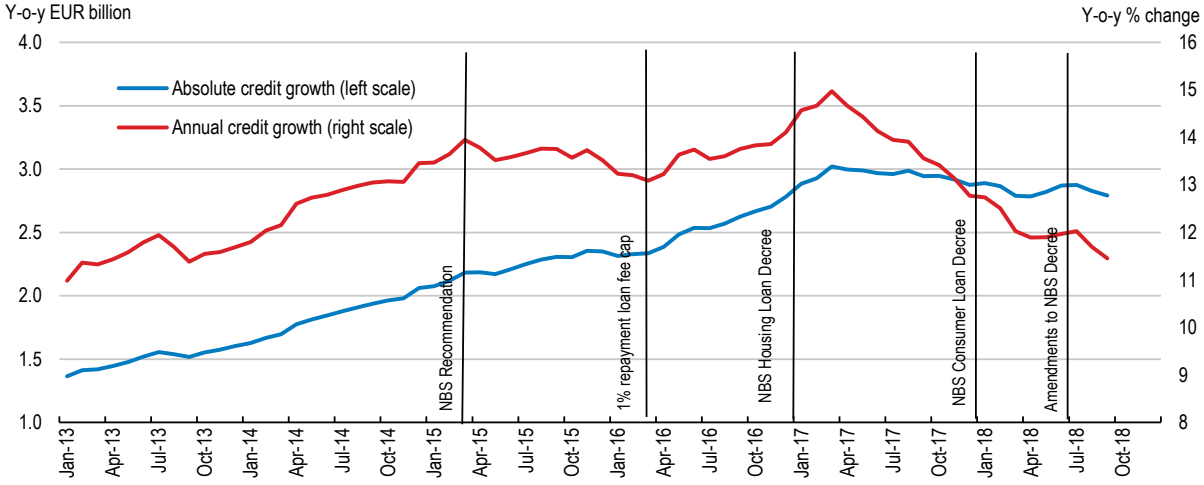
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The long-running upward trend in household debt is increasing the vulnerability of the Slovak household sector. Interest rates are at historical lows, and the terms of new loans

are relatively long, leaving little scope for rescheduling the debt of borrowers who get into financial difficulty. Mortgages are generally very long term, often over 25 years, so borrowers are vulnerable to shocks such as interest rate rises or loss of employment over a long period.

Concerned about credit growth exacerbating this vulnerability, the Central Bank has already intervened to tighten access to housing and consumer loans. Credit growth has slowed a little but remains high (Figure 9). According to analysis by the Slovak National Bank, credit growth remains higher than the rate corresponding to economic fundamentals (National Bank of Slovakia, 2018); the Central Bank is therefore prudently phasing in further macro-prudential measures (Table 3) (Box 1). It should stand ready to further tighten macro-prudential policy if financial-sector risks do not abate.

Figure 9. Household debt growth was also influenced by legislation



Note: "1% loan repayment fee" corresponds to the introduction of a regulatory limit of 1% on the level of early repayment fees for housing loans.
Source: National Bank of Slovakia (2018), Financial Stability Report, Chart 10.

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Table 3. Phased implementation of changes to regulatory lending requirements from 1st July 2018

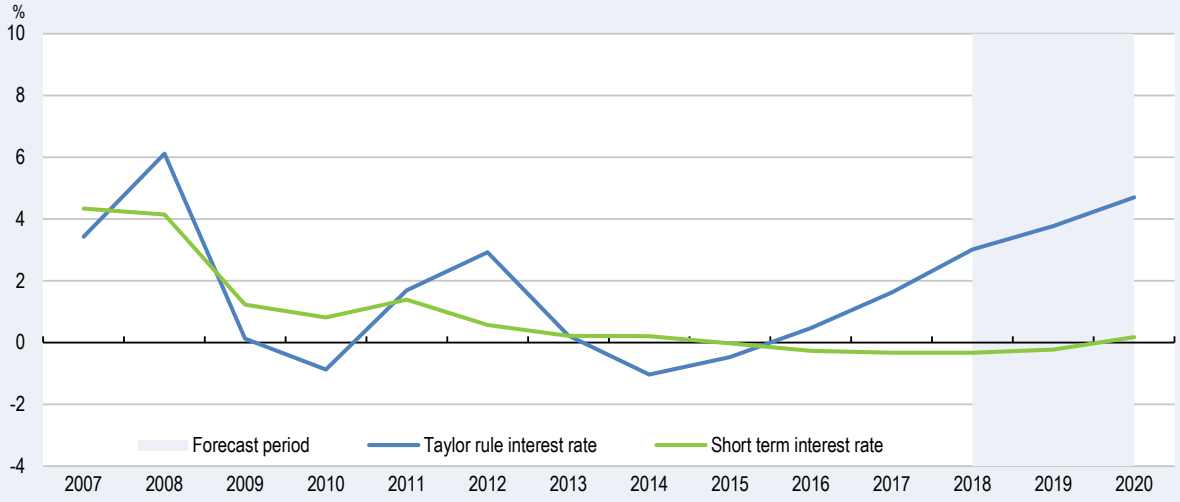
	Maximum share of new loans with debt-to-income ratio above 8	Maximum share of new loans with loan-to-value ratio between 80 and 90%
Q3 2018	20%	35%
Q4 2018	15%	30%
Q1 and Q2 2019	10%	25%
From 1st July 2019	5% + 5% on meeting additional conditions	20%

Source: National Bank of Slovakia

Box 1. The current monetary stance does not properly reflect the business cycle in Slovakia

The Slovak Republic joined the European Monetary Union in 2009. Given that the ECB rate is determined by the cycle of several other countries, the monetary stance does not always correspond to the cycle of the Slovak economy. This may be investigated by using the Taylor rule. Estimates assume that monetary policy would have targeted 2% inflation and a closed output gap. The interest rate implied by the Taylor rule (Figure 10) suggests that the role of other counter-cyclical policies such as fiscal and macro-prudential might have increased (Dehmej and Gambacorta, 2017; Wyplosz, 1991; Gali and Monacelli, 2008). The result shown in Figure 10 depends on the equilibrium real interest rate. Slovakia is a small and open economy, therefore it is assumed that the equilibrium real interest rate corresponds to the potential growth rate of the euro area. There is considerable uncertainty about the equilibrium real interest rate, though. Empirical research suggests that after the crisis the real equilibrium interest rate in the euro area has been lower than potential growth (Holston, Laubach and Williams, 2018). Assuming a lower rate would imply a lower gap between actual policy interest rate and the one implied by the Taylor rule.

Figure 10. Taylor rule estimated interest rates



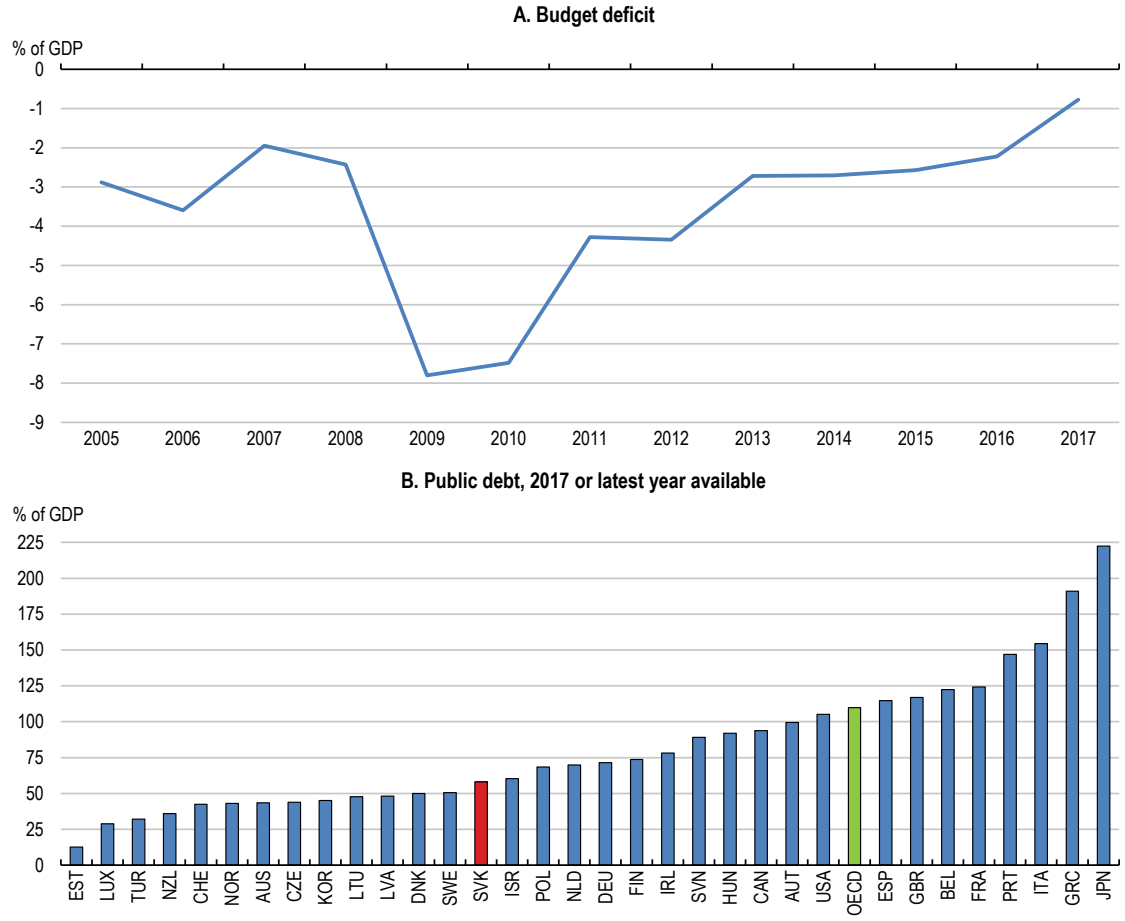
Note: The Taylor rule rate interest rate is calculated as: i = average potential growth in the euro area + inflation + 0.5 * output gap + 0.5*(inflation – 2.0).
Source: OECD Analytical database

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Healthy public finances should be preserved

Slovakia's fiscal position is relatively strong (Figure 11). General government debt has continued to decrease, and the budget deficit has shrunk to a historically low level (0.8% of GDP) due to strong growth and significant consolidation in 2017. Measures adopted by the government since 2012 have helped to improve tax collection, particularly for VAT. The government plans to reach budget balance by 2019, in line with its European medium-term objective.

Figure 11. The budget deficit and debt are relatively low



Note: Debt follows OECD National Accounts definitions.
Source: *OECD Economic Outlook database*.

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Fiscal consolidation is appropriate, despite spending needs

Fiscal consolidation is welcome, as the government needs to lean against the increasing demand pressures. Policy interest rates are quite low for a fast-growing economy that is showing signs of reaching capacity constraints (Box 1). The government plans to reduce the deficit to zero in 2019, but most of this fall is due to strong growth: according to the government's plan the expected structural improvement in 2018-20 represents on average of just 0.1% per year. Somewhat more tightening might be prudent to contain demand pressures. In this regard limiting large public-sector wage increases to areas where important skills shortages are emerging, such as teaching, would be advisable. Fiscal policy assumes an increased importance in providing macroeconomic stabilisation in a monetary union (Kirsanova et al., 2007). At the same time, a somewhat tighter fiscal stance would also make more room for action in the event of shocks, as Slovakia's open economy is very exposed to international trade tensions and volatility.

Still, there are good reasons for increasing public expenditure in some areas, notably education and Roma integration. Within a tighter budget, priority-spending need should be financed by a combination of increased revenue, expenditure switching, and improved efficiency (Box 2).

Box 2. Quantifying the fiscal impact of structural reforms

The following estimates (Table 4) roughly quantify the long-run fiscal impact of selected recommendations. These estimates do not take into account any consequent effects on GDP.

Table 4. Illustrative fiscal impact of recommended reforms

Measure	Annual fiscal balance effect % of GDP
Deficit-increasing measures	1.9
Increasing spending on pre-school education to the OECD average	0.3
Increasing spending on primary, secondary and tertiary schools	0.3
Increasing spending on active labour market polices to the OECD average	0.3
Measures to promote access of Roma to public services	0.3
Reducing social security taxes	0.7
Offsetting measures	1.9
Tax measures	1.6
Reducing the VAT tax gap	0.7
Tax increases (environmental, property taxes)	0.9
Expenditures measures	0.3
Abolishing the coal subsidy	0.1
Merging municipalities	0.2

Notes: 1. Increasing spending on pre-school education from 0.5% of GDP to the OECD average (0.7% of GDP).
2. Increasing education spending per student as a share of GDP per capita to the OECD average.
3. Increasing ALMP spending as a share of GDP (0.2% of GDP) to the OECD level (0.5% of GDP).
3. Measures to promote access of Roma to public services will be four times higher than the current EU funded projects targeted at Roma per year (0.07% of GDP) (see Chapter 1).
4. The amount by which social security taxes can be reduced represents a residual between additional measures and offsetting measures.
4. Closing half of the VAT gap (26%) between Slovakia and the EU median level (10%) according to the EC VAT gap estimates (see below).
5. Increases environmental taxes from 2% of GDP to the median OECD level (2.2% of GDP).
6. Increasing the revenues from the recurrent taxes on immovable property from the current 0.4% to the OECD average (1.1% of GDP).
7. Savings on merging municipalities is based on the results of empirical research (0.2-0.4% of GDP) (Cernenko, Harvan and Kubala, 2017).
Source: OECD calculations.

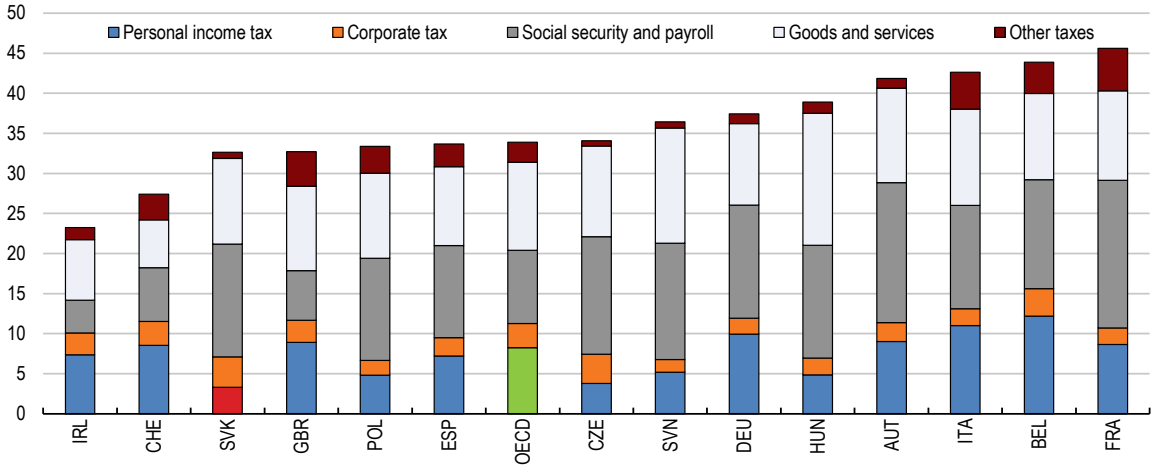
Medium-term planning

Large revenue gains are possible if Slovakia can make further progress in improving tax collection. Despite success in reducing tax evasion, it remains substantial (see section on tax administration below). Two areas where increasing rates could be considered are environment-related taxes and property taxation.

The effective carbon-pricing gap, which measures the gap relative to the Paris Agreement goals, remains significant (OECD, 2018a). In this regard, energy and other environmental taxes should increase. They are still 0.2% of GDP lower than the median OECD level, which by itself would not be enough to eliminate the effective pricing gap. In addition, there are many tax exemptions related to energy consumption. Abolishing them would provide incentives for more effective energy use and could increase revenues by up to 0.1% of GDP (MoE, 2017). The government should launch a broader environmental tax reform to abolish exemptions in excise taxes, harmonise tax rates across different activities as a function of estimated environmental damages and increase environmental tax rates, which are low by international standards. However, environmental tax reform needs to be accompanied by measures to cushion the effect on the poor and the rural population, who is dependent on car transport for mobility, unless good public transport services are offered.

The revenue from recurrent taxes on immovable property in Slovakia is 0.7% of GDP lower than the OECD average. There is some evidence that higher taxation on housing may reduce house price volatility (EC, 2018a). Real estate taxes are less distorting than taxes on labour, though in Slovakia, where many low-income households own their homes through restitution rather than wealth, they could be regressive. The revenue from increases in environmental taxation and some increase in property taxation could be used to finance cuts in labour taxes, as the tax mix is heavily reliant on social security taxes (Figure 12); this increases the cost of employing low-wage workers, harming the least skilled (OECD, 2017a). The average single worker in the Slovak Republic faced a tax wedge of 42% in 2017, compared with the OECD average of 36%.

Figure 12. The tax mix in Slovakia relies heavily on social contributions

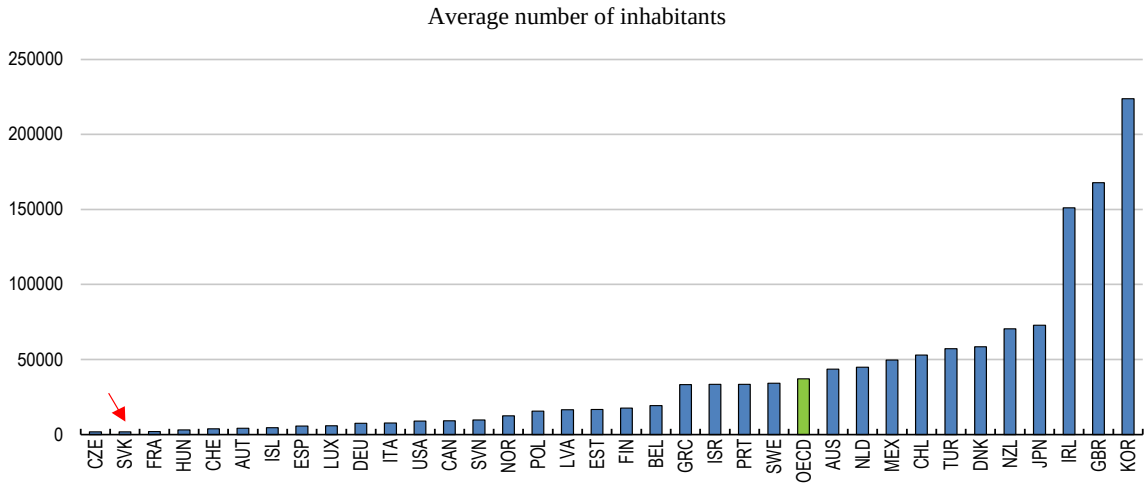


Source: OECD, *Revenue Statistics Database*; OECD, *OECD Economic Outlook 104 Database*.

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The large number of local governments inflates public expenditure. The average population of municipalities is one of the lowest in the OECD (Figure 13). Estimates suggest that reducing their number through mergers could save up to 0.4% of GDP (Cernenko, Harvan and Kubala, 2017).

Figure 13. Slovak municipalities are among the smallest in the OECD



Source: OECD (2018), Subnational government structure and finance database.

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The budgetary framework has improved considerably since the crisis. An independent fiscal council was established in 2011, and transparent debt ceilings were introduced. They require public debt to remain below 60% of GDP. This legal ceiling will decline until it reaches 50% of GDP by 2027. However, binding multi-annual expenditure ceilings, which have also been a constitutional provision since 2011, have not yet been implemented. Actual expenditures in recent years have been consistently higher than budgeted, following persistent overshooting of revenues.

In this regard the Ministry of Finance is examining adding expenditure ceilings in the general government budget in the near future (MoF, 2018a; Table 5). Expenditure ceilings could improve budgetary planning and restrain expenditure increases in boom periods, while allowing the automatic stabilisers to work in downturns. They could also help to better incorporate expenditure reviews into the budgetary planning process and realise the identified potential for savings (see section on public administration below). Expenditure ceilings played an important role in making fiscal frameworks more effective in the Netherlands, Denmark, Sweden, and Finland (EC, 2010). In practice, expenditure ceilings take the form of a cap on nominal or real spending growth over the medium term. Empirical evidence suggests that the compliance rate with an expenditure rule is greater if the rule is directly under the control of the government and enshrined in law or in a coalition agreement (IMF, 2015). The government should consider linking the expenditure ceilings with its debt objectives, as in Israel.

Table 5. Past OECD recommendations on maintaining fiscal prudence

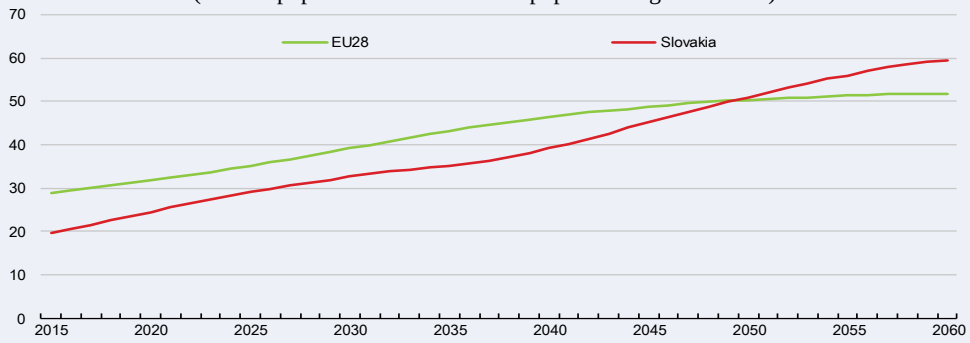
Topic and summary of recommendations	Summary of action taken since 2017 *Survey*
Pursue budget balance by 2019 as planned.	The government`s draft budgetary plan has confirmed the plan to reach a balanced budget by 2020.
Create enough room over time under the debt ceiling to allow the automatic stabilisers to work.	According to the recent government forecast, debt will become fully compliant with the national ceiling already in 2018 and reach 45 % of GDP in 2020.
Implement the constitutional provision of multi-annual binding spending ceilings to reinforce budget discipline in upturns.	The Ministry of Finance announced the testing of expenditure ceilings in the general government budget in the near future
Supplement the current debt ceilings with a much lower non-binding debt target.	No action taken

Box 3. The pension reform needs to be implemented as planned

The Slovak Republic has one of the fastest ageing populations in the OECD. Currently, the share of elderly persons (65 and over) in the working-age population is one fifth. However, in 2060 the share of elderly persons in the working-age population will reach almost 60% (Figure 14). Steep population ageing will expose the pension system to strong fiscal pressures in the next few decades.

Figure 14. The rapidly rising old-age dependency ratio

(ratio of population 65 and over to population aged 15 to 64)



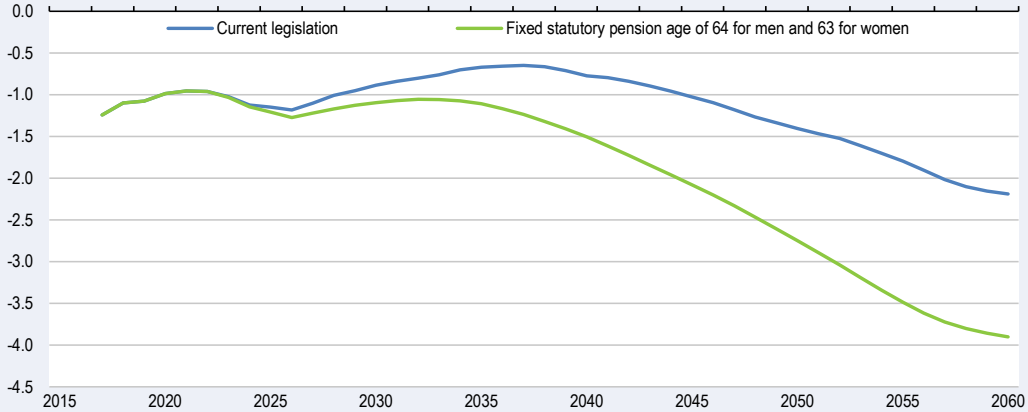
Source: Eurostat

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To face this fiscal challenge, a general pension reform was adopted in 2012-13, which streamlined the points-based pension system, incorporated special regimes for the armed forces and police, switched to inflation-based indexation and adjusted the statutory pensionable age in line with rising life expectancy from 2017 onwards (OECD, 2017a). If the reform is implemented as originally envisaged, it will help to ease the burden on the pension system coming from population ageing (Figure 15, Current legislation). Parliament is currently discussing potential changes in the constitution that would revise the pension system so as to break the link with life expectancy so as to not allow the pension age to be higher than 64 (and lower than that for parents); this will increase the pension system deficit even further.

Figure 15. The pension system deficit

% of GDP

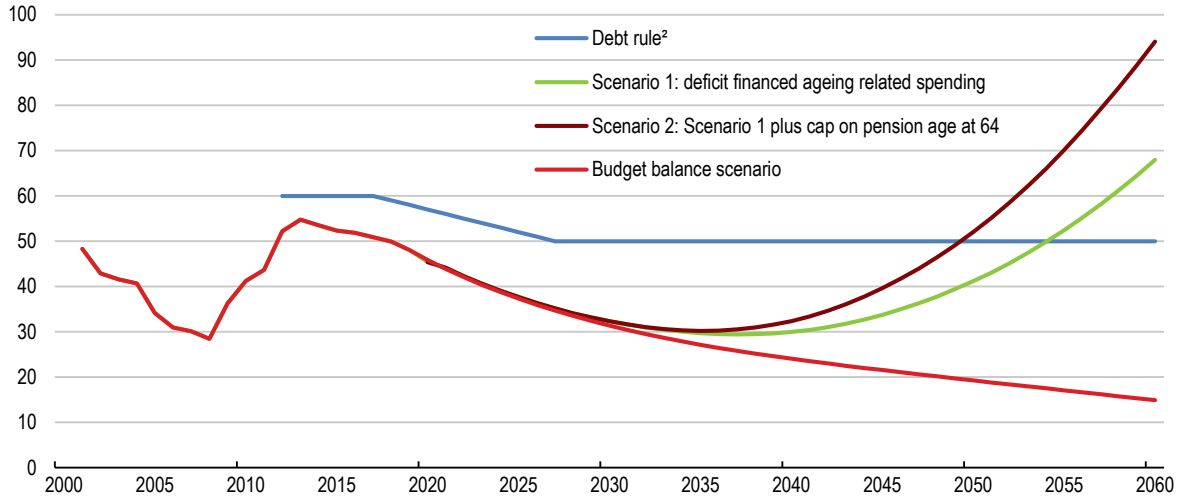


Source: Fiscal Council of the Slovak Republic.

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Figure 16. Illustrative public debt paths

General government debt, Maastricht definition, as a percentage of GDP[1]



1. The "Budget balance" scenario consists of the projections for the Economic Outlook No. 104 until 2020. From there on real growth is based on OECD long term scenario projections and will grow by 2.0%. The "Budget balance" scenario assumes that the budget reaches balance in 2020 and remains stable onwards during the whole projection period. Implicitly, this assumes that ageing costs are offset by rises in taxes or cuts in other expenditure. "Scenario 1, - deficit-financed ageing-related spending " differs from the previous scenario by assuming a higher government deficit due to expenditures sensitive to population ageing (pension, health and long-term care) based on the EC ageing report. "Scenario 2, - Scenario 1 plus cap on pension age at 64" differs from the previous scenario by assuming an entitlement to full pension at the age of 64, regardless of life expectancy, as planned in the proposal discussed in parliament in the fall of 2018.
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 pp.
Source: Calculations based on OECD (2016), OECD Economic Outlook: Statistics and Projections (database), October.

In the long term, keeping the budget balanced will provide adequate buffers against future shocks and more fiscal room for manoeuvre - assuming that rising ageing-related costs are fully contained, for example through higher tax revenues or spending cuts (Figure 16, Budget balance scenario). In this regard, the pension reform of 2012-13 was important, as it significantly lowered pension indexation and increased the age at which full pension entitlement is reached (loosely called the 'pension age') in line with rising life expectancy (Box 3), limiting the rise in pension costs (Table 6). Expenditure on health and old-age care is projected to rise by around 2% of GDP by 2060; without measures to offset these costs, the debt-GDP ratio will increase above the debt ceiling (Figure 16, Scenario 1: deficit-financed ageing-related spending). Backtracking on the pension reform and capping the statutory pension age at 64, as foreseen by an initiative currently discussed in parliament, will increase the debt even further (Figure 16. Scenario 2). At the same time, implementation of various structural reforms can help increase economic growth (Box 4), with positive effects on fiscal sustainability.

Table 6. Long-term projection for age-related spending, % of GDP

	Total age-related spending			Gross public pension spending			Health care spending			Long-term care spending		
	2016	2030	2060	2016	2030	2060	2016	2030	2060	2016	2030	2060
Czech R.	18.2	19.7	25.2	8.2	8.2	11.6	5.4	5.9	6.6	1.3	1.8	2.8
Hungary	19.0	17.8	21.9	9.7	8.4	11.1	4.9	5.4	5.8	0.7	0.8	1.1
Poland	20.4	20.5	22.2	11.2	11.0	11.1	4.3	4.5	5.2	0.5	0.7	1.2
Slovenia	21.9	23.9	28.8	10.9	12.0	15.2	5.6	6.3	6.8	0.9	1.1	1.8
Slovakia	**18.9**	**18.8**	**22.2**	**8.6**	**7.6**	**9.9**	**5.6**	**6.2**	**7.0**	**0.9**	**1.1**	**1.5**
EU28	25.0	25.7	26.8	11.2	11.6	11.3	6.8	7.2	7.7	1.6	1.9	2.7
EA	26.0	27.0	27.6	12.3	13.0	12.4	6.8	7.1	7.5	1.6	1.9	2.7

Note: Total age-related spending includes gross public pensions, health care, long-term care, education and unemployment benefits.
Source: European Commission (2018), *The Ageing Report 2018, Economic and Budgetary Projections for the 28 EU Member States (2016-2070)*, 3/2018, Brussels.

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Box 4. Structural reforms can raise growth and living standards

The effect of selected reforms proposed in this *Survey* can be gauged using simulations based on historical relationships between reforms and growth outcomes across OECD countries (Égert and Gal, 2017). The model on which the estimates are based captures the reform recommendations only very roughly in some instances. Therefore, they should be seen as purely illustrative. The policy changes that are assumed (Table 7) are based on comparing Slovakia's current policy settings with those of OECD countries. The model estimates reflect fiscally neutral spending increases. For example, the expenditure increase on childcare support is financed by tax increases or spending cuts in other areas.

Table 7. Illustrative GDP-per-capita impact of recommended reforms

Reform	Percentage increase in GDP per capita	
	10 year effect	Long-run effect
Increase spending on Active Labour Market Policy	1.1%	2.2%
Increased spending on R&D	1.4%	3.7%
Increase government support for childcare	1.6%	2.1%
Improve the rule of law	3.4%	8.9%

Notes: The permanent policy changes assumed for the scenarios in the table are:
1. Spending on active labour market policies as a share of GDP is increased by 0.3% of GDP to reach the level of the OECD average
2. R&D business sector funding is increased from 0.4% to 1.3%, reaching the OECD average level
3. Government support for childcare is increased from approximately 0.5% of GDP to 0.7% of GDP, matching spending to the OECD average
4. Improving the rule of law measured by the World Bank's World Governance indicator by closing one-fifth of the gap with the average of top 5 European countries in the OECD better life ranking.
Source: OECD calculations based on Égert and Gal (2017).

Sustaining environmentally friendly growth

CO_2 emissions per capita are lower than on average in the OECD (Figure 17, Panel A). But Slovakia needs to develop a plan for reaching long-term emissions reductions needed to meet the goals of the Paris agreement, especially as most of Slovakia's CO_2 emissions are

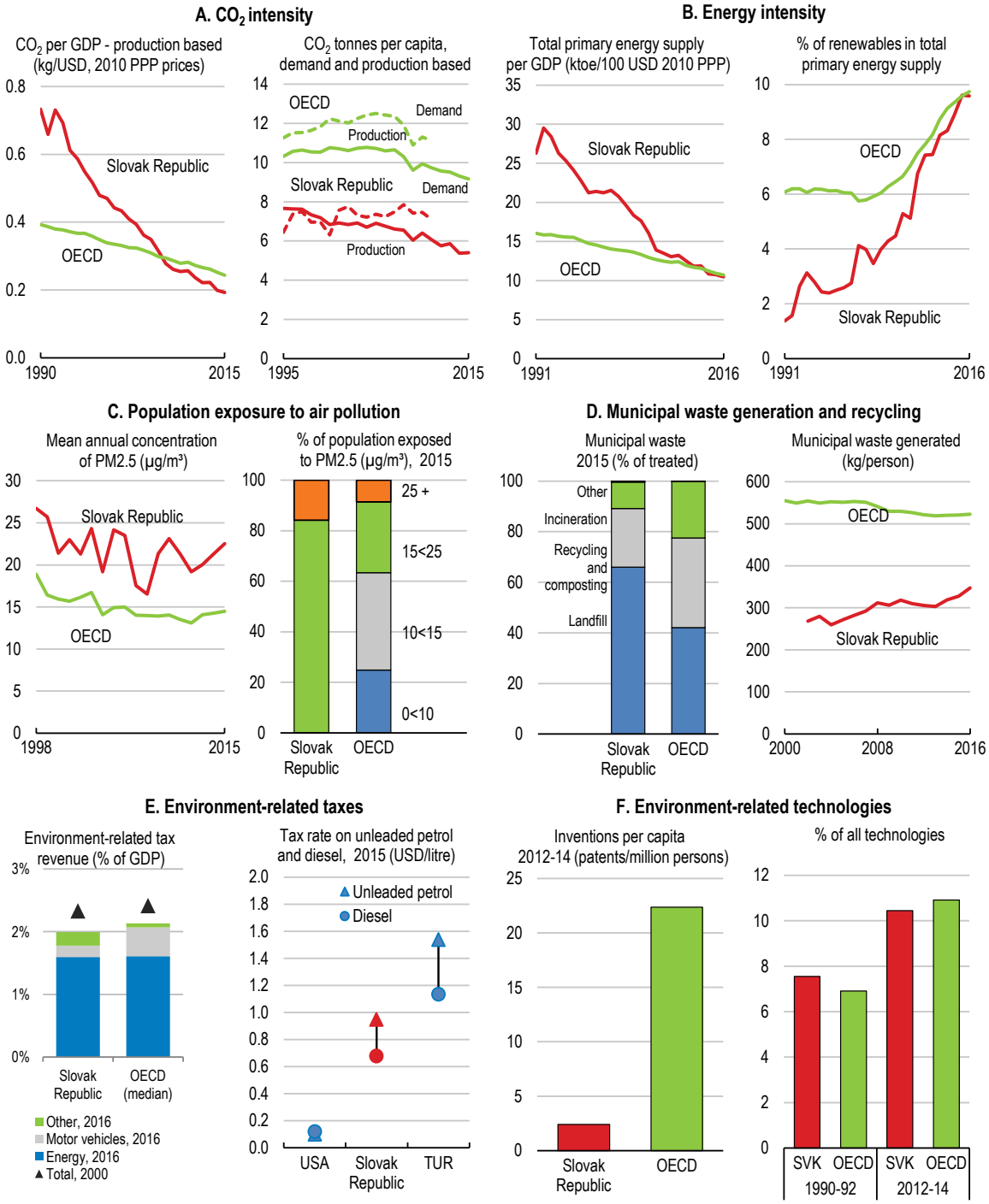
outside the European Union's Emission Trading System. Slovakia offers subsidies for the purchase of electric cars. But this is unlikely to be a very effective instrument when, for example, energy taxes and taxes on vehicles (Figure 17, Panel E) are lower than in most countries. Also, coal is taxed at lower rates than oil or natural gas, even though it generates more pollution. In electricity generation, oil and coal are not taxed at all. Gradually raising taxes on fossil fuels according to their carbon content would lower greenhouse gas (GHG) emissions and also help to reduce air pollution, which is particularly prevalent in Slovakia (Panel C). At the same time, as recommended in the previous Survey, the coal subsidy should be abolished (Table 8).

Table 8. Past OECD recommendations on environment and green growth policy

Topic and summary of recommendations	Summary of action taken since 2017 *Survey*
Gradually phase out coal subsidies and tax breaks for energy use.	No action taken
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

Slovakia makes excessive use of landfill in waste treatment (Panel D). To start to reduce this, in November 2017 the government began to use EU funds to support waste management projects in the least developed areas. The authorities argue that this creates employment, while reducing landfill and thus improving the environmental impact of waste treatment. It also comes with the prospect of developing renewable energy from waste. Extensive publicly funded construction of sorting and recovery infrastructure has already taken place, however (OECD, 2018b). So far, this has had little effect on recovery and recycling rates, though. The government recently approved measures to substantially increase fees for waste landfill over the next three years to intensify the fight against illegal landfill and incentivise recycling.

Figure 17. Emissions have fallen more than the OECD average



Source: OECD (2018), *Green Growth Indicators (database)*.

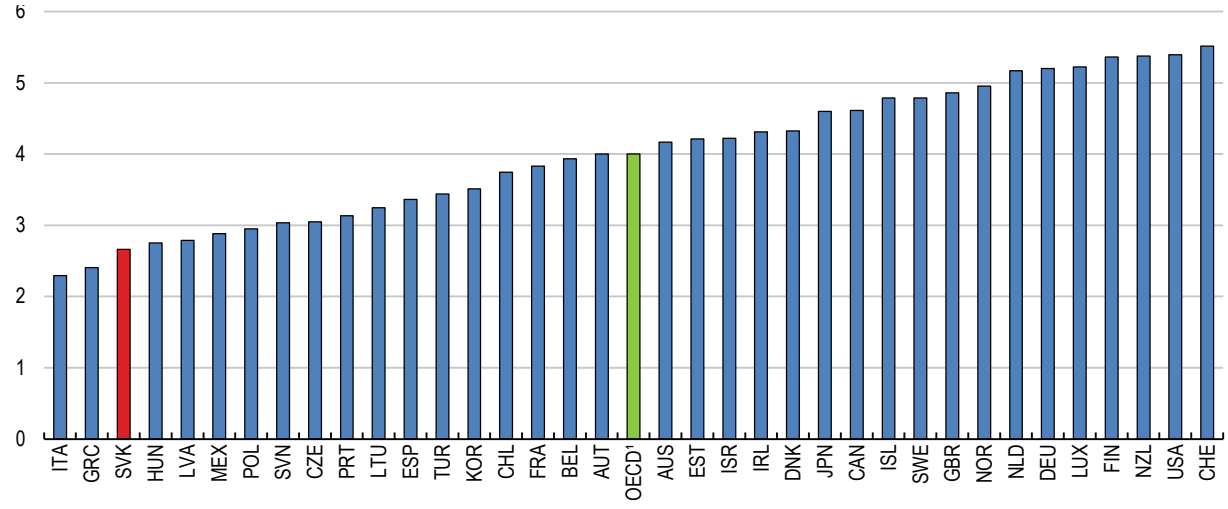
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Improving the quality of public services and facilitating access will improve well-being for all citizens

Increasing public-sector efficiency is a crucial policy challenge for Slovakia. Health-care outcomes are poor. Mortality is high, and life-expectancy at birth is only 77 years, three years lower than the OECD average. Education results are weak and highly dependent on socio-economic background, suggesting that schools are not effective in overcoming differences in children's starting position (see the section on education below). Moreover, indicators suggest a poor comparative performance of public administration (Figure 18) and lack of trust in government institutions. In OECD countries, only Hungary, Turkey and Mexico rank worse than Slovakia on Transparency International's Corruption Perceptions Index. In late 2017 85% of Slovaks thought that corruption was "widespread" in their country compared with two-thirds of EU citizens overall (EC, 2017). Tax collection, the judiciary and skill levels among public employees all show room for improvement. Improving the situation of the Roma community is as much to do with access to public services as with their quality and coordination.

Figure 18. Performance of government general services

Scale from 0-6 (best), 2017



Note: Unweighted average of the 36 OECD countries
Source: World Economic Forum; *Global Competitiveness Index dataset 2007-2018*; www.weforum.org/gcr

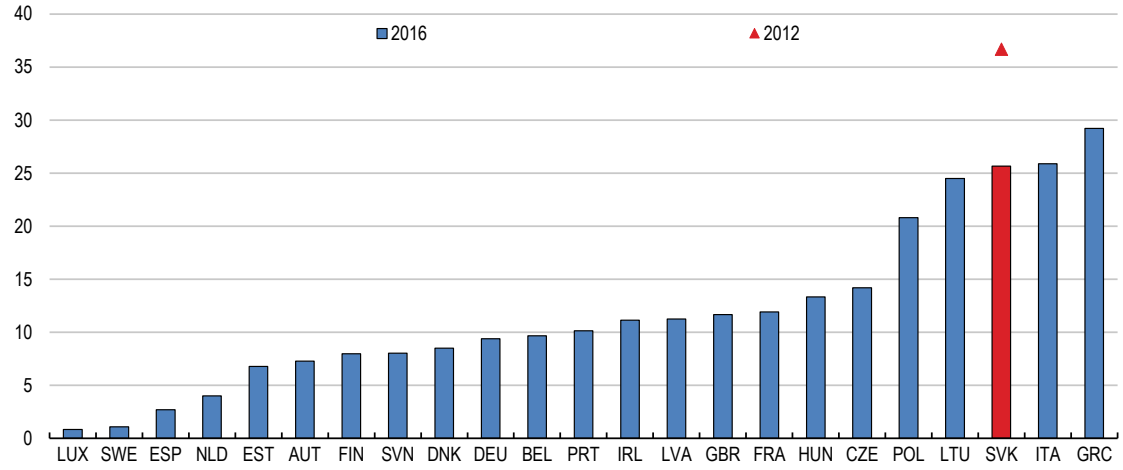
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Improving the effectiveness of tax collection

Weaknesses in tax administration are reflected in heavy tax evasion. An indicator of low tax compliance is the share of companies not paying any corporate income tax (Remeta et al., 2015). More than half of Slovak companies declare zero tax liability and one fifth of them have declared zero or negative profits in five consecutive years (MoF, 2018b).

Comparing VAT revenue with its theoretical yield (the VAT tax gap) also illustrates tax collection efficiency. There has been a strong improvement in VAT collection since 2012, as tighter controls, more monitoring and better use of electronic communication take effect. The VAT tax gap reduction in 2016 was the fifth highest in the EU. But Slovakia still lags a long way behind most other countries (Figure 19).

Figure 19. The VAT Gap



Note: The VAT gap is the difference between the amount of VAT revenue collected and the theoretical tax liability according to tax law, as a percentage of total VAT liability.
Source: G. Poniatowski, M. Bonch-Osmolovskiy and M. Belkindas (2017), *Study and Reports on the VAT Gap in the EU-28 Member States: 2017 Final Report*", Center for Social and Economic Research (CASE) Reports, No. 492.

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Analytical tools using modern data analysis allow the authorities to target high-risk individuals or companies for audit. It requires investment in ICT and training personnel. The authorities are introducing tax compliance monitoring (Table 9), but tax auditing needs to be strengthened further. Many tax administrations in OECD countries are expanding their collection of data from third parties. Some tax administrations require banks to provide aggregate information periodically. For example, Poland created a centralised data warehouse, merged tax administration, customs and fiscal control operations to improve coordination, introduced improved modelling tools to better detect irregularities and facilitated information exchange with banks when there is a suspicion of tax fraud. (OECD, 2018c).

Modern technology can ease compliance by integrating tax declarations into the business process. This way they are turned into a by-product of the steps that businesses follow automatically in accounting for their transactions (OECD, 2014a). For example, the Danish tax administration developed such a system for small and medium enterprises that file their tax returns directly from their accounting systems. The system improves both accounting and tax compliance (OECD, 2015a).

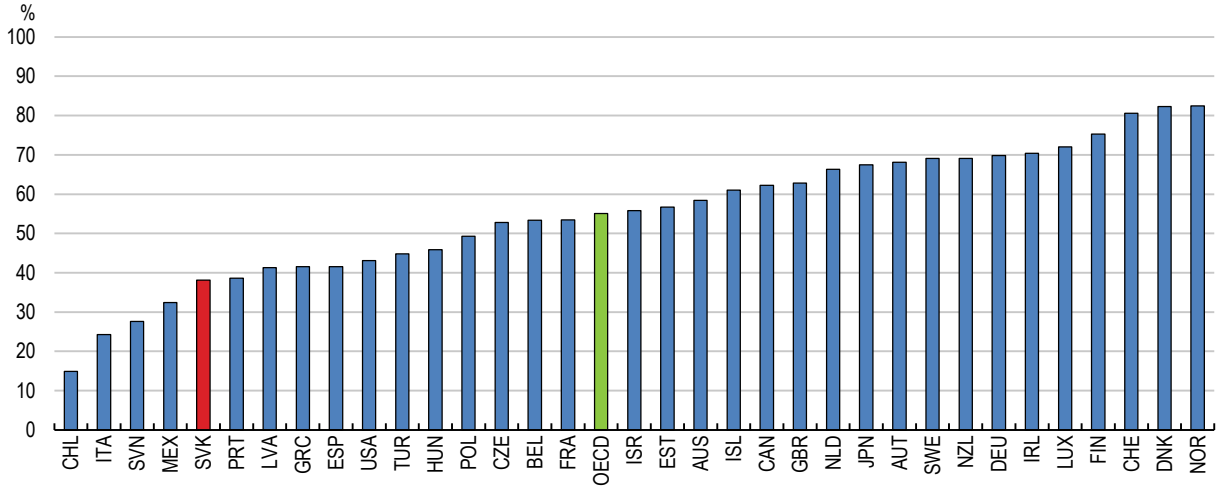
Table 9. Past OECD recommendations on effectiveness of tax collection

Topic and summary of recommendations	Summary of action taken since 2017 *Survey*
Merge the tax/customs and social security agencies to raise revenues. Link the IT systems of the tax administration and banks.	No action taken
Further enhance the efficiency of tax administration. Continue efforts to improve tax collection.	The Third Action Plan on the fight against tax fraud for the years 2017–18 (21 measures) has been introduced including the new tax compliance index that assesses taxpayers' risk profiles, mandatory e-communication for taxpayers, and prefilled electronic tax returns for motor vehicle tax.

The judicial system needs to be further improved

The Slovak judicial system has a large backlog of cases especially those concerning enforcement – a category including the resolution of creditor-debtor conflicts and insolvency proceedings. In particular, a large number of old distrainment cases add to the time taken for new cases to be processed. The average total length of judicial proceedings in civil and commercial matters was almost two years in 2017. However, the judicial system is undergoing systemic reforms to help clear the backlog. The government is considering several options to solve this issue soon. For now, Slovak citizens and companies have relatively little confidence in the judicial system, especially believing that it lacks independence (Figure 20).

Figure 20. Low trust in the judicial system and courts



Note: Data correspond to the percentage of "yes" answers to the question: "In this country, do you have confidence in each of the following, or not? How about the judicial system and the courts?"
Source: *Gallup World Poll (database).*

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When enforcement is slow or uncertain, and confidence in the system is low, individuals and companies in Slovakia have to take more elaborate and costly actions to protect themselves against default on contracts than in other countries. Methods include writing contracts in other jurisdictions, such as Austria, relying more on arbitration (also often abroad), and providing more collateral.

Responsibility for many enforcement cases has, since April 2017, been allocated to just one district court (Banská Bystrica), which has historically dealt much more quickly with these cases. Further changes were adopted aimed at speeding up certain judicial proceedings, including requiring exclusively electronic communication for certain procedures. Nevertheless, further efforts are needed to implement recommendations from a recent report by the Council of Europe's Commission for the Efficiency of Justice. Further court specialisation for some types of cases could be effective, as would be more rational budget and human-resource management, paying more attention to ethics-awareness among judges, and providing them with more technical and legal support staff (CEPEJ, 2017). These are good recommendations and should be followed up, along with other steps already planned (Table 10), such as improving the use of IT and use of alternative dispute resolution procedures.

Dealing with perceptions of corruption

The Prime Minister's office is developing a system to identify and address corruption risks in the administration, and the government proposed new legislation strengthening the protection of whistle blowers. The new system to detect corruption risks within the public administration, such as decisions involving large amounts of resources, will be used to enhance monitoring and controls in high-risk areas. Other policies, such as publishing winning public procurement contracts and requiring full disclosure of beneficial ownership of companies dealing with the state, have reinforced transparency. Over time, steps such as these, along with the continuing improvements in laws and regulations defining and sanctioning corruption, should help limit corruption and improve trust. They rely on adequate enforcement.

Table 10. Past OECD recommendations on improving the judicial system

Topic and summary of recommendations	Summary of action taken since 2017 *Survey*
Further strengthen the efficiency and independence of the judicial system. Continue to increase judicial capacity in particular through investment in IT systems.	New measures have been introduced, including an assessment of judges' work by the members of professional assessment juries/commissions named by the Judicial Council of the Slovak Republic.

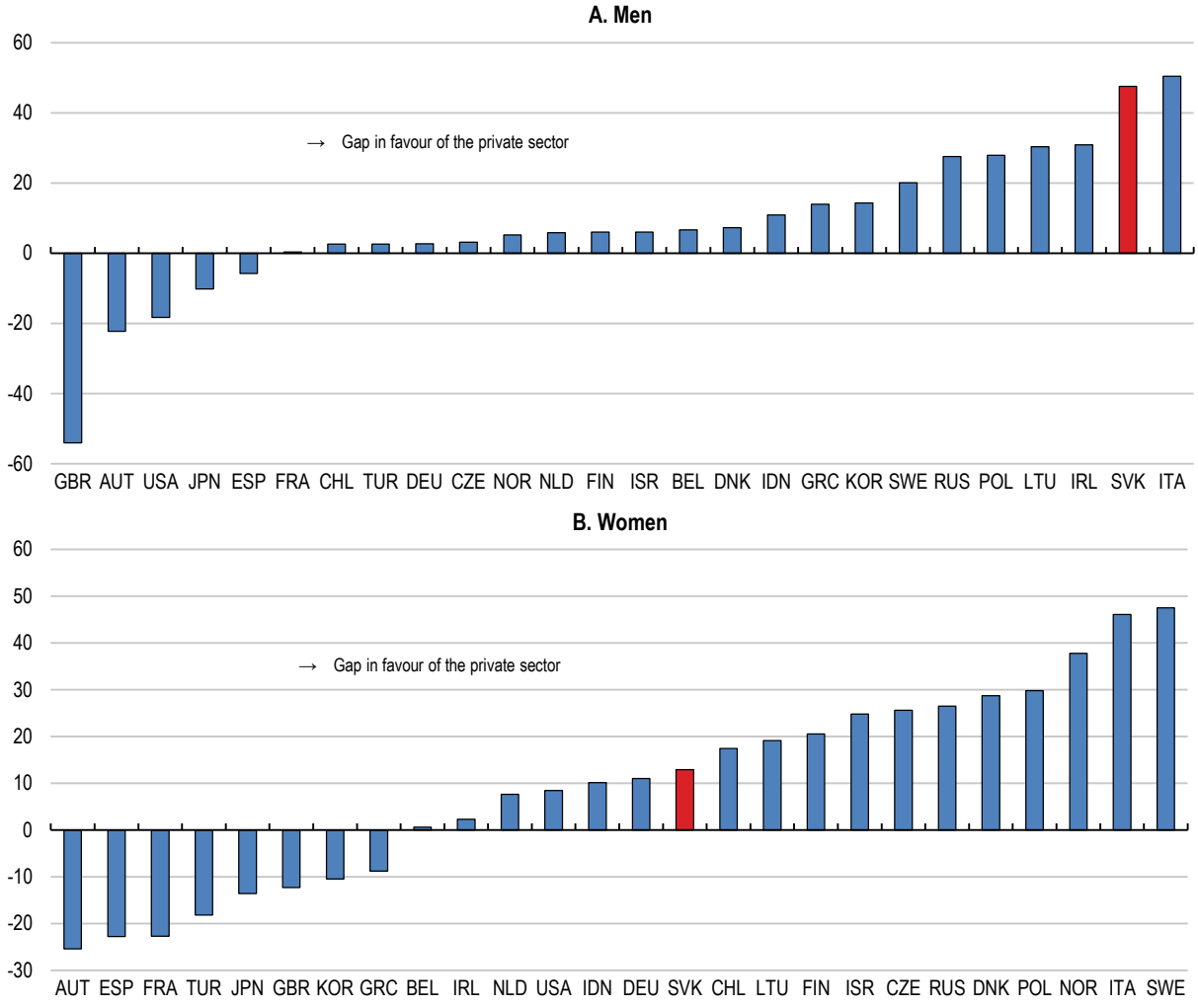
Skills in public administration

The average skill level – measured by the OECD PIAAC (Programme for the International Assessment of Adult Competencies) indicators – of public-sector employees is significantly lower than in the private sector, and this disparity is one of the highest in the OECD (Figure 21). Better recruitment, and on-going training where necessary, can help to reduce the gap. Development of performance indicators to help individuals and departments to assess their progress can also contribute.

Better pay relative to the private sector might attract more qualified people into public administration. Public-sector wages are low in international comparison (MoF, 2018c). The government currently proposes substantial increases in public-sector pay 10% in 2019 and 2020 for most public employees. The plan misses an opportunity to relate pay more closely to public-sector needs, to skills and to performance. For example, the education sector has a high wage gap relative to the private sector and the Slovak teaching profession remains unattractive (OECD, 2017a). But this is not the case in other areas.

It would be better to set aside at least part of the budgetary allocations to cases of clear shortages. In this regard the government should continue to strengthen the Value for Money initiative within the Ministry of Finance, which aims to promote evidence-based policy making and efficiency within the public sector (Box 5). The current review concluding in 2018 is focused on public-sector wages. This can help to identify the most effective allocation for these additional resources. However, the conclusions of previous expenditure reviews have so far not been fully implemented. The resources of the implementation unit responsible for putting the conclusions into practice should be strengthened, and the review process should be fully integrated into medium-term budgetary planning. In this respect introducing expenditure ceilings, which put a cap on nominal or real spending growth over the medium term would help focus the administration's attention on identified savings potential.

Figure 21. The skills gap between public and private sectors is high in Slovakia



Source: Y. Mazar (2018), "Differences in Skill Levels of Educated Workers between the Public and Private Sectors, the Return to Skills and the Connection between them: Evidence from the PIAAC Surveys", *Bank of Israel Discussion Paper*, No. 2018/01.

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Box 5. Value for money: the public expenditure review process

The main emphasis of the Spending Review process is on ways to improve efficiency – outcomes for given resources -- often taking broad OECD recommendations into account.

Reports in 2016 covered Healthcare, Transport and Informatisation. In 2017 there were reports on Education, Environment, Labour Market and Social policies.

Recommendations in the 2016 and 2017 reviews included:

- Health: expand use of diagnostic related groups for hospital funding; assess pay and incentive structures for medical staff; reduce expenses by introducing stricter

cost controls on special medical material, reducing drug overconsumption and implementing drug prices indexation.

- Transport: improve project evaluation and prioritisation; reduce excess capacity in railways; increase the share of road finance allocated to maintenance to reverse their deterioration.
- IT: improve project evaluation and prioritisation; centralise support functions and procurement.
- Environment: phase out coal subsidies; better prioritise flood protection investments; increase environmental taxes.
- Education: increase teachers' pay (especially for young teachers), linking this with quality and improved training; reduce the number of elementary schools, taking into account the impact on quality and accessibility of education; improve the system of accreditation of universities, including more attention to teaching results; improve information, including graduate tracking; be more selective in supporting students for post-graduate degrees.

Labour Market and Social policies: consider how to better target family support; shift active labour market policies towards educational and training programmes and adjust measures taking international experience of what works to into account; increase efficacy of the pension system by supporting age-appropriate investment choices – for example by showing people the likely pensions associated with different investment strategies and by introducing default age-specific investment strategies.

Table 11. Past OECD recommendations on raising the efficiency of the public sector

Topic and summary of recommendations	Summary of action taken since 2017 *Survey*
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	New measures have been adopted, including performance evaluation, new recruitment procedures, and a new procedure to help high performing civil servants who were dismissed due to organisational changes in their service offices to get back to work. A central information system for the civil service has been established, which will help the Government Office to make informed decisions regarding the civil service based on data from all service offices.
Encourage joint public-service delivery for small municipalities, and strengthen the revenue-raising power and spending responsibility of viable local governments.	No action taken

Access to public services for disadvantaged groups

Weak access to public services can hamper the integration of disadvantaged groups. This is particularly true for Roma, who account for around 8% of the population. They are poorly integrated in society and have extremely weak access to public services (Table 12). Poor access is related to cultural and language barriers, lack of awareness of available programmes, geographical isolation in some cases and discrimination. The Roma have low educational attainment with high dropout rates, damaging their labour market prospects. Poverty and inadequate housing coupled with weak access to outpatient care reduce life expectancy, which is lower by six years compared to the general population and an infant mortality rate that is almost three times higher than in the general population (MoF, 2018d).

Table 12. Roma access to public services is low

	General population	Marginalised Roma
Share of children aged 4-6 who participate in pre-school education (%)	77	34
Enrolment rate in upper secondary education age (15-18)	91	58
Enrolment rate in post-secondary and tertiary education age (19-24)	50	6
Share of households living without toilet, bathroom and shower inside the dwelling	0.6	43
Share of households living without tap water inside the dwelling	12.6	25

Source: European Union Agency for Fundamental Rights (2016).

Addressing these gaps in access to public services is an urgent policy priority. The government should prioritise integrating the Roma in order to build a more inclusive society, which ensures that everybody benefits from economic growth. This will require coordinated interventions in various different policy areas including: education, labour market policies, health care, housing and financial inclusion. Coordination is particularly important because exclusion is often so severe that interventions in one area will not work without progress in others. Children's access to education and staying in school may depend on improved hygiene, which in turn depends on easy access to running water, for example. Therefore, the work of social workers, housing policies, Roma school mediators and health mediators should be better coordinated. More integrated services can address issues of vulnerable communities simultaneously, and collaboration and knowledge sharing between providers can increase service quality (OECD, 2015b). In addition, a more integrated approach is more efficient and cheaper than sequencing the individual policy measures.

Implementing interventions in an integrated manner requires a central body with some power to coordinate different policies. This would best be done by strengthening the role of the Plenipotentiary for Roma communities, who currently has only an advisory role in the central government. A model could be the Deputy Prime Minister's Office for Investment and Informatization in the Slovak Republic, which is a cross-cutting ministry coordinating other ministries in the area of investments. The same approach could be applied to the area of Roma integration. As much as possible, programmes to improve the situation of the Roma should be designed in consultation with the communities they are intended to help.

Increasing the number of trained personnel from Roma settlements themselves will help facilitate dialogue and cooperation between their communities and public institutions. There are already some successful EU-funded pilot projects such as the Roma health assistants or Roma Civil Neighbourhood Watch, which help to improve access to public services. Trained Roma health assistants accompany sick people to the doctor, interpret if necessary, contribute to the prevention of infectious disease and encourage up-take of vaccinations. The direct involvement of Roma mediators is important, because they are better able to identify the needs of the community.

There are many local initiatives from public agencies and NGOs, which facilitate dialogue and ease access to public services, some funded by the EU. Although EU-funded programmes have increased the resources targeted at Roma integration, these funds do not represent a systematic and sustainable policy response to Roma integration. Individual projects usually run only for two or three years, followed by lengthy breaks before successor EU-funded programmes start up. Many of these projects were intended to start as pilots to test different approaches and bring the successful ones to scale. However, none of them has so far been successfully incorporated into and funded by national policy.

Analysis of which are cost-effective and which are not is needed, and successful ones should be scaled up to the national level. This requires the development of improved statistics to monitor progress. The Plenipotentiary should also be mandated, and resourced, to collect data and monitor the situation of the Roma.

Affirmative action could play a role in accelerating integration. This could include extra help in the education system to improve the chances of Roma children to get a university education. Scholarships and financial aid to Roma students could remove some barriers. For example, in Israel, prospective students from disadvantaged minorities who do not meet the required academic requirements are entitled to subsidised on-campus classes, including boarding, mentoring and guidance, to help them catch up and enrol in academic studies. Recruitment to public administration might also play a role in overcoming prejudice and providing role models for future generations. In order to integrate Roma into public administration, Roma ethnicity could be defined as a "tie-breaker" when two similar-quality candidates apply to the same public position. This can be particularly important in public-sector jobs such as kindergarten teachers or teaching assistants, which will help to employ Roma but also other aspects of Roma integration. To support the integration of Roma in the private sector, employment of Roma workers can be set as a criteria or an advantage when firms bid for a public contract, similar to the practice in the United States of America (OECD, 2010).

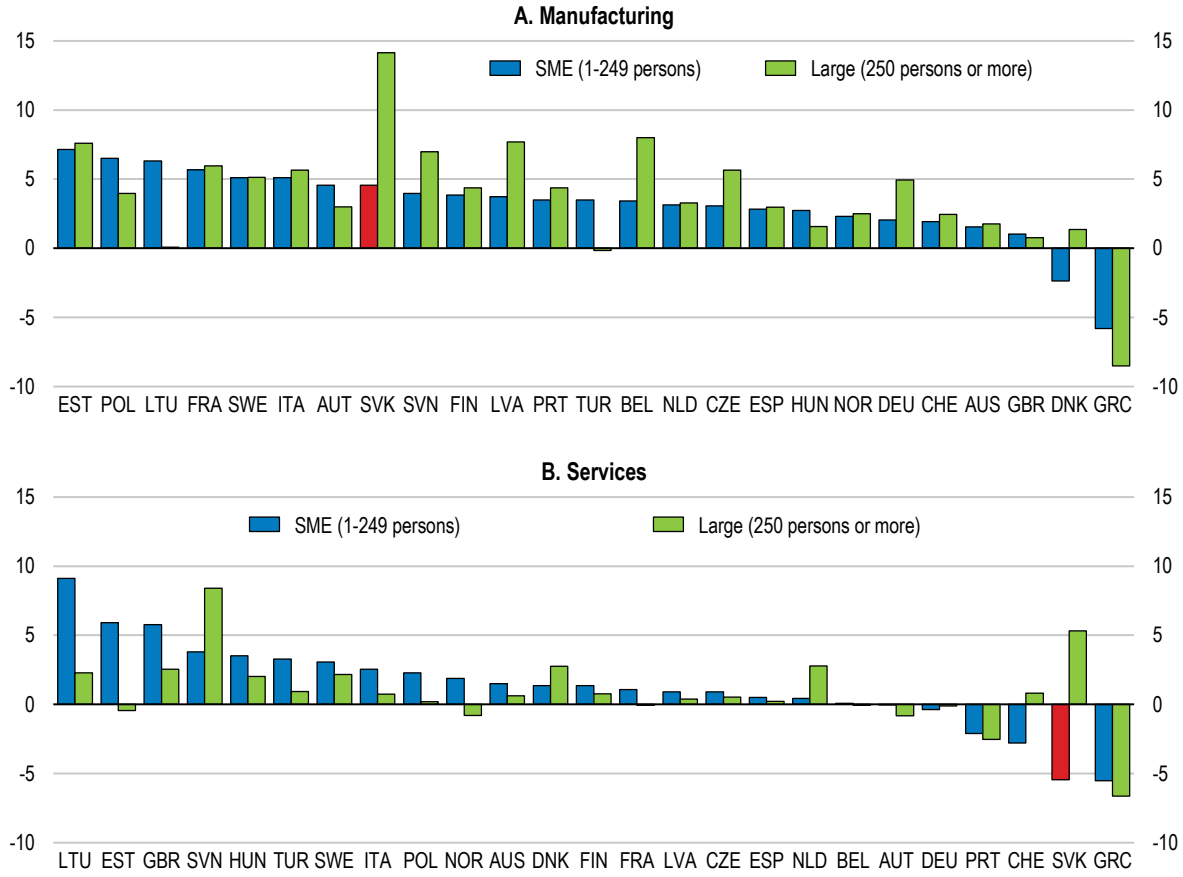
Enhance policies to develop workforce skills

Shortages of skilled labour are emerging, and technological change risks making skills redundant faster than in the past. Furthermore, there are strong signs that Slovakia is a two-speed economy, divided between large, mainly foreign-owned companies and smaller domestically owned companies. The large companies have high levels of productivity growth, frequently due to foreign direct investment delivering new technologies and recruiting or training workers to exploit them. Productivity has grown much more slowly in small companies. In small service sector companies, it has actually been declining (Figure 22). Their poorer performance suggests that spillovers of skills and ideas from the larger, foreign-oriented, companies to the rest of the economy have been limited.

Over time rising wages will make Slovakia less attractive in terms of pure cost levels for foreign investors. Future growth will therefore depend more on developing home-grown skills both for foreign-owned companies and especially for small and medium-sized companies to innovate and compete more vigorously.

Figure 22. Productivity gains have been much stronger in large firms than SMEs

Real value added per person employed, average annual change, %, 2009-14 or latest available year

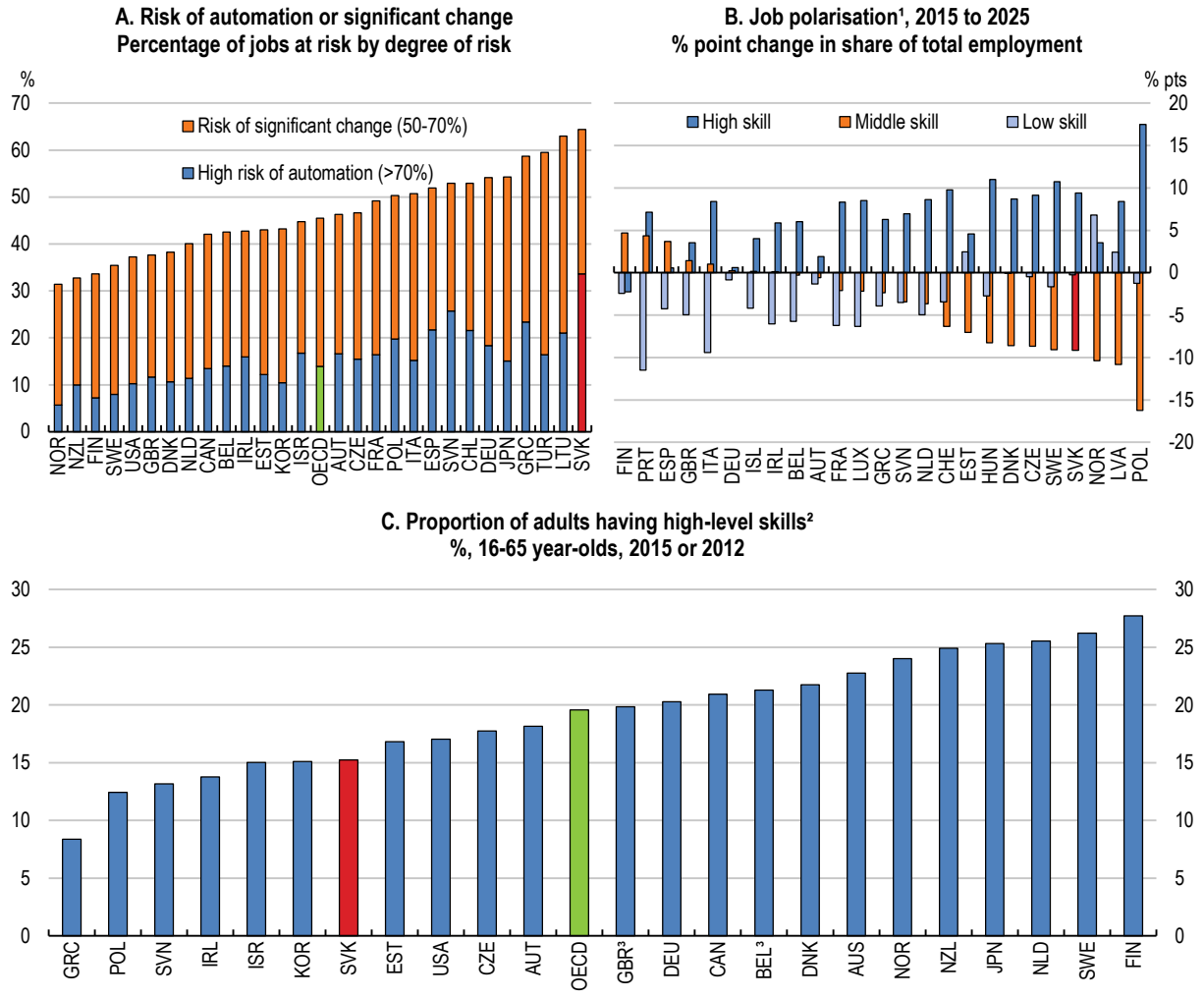


Source: OECD (2017), *Entrepreneurship at a Glance 2017*, OECD Publishing, Paris.

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Technological change will have important consequences for the labour market in Slovakia due to its large share of low-skill routine jobs, which are likely to be automated in the near future. Almost two-thirds of current jobs in Slovakia are at risk of automation, as growing demand for highly skilled labour is expected to replace medium-skill jobs (Figure 23). It does not necessarily mean that these jobs will disappear entirely, but workers will almost certainly need to adapt to changing tasks by upgrading their skills to occupy the higher-skill jobs that will be created. Low-skilled workers often originate from disadvantaged families and were not offered the opportunity to acquire good skills. Slovakia needs stronger schools that do more to improve the performance of disadvantaged children. Vocational education and adult training also need to become more reactive to changing labour market needs and more accessible for older and lower-skilled workers. This will do much to promote inclusiveness, continued productivity growth and foreign direct investment that goes beyond a few sectors.

Figure 23. Slovakia's employment looks vulnerable to the likely increase in automation



1. High-skill occupations include jobs classified under the ISCO-88 major groups 1, 2, and 3. Middle-skill occupations include jobs classified under the ISCO-88 major groups 4, 7, and 8. Low-skill occupations include jobs classified under the ISCO-88 major groups 5 and 9. The above chart includes 15 of the 18 listed industries. The excluded industries are the following: Agriculture, hunting, forestry and fishing (1), Mining and quarrying (2), and Community, social and personal services (18).
2. Average of percentage of adults scoring at PIAAC literacy or numeracy proficiency level 4 or 5, or scoring at problem solving in technology-rich environments level 2 or 3.
3. Data for Belgium refer only to Flanders, and data for the United Kingdom refer only to England.
Source: OECD (2017), *Education at a Glance 2017: OECD Indicators;* L. Nedelkoska and G. Quintini (2018), "Automation, skills use and training", *OECD Social, Employment and Migration Working Papers*, No. 202, OECD Publishing, Paris. http://dx.doi.org/10.1787/2e2f4eea-en; European Centre for the Development of Vocational Training (Cedefop) (2017), *Forecasting skill demand and supply, http*://www.cedefop.europa.eu/en/events-and-projects/projects/forecasting-skill-demand-and-supply/.

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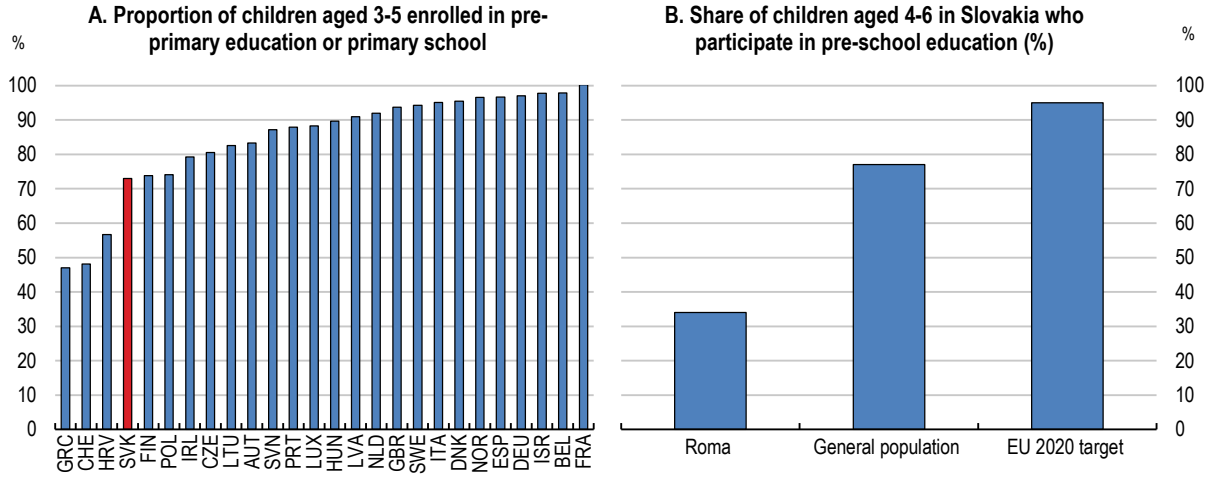
Improving education outcomes should be a priority

Slovak adults have weak problem-solving and computer skills; one-quarter of the adult population is fully computer illiterate (OECD, 2017a). Yet employers are increasingly demanding these skills in the expanding digital economy (OECD, 2014b). This situation

may deteriorate further before it improves. Children's educational performance at age 15 measured by PISA is weak and has been deteriorating in international comparison. The youngest age cohorts have even worse numeracy skills than their older counterparts, a clear outlier in the OECD, where the reverse is normally the case (PIAAC – National report, 2013). Almost one-third of all 15 year-old students have not obtained even a basic level of proficiency in assessed subjects.

Participation in pre-school education can help improve children's learning and its benefits extend to their health and wellbeing (OECD, 2018d). In the Slovak Republic pre-school education is voluntary and participation is much lower than on average in the OECD. It is particularly low for disadvantaged groups such as Roma. Only one-third of them attend kindergarten, compared with almost 80% in the non-Roma, and 90% in most OECD countries (Figure 24).

Figure 24. Pre-school attendance is low, especially for Roma (%)



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

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More investment and technical and material assistance to municipalities are needed in order to boost the number of pre-school facilities, which remain low despite the use of EU funds to increase capacity (OECD, 2017a). Pre-school education should become compulsory for 5 year-olds, which the Slovak Republic plans to implement as of 2020, and legal entitlements should be introduced for 3-4 year-olds. This can also be beneficial for female labour market participation, discussed further below. Several neighbouring EU member countries, such as the Czech Republic, Poland and Hungary have already introduced obligatory pre-school education. Such changes must be phased in so as not to outstrip the supply of good-quality facilities and teachers - low-quality pre-school education can have detrimental effects on development and learning (OECD, 2018e). As an intermediate step, the limited resources should be targeted first at disadvantaged groups.

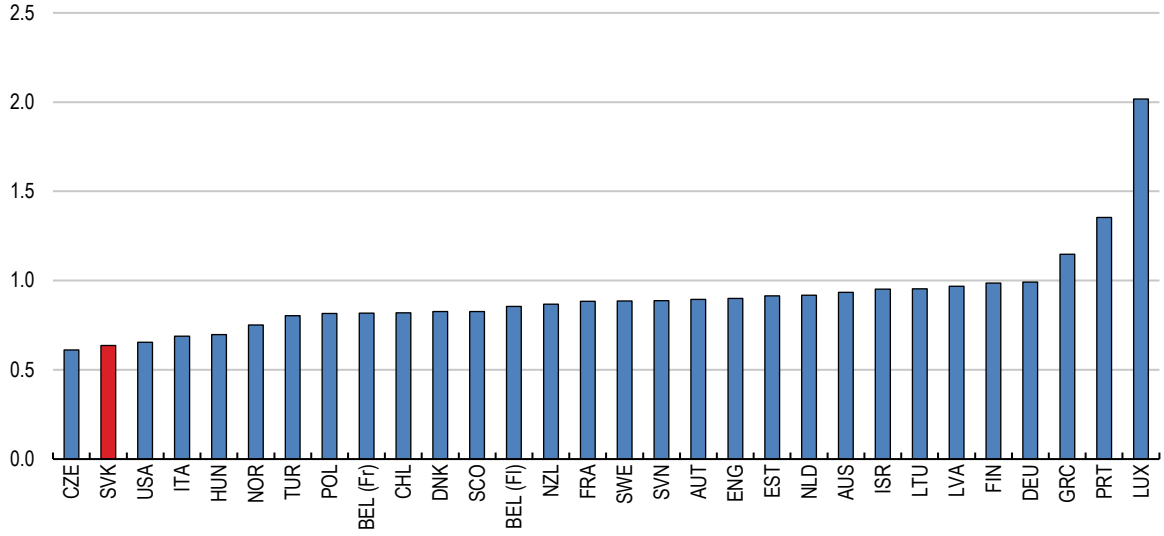
The demand for pre-school education among disadvantaged groups should be bolstered by raising awareness among parents. Local municipalities and social workers should discuss the benefits of early education with the Roma. Creating parent support groups or opportunities for Roma parents' participation in school activities can foster their children's integration into their school environment. The government should also cover the hidden

costs of education such as transport. A conditional cash transfer programme was introduced in Hungary in 2009 for disadvantaged children aged 3 to 4 and led to much higher enrolment (Kertesi and Kézdi, 2013). In 2018 the Slovak government introduced a child-raising allowance to partially cover the costs for pre-primary education for children one year before starting primary education.

Teachers need better qualifications, better training and better conditions to improve educational outcomes

Highly qualified and motivated teachers are key to improving skills (Chetty et al., 2014; Schacter and Thum, 2004). However, working conditions and salaries for Slovak teachers are unattractive; only 4% of them reported that their profession is valued in society (OECD, 2013a). Teachers earn only around 60% as much as the average tertiary-educated person in Slovakia (Figure 25).

Figure 25. Ratio of teachers' salaries to the earnings of tertiary-educated workers, 2016



Note: Data are for 2015 for Belgium, Chile, Czech Republic and Finland and for 2014 for France, Italy, Lithuania and the Netherlands.
Source: OECD, *Education at a Glance database.*

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The government has taken steps to improve teachers' working conditions (Table 13) and intends to increase their salaries further, along with those of other public-sector workers, by 10% in each of 2019 and 2020 and an additional increase for young and starting teachers. But overall wages are expected to rise by around 14% over this period, so a large gap will remain. Further increases in teachers' relative earnings in the future will be necessary to improve the quality of new recruits, but not sufficient: higher wages for teachers are unlikely on their own to improve results for students unless other reforms are undertaken. Such reforms need to improve teaching methods, to train teachers to adapt their methods to the needs of students, to develop measures of school performance that can give school principals and teachers useful feedback, and to expand and improve ongoing career training.

Teachers in schools with a high proportion of disadvantaged students should be given additional incentives. The maximum salary supplement in Slovakia for teaching disadvantaged pupils is EUR 25 per month, representing less than 2% of the average wage

of the teacher. Some other OECD countries use much more generous financial incentives to attract the best teachers to disadvantaged schools (OECD, 2014c). Financial incentives could be complemented by other measures, such as smaller class sizes or more teaching assistants (OECD, 2012).

Table 13. Past OECD recommendations on education

Topic and summary of recommendations	Summary of action taken since 2017 *Survey*
Further increase teachers' salaries, particularly for starting teachers, conditional on improved teaching quality through high-quality professional development and increased focus on disadvantaged pupils.	Implementation plan for Education 2018 include increase in the teachers' salaries by 10% in 2019 and 10% in 2020.
Postpone early tracking in primary schools.	No action taken

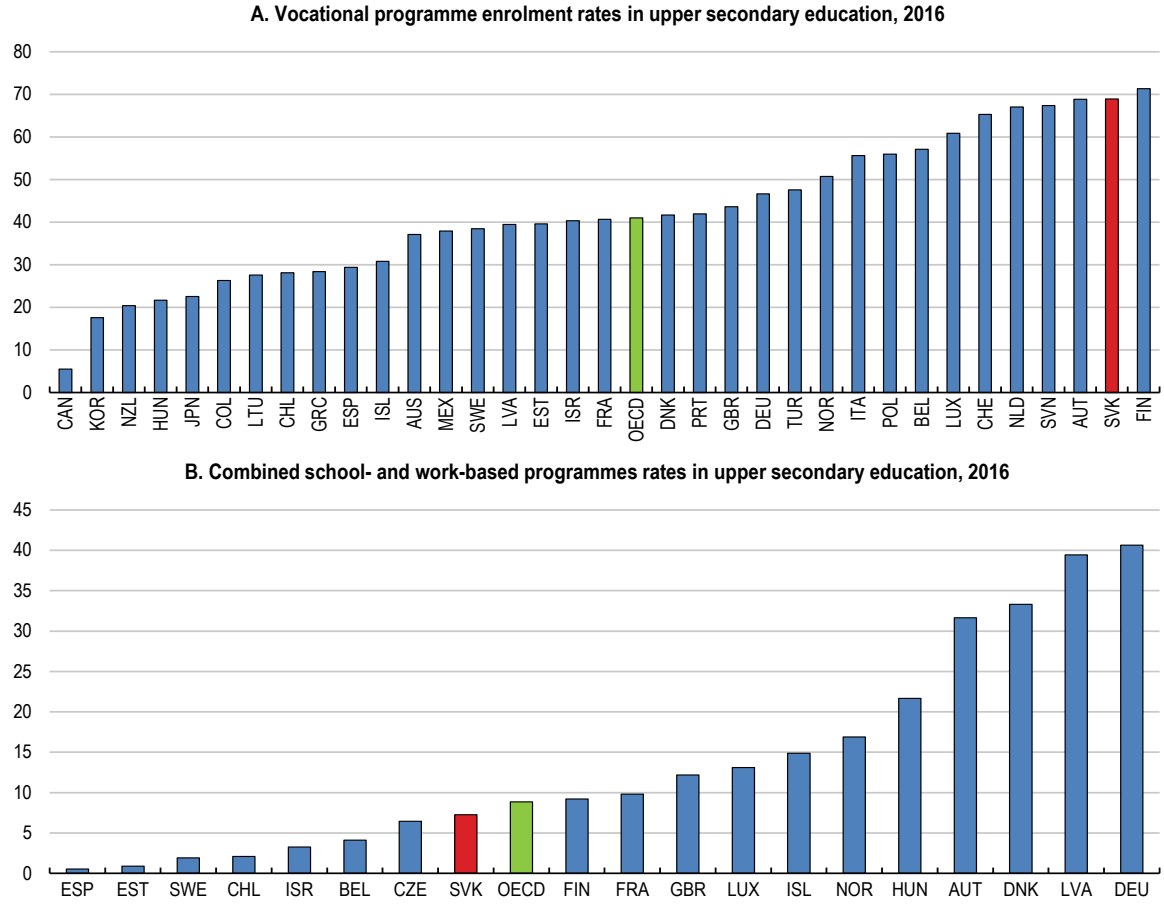
Wage increases may attract better qualified recruits, but both initial and ongoing training needs to be strengthened. One way forward would be professional development programmes, where teachers receive relevant training together with regular feedback under the mentorship of a lead teacher. Such an approach can improve teaching quality significantly (OECD, 2009; Fryer, 2016) and can also make the teaching profession more attractive by creating new career opportunities. Teachers in Slovakia rarely employ a differentiated and individualised approach that takes into account the diverse educational needs and abilities of their pupils (SSI, 2016). In contrast, in Finland, where learning outcomes are better, all teachers are trained in adapting their teaching to the varying learning needs and styles of their students (OECD, 2012).

The training content of vocational schools should be better linked with labour market needs. The share of vocational students in upper secondary education is among the highest in the OECD (70%), but few students receive work-based learning (Figure 26), while employers complain about the lack of professional and technical skills of VET graduates (Fazekas and Kurekova, 2016). Financial incentives for employers to participate in work-based learning schemes were introduced in 2015, but still only 7% of students participate (Panel B).

The authorities should continue to encourage companies to offer work-based learning and participate in designing practical and theoretical learning content. Besides the current financial incentives for employers, the National Council for Vocational Education and Training (a coordinating body, affiliated to the government, which brings together employers, some local governments and training providers) could help companies handle the associated administrative tasks, match employers with students and ensure that training meets the required quality standards. For example, in Scotland and Australia publicly funded intermediary bodies manage apprenticeships on behalf of employers, handle administrative work and match candidates for apprenticeships with employers (Musset et al., 2014).

It remains important to preserve and improve general skills among vocational students. Vocational students have generally lower levels of literacy and numeracy proficiency than general education graduates (OECD, 2017a). Work-based learning should be balanced with sufficient instruction time for general skills acquisition. This will better prepare these students for a changing labour market, enhancing Slovakia's prospects for innovation and moving up global value chains.

Figure 26. High share of vocational students with weak practical experiences



Note: Average of countries with available data.
Source: OECD (2018), *Education at a Glance database.*

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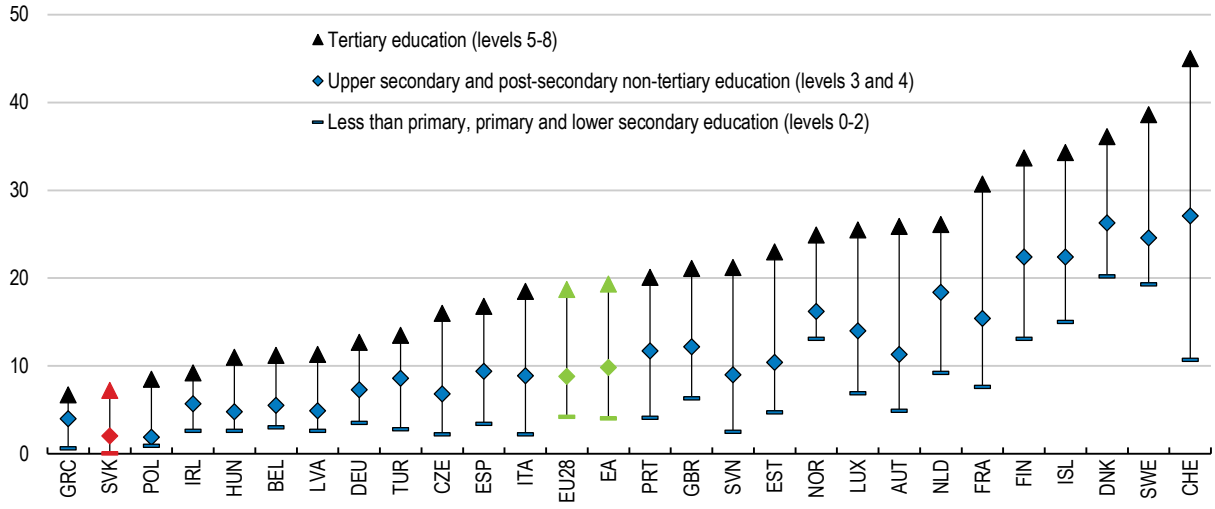
Promoting life-long learning

Technological changes expose more people to a depreciation of their qualifications in the absence of continuous investment in education and training. Cognitive and digital skills have to be used regularly and need updating, for example through training, to be maintained. The relative disadvantage of older workers is accentuated by the rapid growth and evolution in the use of ICT. These trends call for an effective lifelong learning framework, which can help preserve and update workers' skills.

However, few Slovak workers, and very few of the least qualified, take this kind of training (Figure 27). Initiatives have been launched by the authorities to expand adult learning schemes. One such initiative, Do Not Disqualify Yourself!, was introduced in 2016 and aims to promote training for adults aged over 25 who have left formal education.

Figure 27. Participation in life-long learning is low

Per cent of population aged 26-64, 2016



Source: Eurostat (Labour Force Survey 2016).

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Financial obstacles to increasing the role and effectiveness of lifelong learning are connected to the loss engendered both for workers and for businesses by a period of training. Strengthening tax incentives for employers, could encourage them to provide more training for their employees, a solution applied in some countries in northern Europe (OECD, 2017c).

Financial support is especially important for low-skilled workers (OECD, 2018f). In Germany workers with low qualifications may receive grants to be retrained in areas with good labour market prospects. In Canada, the Netherlands, France and Spain resources are directed to workers' individual learning accounts, while income-contingent loans for workers signing up to long-term training are another possibility.

New forms of training such as massive open online courses (MOOCs) can be flexible enough to be compatible with the family and professional commitments of working people. The creation of modular systems, as in Denmark, Switzerland and Portugal, can assist adults to study at their own pace. These modular systems should be encouraged by mechanisms for recognising and certifying these skills. Several technology companies, including Microsoft, HP, Samsung, Apple and Google have already introduced systems for certifying skills acquired by MOOC participants (OECD, 2016a). The government is preparing a system for certifying adults' formal and informal skills, to be introduced during 2018.

Growing shortages of skilled labour coincide with high long-term unemployment

Activation and training policies reach very few of the long-term unemployed. Such programmes are underfunded in Slovakia, and a relatively high share is still concentrated on public works schemes. Participants receive a lump-sum benefit that is often the only source of income in less developed Slovak regions (Kureková et al., 2013). Public works schemes can be valuable but maintain only basic skills, such as work routine and time

management. They do not provide the skills that are in short supply, and not many participants subsequently find a job in the labour market (Hidas et al., 2016).

The government is already increasing training measures within activation policies for the unemployed, but they should be expanded further. Training can significantly improve participants' skills and employability (Card et al., 2015; EC, 2015). Not all training is effective, however, so training providers should be evaluated regularly, and the results published. It can be complemented by subsidies to private employers offering on-the-job training (also subject to evaluation) for hard-to-place job-seekers. For example, a successful public-private partnership programme called BladeRunners in Canada provides on-the-job training through cost sharing for courses, buying equipment and wage subsidies (OECD, 2012). In addition, second-chance education should be strengthened by designing and developing a network of relevant providers. Using pilot projects with careful evaluation, to find out what works in Slovakia, would be a good approach.

The Public Employment Service needs reform. With limited resources the capacity of labour offices to provide complex services for the hard-to-place unemployed is limited (Hidas, 2016). The Slovak Republic has one of the highest shares of long-term unemployed in the OECD, partly due to high unemployment among the Roma. Long periods of unemployment have 'scarring' effects, and the long-term unemployed are more difficult to bring back to the labour market (OECD, 2013b). They need more complex labour market policy interventions and corresponding funding.

Additional funding for Public Employment Services should strengthen counselling for hard-to-place jobs seekers who require intensive guidance. Increasing the number of specialised counsellors should be coupled with effective profiling of jobseekers' needs. Individual action plans should be set up for job-seekers, laying out required training and catering for other needs like counselling and mentoring programmes. However, to be effective, these policies must not act separately, but in collaboration with other services, as vulnerable groups have complex needs, which require multiple interventions, especially in the case of the Roma (see above).

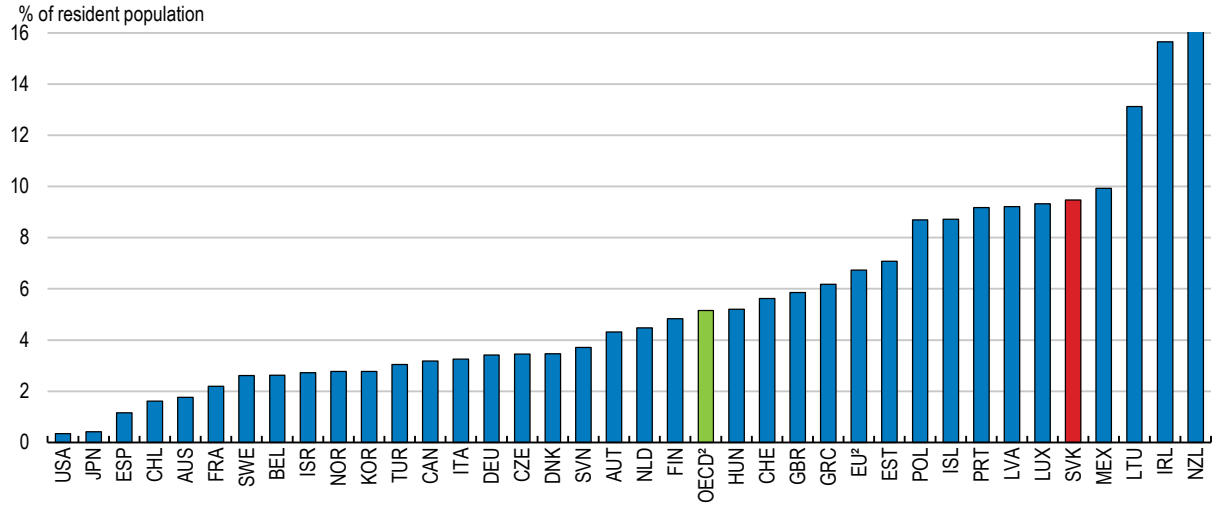
Attracting foreign and Slovak migrants

One tenth of the Slovak population is now living abroad (Figure 28) (Halus et al., 2017). Returning emigrants could bring home skills, networks and financial capital (OECD, 2008). Emigrants do not return in large numbers just for financial incentives, however; the quality of public services, notably health care and education, typically low in Slovakia, is an important additional factor.

Many OECD countries provide online hubs for their citizens abroad advertising job, training, business and research opportunities in the home country (DFA, 2015). Promoting ties between the diaspora and the country of origin can be an important source of knowledge transfer. Moreover, surveys among Slovak researchers abroad confirms that those who keep some business ties with Slovakia are more likely to consider returning home (To da Rozum, 2018).

Figure 28. A high proportion of Slovaks live abroad

People living abroad as per cent of the population of their country of origin (2016)[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); OECD Economic Outlook*: *Statistics and Projections (database).*

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Immigration can be another source of qualified workers. Inflows have increased recently from a low level and now roughly balance emigration. A currently approved measure aims to shorten residency approval for non-EU workers from 90 to 30 days for certain jobs. Moreover, since May 2018 employers hiring foreigners in occupations in shortage where unemployment is below 5% are exempted from labour market tests – compulsory time to post a vacant position on the labour office website to ensure that there are no Slovak workers available for vacant posts (Table 14). However, the exempted occupations are mostly low and middle-skilled jobs, because the definition of occupations in shortage is based on labour office data, where high skilled vacancies are rarely registered.

Table 14. Past OECD recommendations on immigration

Topic and summary of recommendations	Summary of action taken since 2017 *Survey*
Simplify visa and residence procedures for skilled foreign workers.	New measures have been introduced to improve the access of highly skilled migrants from Non-EU member states to the Slovak labour market, including shortening the time for working permits in jobs with prevalent labour shortages.

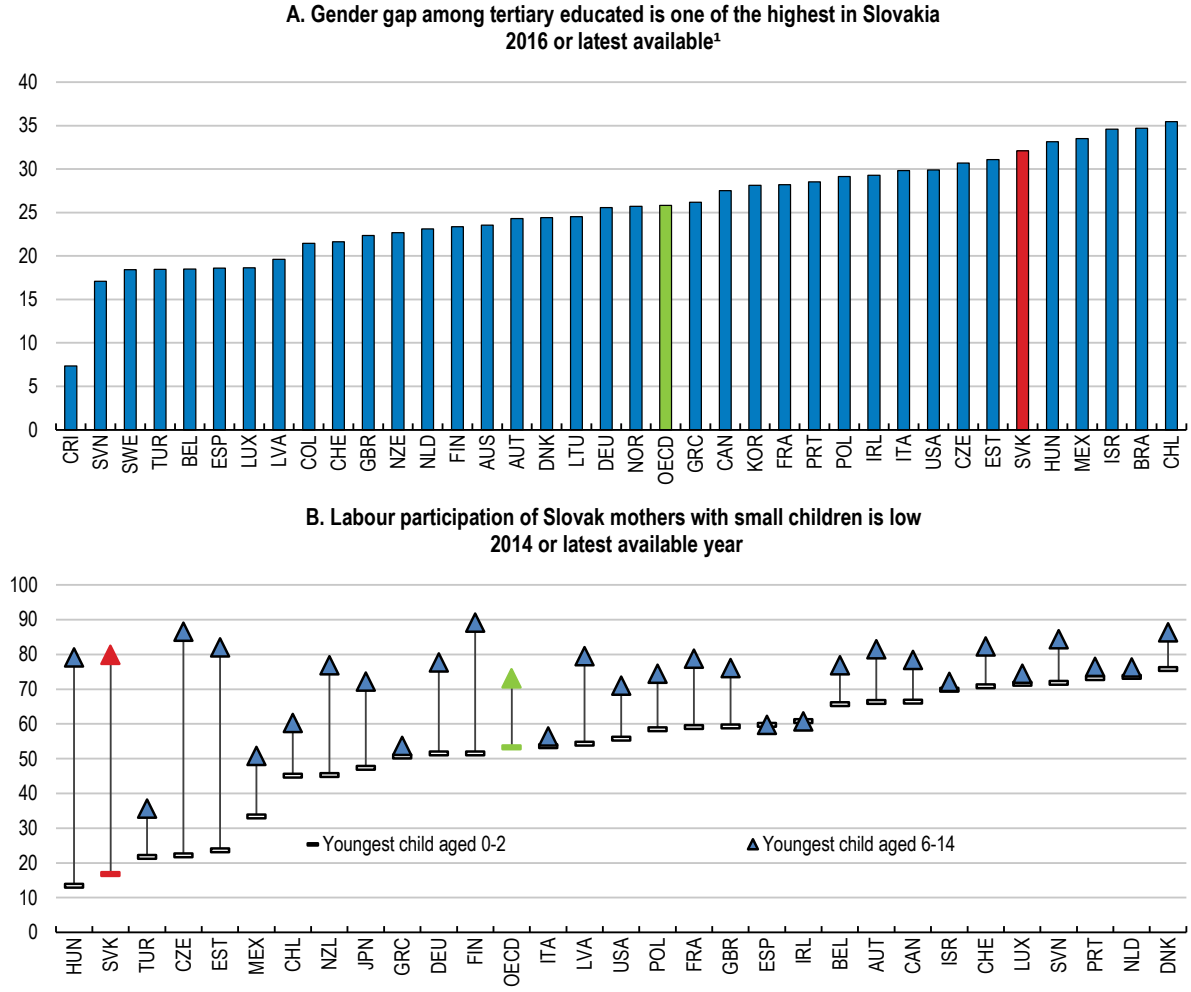
Therefore, reducing the maximum time for hiring procedures of non-EU/EEA workers would be desirable for all occupations. While the process should be simplified and transparent, overall numbers could be regulated through rationing or an auction system, for example. Care has also to be taken to design fair and acceptable rules for family members and children subsequently born in Slovakia. The government also needs to ensure that immigrants and their families have good access to education, employment services and housing conditions for highly skilled foreigners should be eased further. For example, the conditions for attributing Blue Cards, which grant special residency rights and work

permits to highly skilled migrants from outside Europe, are stricter than in other EU countries.

Enhancing gender equality in the labour market

The gender pay gap is one of the highest in the European Union (Rizman, 2017) (Figure 29, Panel A). Having a child significantly affects women's earnings, but not men's (Rizman, 2017). This is in line with the experience of some other countries, which show that the gender wage gap is associated with having children (Coudin et al., 2018), but professional choices in line with gender stereotypes and discrimination can be other factors. The maternal employment rate is one of the lowest among OECD countries, particularly for women with small children (Panel B). Research shows that long career breaks can increase the gender wage gap significantly, with subsequent impacts on pension rights.

Figure 29. Labour market outcomes of women are weak, particularly for mothers with small children



Note: Estimates of earnings used in the calculations refer to the gross earnings of adults with income from full-time, full-year employment, except for Ireland, Latvia, Luxembourg, Mexico, and Turkey where data refer to earnings net of income taxes.
Source: OECD Education at a Glance 2017; OECD Education at a Glance 2018

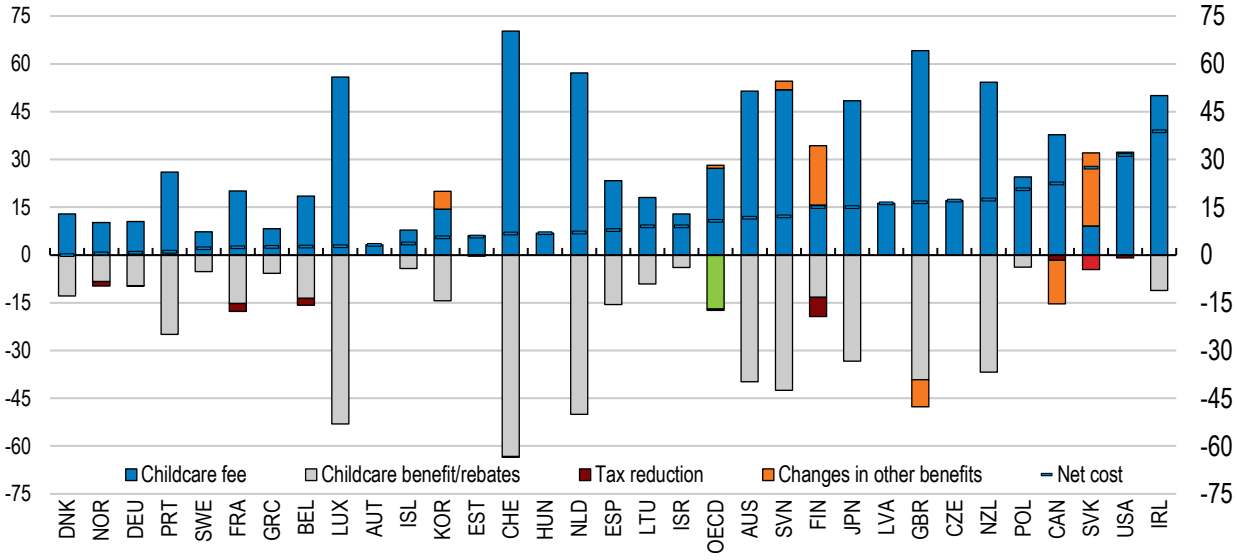
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Employers make little use of options to reconcile work and parenthood or long-term care. In addition to the lack of pre-school facilities mentioned earlier (see section on education above), public childcare facilities are insufficient and private facilities expensive. Flexible employment arrangements to help reconcile family responsibilities and work are less common than in other OECD countries (Hidas and Horvathova, 2018). Family policies in Slovakia encourage mothers to look after their children at home up to the age of three. Fathers can take paternity leave and more and more do. However, parental leave, which follows this period and comes with a much lower benefit, is almost exclusively taken by mothers and it can last 130 weeks, one of the longest periods in the OECD. This accentuates the gender gap. The labour market prospects of single mothers and mothers with low skills are most severely affected (Hidas and Horvathova, 2018).

Expanding good quality pre-school facilities and childcare should be a priority. Part of parental leave should be available for partners only, to facilitate their participation in childcare. In Iceland and Sweden this led to a doubling in the number of parental leave days taken by spouses or partners (OECD, 2016b). Increasing childcare benefits, much higher in some countries, would help low-income mothers manage work and family commitments (Figure 30).

Figure 30. Childcare costs for a single-parent family are substantial in Slovakia

Net childcare costs for a two-child (aged 2 and 3) single-parent family with full-time earnings at 50% of average earnings, as a % of average earnings (AW), 2015



Note: Data reflect the costs of full-time care in a typical childcare centre for a two-child single-parent family, where the single parent is in full-time employment and the children are aged 2 and 3. Gross earnings for the single parent are set equal to 50% of average earnings. 'Full-time' care is defined as care for at least 40 hours per week. Average earnings/the average wage refers to the gross wage earnings paid to average workers, before deductions of any kind (e.g. withholding tax, income tax, private or social security contributions and union dues) (see OECD, 2007: 186-187). Data for countries marked with an * are based on estimates for a specific region or city, rather than for the country as a whole. See the OECD Tax and Benefit Systems website (http://www.oecd.org/els/soc/benefits-and-wages.htm) for more detail on the methods and assumptions used and information on the policies modelled for each country.
Source: OECD Tax and Benefit Models 2015.

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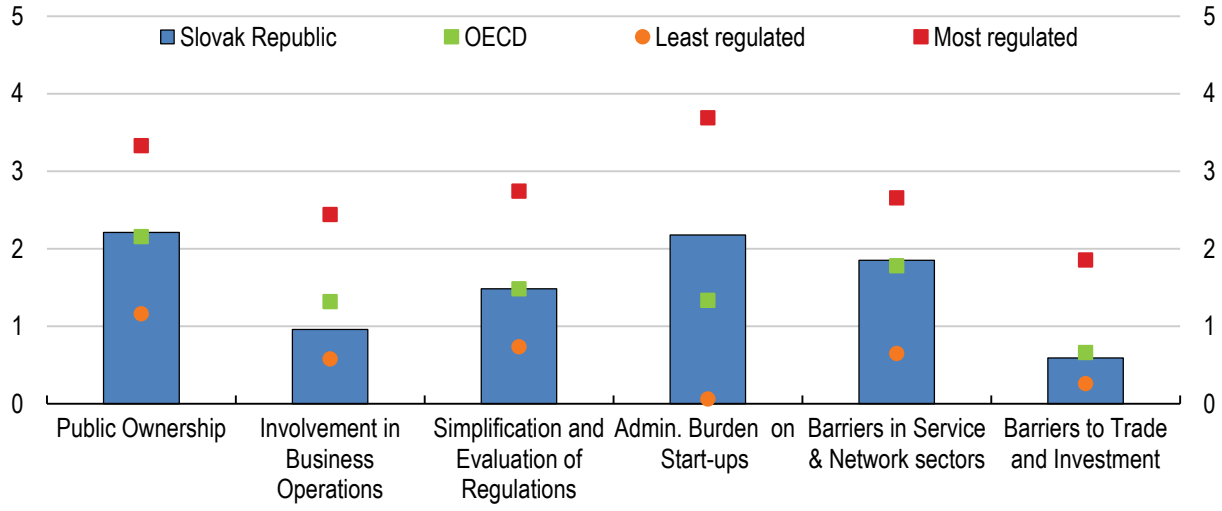
Enable entrepreneurship and innovation to support long-term growth

Strong per capita income growth, stronger than in many OECD countries, is projected to continue into the near future. But growth has been based on declining unemployment and foreign investment. The domestic sector seems to have contributed little. For the long term, unemployment may have not much further to fall, and shortages of skilled labour may dampen foreign investment. Improved education can, over time, increase the skill pool available. Diversifying Slovakia's economy and strengthening productivity through more innovation and a stronger capacity to adopt new technologies, in both domestic and foreign-owned firms, will require a vibrant business environment and a stronger research base. Beyond a more efficient and effective judiciary there are remaining regulatory hurdles which could be reduced. In addition, financing, evaluation and control mechanisms in tertiary education and research that are geared more towards rewarding quality would go a long way towards strengthening innovation.

Regulation

The regulatory environment, as assessed by OECD indicators of product market regulation (PMR), has become much less strict over the past few decades. Where regulation can be reduced without jeopardising health, safety or other factors in well-being, this can ease entrepreneurship and be beneficial for growth. The PMR indicators in Figure 31 would suggest that regulations affecting start-ups could be reduced.

Figure 31. Product market regulation is generally less strict

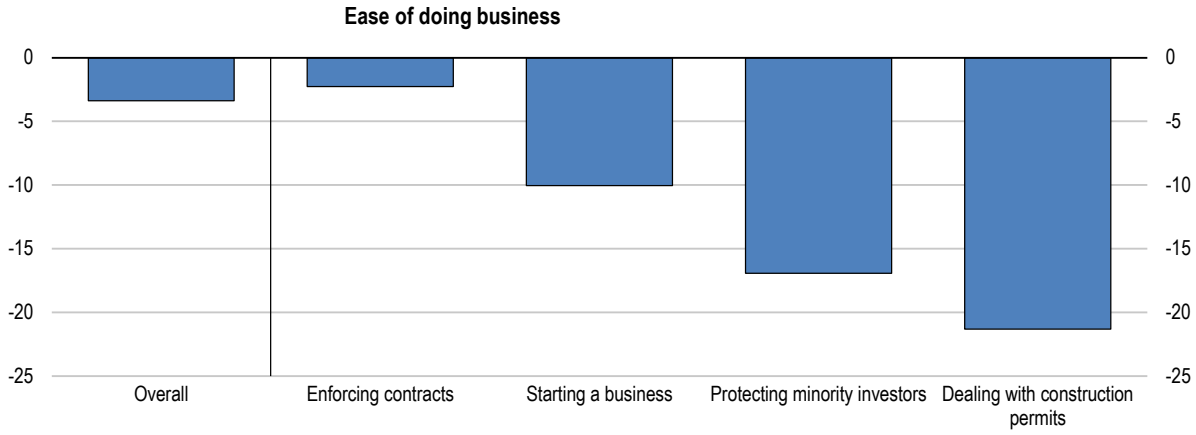


Source: OECD

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Other indicators, such as those in the World Bank's Doing Business report, cite shortcomings in contract enforcement, due to the slow pace of dispute settlement noted earlier (Figure 32).

Figure 32. Inefficiency in the government sector and bureaucracy undermine business environment



Note: The distance to frontier (DTF) measure shows the distance of each economy to the "frontier," which represents the best performance observed on each of the indicators across all economies in the Doing Business sample since 2005. OECD high income includes 36 OECD countries excluding Mexico and Turkey.
Source: World Bank, Doing Business 2019.

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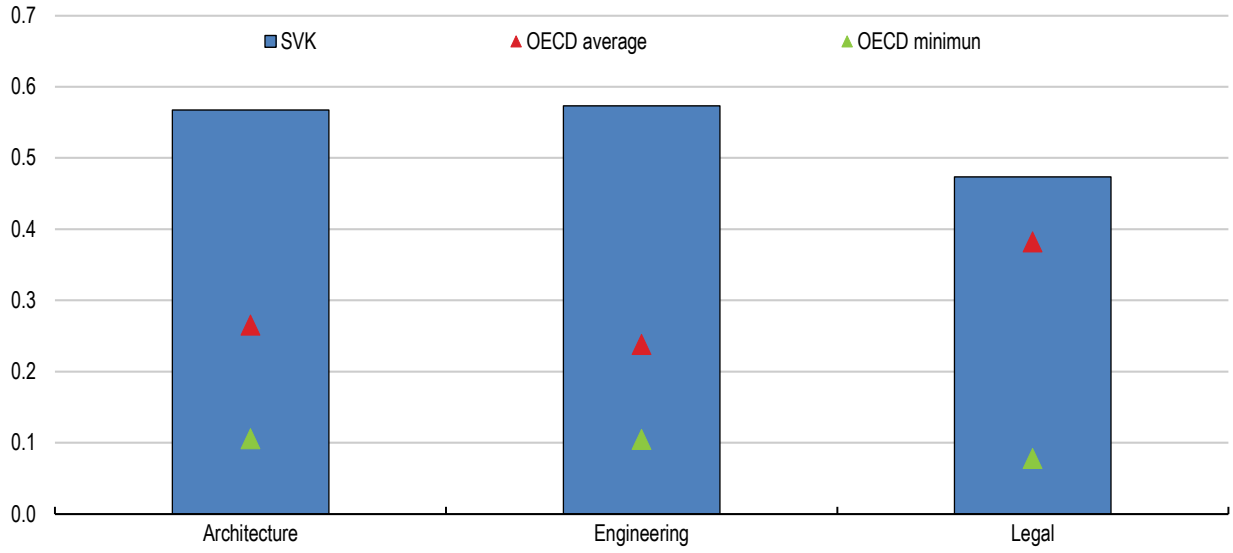
The bankruptcy regime is very slow to resolve insolvencies (World Bank, 2019). The legislation is relatively inflexible when it comes to adjusting the workforce and excessively stigmatising for honest entrepreneurs, making no distinction between honest and fraudulent entrepreneurs (World Bank, 2019; Adalet McGowan and Andrews, 2018).

World Bank indicators also highlight problems, for example inefficient procedures for starting up a business, guaranteeing the protection of minority investors or granting building permits. The government took action in a number of these areas, including construction permits, in 2017-18. Doing Business finds that, on average and prior to these latest actions by the government, it took 300 days to obtain a building permit for a warehouse – the OECD average is 153 days (World Bank, 2019). Such delays are found in other areas of public administration, and obtaining or accelerating permission often depends on personal connections or even on making side-payments to officials (Eurobarometer, 2017).

Restrictions on foreign businesses entering the services sector, especially providers of legal services, architects and engineers, are onerous. Easing them would promote diversification into services, including through FDI (Figure 33). The government has taken steps to encourage more investment projects with higher value added. Since 2018 criteria for investment support eligibility no longer focus on the number of new jobs created but on the average salary of new jobs. The idea is to attract high value-added activities, such as research centres. This aid, which varies between 25% and 35% of investments in accordance with EU regulations, concerns around 20 projects a year, some 16 of which are submitted by foreign enterprises.

Figure 33. Entrepreneurship barriers affect professional services

OECD Services Trade Restrictiveness Index (STRI)[1], scale from 0 to 1 (most restrictive), 2017



Note: They are calculated on the basis of the STRI regulatory database, which contains information on regulation. The STRI database records measures on a Most Favoured Nations basis. Preferential trade agreements are not taken into account.
Source: OECD (2018), *Services Trade Restrictiveness Index*.

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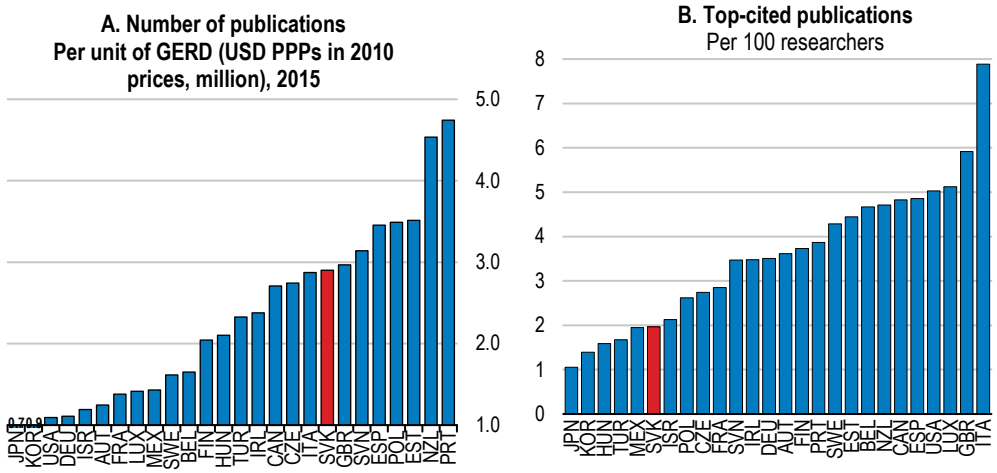
Research and innovation

There is a key role for tertiary education in providing skills to develop and introduce new technologies. However, the quality of tertiary education is among the lowest in the OECD (OECD, 2017a; U21, 2016). Partly for this reason, more than 14% of Slovak students study abroad, the second-highest level in the OECD, mostly in the Czech Republic (OECD, 2017a).

Work to improve quality is hampered by an accreditation system for tertiary education institutions that lacks transparency and independence (OECD, 2017a). Its members may have a conflict of interest because they work in higher education institutions. Labour market relevance is not a key criterion for approval of programmes, and funding for research does not effectively distinguish high- from low-quality research (Chapter 2). Hence, publication rates are relatively high, but quality is low (Figure 34). The government recently launched an ambitious reform aiming to address these shortcomings and align the quality-assurance system with international standards and introduce new methods for research evaluation. It will be important to ensure that external experts are appointed for quality evaluation. More weight should be given to the quality and impact of research, rather than the quantity, and good methods for assessing teaching quality are equally important.

Figure 34. Slovak researchers produce many publications, but their average quality is poor

Number of documents and percentage among world's 10% most cited, average 2003-2012



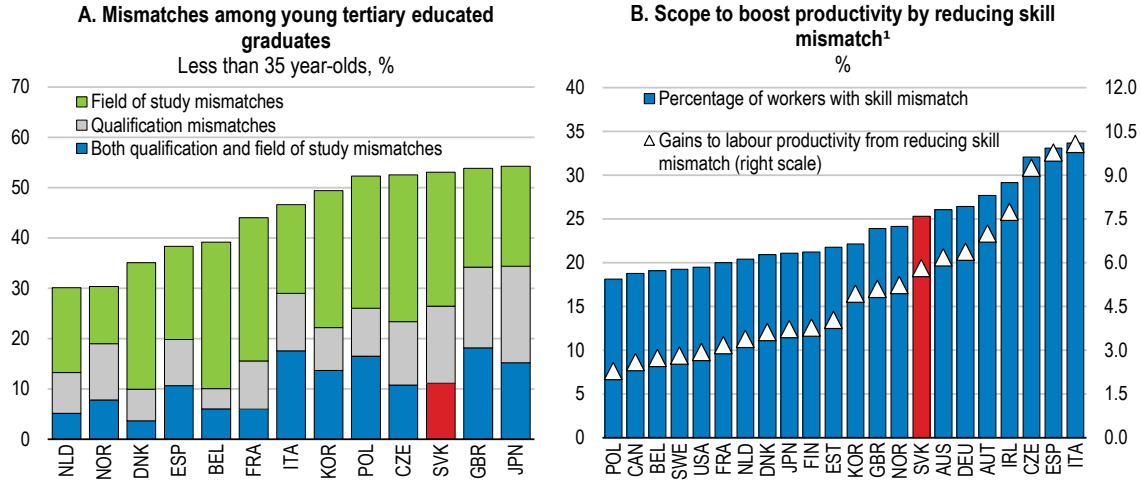
Note: Gross domestic expenditure on R&D in million constant USD (constant prices and PPPs).
Source: OECD (2016), *OECD Science, Technology and R&D Statistics (database);* OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society* (http://www.scimagojr.com).

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Slovak tertiary education puts too little emphasis on practical experience, contributing to significant labour market mismatch among young tertiary graduates. This reduces productivity and earnings (Figure 35). Qualifications are particularly poorly matched to the needs of businesses involved in robotics and IT solutions (Chapter 2). Graduate tracking systems, educational counselling, and career guidance, already mentioned in the government education strategy should be developed to help students make better informed choices. They can also guide funding and be used for policy evaluation. Recent steps in this direction, including the creation of centralised information outlets for students and their parents, are welcome but should be expanded beyond dual work-study programmes (Minarechová, 2018). For example, Poland launched a national system for tracking graduates' employment by matching employment records from social security with universities' data, providing reliable information on graduates' situation in the labour market, including their employment and salaries (EC, 2016). Tertiary education programmes should also be developed that have a greater professional focus: there are no vocational programmes at the Bachelors level in Slovakia, and financial incentives push universities to produce too many students with little practical experience at the Masters level (OECD, 2017a).

The Slovak education system pays insufficient attention to soft skills, such as the ability to work with others, share information, organise one's work, and communicate with, influence and manage others (Figure 36). Providing opportunities for management training for those with management responsibilities is one way forward. Developing management skills, especially for SMEs, could also be encouraged as in a number of OECD countries (OECD, 2017d). Moreover, complementary to a management skill development programme, Slovakia could emulate more specific policies such as developing business coaching programmes for SMEs (as in New Zealand) or supporting the establishment of management and entrepreneurs' networks to disseminate the adoption of good practices (as in the Netherlands and Finland) (OECD, 2016c).

Figure 35. Qualification and educational mismatches in Slovakia are high and costly



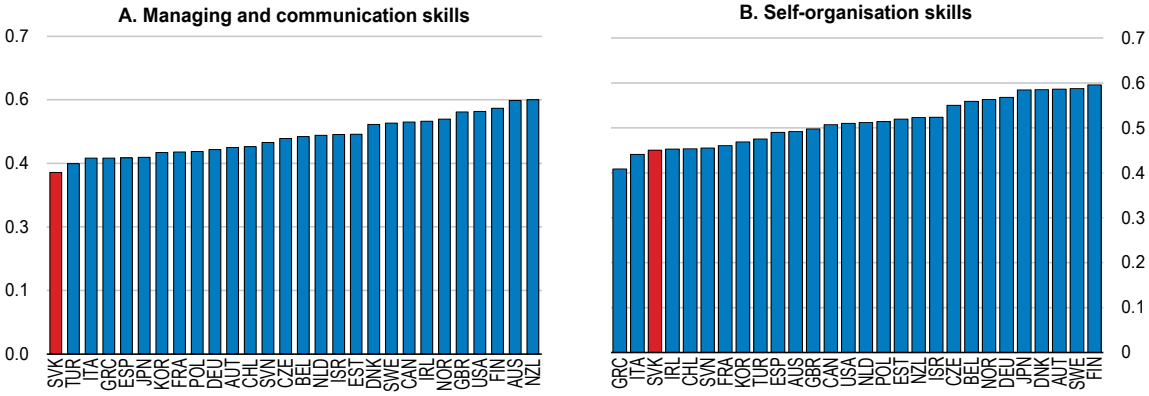
Note: The figure shows the percentage of workers who are either over- or under-skilled and the simulated gains to allocative efficiency from reducing skills mismatch in each country to the best practice level of mismatch. The figures are based on OECD calculations using OECD (2012), *Survey of Adult Skills*.

Source: OECD (2012), *The Survey of Adult Skills (PIAAC)*; M. Adalet McGowan and D. Andrews (2015), "Labour market mismatch and labour productivity: Evidence from PIAAC data", *OECD Economics Department Working Paper*, No. 1209, OECD Publishing, Paris.

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Figure 36. Slovak workers' soft skills seem underdeveloped in a number of domains

Workers' task-based skills, index, 2012 or 2015



Note: A higher score is associated with a higher frequency of performing these tasks on the job. Data for Belgium refer only to Flanders, and data for the United Kingdom refer to England and Northern Ireland jointly.

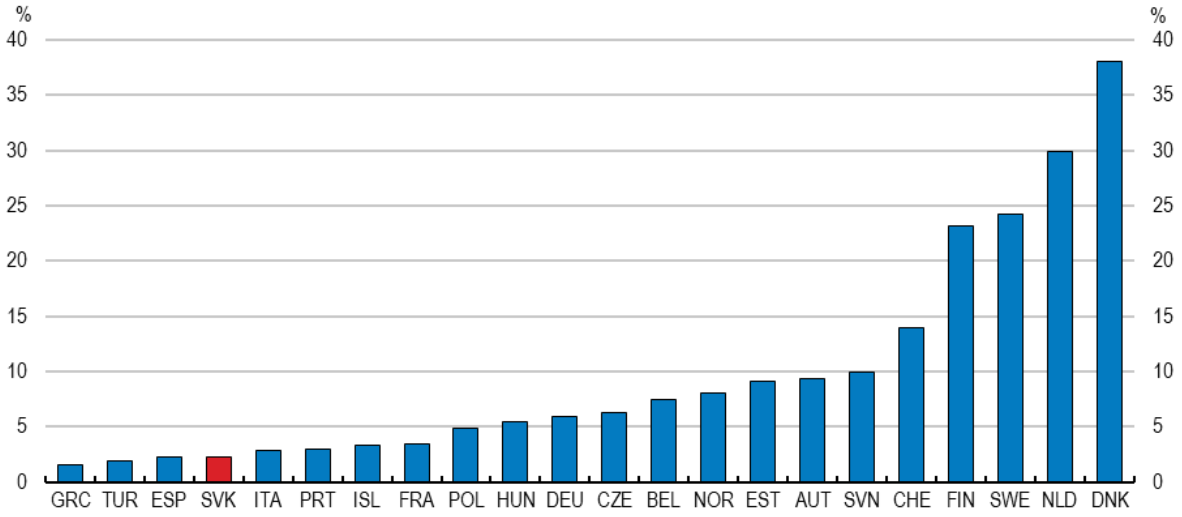
Source: OECD (2017), *Skills Outlook 2017: Skills and Global Value Chains*, OECD Publishing, Paris.

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Slovak tertiary education is relatively closed to international influences despite the increasingly internationalised nature of research and business. Few courses are held in English (Figure 37), with foreigners comprising only 6% of teachers, compared with more than half in many of the world's best universities (To Da Rozum, 2018). The number of foreign students is 5%, less than half of the OECD average. The lack of international collaboration with institutions in different countries lowers the quality of research (OECD, 2017c). To attract high-quality foreign teachers, universities need to be able to offer them well-remunerated and high-quality research positions. As an intermediate step, the government should promote academic-exchange programmes and scientific collaboration.

These incentives can help improve networking and enhance the likelihood that research will be recognised or adopted by the private sector (OECD, 2017c).

Figure 37. Proportion of tertiary education programmes provided in English, 2013-14



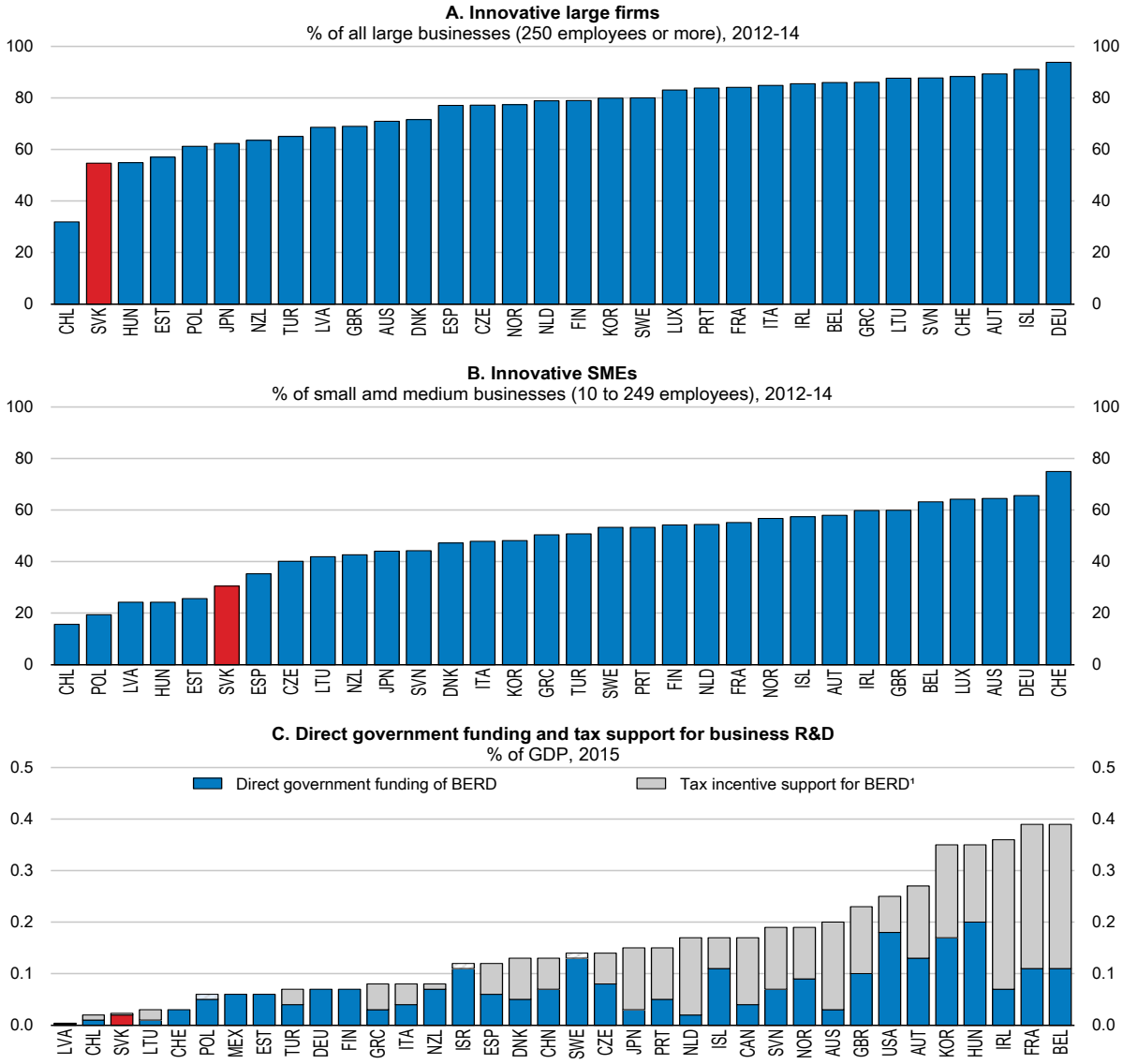
Source: B. Wächter and F. Maiworm (2014), "English-Taught Programmes in European Higher Education, The State of Play in 2014", *ACA Papers on International Cooperation in Education*.

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It is also important to stimulate private-sector research and innovation. The low level of R&D spending by businesses reflects, on the one hand, the limited interest shown so far by multinationals located in Slovakia to develop research activities in the country and, on the other hand, the low investment by local firms, especially SMEs, in this domain (Figure 38, Panels A and B).

The government has strengthened tax incentives to stimulate research and innovation initiatives, which were previously very limited (Table 15; Figure 38 Panel C). Tax incentives may help boost private investment in knowledge, since returns on R&D investments are difficult to appropriate by firms as some of the resulting outcomes will leak out or "spill over" to other firms. International experience shows that, to be effective, such policies must include rigorous *ex ante* and *ex post* evaluation systems (Appelt et al., 2016). Otherwise, inefficient programmes or even misuse of funds can go undetected.

Figure 38. Boosting innovation in the private sector is necessary



Note: Data on tax incentive support not available for Israel, Poland and Sweden.
Source: OECD (2017), *OECD Science, Technology and Industry Scoreboard 2017: The digital transformation*, OECD Publishing, Paris.

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If the authorities cannot monitor generalised tax incentives effectively, they should switch to discretionary schemes, where projects must respect clear criteria before support is paid. Independent monitoring and evaluation of outcomes is essential to building up a picture of which kinds of support work well in Slovakia. This applies whether the support itself is paid through the tax system or through grants. To support innovation a well-designed and properly focused strategy based on closer co-operation between private and public research could help strengthen the country's research capacities in areas such as the automotive sector where expertise already exists. Creating joint public-private centres of excellence for some of these domains would be one way to facilitate this cooperation and could also

increase the country's appeal for the research teams of large multinationals. Such "centres of competence" exist in many countries. Austria has a COMET (Competence Centres for Excellent Technology) programme; one auto-industry-related example is a digital mobility programme that aims to turn ideas into research projects within six weeks. The UK has "Catapult" centres with similar objectives. A survey of competence centre programmes in different countries, with differing structure and management can be found in TAFIE (2016).

Table 15. Past OECD recommendations on innovation

Topic and summary of recommendations	Summary of action taken since 2017 *Survey*
Reform the R&D tax credit to make it refundable. Promote cluster facilitators and a competition-based funding process.	100% of R&D spending can now be deducted from the tax base, increased from 25%. At the same time, in 2018 the so-called patent box was introduced; this exempts revenues coming from the use of selected intangible assets (patents, utility models and software) from taxation.
Provide technical assistance to regional authorities to develop their capacities and involvement in assessing and steering innovation policies at the regional level.	No action taken

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Annex. Progress in structural reform

This Annex reviews actions taken on recommendations from the previous Survey that are not covered in tables within the main body of the Key Policy Insights chapter above. Recommendations that are new to this Survey are listed at the end of the Executive Summary and the relevant chapters.

Main recommendations	Action taken since May 2017
Financial issues	
Stand ready to further tighten macro-prudential policy settings if financial-sector risks do not diminish.	Countercyclical capital buffer rate was increased further from 1.25% to 1.5%. The limits on LTV has been tightening further. Gradual phase-in of the rules from July 2018 to July 2019.
Fiscal issues	
Pursue budget balance by 2019 as planned.	The government`s draft budgetary plan has confirmed the plan to reach a balanced budget by 2020.
Supplement the current debt ceilings with a much lower non-binding debt target. Implement the promised spending ceilings.	The constitutional act on fiscal responsibility assumes continuous decline of the lowest sanction band to 40 % of GDP (between 2018 - 2027).
Create enough room over time under the debt ceiling to allow automatic stabilisers to work.	According to the recent government forecast, debt will become fully compliant with the national ceiling already in 2018 and reach 45 % of GDP in 2020.
Implement the constitutional provision of multi-annual binding spending ceilings to reinforce budget discipline in upturns.	The Ministry of Finance announced the testing of expenditure ceilings in the general government budget in the near future.
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 those joining the labour market for the first time.	No action taken.
Taxation	
Merge the tax/customs and social security agencies to raise revenues. Link the IT systems of the tax administration and banks.	No action taken.
Further shift the tax burden from labour to less distortive bases such as property, alcohol and environmental externalities such as air pollution.	No action taken.
Further enhance the efficiency of tax administration. Continue efforts to improve tax collection.	The Third Action Plan on the fight against tax fraud for the years 2017–18 (21 measures) has been introduced including the new tax compliance index that assesses taxpayers' risk profiles, mandatory e-communication for taxpayers, and prefilled electronic tax returns for motor vehicle tax.
Raising the efficiency of public spending	
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.	No action taken.
Further boost public-spending efficiency by continuing to expand and deepen spending reviews ("Value for Money" initiatives).	The 2017 the Ministry of Finance published spending reviews on education, environment, labour market policies and the social policies reviewed expenditures. In October 2017, the government has also approved three new spending reviews (agriculture, integration of the at-risk-of-poverty-and-social-exclusion groups and spending review of employment and remuneration in general government).
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.	New measures have been adopted, including performance evaluation, new recruitment procedures, and a new procedure to help high performing civil servants who were dismissed due to organisational changes in their service offices to get back to work. A central information system for the civil service has been established, which will help the Government Office to make informed decisions regarding the civil service based on data from all service offices.
Use performance budgeting and e-government to modernise management. Train more staff in computer and internet skills.	No action taken.

Main recommendations	Action taken since May 2017
Encourage joint public-service delivery for small municipalities and strengthen the revenue-raising power and spending responsibility of viable local government.	No action taken.
Further strengthen the efficiency and independence of the judicial system. Continue to increase judicial capacity in particular through investment in IT systems.	New measures have been introduced, including an assessment of judges' work by the members of professional assessment juries/commissions named by the Judicial Council of the Slovak Republic.
Product market reforms	
Ease regulation in retail trade. Lower licencing restrictions for legal services, architects and engineers.	No action taken regarding retail trade.
Further reduce public-sector involvement in network industries.	No action taken.
Further reduce bureaucratic costs and make regulations more business-friendly.	New measures to reduce bureaucratic costs were introduced in 2017, which among others will provide courts with access to the tax debtor's database. In 2018 the Government adopted a long-term strategy for better regulation "RIA2020-Strategy for Better Regulation, which will implement advanced methodologies and tools for better regulation including the use of available digital solutions (eg. e-consultations)
Pursue further entry of private capital in electricity generation and distribution and gas distribution sectors.	No action taken.
Labour market reforms	
Develop further training as well as job-search support, and phase out public-works programmes.	The number of training programmes has increased, mainly requalification courses focusing on obtaining soft and technical skills (communication skills, personal development, computer skills and language skills).
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.	The Social Policy Institute has conducted an evaluation of the ALMPs.
Enhance advanced skills and education	
Further increase teachers' salaries, particularly for starting teachers, conditional on improved teaching quality through high-quality professional development and increased focus on disadvantaged pupils.	Implementation plan for Education 2018 include increase in the teachers' salaries by 10% in 2019 and 10% in 2020.
Increase the transparency and independence of the tertiary quality-assurance framework to international standards.	The new measure has been adopted in 2018 in which main principles of the ESG 2015 were introduced.
Ease the conditions for foreign professors and researchers to teach at Slovak universities.	Amendment to the Act on Higher Education approved by the parliament in September 2018 opens positions of professors and docents for a period of three years also to applicants who do not hold respective titles (professor or docent).
Introduce a graduate tracking system to improve responsiveness of tertiary education to labour market needs. Develop professionally oriented vocational bachelors programmes. Strengthen careers counselling.	No action taken.
Develop a system of information and cultural outreach to expatriate communities.	No action taken.
Attract foreign students by expanding the number of tertiary courses in English, and strengthen scholarship programmes.	The Ministry of Education has increased scholarship funding in the National scholarship programme by 10 % (up to1,1 mil. Euro) in 2018.
Improve the health- and long-term care systems	
Further centralise hospital procurement, and professionalise their management.	The MoE finalised central procurement of CT scanners and beds.
Introduce performance-related pay for hospital doctors, and decouple salaries from national average wage.	No action taken.
Further increase medical school places for general practitioners, and expand their prescription-writing authority.	No action taken.

Main recommendations	Action taken since May 2017
Expand fee-for-service payments for primary care procedures of general practitioners.	No action taken.
Implement e-health and e-prescription programmes.	E-prescription has been fully implemented, achieving roughly 80-85% of penetration, e-health was made mandatory as of January 2019.
Innovation	
Reform the R&D tax credit to make it refundable. Promote cluster facilitators and a competition-based funding process.	100% of R&D spending can now be deducted from the tax base, increased from 25%. At the same time, in 2018 the so-called patent box was introduced; this exempts revenues coming from the use of selected intangible assets (patents, utility models and software) from taxation.
Environment and green growth policy	
Gradually phase out coal subsidies and tax breaks for energy use.	No action taken.
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
Phase out support to renewables as they become competitive.	The Ministry of the Environment has prepared the draft legislation that will introduce an auction system and a Feed-in-Premium will be paid to producers based on auction competition.
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 biodiversity protection. Continue cleaning up contaminated sites, applying the polluter pays principle.	A comprehensive strategy for protected areas has been incorporated into the forthcoming Environmental Strategy up to 2030.

Thematic chapters

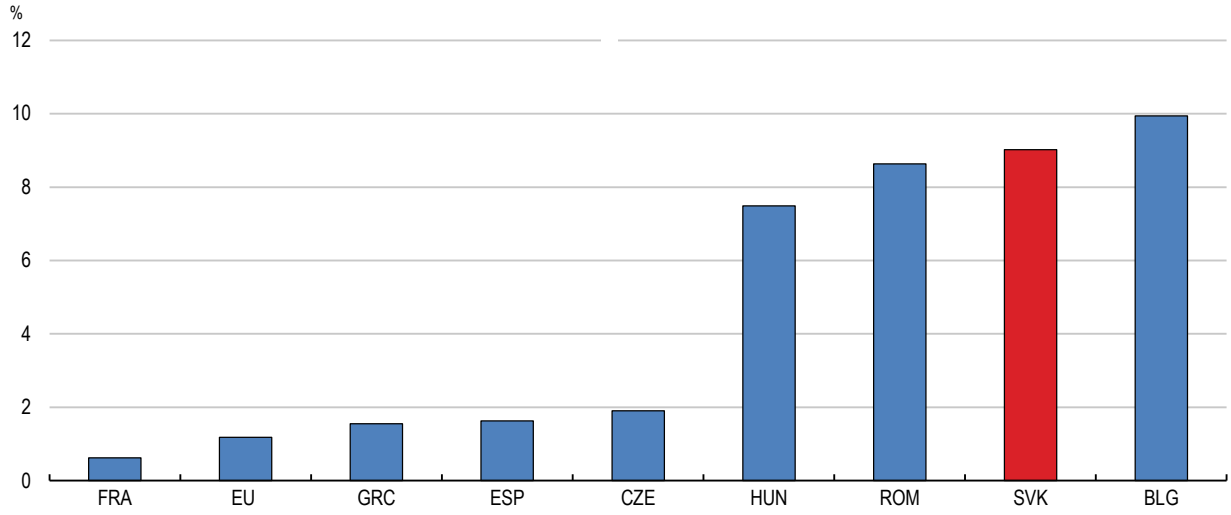
Chapter 1. Enhancing the social integration of Roma

Roma account for almost one-tenth of the population in the Slovak Republic. They live mostly excluded from the general population in concentrated settlements, separated neighbourhoods or ghettos. The majority live in poverty and face social exclusion in almost all aspects of everyday life. Only a small share of Roma work, and a majority suffer from long spells of unemployment, their educational attainment is low, and a large number are illiterate. Social exclusion is further exacerbated by rising general animosity and mistrust between Roma and non-Roma groups. This calls for immediate policy action. The government should ensure easy access to all public services and provide additional support for the disadvantaged Roma communities. Individual policies should be effectively coordinated, because the problems that the Roma are facing are interconnected. A necessary precondition for successful Roma integration is the support of the general population. Policy interventions towards Roma integration should be accompanied by measures to eliminate the prejudices among parts of the majority population against their fellow citizens.

Roma in the Slovak Republic face extreme levels of social exclusion

Today, with an estimated population of around 12 million, Roma people are one of the largest ethnic minorities in Europe. The Slovak Republic has one of the continent's largest Roma populations (Figure 1.1). Estimates differ, but it is assumed there are between 400 000 and 500 000 Roma in Slovakia, accounting for 7-9% of its population (see Annex 1).

Figure 1.1. Estimated share of Roma in the EU (2012)



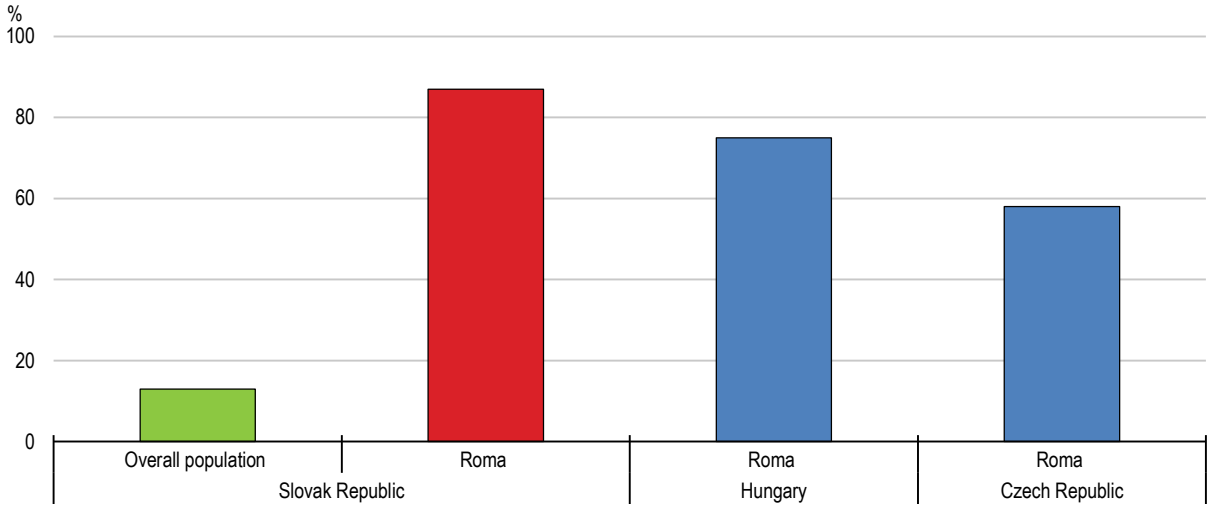
Note: Most data regarding the Roma is surrounded by uncertainty. The share represents the average of different estimates.
Source: Council of Europe, https://www.coe.int/en/web/portal/roma/

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The migration of Roma to the Slovak Republic dates back to the 13th century, when Roma were settling in suburbs and the edges of villages to develop their activities in crafts, trade and occasional seasonal work (Matlovicova et al., 2012). They were often subject to restrictive and exclusionary policies. Particularly before and during the Second World War, the Roma communities were often forcefully relocated and resettled, which has contributed to their spatial concentration. This formed the basis for the establishment of today's settlements, separated neighbourhoods or ghettos on the outskirts of villages and towns. The Roma communities vary based upon geographic location and the level of integration. Nevertheless, the average level of ethnic segregation is exceptionally high. Less than half of the Roma live dispersed among the general population and only one-third consider Slovak as their mother tongue (UNDP, 2014; UNDP, 2012).

The differences in living standards between Roma and the general Slovak population are striking. Per capita output of Slovak Roma is comparable to outcomes in sub-Saharan Africa (World Bank, 2012a). While the Slovak Republic has a comparatively low poverty rate, it is particularly pronounced among the Roma population. Findings from the EU-MIDIS survey (2016) show the vast majority of Roma are at risk of poverty, and almost one-third living in households where at least one person went to bed hungry in the past month. Moreover, poverty is not only higher compared to the general population but is the highest among Roma in neighbouring countries (Figure 1.2).

Figure 1.2. The vast majority of Roma are at risk of poverty



Note: At-risk-of-poverty based on the EU-MIDIS II survey are all persons with an equivalised current monthly disposable household income below 60% of the median equivalised national income. The equivalised disposable income is the total income of a household, after tax and other deductions, divided by the number of household members converted into equivalised adults.
Source: EU (2016), *Second European Union Minorities and Discrimination Survey, Roma – Selected findings*, European Union, Agency for Fundamental Rights.

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Roma face social exclusion in almost every aspect of everyday life (Table 1.1). Roma suffer from housing exclusion, depriving many households of heating, electricity and other essential domestic necessities. One-third of them are illiterate or state that they have difficulties reading (UNDP, 2012). Roma suffer from frequent spells of long-term unemployment, and only a small share have regular jobs.

Table 1.1. Selected indicators of Roma exclusion in Slovakia

	General population	Roma
At-risk-of-poverty rate (%)	13	87
Employment rate, 20-64, (%)	68	25
NEET rate - neither in work nor in education, aged 16-24, (%)	14	65
Drop-out rate from education, (%)	7	58
Share of households living without a toilet, bathroom and shower inside the dwelling	0.6	43
Share of households living in areas affected by crime, violence and vandalism	8.7	30

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

However, social exclusion does not reflect preferences, as for example most Roma express a desire for stable jobs, and employed Roma have higher rates of self-reported happiness (World Bank, 2012a). At the same time, one survey confirms that Roma parents prefer their children to complete secondary or tertiary education (Gatti et al., 2016).

Widespread poverty and social exclusion have significant effects on life expectancy, and available evidence indicates that large health inequalities exist between the Roma and non-Roma populations. The estimated gap in life expectancy at birth is 6 years, depending on the degree of integration of the Roma communities (MoF, 2019). The situation is even worse in some districts where these marginalised groups have a life expectancy of barely 53 years, compared with 70 years for non-Roma people (OECD, 2017a; Soltès et al., 2014).

More worryingly, Roma can be trapped in a cycle of poverty for generations. If a child starts her or his life with limited access to education and lives in poor housing conditions, there is a high probability she will end up in poverty too. Indeed, results for Roma show exceptionally weak upward social mobility between generations. Younger generations of Roma have almost the same poor labour market outcomes as their parents; upward social mobility for Roma born in segregated and concentrated residential areas is extremely low. The probability that Roma born in concentrated residential area become unemployed or earn less than minimum wage in irregular work is almost 70% (see Box 1.1)

Box 1.1. Intergenerational mobility is very low for Roma

Lack of upward mobility at the bottom of the income distribution means that many potential talents are missed out or remain under-developed (OECD, 2018a). Intergenerational economic mobility is measured by the elasticity between paternal earnings and the adult earnings of their children. The work of the Financial Policy Institute (Rizman, 2018) confirms that intergenerational mobility is high in Slovakia, except for the poorest households. Here the same approach was followed to estimate the intergenerational mobility for Roma.

The intergenerational earnings elasticity is derived from a regression-to-the-mean model:

$$lnY_{ti} = \alpha + \beta Y_{i,t-1} + \varepsilon_{t,i}$$

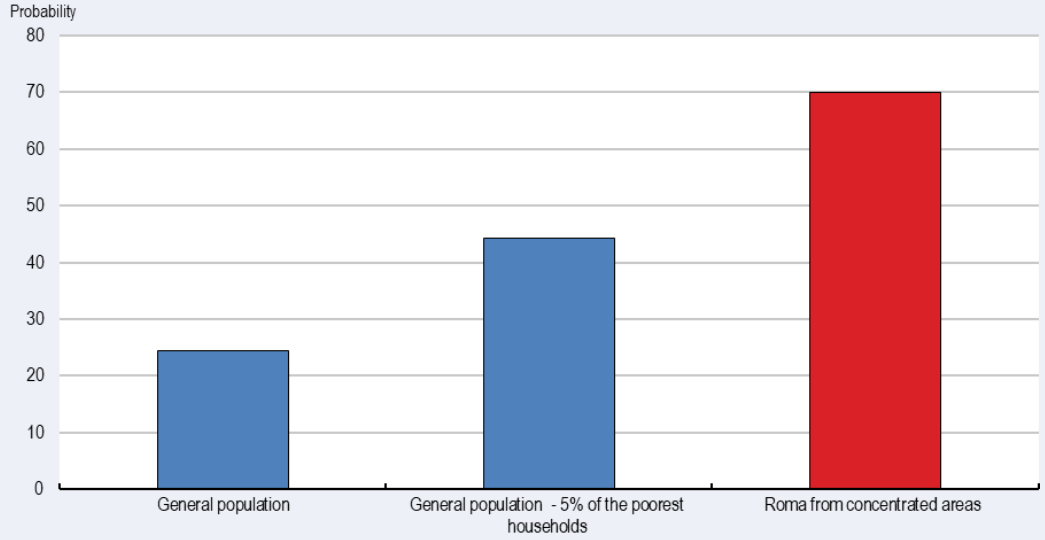
Where Y represents "permanent earnings" for individuals from a family indexed by i, across two generations, t and t – 1. Following the example of Corak (2013), Y refers to the earnings of fathers and sons, ε represents all other influences on the child's adult earnings, the constant term α captures the trend in average incomes across generations and β indicates the elasticity across generations within the same family in terms of the percentage difference in child earnings for each percentage point difference in parental earnings. Higher values of β indicate a higher probability that the earnings of parents predict the adult income of a child. In contrast, lower β values indicate that the relative earnings of parents are weak predictors of the earnings of a child.

The results show that the elasticity is much higher for Roma population whose elasticity is 39.5, while the elasticity for the general population is only 18.4. Consequently, the earnings of parents are much better predictors of the earnings of children in the case of Roma, and a greater fraction of economic disadvantage can be passed from parents to their children.

Particularly, for Roma children coming from concentrated areas the probability to end up in poverty is high. The probability to become unemployed or earn less than the minimum wage in irregular work is almost 70%, which is much higher compared to general population and even higher than the poorest non-Roma population (Figure 1.3).

Figure 1.3. Intergenerational mobility of Roma living in concentrated residential areas is low

Probability of being unemployed or earning less than a minimum wage according to parents' economic and ethnic status



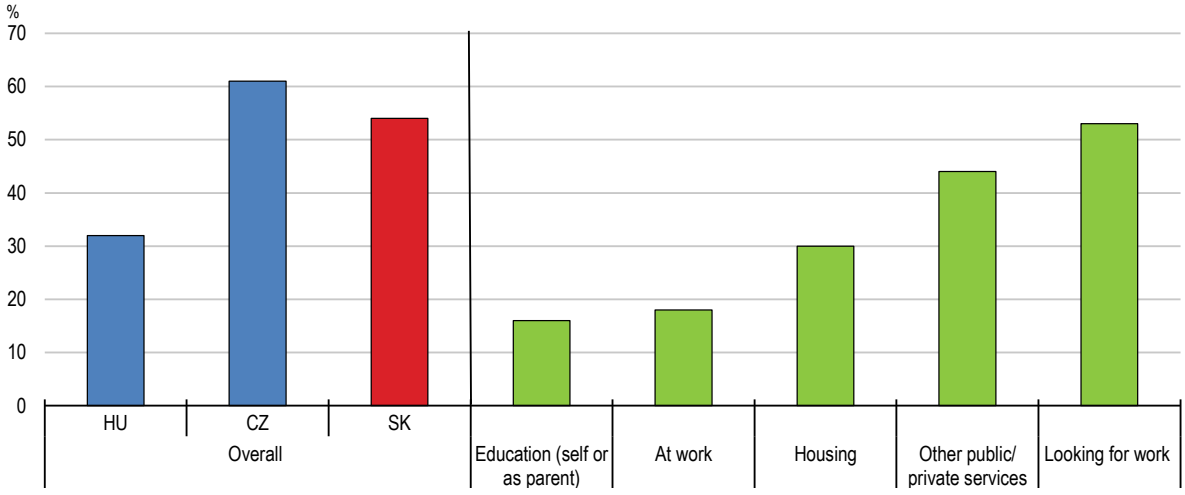
Source: OECD calculation based on J. Rizman (2018), "Jablko padá ďaleko od stromu", Institute for Financial Policy, Ministry of Finance of the Slovak Republic, Policy Brief, No. 09.

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Social exclusion is further exacerbated by general animosity and mistrust between Roma and non-Roma groups. Findings from EU-MIDIS survey (2016) show that more than half of the Roma population felt discriminated against because of their Roma background at least once in the past five years, particularly during job search (Figure 1.4).

Figure 1.4. Discrimination against Roma is widespread

Discrimination based on Roma background in the past 5 years in different dimensions (%)



Note: Out of all Roma respondents at risk of discrimination on grounds of Roma background in the past 5 years in at least one of the domains of daily life asked about in the survey.
Source: EU (2016), *Second European Union Minorities and Discrimination Survey, Roma – Selected findings*, European Union, Agency for Fundamental Rights.

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This was confirmed by an experiment performed by the Financial Policy Institute, which sent a batch of fictitious job applications to employers; only one-third of those with Roma names got a response, while 70% of the applications with non-Roma names received a response (Machlica et al., 2014). Comparable examples can be found in schools, where parents from the majority population tend to prefer schools without Roma children. More than half of the general population in Slovakia stated that they would feel uncomfortable if their children had Roma schoolmates (Eurobarometer, 2012). In some extreme cases physical walls and barriers have been erected to segregate Roma from the rest of society (ERRC, 2013).

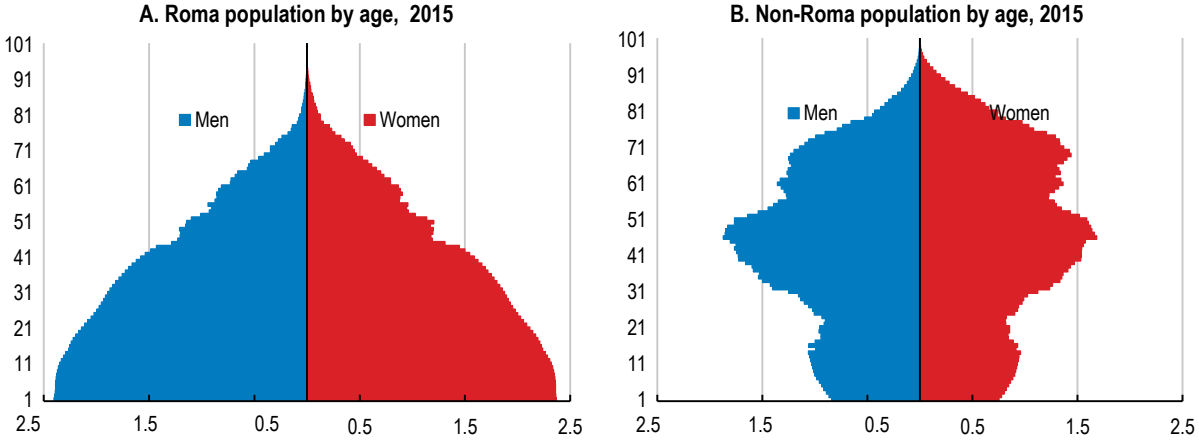
At the same time, the Roma population lack trust in local governments and public institutions. This is also partly related to their under-representation in party politics and public administration. The three officially registered Roma parties are politically insignificant. The 2012 parliamentary elections brought in the first Romani Member of Parliament since the country gained independence. There are increasing numbers of Roma mayors and members of local parliaments, but Roma are still severely under-represented in communal, provincial and national elective bodies.

Demographic trends underline the importance of Roma integration

Over the longer term demographic trends with a higher fertility rate among Roma imply that the Roma share of the population will increase. There is a large disparity in the demographic structure of the Roma vs non-Roma populations (Figure 1.5). Overall, the Slovak Republic has one of the fastest ageing populations in the OECD. The Slovak population, which is currently one of the youngest in the European Union is projected to become the 6th oldest by 2070 (EC, 2017a). In contrast, the Roma population is expected to increase. The median age of the Roma population is 24 years in comparison with 37.5 years for the non-Roma (Sprocha, 2014). The share of the Roma population is expected to increase from 8% to 14% by 2060 (OECD, 2017a).

The high level of social exclusion and increasing share of Roma population call for immediate policy actions. The government should prioritise integrating the Roma in order to build a more inclusive society, which ensures that nobody is left behind. Reaching this goal requires vision and long-term commitment.

Figure 1.5. The Roma have a much younger population



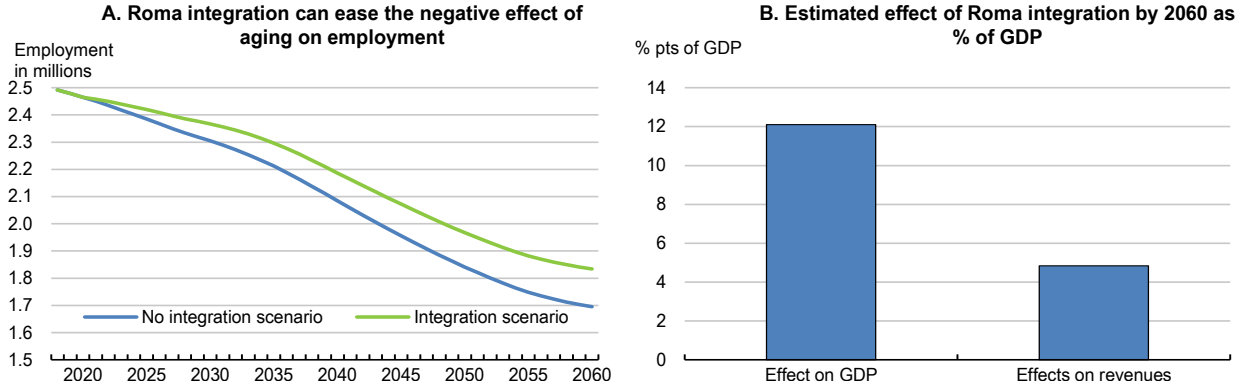
Source: B. Sprocha (2014), *Reprodukcia rómskeho obyvateľstva na Slovensku a prognóza jeho populačného vývoja*, INFOSTAT – Výskumné demografické centrum.

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Roma integration is an investment for the whole society

Successful Roma integration would also increase the supply of qualified labour, which can boost the economy, help alleviate labour shortages and also can help to mitigate the effects of rapid ageing (Figure 1.6, Panel A). Successful Roma integration requires additional funding (see below). However, investment in Roma integration cannot only help improve the well-being of disadvantaged groups, but also yield positive fiscal returns from improved employment prospects. For example, empirical estimates suggest that opening professions, such as medicine and law, to women and black people who did not previously pursue them due to occupational and human capital barriers, was an important source of growth for the US economy (Hsieh et al., 2018). The cost of excluding the Roma minority is significant (Marcincin and Marcincinova, 2009),

Figure 1.6. Social inclusion of Roma will have positive effect on the economy



Note: The estimated impact is calculated as a difference between two scenarios. (i) "No integration scenario" assumes no convergence of Roma in terms of relative productivity and the employment rate, which remain at the current level (ii) "Integration scenario" assumes convergence of the employment rate and productivity of Roma to the level of the general population by 2060. Both scenarios assume a rising share of Roma population. See more details in the Technical Background Paper.
Source: Geva, A., S. Hidas and G. Machlica (2019), "The benefits of social inclusion of Roma in the Slovak Republic", Technical background paper, forthcoming.

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Increasing the Roma employment rate and their productivity to the level of the general population by the end of 2060 would increase GDP by more than 12% (Figure 1.6) with the economy growing faster on average by 0.3 p.p. per year. At the same time, a higher employment rate and wages of the Roma will bring additional fiscal revenues, worth around an estimated 5% of GDP by 2060.

Access to public policies should be strengthened

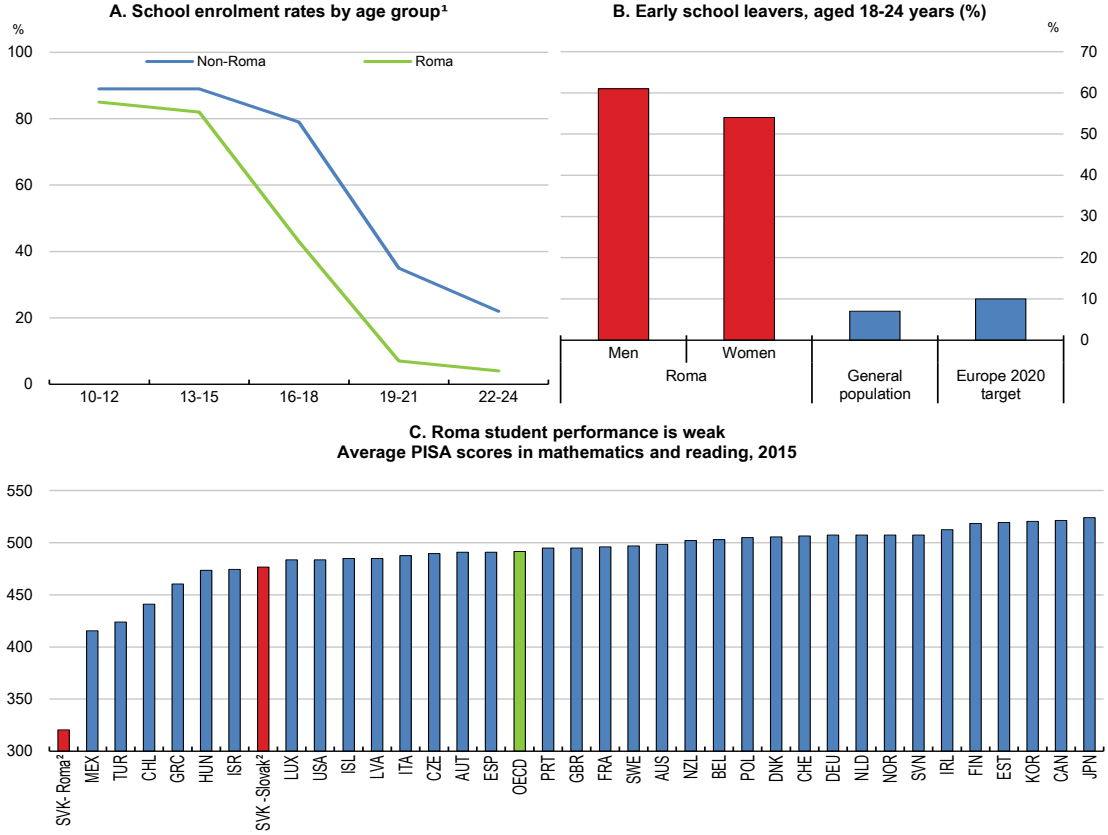
Ensuring access to public services and providing additional support is necessary to level the playing field for the disadvantaged Roma communities. This will require coordinated interventions in different policy areas including: (i) education, (ii) labour market policies, (iii) health care, (iv) housing and (v) financial inclusion.

The education system should become more inclusive

Education can be a powerful instrument for improving equity and reducing poverty. However, the Roma have low educational attainment: more than half of them drop out of school, and only a few manage to reach tertiary education (Figure 1.7, Panels A and B).

The outcomes of Roma students are significantly worse than those of their non-Roma counterparts. The performance difference in PISA scores between Roma and non-Roma pupils at the age of 15 years is about 160 points, which corresponds to almost five years of schooling (Panel C).

Figure 1.7. Roma education outcomes lag far behind



1. Share of Roma and non-Roma living in close proximity to Roma households who attend school by age group.
2. Each group is based on the same language spoken at home.
Source: OECD (2016), PISA 2015 Results (Volume I): Excellence and Equity in Education; OECD calculations based on PISA 2015 Database; EU (2016), Second European Union Minorities and Discrimination Survey, Roma – Selected findings, European Union, Agency for Fundamental Rights.

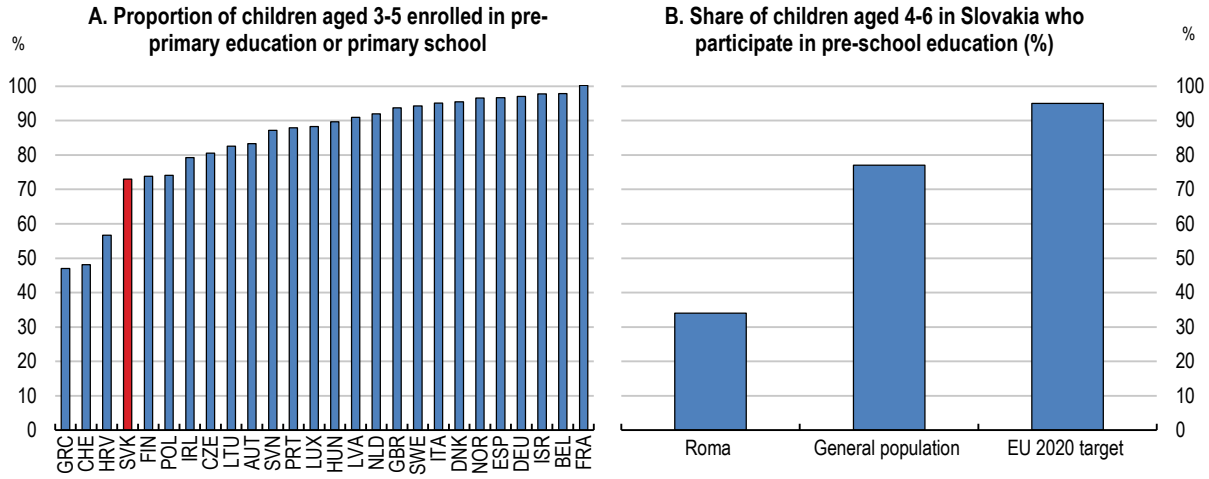
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Expanding participation in pre-school education

Participation in high-quality early childhood education and care (ECEC) can help significantly improve child development. Indeed, PISA analysis confirms that Slovak youth with pre-primary education are at much lower risk of becoming low performing students (OECD, 2016). Empirical estimates suggest that the benefits of pre-school education go beyond positive effects on children's learning and extend to their health and wellbeing (OECD, 2018b). In the Slovak Republic pre-school education is optional and in contrast to most countries in the EU, places in ECEC are not legally guaranteed in Slovakia (EC/EACEA/Eurydice, 2016). Only one-third of Roma attend kindergarten compared with almost 80% in the overall population and 90% in most OECD countries (Figure 1.8). It is important to stress that the duration of participation also matters: empirical research suggest that students who attended early childhood education for less than a year are 3.1 times more

likely to perform below the baseline level of proficiency in science than students who attended for one or more than a year (OECD, 2018b).

Figure 1.8. Pre-school attendance is low, especially for Roma (%)

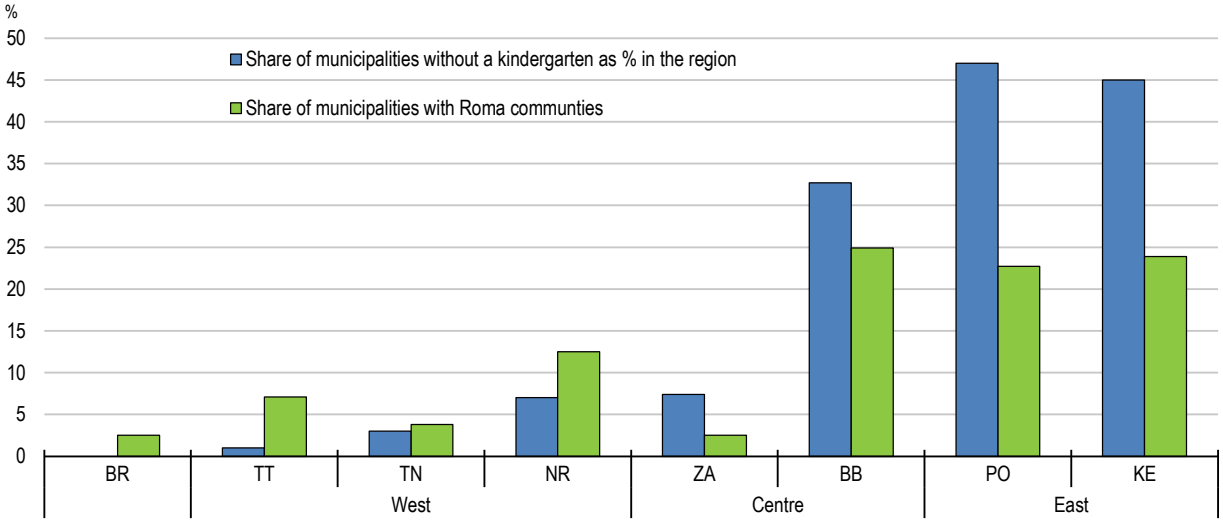


Source: OECD Family database; EU (2016), Second European Union Minorities and Discrimination Survey, Roma – Selected findings, European Union, Agency for Fundamental Rights.

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Pre-school capacities are insufficient despite the ongoing EU-financed expansion (MoF, 2019). Municipalities without a kindergarten tend to be in regions with higher concentrations of Roma population (Figure 1.9). Due to the high demand, kindergartens prefer children of working parents and families with permanent residences, conditions which often effectively disqualify Roma parents (To da Rozum, 2018).

Figure 1.9. Kindergartens are most often lacking in regions with higher Roma concentration



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

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At the same time, the low participation of the Roma can be attributed to cultural and financial barriers or discrimination. Roma parents often refuse to send their children to kindergarten, as they feel they are too young to be enrolled (UNDP, 2012). Also, some Roma parents do not have access to information on the process of enrolment and are not aware of the formal requirements. Transport costs also present a significant barrier for many Roma families, as some remote Roma settlements have only limited public transport options (RECI, 2018). In addition, there are cases of discrimination against Roma. These include petitions against the opening of kindergartens with a prevalence of Roma children (RECI, 2018).

Moreover, tuition and other fees can represent a significant barrier for Roma. Pre-school education is run by municipalities and there are no limits regarding tuition fees. Therefore, the fees can vary significantly between municipalities, from 7 euros per month up to 300 euros per month (MoF, 2019). The out-of-pocket childcare costs relative to income for children age 2-3 years are among the highest in the OECD (OECD, 2017b). These costs include enrolment and other fees such as for transport or extracurricular activities.

In order to boost the participation of Roma in pre-school education it will be necessary to increase the number of pre-school facilities with more investments on top of EU funds. Nurseries and kindergarten should be prioritised in public spending. In general, investments in early childhood education are considered to have high returns. Empirical research confirms that the rate of return on investment in human capital is the highest at an early age. Early interventions is found to be more cost efficient than remedial education interventions later in life (OECD, 2011; Schweinhart, 2006; Heckman et al., 2009). In the short run, these steps can be complemented by expanding licensed home-based pre-school education for younger children to meet these demands with relatively limited investment (OECD, 2018b).

Participation in pre-school education should be compulsory for 5 year-olds, and legal entitlements should be introduced for 3-4 year-olds. Several other EU member countries, such as Bulgaria, France, the Czech Republic, and Hungary have already introduced obligatory pre-school education. This in Hungary resulted in the same enrolment rate in kindergartens for Roma and non-Roma children.

Nevertheless, the reform should be carefully implemented to ensure high quality across all pre-school facilities, because low-quality pre-school education can have even detrimental effects on development and learning (OECD, 2018c). Therefore, greater funding should be provided to adequately staff the teaching positions as well as supporting personnel with adequate training. In this regard the authorities should consider transferring the pre-school funding from municipalities to the Ministry of Education and financing ECEC through appropriate normative (Santiago et al., 2016). As an intermediate step, the funding should be targeted at disadvantaged populations such as Roma.

The demand for pre-school education among disadvantaged groups should be bolstered. The government should cover the hidden costs of education such as transport. A conditional cash transfer programme was introduced in Hungary in 2009 for disadvantaged children aged 3 to 4 and led to much higher enrolment (Kertesi and Kézdi, 2013). The government recently decided that as of January 2019 lunch will be free of charge for every pupil in the last year of kindergarten and in elementary school. In addition, the Slovak government in 2018 introduced a child-raising allowance to partially cover the costs for pre-primary education for children one year before starting primary education. These are steps in the right direction, but the support should be expanded further to identify and cover the hidden costs for all disadvantaged children.

In addition, local municipalities and social workers should raise awareness of the benefits of early education. Parental involvement and the presence of Roma personnel can alleviate the distrust among Roma parents towards ECEC. Creating parent support groups or opportunities for Roma parents' participation in school activities can help integrate children into the ECEC environment. These parent outreach programmes should be drawing on experience of national pilot projects and international projects (EC, 2017b). For example, as a programme in New Zealand – "Engaging Priority Families" – provides support to children and their families, helping them attend ECE regularly, supporting learning at home and assisting them with the transition to school(OECD, 2015a).

Box 1.2. School performance among disadvantaged groups in selected OECD countries

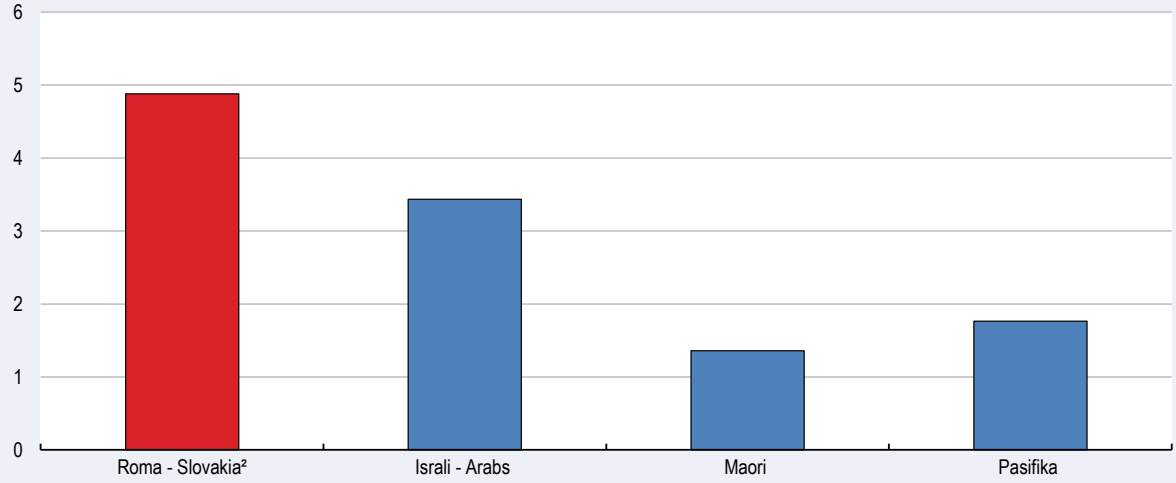
Improving the performance of students with different social and cultural background remains a significant challenge for many OECD countries. The school outcomes measured by PISA tests suggest that the gaps between these disadvantaged groups and the rest of the population are significant (Figure 1.10). The gap of Pisa scores of Roma in Slovakia with the rest of the Slovak population, amounts to almost 5 years of schooling, is substantially higher than that of Arab-Israelis compared with the rest of Israeli population (about 3½ years) and the Maori and the Pasifika people compared with the rest of the New Zealand population (between 1¼ and 1¾ years).

Māori represent 15% and Pasifika people almost 8% of the New Zealand population. On average, they have lower incomes and poorer social and health outcomes than non-Māori. Māori and Pasifika achievement remains below that of the rest of the population. A cornerstone of the New Zealand governments' strategy for accelerating the progress of Māori and Pasifika students is to ensure that all pre-school children have access to high-quality early childhood education. Progress has been made in reducing nonparticipation rates for Pasifika and Māori children, from 24% and 17%, respectively, in 2000 to 9% and 6% in 2016 (OECD, 2017c).

Israeli-Arabs represent one fifth of the population in Israel. They have a different school system and live mostly in separate cities. This contributes to different outcomes in the labour market, education and earnings (OECD, 2018d). Although disparities in school outcomes remain significant, there has been an improvement in the achievements of Israeli-Arab students. The level of formal education attained by teachers in the Arab system has improved and enrolment rates in pre-primary and post-primary education, which lagged behind the Hebrew sector rates, are now almost identical (Blass, 2017).

Figure 1.10. Gap in PISA score[1] compared to the rest of the population

Expressed in equivalents of years of schooling



1. Average PISA score in mathematics and reading
2. Roma are identified by the language spoken at home.

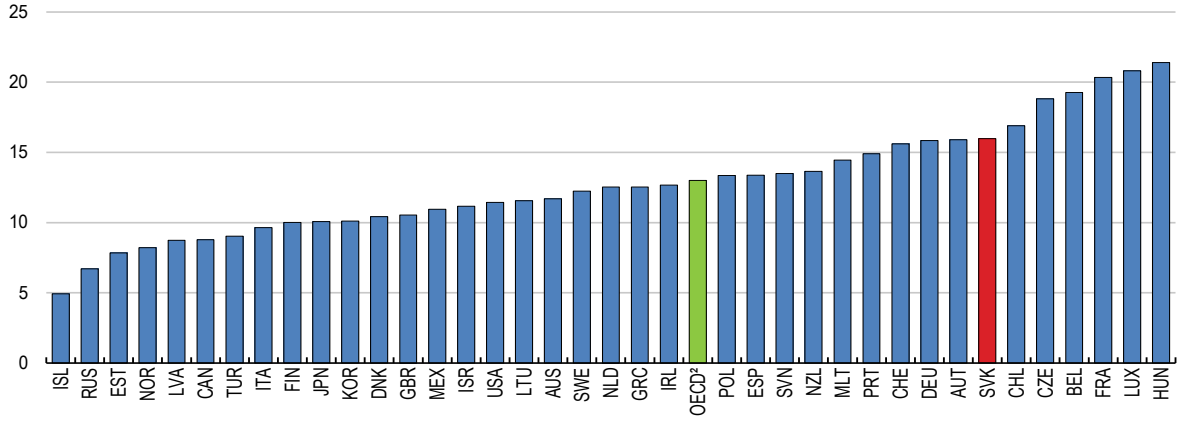
Source: OECD, PISA Results, S. May, J. Flockton and S. Kirkham (2016), PISA 2015 - New Zealand Summary Report, Ministry of Education.

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Providing support to low performers and disadvantaged schools

Due to severe poverty in the settlements, many Roma face several difficulties upon entering the primary-school environment, and their school readiness is hindered by limited participation in pre-school education. At the same time the Slovak school system is not properly equipped to overcome these barriers. Indeed, the impact of socio-economic background on student outcomes in Slovakia is one of the highest in the OECD (Figure 1.11).

Figure 1.11. 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.

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There are two main financial instruments used to limit the impact of socio-economic background on students' performance. The first is the SDE (socially disadvantaged environment) allowance paid to schools based on the number of disadvantaged students. The school can use this allowance for several purposes, for example for teaching assistants. In 2017 the amount of the allowance per student was EUR 260, and a half was spent on teaching assistants/social pedagogues or teachers' allowances (MŠVVŠ, 2017). The second instrument is a separate allowance paid to schools for lunches or materials for disadvantaged students.

However, the support from the SDE allowance is insufficient. It represents together only 0.84% of the current budget for primary education. Weak funding results in an insufficient number of teaching assistants or social pedagogues. There are about 260 teaching assistants and 78 social pedagogues in Slovakia, translating to one per 120 disadvantaged students. In many other OECD countries the financing of schools with weaker socio-economic profiles is much more generous. For example, in Chile a weighted voucher system was adopted that provides 50% more resources for students from poor socio-economic backgrounds (Elacqua, 2012). Therefore, funding for schools with the high share of disadvantaged students needs to increase and should be subject to regular monitoring and evaluation.

At the same time these financial instruments are not well targeted in Slovakia. Pupils' disadvantaged status is determined either by the Pedagogical Centres, which have limited capacities, or is based on household income. In the case of household income, the disadvantaged pupils are those from households receiving the "assistance in material need" (AMN), which is a social assistance to those whose income falls below the subsistence minimum. However, this does not cover all the poor households in Slovakia properly. For example, some families receiving parental leave benefits lose eligibility for AMN. As a consequence, these instruments cover only 35% of the overall number of pupils coming from households at risk of poverty (MoF, 2019). Thus, many schools host these disadvantaged pupils without additional funding.

Therefore, the conditions to receiving higher funding for disadvantaged pupils should be broadened to better reflect schools' needs. For example, the educational attainment of parents is used in the Netherlands and language needs of pupils in several OECD countries to determine if a school needs more funding (OECD, 2012; EASI, 2016; OECD, 2017d).

Attracting the best teachers to disadvantaged schools

The main support should be targeted at teachers. Teacher quality can have the largest effect on the performance of students, strong enough to close the achievement gaps between advantaged and disadvantaged students (Chetty et al., 2014; Schacter and Thum, 2004).

Teachers in the Slovak Republic are poorly paid and have lower general skills than people in other professions (OECD, 2017a). Moreover, experienced teachers are in short supply in schools in socioeconomically disadvantaged regions (Santiago et al., 2016). Among schools attended by 15 year-olds, the likelihood of teacher shortages is considerably higher in schools both with plenty of socio-economically disadvantaged students and in those located in rural areas.

The incentives for the best teachers to work in the schools with the most disadvantaged students are weak in Slovakia. The maximum salary supplement for teaching disadvantaged pupils is EUR 25 per month, representing less than 2% of the average teacher wage. However, some other countries use much more generous financial incentives to attract the

best teachers to teach in disadvantaged schools. For example, Brazil increased the salaries of teachers by 60% in real terms for those working in poorer areas (OECD, 2014a). Increasing the salaries of teachers in disadvantaged schools should not come at the expense of other teachers, as the salaries of teachers are already among the lowest in the OECD (OECD, 2017a). Experience from other countries suggests that these financial incentives should be complemented by other incentives (OECD, 2012). For example, Korea offers in addition to a salary premium multiple incentives to candidates working in high-needs schools, such as smaller class sizes and additional credits towards future promotion.

These incentives should be further accompanied by teacher training, which will help improve the quality of teaching in disadvantaged areas. Teachers in Slovakia rarely employ a differentiated and individualised approach that respects the diverse educational needs and abilities of their pupils (SSI, 2016). Teachers report that the offered professional training courses do not correspond to their needs, and special-needs and student-behaviour courses are the most demanded (TALIS, 2013). Teachers should be prepared to teach students from diverse backgrounds, and this training should be included in the training strategies for teachers. In addition, tertiary education should design programmes that include mandatory courses covering multiple aspects of diversity (EC, 2017c; OECD, 2015b). For example, in Finland, all teachers are trained in adapting their teaching to the varying learning needs and styles of their students (OECD, 2012).

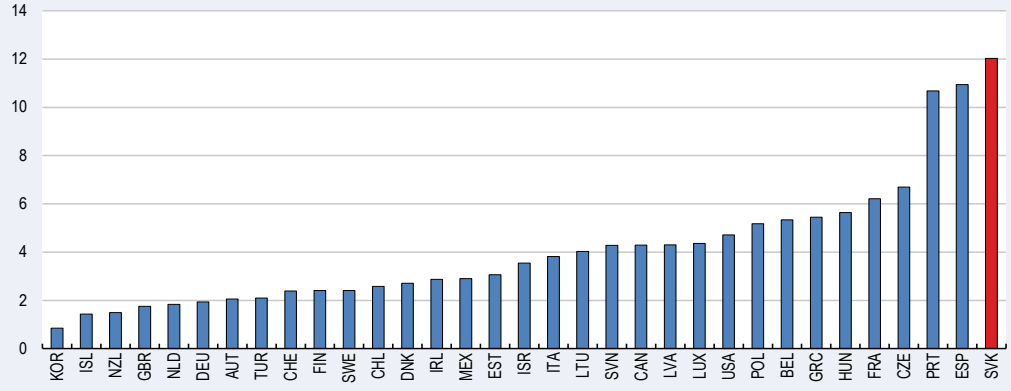
More differential and individualised teaching approaches can help address grade repetition (Box 1.3) and drop-out rates, which are more pronounced among the Roma community. This should be further supported by activities outside the formal curriculum. Evidence shows that the availability of additional time in school for disadvantaged students through extra academic and social activities can have positive effects on academic performance and motivation (OECD, 2012). Different learning-time options can include after-school and holiday learning programmes.

Box 1.3. Grade repetition is common among Roma students

Grade repetition is internationally low in the Slovak Republic (PISA, 2015). However, in the Slovak education system disadvantaged pupils are more likely to repeat a grade, and this relative likelihood is the highest among the OECD countries (Figure 1.12).

Figure 1.12. Disadvantaged students in Slovakia are more likely to repeat grades

Likelihood of disadvantaged students to repeat a grade, relative to advantaged students



Source: OECD, PISA 2015 Database, Table I.6.14

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Grade repetition can significantly affect pupils' chances of reaching secondary education. Repeated years are counted to the 10-years of compulsory education, while the primary education is nine years. Therefore, those who repeat grades several times can reach 10 years of compulsory education without completing primary school. Even zero grades, aimed at achieving school readiness, can be repeated (SZ, 2018; CVTI, 2017).

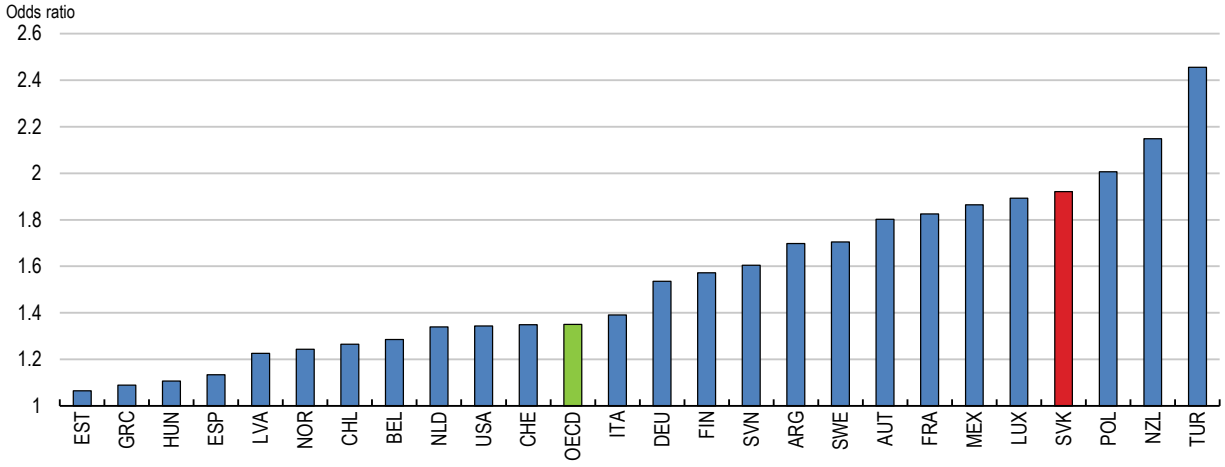
Grade repetition does not effectively address underperformance in school; moreover, it is likely to undermine pupils' confidence and trigger early school leaving (OECD, 2007).

Addressing language barriers

Only one-third of Roma consider Slovak as their mother tongue (UNDP, 2012). Many Roma do not speak Slovak or are bi-/trilingual, speaking a combination of Romani, Slovak and Hungarian. This represents an important barrier for integration, as proficiency in the language of instruction is a fundamental determinant of successful educational outcomes. Students who do not master the language of instruction are at a significant disadvantage in schools (Nusche, 2009).

However, the Slovak education system fails to help pupils to overcome these language barriers. Indeed, students speaking a different language at home from that used in school are more likely to be perform poorly. This probability is higher in the Slovak Republic than in other OECD countries, even after controlling for students' other socioeconomic characteristics (Figure 1.13). Very few schools provide Romani as a support language or Romani-language textbooks (Gallová-Kriglerová et al., 2012). Most teachers and support staff do not speak Romani, and Roma teachers are significantly underrepresented: there are only 10 primary and lower secondary teachers that declared a Roma origin (CVTI, 2014; SSI, 2016). Schools do not provide any language support for those to whom Slovak is not a mother tongue.

Figure 1.13. Pupils who speak a different language at home from the language of assessment are more likely to be low performing



Note: The estimates control for other characteristics including: socio-economic status, family structure, immigrant background, location of student's school (rural or urban area), attendance at pre-primary school, grade repetition and programme orientation (vocational or general).
Source: OECD (2016), Low performing students, OECD Publishing, Paris.

StatLink https://doi.org/10.1787/888933902187

Considering the language diversity of its student population, Slovakia should introduce a systematic language policy. Options and strategies for learning Roma should be covered in both initial and in-service training for teachers (OECD, 2015b). The government should introduce programmes to increase the number of Roma teachers and teaching assistants in schools. Examples of successful projects show that Roma teaching assistants improve the educational achievements of Roma children and help change attitudes of Roma parents towards higher school attainment (EC, 2016; Gatti et al., 2016). However, it is important to ensure that implementation of these steps will not lead to segregation (EC, 2018).

At the same time additional Slovak language support for Roma students should be introduced. Teachers should be able to identify those needing extra language training. These additional language support can start in pre-primary school. For example, in Israel the government is expanding Hebrew lessons, including in kindergartens, and 120 Arab kindergartens are getting acquainted with Hebrew for two hours a week (OECD, 2018d).

Tackling segregation

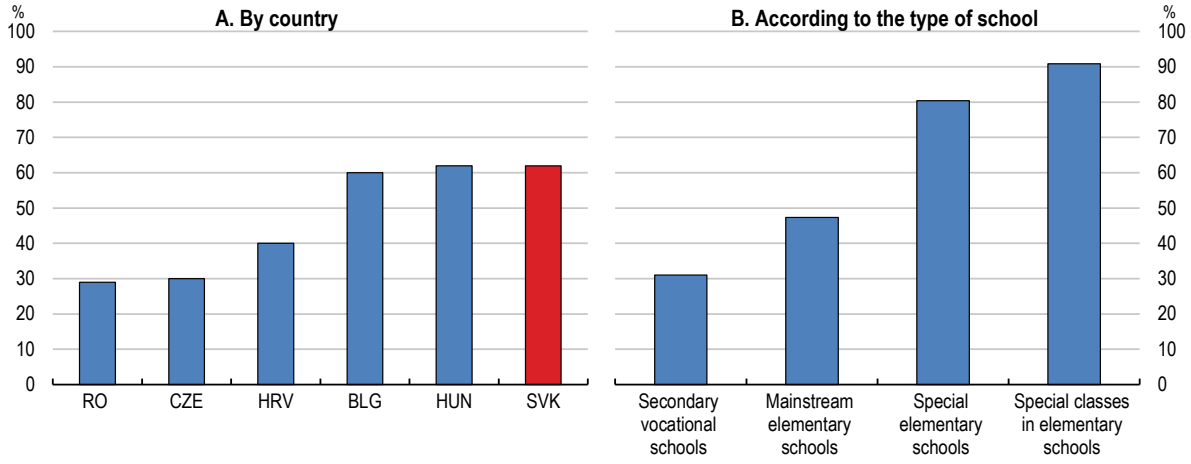
In the Slovak Republic segregation in education is prohibited, but still there is evidence of activities that can lead to Roma concentration in schools (Amnesty International, 2017). Children in Slovakia usually attend a school in the school district where they reside unless their parents decide otherwise. School districts are established at the municipal level. There is evidence that some municipalities have started to establish school districts according to the areas resided by Roma in order to avoid the enrolment of Roma in predominantly non-Roma schools. At the same time the phenomenon of white flight is also present, when non-Roma students leave the schools with a prevalence of Roma students.

The school segregation of Roma has been confirmed by a landmark court ruling in the case of Sarisske Michalany and widely documented by the Slovak state school inspection and several NGOs. Since 2015 Slovakia also faces an ongoing infringement proceeding by the European Commission for discrimination against Roma in education. The majority of Roma children report that they attend schools and classes in which all or most of their schoolmates are Roma (Figure 1.14). Segregated exclusive Roma schools exist mostly in predominantly Roma areas. However, there is evidence of exclusive Roma classes in mainstream schools, segregated buildings and even segregated dining facilities for Roma (SSI, 2016). International evidence confirms that ethnic and socio-economic composition of schools and classes is one of the most important variables explaining pupils' systematic low achievement and educational attainment (OECD, 2009). This is particularly important for Roma, as strong socio-economic selection bias is strengthening the perception of poor quality and creating a vicious circle in the expectations of teachers and students.

Therefore, schools should be helped and incentivised to desegregate and school choice should be coupled with student-allocation schemes which would ensure that children are distributed to schools in a more diverse manner. For example, places might be reserved or ratios set for students of certain ethnic origin, socially disadvantaged or disabled students.

Figure 1.14. Roma are often segregated in schools

Proportion of Roma who state that all or most of the schoolmates are Roma, share in %



Source: European Union Agency for Fundamental Rights (2016), UNDP (2012a), Report on the Living Conditions of Roma Households in Slovakia 2010, www.undp.org/content/dam/ rbec/docs/Report-on-the-living-conditions-of-Roma-households-in-Slovakia-2010.pdf.

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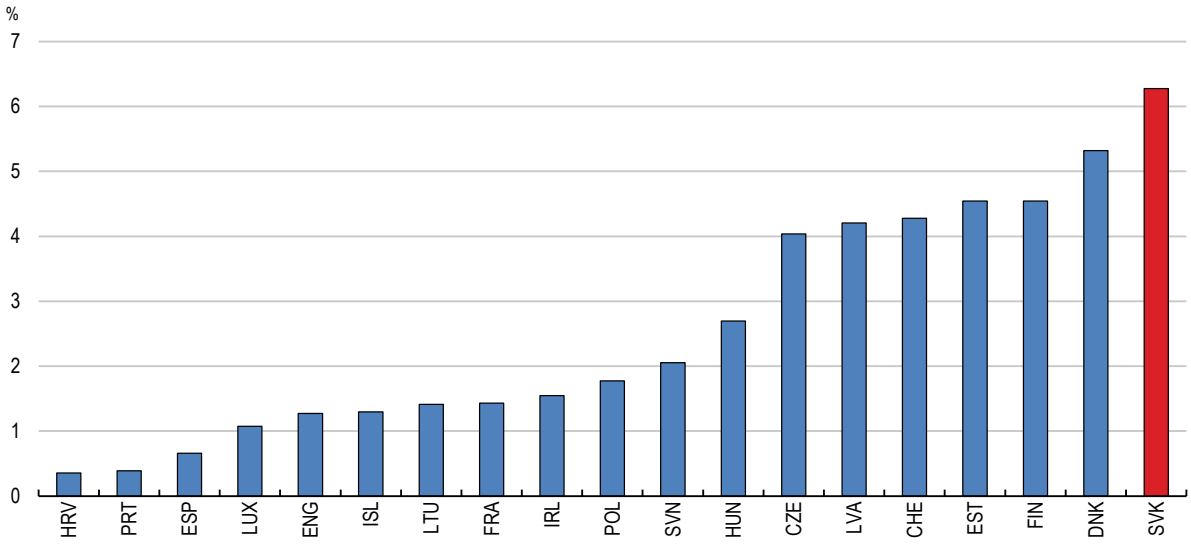
Another approach would be to redefine school districts coupled with a policy of school transportation (busing) (CoE, 2017; OECD, 2012). The schools should be prepared for desegregation with better teacher training (see above), and support staff such as assistants, special pedagogues, psychologists and others should form an integral part of the school inclusiveness.

More worryingly, Roma are overrepresented in special schools (Figure 1.15) that are supposed to provide education for children with disabilities. An initiative was launched in 2015 to prevent misdiagnosis of Roma students. Still, the Roma represent more than half of all pupils in special classes and more than 40% in special schools, while their share in mainstream education is only 10% (MoF, 2019). Overall, Slovakia has the highest population share educated in special settings (Figure 1.15). Completion of special basic schools (ISCED 2) does not allow their graduates to pursue their education at the regular secondary schools (ISCED 3), which significantly limits their further education and labour market prospects. Thus, enrolment in special schools has negative long-term effects in terms of future educational and labour market outcomes.

The high share of Roma in special schools is partly a consequence of misdiagnosis. There are still tendencies to treat children with learning difficulties as mentally disabled, medicalising the socio-economic disadvantages (Santiago et Al., 2016). Field research has confirmed that the testing results are in some cases arbitrary and subjective (CVEK, 2018; Amnesty, 2017; World Bank, 2012a; SSI, 2016). Also, many special schools are trying to attract new students as their survival depends on the per capita funding based on the number of enrolled students. In addition, some Roma parents prefer special schools for their children as they are more easily accessible, and offer a less demanding curriculum that can be handled at a slower pace and a more familiar environment (CVEK, 2018; SGI, 2013; UNDP, 2012). Roma parents are often not aware of negative effects of special schools on educational and labour market prospects.

Figure 1.15. Slovakia has the highest share of pupils in the special schools

ISCED 1 and 2, 2014



Note: How many pupils with an official decision of SEN are educated in separate special classes in mainstream schools or in separate special schools in ISCED 1 + ISCED 2:
Source: European Agency for Special Needs and Inclusive Education

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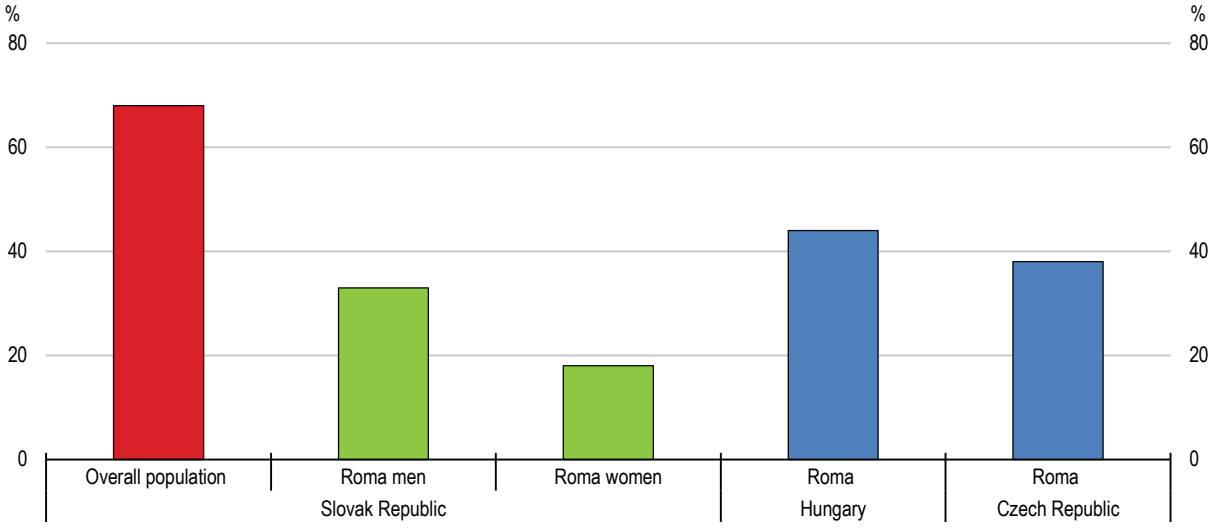
There is evidence that these children can do well in regular classes if provided adequate support. A pilot research project that followed Roma families who emigrated to the United Kingdom showed that children who had previously been placed in special schools were able to successfully complete primary and secondary education at integrated, mainstream schools (Equality, 2011; World Bank, 2012a).

Rather than using assessment instruments to stream children into special education, diagnostics should be used to identify individual needs and these needs should be addressed within a regular primary school with correspondingly increased funding for the school. In line with the current international practice (Latvia, Malta, Norway) some special schools could be transformed into resource centres for mainstream schools. In this way teachers could benefit from the valuable expertise of special school staff (EC, 2016; SGI, 2013). Regular re-diagnosis should become compulsory. Lastly, social workers and Roma mediators should work closely with families and provide relevant information about schools and their impact.

Improving labour market access

The Roma employment rate lags significantly behind that of the general population. Only one-quarter of the adult Roma population have a paid job, and this ratio is considerably smaller than for the non–Roma population, but also lower than for the Roma population in neighbouring countries (Figure 1.16). Moreover, there is a substantial gender gap. Men's average employment rate is twice that of women, which is explained by traditional gender roles, as Roma women are engaged in domestic work and childcare (Gatti et al., 2016). The unemployment rate of Roma is more than 40%, with most of the Roma population being unemployed for more than a year (MoF, 2018).

Figure 1.16. Roma employment rates are weak, 2015



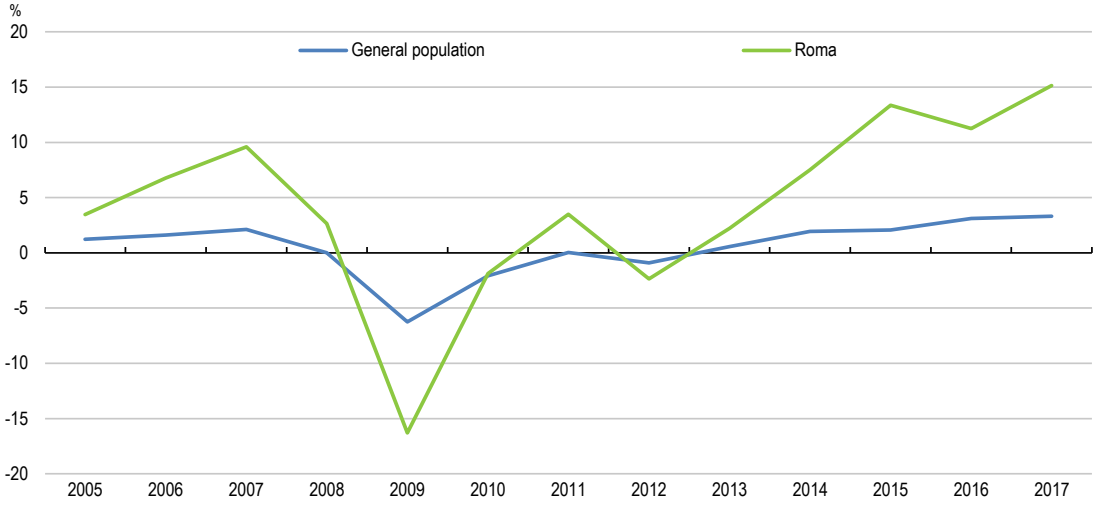
Source: EU (2016), Second European Union Minorities and Discrimination Survey, Roma – Selected findings, European Union, Agency for Fundamental Rights.

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Roma who are employed face high job uncertainty and instability. Roma work mostly in construction (World Bank, 2012a) or in low skilled jobs. Their overall employment is characterised by high volatility, suggesting a prevalence of short term/seasonal contracts (Figure 1.17). This indicates lower job quality than for the general population. Also, the average wage of employed Roma is 40% lower than for the non-Roma (Geva, Hidas and Machlica, 2019). In addition, many Roma work in the informal economy, which increases their costs of job insecurity, as they are not entitled to unemployment benefits when they are out of work (Gatti et al., 2016). All these factors place Roma at a higher risk of falling into poverty when faced with a health or employment shock.

Figure 1.17. Roma employment is much more volatile

Employment growth (%)



Source: Geva, A., S. Hidas and G. Machlica (2019), "The benefits of social inclusion of Roma in the Slovak Republic", Technical background paper, forthcoming

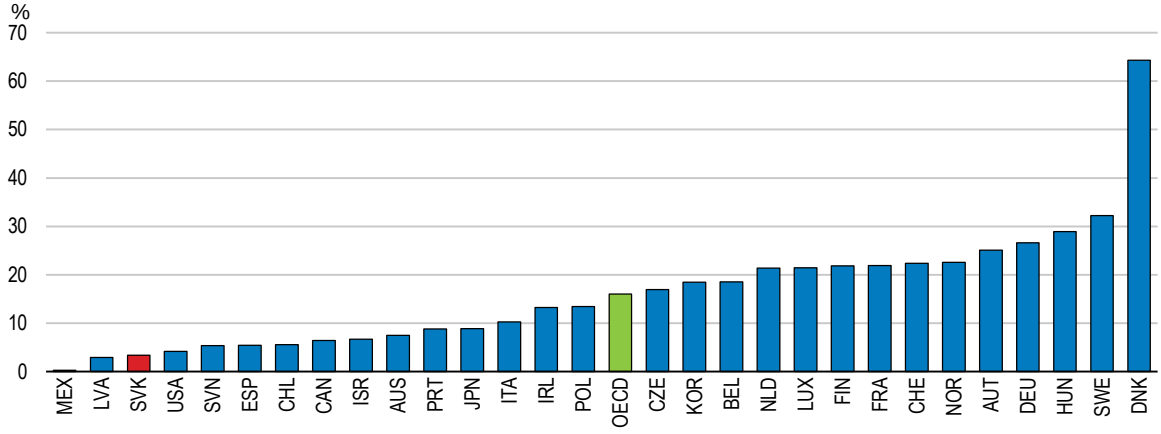
StatLink https://doi.org/10.1787/888933902263

Roma often participate in public works schemes

The Slovak Republic has one of the highest shares of long-term unemployed in the OECD, partly due to weak labour market outcomes of Roma. Empirical research confirms that long periods of unemployment have been shown to have 'scarring' effects, and the long-term unemployed are more difficult to bring back to the labour market (OECD, 2013). Therefore, long-term unemployment requires more complex labour market policy interventions and correspondingly higher funding. However, Slovak spending on active labour market policies remains low, particularly in the context of high long-term unemployment (Figure 1.18).

Figure 1.18. Spending on active labour market policies is low in Slovakia

As a percentage of GDP per capita, 2015 or latest available[1]



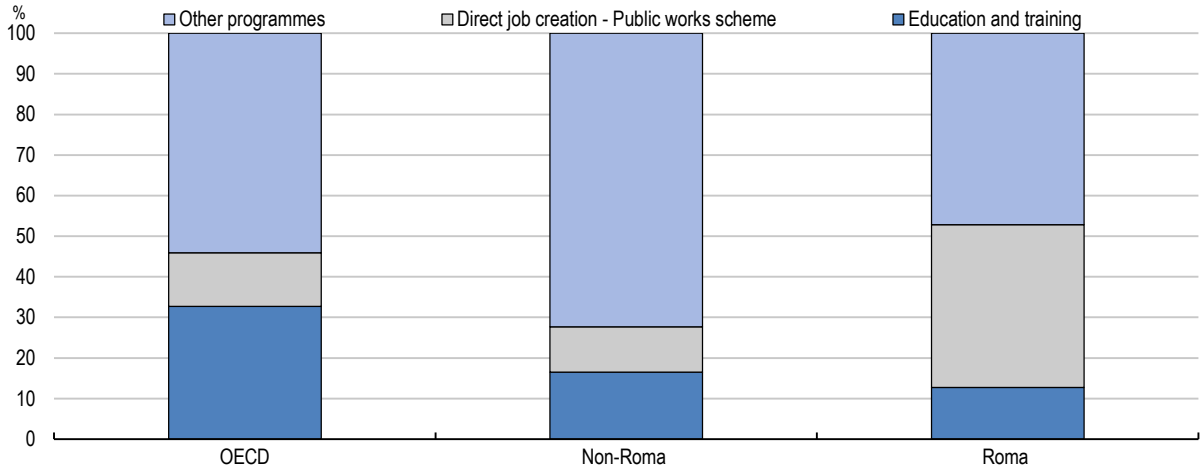
Note: The OECD aggregate is calculated as an unweighted average of the data shown.
Source: OECD Employment and Labour Market Statistics (database).

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The major programme that reaches marginalised Roma who are unemployed are the public works schemes. Almost half of Roma participating in active labour market policies are in these schemes (Figure 1.19). They typically offer jobs in the public sector to help the unemployed maintain basic skills, such as work routine and time management and last between 6 and 18 months. Participants receive a lump-sum benefit that is often the only means of supplementing income from the AMN in less developed regions in Slovakia (Kureková et al., 2013).

Figure 1.19. Large share of unemployed Roma is in public work schemes

Share of participants in different ALMP programmes (%)



Source: Geva, A., S. Hidas and G. Machlica (2019), "The benefits of social inclusion of Roma in the Slovak Republic", Technical background paper, forthcoming

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However, these programmes do not provide the relevant skills, and only a small share of participants subsequently finds a job in the labour market (Hidas et al., 2016). Repeated participation can then cause lock-in effects that prevent enrolees from job search or training activities. This confirms other countries' experience that shows that participation in such schemes can lower the probability of finding employment after the programmes have ended, leading to a long-term exclusion from the primary labour market (Card et al., 2015; Duell et al., 2010; World Bank, 2012b).

At the same time, Roma are underrepresented in other measures of active labour market policies, which have much higher potential for labour market integration. More than 40% of the active Roma population is unemployed, but they are three times less likely to be engaged in employment-incentive schemes or training programmes than the general population (Geva, Hidas and Machlica, 2019). In particular, training measures can significantly improve participants' skills and employability (Card et al., 2015; EC, 2015). Only one tenth of Roma in the ALMPs have participated in training programmes, compared to 30% on average in the OECD.

Support for the long-term unemployed should be strengthened

The large share of long-term unemployed and of ethnic minority job seekers among the unemployed calls for higher ALMP spending. The overall spending on activation policies should increase, and (i) the training measures should be strengthened and (ii) ALMP support should target hard-to-place job-seekers, particularly Roma, who represent its largest share.

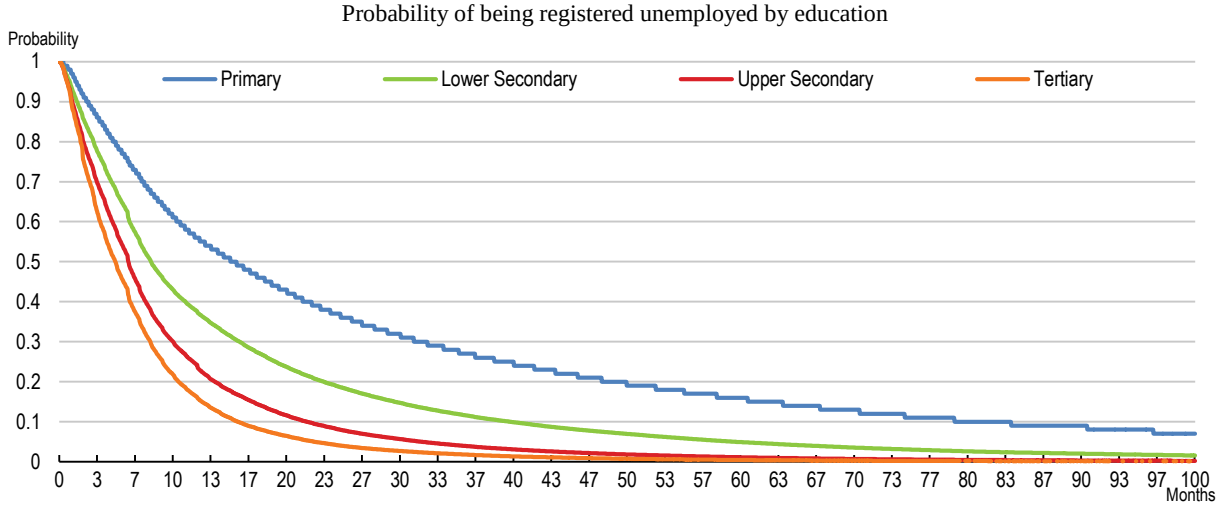
Increasing training provision is necessary, as a lack of skills represents a significant barrier for Roma to access the labour market. As was mentioned previously, many Roma enter the labour market with a low educational level, which increases their risk of becoming long-term unemployed (Figure 1.20). Therefore, second-chance education should be

strengthened by designing and developing a network of relevant providers. Also, training courses, linked to local employers' needs, should be offered. These courses can include training courses for jobs such us health mediators, kindergarten teachers and teaching assistants, which will help to employ Roma, but will also help other aspects of Roma integration.

These measures can be complemented by on-the-job training. Employers can play a key role in providing opportunities and training for participants. Empirical research confirms that employment-incentive schemes in the private sector can improve the employability of low-skilled participants (Card et al., 2015). Subsidies can be offered to private employers offering on-the-job training for hard-to-place job-seekers. For example, a successful public-private partnership programme called *BladeRunners* in Canada provides on-the-job training through cost sharing for courses, buying equipment and wage subsidies (OECD, 2012).

Establishing closer links with employers can also help bridge the information gap between the Roma community and employers. Trained social or community workers can help provide information about prospective Roma employees. The successful example of the US Steel Kosice factory shows that bridging this information gap leads to a substantial increase in Roma employment. In this case a local church in Kosice working in the Roma community helped the US Steel factory to identify prospective and eager-to-work Roma employees who were subsequently hired (Gatti et al., 2016).

Figure 1.20. Less educated job-seekers have higher probabilities of remaining unemployed for longer periods



Source: MoF (2016), "Veľa práce na úradoch práce: Efektivita a účinnosť služieb zamestnanosti" Institut Financnej Politiky, Ministerstvo Financii Solovenskej Republiky, http://www.finance.gov.sk/Default.aspx?CatID=11228

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ALMP measures, including training, should be better linked with the needs of the unemployed by introducing a comprehensive profiling of the unemployed. Many long-term unemployed Roma require tailored individual action plans that offer a mix of training, counselling and mentoring programmes. The action plans should address the multiple social needs of the clients, including Roma-specific constraints such as poor health, housing

and transport issues, indebtedness or limited availability of childcare. The intervention should be implemented in close cooperation with other public services (see below).

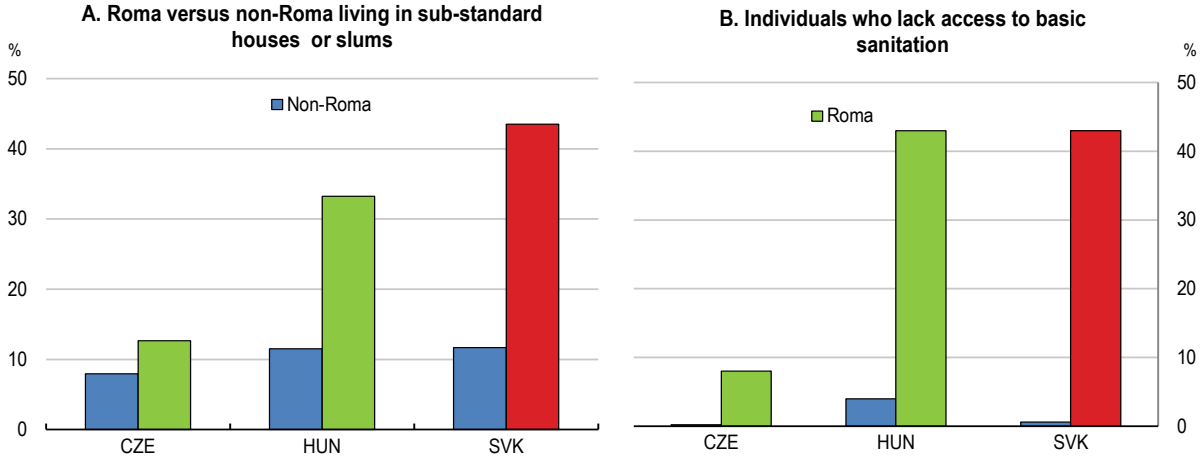
Despite some improvements in public employment service (PES) staffing, labour offices remain understaffed, which allows them to do only necessary administrative work. They do not have the capacity to implement client-oriented individualised services (Kurekova and Duel, 2013), which many jobseekers need, particularly the Roma. To provide individualised support, the public employment services need to be better staffed. Collaborating with private services, including NGOs, with a good track record of high quality support for Roma can help ease capacity constraints. In some cases, the labour offices could consider to outsource the services to non-state providers to improve the outcomes of job-seekers from disadvantaged groups (Tergeist and Grubb, 2006). Providers can be motivated by a payment system that rewards entries into the labour market that last for a predefined period of time, for example 6 months. Systematic performance monitoring and impact evaluation of ALMP programmes and monitoring of outsourced services should be implemented to determine if measures are well targeted, efficient and as effective as intended (World Bank, 2012a).

Improving living conditions

Living conditions and housing are dire in concentrated Roma settlements. Many Roma do not have sufficient income to build or buy adequate housing, so many of them live in provisional dwellings built from mud, soil, wood or other construction scrap. Almost half live in derelict houses or slums (Figure 1.21, Panel A). Furthermore, dwellings are overcrowded, with an average six people per housing unit and often in very bad conditions with leaking roofs and rot in the walls (FRA, 2016). With the expected increase in the Roma population, this problem could worsen.

Figure 1.21. Roma live in poor conditions with limited access to basic infrastructure

Selected indicators of Roma versus non-Roma living conditions



Note: Having a toilet and a shower or bathroom inside the dwelling.
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); EU (2016), Second European Union Minorities and Discrimination Survey, Roma – Selected findings, European Union, Agency for Fundamental Rights.

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Moreover, Roma settlements suffer from a lack of basic facilities and access to basic infrastructure. For example, access to clean drinking water through a connection to public water supply is limited (Filčák et al., 2018). Almost half of Roma households live in dwellings without a toilet, shower and bathroom (Figure 1.21, Panel B), and half live in neighbourhoods without a public sewage system. Access to drinking water and waste-disposal services have important repercussions on health and education outcomes.

Formalisation of property rights should be a priority

A large share of Roma live in informal settings without legal title to the land on which their houses are built. In the past, the Roma minority was subject to forceful population resettlement (Jurova, 2002). During the Second World War and the communist period they were often forced to move to what was at that time considered as state-owned land. However, economic transition followed by the restitution of previously nationalised land significantly changed land ownership in Slovakia. Consequently, in many cases properties on which Roma settlements were built have changed ownership and have been claimed back by their legal owners. Today, only one-third of the Roma own the land on which their houses are built. Another third live on municipal land, while the rest of the Roma settlements are situated on land owned by different owners, hence considered as illegal.

Moreover, as segregated settlements continued to expand, many of the houses were built illegally, as the process of obtaining a building permit is extremely complex (see Chapter 2). Often the only way that poor Roma can afford to build homes is by using makeshift materials that they find, which do not comply with basic construction standards and lack the required permits.

Due to their lack of legal status, municipalities are not allowed to provide infrastructure investment to the settlements, such as roads or water pipe-lines. At the same time, families who lack formal tenure are not eligible to receive a housing allowance. Empirical research indicates that only half of the recipients of assistance in material need are eligible for a housing allowance (Skobla, Csomor and Filadelfiova, 2017). More worryingly, these households risk eviction, as they do not possess sufficient financial means to afford the legalisation process. There have been several landmark cases of forced evictions over the past 10 years. More than 3 000 Roma were evicted from their homes between 2010 and 2013, but fewer than 1 000 were provided with alternative housing (US, Department of State, 2015).

Therefore formalisation of property rights should be a priority. There is an EU-funded project to provide land-consolidation support. However, support to households and municipalities should be scaled up and should include technical, legal and financial assistance. The Caesar project in Romania or Spissky Hrhov in Slovakia provide examples of good practice (see Box below). They show that with the proper assistance, municipalities can formalise most Roma property rights and provide basic infrastructure for the Roma settlements (Gatti et al., 2016; Musinka, 2012). Based on these examples, government support to municipalities should include technical support to update municipal urban plans, mapping of the informal areas and assessment of property rights. Legal, financial and technical support should be given to Roma households to reach an arrangement with legal landowners in the form of purchase or lease. This legal inclusion should be facilitated by municipalities that can, for example, swap land to ease arrangements.

Support home improvements

In addition to formalisation of property rights, public investment in Slovakia's basic infrastructure needs to be strengthened. Several EU-funded projects are devoted to improving the infrastructure in Roma settlements. However, utilisation of these funds is weak, as municipal officials usually lack the technical capacity to apply for these projects or simply choose projects benefiting the general population. Therefore, technical support for the municipalities should increase, and after the end of programming period these programmes should continue under the national budget to support and prioritise the Roma settlements with the worst living conditions.

Past experience with building social housing in Slovakia has not shown positive results. The Housing Development Programme has provided subsidies for local municipalities to acquire municipal rental apartments. It aimed to increase the housing supply, as the share of public housing has been very small. However, providing fully finished public units is costly and complex to manage. Therefore, these programmes can usually target only a small fraction of potential clients. More worryingly, evaluations of these projects have shown that new social housing has deepened segregation as the vast majority of the dwellings are located either in already segregated areas or in other remote locations (Hojsík, 2008; Škobla and Filčák 2016). Also, these flats were soon 'worn out' due to their low quality and overcrowding (Smatanová, 2010). As a result these social housing development projects resulted in further stigmatisation of segregated Roma by the general population.

Therefore, assisted housing has much greater potential to improve housing conditions for the Roma. Assisted housing combines self-help construction with savings and microcredit funding. Building construction takes place under professional surveillance with a focus on gaining professional skills and experience. The social work and assistance to the family are provided throughout the whole saving period and the micro-loan repayment period. Evidence from local NGOs shows that such programmes can significantly improve the living conditions of Roma (World Bank, 2012b). These successful pilot programmes can then be scaled up at the national level.

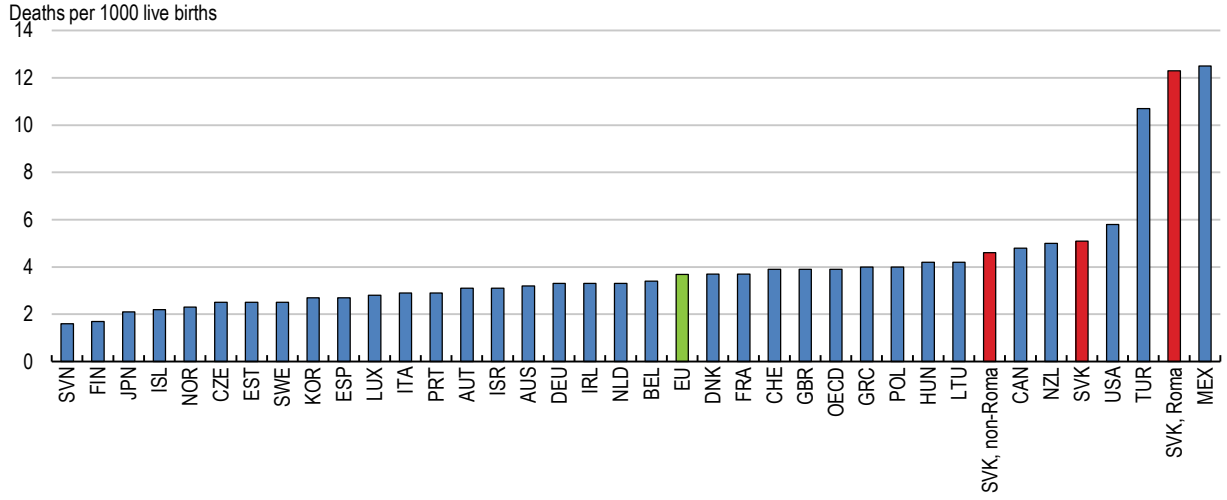
Another important goal is spatial desegregation. However, this should be based on removing the barriers to voluntary relocation, rather than some forced relocation. This includes improving the access to services and land, enabling Roma to participate in wider society, thus requiring wider support across all policy domains. At the same time the segment of rental housing is small and the share of social housing is negligible.

Some countries, for example, provide social flats in new development projects to foster integration of disadvantaged groups. New development projects in large metropolitan areas such as Vienna, London and New York must devote a small share of their flats for social housing. These flats in the new development projects have regulated rent or prices for socially disadvantaged groups. These measures should be carefully implemented and should be coupled with supportive services to help families adapt to the new community. A successful project in Spain helped Roma families to resettle, providing subsidised rental housing and packages of social support to adjust to the new environment and livelihoods (Gatti et al., 2016). A similar approach has been tested in the Czech Republic. The city of Brno launched the Housing First approach and 50 non-segregated municipal flats have been offered to tenants, who were supervised by social workers with very promising preliminary results (Housing First, 2018).

Access to health care should be bolstered

Health-care outcomes of Roma are poor and critical in some areas (Belak et al, 2017; Gatti et al., 2016). The estimated life expectancy is 6 years lower than that of the rest of the population (MoF, 2019). The biggest gap in life expectancy is present in segregated areas of Roma settlements with poor living conditions where these marginalised groups have a life expectancy of barely 53 years, compared with 70 years for non-Roma people (OECD, 2017a; Soltès et al., 2014). The infant mortality rate among the Roma population is almost three times higher than for the non-Roma population (Figure 1.22). At the same time, the Roma have lower probabilities to live healthy lives as they suffer much more from chronic diseases. For example, while three out of four Slovaks live without any chronic conditions, for Roma women it is 50% (Sprocha, 2014).

Figure 1.22. Infant mortality is high for Roma



Source: Ministry of Finance (2019), "Spending Review on Groups at Risk of Poverty and Social Exclusion", Expenditure reviews.

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The reasons for poor health outcomes include poor living conditions. In segregated settlements the lack of central drinking water or waste disposal helps the spread of infectious diseases, including measles and hepatitis A (EC, 2014a). Outbreaks of epidemics of scabies and lice are common. Moreover, overcrowded places in settlements contribute to the spread of respiratory diseases. It is alarming that 80% of juvenile tuberculosis patients are Roma (Paraličová et al., 2015). In addition, Roma have more risky lifestyles, with a high prevalence of smoking and unhealthy nutrition practices contributing to their poorer health status and chronic diseases. These reasons for poor health outcomes are exacerbated by their limited access to the health-care system.

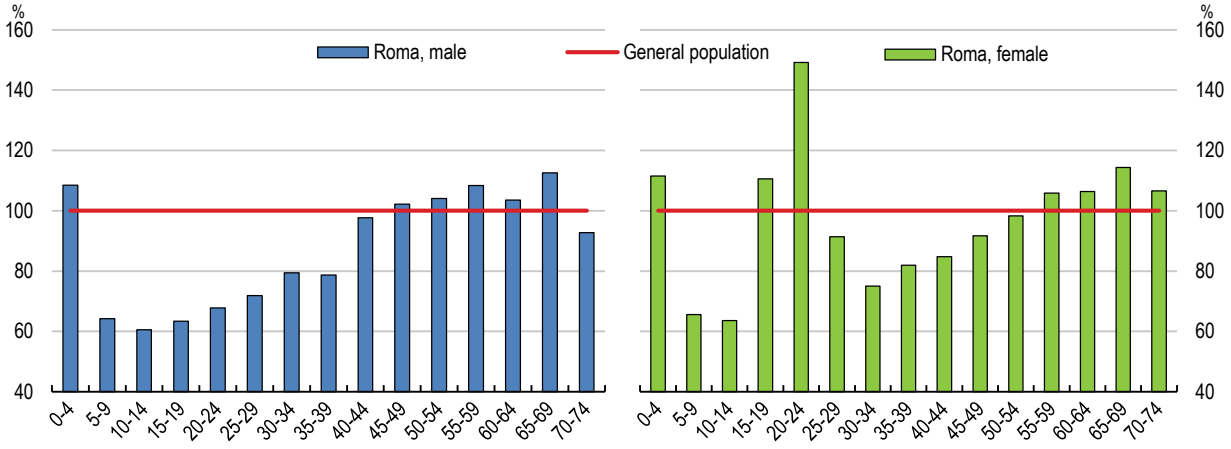
Health-care services are available but are used less by Roma

The availability of health insurance is a major determinant of access to the health-care system. Nearly all Roma citizens (95%) are covered by the national basic health insurance, and their coverage is comparable to that of the general population's (FRA, 2016). Also, despite the remoteness of some Roma settlements, the medical services are accessible as

the distance to the closest critical medical service for the average Roma family is relatively short (1-3 km) (World Bank, 2012a).

However, the Roma use health-care services less than the general population. Half of them do not seek health care when they need it (UNDP, 2012). The low use of health services among Roma is confirmed by system expenditures, which are on average 30% lower for Roma than non-Roma individuals. Young Roma in particular use health-care services less often (Figure 1.23). For example, their use by young Roma men (age 5-29) is on average 40% lower than young non-Roma men. Limited use of health-care services at younger age, including preventive care, can have negative health impacts later in life. Roma women in child bearing age report greater use of health care due to the larger number of children, while most Roma women give birth in hospitals. Nevertheless, after childbirth the use of health care decreases significantly for women and increases again only in older age.

Figure 1.23. Roma use health care services less often



Source: Geva, A., S. Hidas and G. Machlica (2019), "The benefits of social inclusion of Roma in the Slovak Republic", Technical background paper, forthcoming

StatLink https://doi.org/10.1787/888933902377

The reasons for low use of medical services by Roma are related to a number of factors, including significant information barriers and discrimination. Also, limited language and cultural understanding often result in the indirect unavailability of health services. At the same time transport and medical costs represent additional barriers to accessing health-care services.

Community health workers could help to overcome information barriers

Roma very rarely use preventative care. For example, check-ups for sugar levels or blood pressure are less frequent among Roma (UNDP, 2012). They tend to use health-care services differently from the non-Roma population, with heavier use of acute hospital services as the result of lower levels of engagement in preventative primary care (World Bank, 2012a; Sheffel, 2005). Roma usually do not seek medical care and wait until health concerns mount significantly before seeking help. Minimal use of preventive care can also be illustrated by vaccination rates, where a little over half of the Slovak Roma population have received some sort of vaccination, compared to up to 99% in the general population (EC, 2014). The vaccination rate has been improving in recent years. Low levels of preventative care are related to the lack of information among Roma.

Information barriers are most pronounced in early child development. Roma women have children at much younger ages, and teen pregnancy is common: one-fifth of Roma women have their first child before the age of 18. Most Roma give birth in the hospital, but the frequency of reproductive health check-ups is very low (World Bank, 2012a). Roma children are born with lower birth weights and are less likely to be exclusively breastfed (Gatti et al., 2016). Also, poor diet and nutrition contribute to low immunity and poor growth. The low infant mortality rate among the Roma population can be related to external factors such as diseases or risk behaviour. Therefore, it is of utmost importance to promote greater health knowledge and improve awareness.

The government's Roma health mediators programme aims to strengthen the link between the health services and the Roma population. These Roma health assistants are used to accompany sick people to the doctor, interpret if necessary, contribute to the prevention of infectious diseases and encourage up-take of vaccinations. The direct involvement of Roma mediators in these initiatives is important, because they are better able to target the needs of the community. At the end of 2017 there were some 238 mediators for 261 locations. The available evidence suggests that this programme is the most promising way to effectively address Roma health issues (Gatti et al., 2016).

The programme is currently financed through EU funds, and its future is therefore uncertain. The mediators often have no job security and low salaries. The health-mediator programme should become an integral part of the Ministry of Health budget, and the salary of the mediators should be increased. For example, performance incentive payments could increase the effectiveness and quality of service provision. Further career opportunities should be offered to Roma health assistants who are willing to continue with their studies and develop their carriers in the health sector.

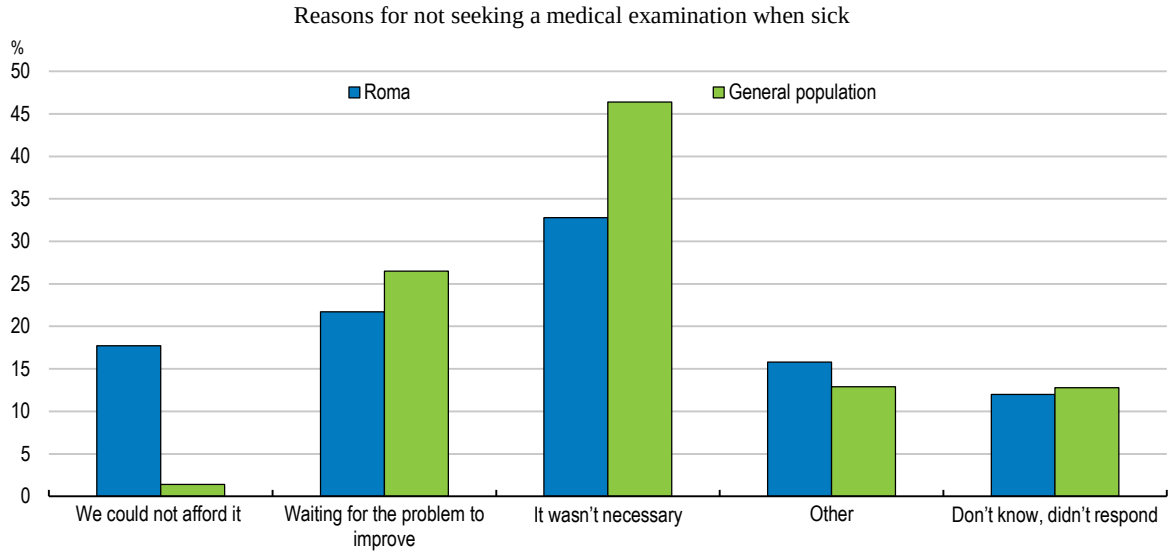
At the same time expansion of these programmes should focus on maternal health information. The current programmes are effective in increasing vaccination coverage and preventive check-ups, but more focus should be added to awareness-raising opportunities for reproductive, maternal and child health services (Gatti et al., 2016). Estimates from the hospitals in East Slovakia indicate that almost 80% of the hospitalised infants below the age of one are Roma and that many of the diseases can be avoided by raising awareness (Pochova et al., 2011). Although some pilot projects are starting in this area, more mediators specialising in maternal health information would be desirable.

A complementary approach to promote health knowledge and raise awareness is to use the existing entry points in the health-care system. As most Roma women give birth in a hospital, it provides an opportunity to discuss many elements of reproductive health, breastfeeding and post-natal care with the new mother and family members (World Bank, 2012a). Therefore, more training should be allocated to hospital staff to interact more effectively with Roma women. This should be accompanied by distributing materials in Romani regarding nutrition and breastfeeding.

Additional financial support is needed to improve access to health services

Transport and medical costs represent an additional barrier to access health-care services. The health-care system in the Slovak Republic entitles people to free care. However, the share of total medical costs paid directly by the user is almost one-fifth of total costs, including surcharges for medicines or care not covered. These can represent a significant barrier for disadvantaged households. Indeed, almost one-fifth of the Roma cite financial constraints as a reason not to seek medical services, which is significantly higher than the general population (Figure 1.24).

Figure 1.24. Financial constraints represent a barrier for Roma to seek medical services



Source: UNDP (2012), "Report on the Living Conditions of Roma households in Slovakia 2010", Bratislava.

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Current legislation exempts pensioners and the disabled from surcharges for medicines. These exemptions should also apply to socioeconomically disadvantaged groups. Many infectious diseases are due to poor living conditions and limited access to clean water. This should be addressed by expanding infrastructure investment in cooperation with other policies. In the meantime, public funding should be found for hygiene-epidemiological monitoring of Roma settlements, for corresponding regular disinfection and rat extermination programmes and to support vaccination programmes in the Roma communities, particularly against hepatitis and tuberculosis.

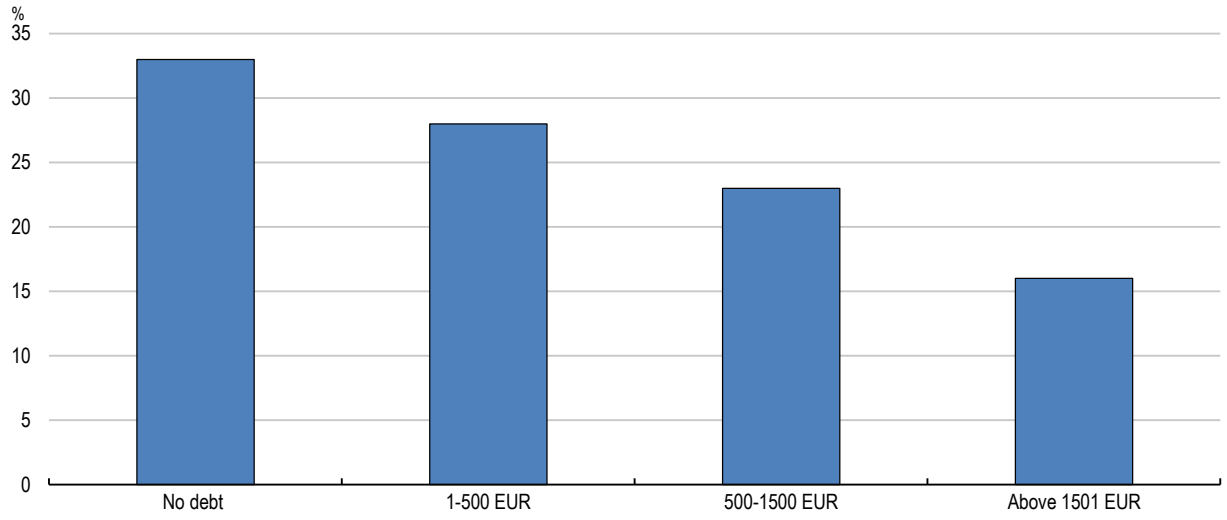
Promoting financial inclusion in the Roma communities

The Roma are more likely than others to face unexpected expenses due to irregular employment and low income. At the same time they lack access to a broad range of financial services. Only one third of them have bank accounts, and only 10% have any savings at all (World Bank, 2012a). Even among Roma households that do save, the amount of saving is very low. Roma households are therefore more exposed to income shocks and have less means to invest in education or pay for unexpected health expenses.

Consequently, many Roma are forced to take on debt. Field estimates suggest that more than 70% of Roma households are currently indebted (Figure 1.25). However, Roma are poorly positioned to borrow money from commercial institutions because of their economic status and lack of access to information on processes and procedures. Therefore, they borrow small amounts of money through local Roma moneylenders at very high effective interest rates. These usurers have significant social and economic power in the Roma settlements. Field estimates suggest that loan repayments represent up to one-third of monthly household expenditures (UNDP, 2013). Therefore, many Roma become trapped in a cycle of dependence where they do not have any money because they must repay their debt and give all their meagre incomes to the usurers (Hrustic, 2015) or official debt collectors. Heavy indebtedness lowers borrowers' disposable incomes and represents a serious work disincentive, limiting their employment prospects.

Figure 1.25. High share of Roma is indebted

Share of Roma households according to the level of debt in euros



Source: UNDP, (2013) "A situational analysis of selected aspects of living standards of households in marginalised Roma settlements", Bratislava.

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The government should promote financial inclusion by using public social protection payment systems. Roma and non-Roma households receive social protection payments through the post office in cash once a month. Transferring social transfers into personal bank accounts can provide incentives for banks to agree with the government to provide low-cost bank accounts for the poor. This can become an effective tool in the pursuit of public-policy objectives. For example, payments can be disbursed to beneficiaries four times a month, instead of once, to encourage consumption smoothing. Today, many Roma spend most of the payments in the first half of the month following their receipt and then are forced to borrow (Sheffel, 2005). At the same time, introducing electronic payments can provide significant savings for governments. Experience in Brazil and India shows that this measure helped reduce administrative costs significantly (World Bank, 2012b).

Another important tool to enhance financial inclusion is social microcredit, which enables poor Roma households to borrow with much lower interest rates compared to usurers' charges. The development of the Slovak microfinance sector is lagging behind the neighbouring countries, but the scope for microfinance remains limited (World Bank, 2012a). One way forward is to couple the microcredits with saving facilitation and linking saving activities with human development outcomes. For example, ETP an NGO link credit provision for home improvements with saving behaviour. Clients get credit if they prove they can save for a certain amount of time. These programmes can be scaled up and target different development goals. ETP Slovakia disbursed 500 small repayable microloans (1200 Euro) to mostly poor Roma families for small home improvements projects and around 90% of the funds provided were already paid back.

However, expansion of microfinance schemes should be carefully implemented. Experience from other countries shows that numerous modifications must be made to microcredit practices to adapt to both local conditions and the specific situation of the borrowers. Microcredit lending needs to be coupled with financial education and mentoring, and the presence of well-trained field workers is indispensable (EC, 2012). Poor

people need careful financial planning to make ends meet with their limited resources. There are some financial education courses that have been developed by an NGO (ETP Slovakia) to teach clients to use their finances wisely and to help them escape from debt trap. Together with the Autonomia Foundation, ETP has been working with standardised financial training modules that have proven successful as entry points into microsavings and microcredit programmes for clients living in marginalised communities (World Bank, 2012a). These programmes should be scaled up, and general financial training should be provided, for example in schools, where they can target teenagers.

A holistic policy approach is needed to address Roma exclusion effectively

The government should play a key role in enhancing the integration of Roma. However, to be effective, these policies must not act in separate silos. On the contrary, it is important that Roma integration policies take a holistic approach, which will require:

1. Coordinated interventions in different policy areas, as the exclusion is so severe that interventions in one area will not work without others;
2. Involving Roma themselves in policy interventions, to help facilitate dialogue and cooperation between their communities and public institutions;
3. Addressing the attitudes of the general public – without this, integration efforts may not reach their aims.

The current framework goes in the right direction, but could take a more systematic approach

The current Slovak framework for Roma integration goes in the right direction. It is based on the *Strategy for the Integration of Roma 2020*, which set out primary goals and action plans in different policy areas (MoI, 2017). Individual ministries are responsible for individual goals which are coordinated by the Plenipotentiary of the Slovak government for Roma communities, who has an advisory role for these matters and provides assistance for projects funded by the European Union.

The main sources of funding specifically targeted at Roma communities are two EU-funded programmes. One finances human resources in the Roma communities, including social workers, health mediators (see below) and the Roma neighbourhood watch. The other finances infrastructure projects. These include building pre-school facilities, community centres and other projects that enable access to basic infrastructure. These EU programmes run throughout the period 2014-20 with estimated costs of EUR 435 million (an average per year of 0.07% of Slovak GDP).

Although EU-funded programmes have increased the resources targeted at Roma integration, they remain small. Only 30% of the municipalities with Roma population have so far applied for these EU funds. Many projects were intended as pilots to test different approaches and then expand the successful ones. However, none of them have so far been incorporated into the national budget. Individual projects usually run only for two or three years, followed by lengthy breaks before successor EU-funded programmes start up. This creates serious disruptions in public support for Roma communities: for example, a social worker may lose their job and have to move elsewhere before funding is renewed. At the same time the future of these programmes is uncertain as EU funds may come to an end in 2020. Consequently these funds cannot be relied upon for a systematic and sustainable policy approach to Roma integration.

At the same time, monitoring and evaluation of the current framework is very limited. EU-funded projects are evaluated using field interviews, but in the Slovak Republic there is no regular monitoring of the overall situation of the Roma (see Annex A). This seriously limits efforts to improve programme design and to raise the effectiveness of public integration policies explicitly targeting the marginalised Roma.

Stronger coordination of policies for Roma communities is needed

Successful integration will require coordinated interventions in different policy areas including: education, labour market policies, health care, housing, and financial inclusion. In New Zealand, a multi-pronged approach is laid out in the treasury's "Living Standards Framework" to address well-being gaps for low socio-economic households, including many Māori and Pasifika people (OECD, 2015a).

Implementing interventions in an integrated manner requires a designating body that purposefully coordinates different policies. This includes building networks and creating a common working platform for the relevant stakeholders at the local level. In the current framework this position is held by the Plenipotentiary, but its mandate is weak, as it has only an advisory role with limited power to influence other ministries. However, the present situation of the Roma calls for urgent action, requiring stronger institutional and political authority for the Plenipotentiary. A model could be the Deputy Prime Minister's Office for Investment and Informatization in the Slovak Republic, which is a cross-cutting ministry coordinating other ministries in the area of investments. The same approach could be applied to the area of Roma integration. Strengthening the Plenipotentiary's position in the institutional hierarchy can help better coordinate all the relevant actors so that they work together. This includes municipalities given the Plenipotentiary's strong local network. Mayors have to take initiative as they play an important role for policy implementation.

The Plenipotentiary should also be mandated, and resourced, to collect data and monitor the situation of the Roma. Suitable data collection and rigorous analysis are particularly important to inform individual line ministries and coordinate the policy response appropriately. Household survey data in marginalised Roma communities should be collected on an annual basis and impact evaluations can help identify the most cost-effective actions.

Box 1.4. Successfully coordinated policy intervention at the local level

Spissky Hrhov is a village known as an example of successful Roma integration. Twenty years ago, the Roma represented almost half of the population, most of them lived in ruined houses, without electricity and one-fifth of the children were in special schools. Today, most of the Roma community members are employed, enjoying a good living standard and are integrated with the wider community. Roma pupils do not only finish their primary education, but also continue on to grammar school or vocational school in the district (CoE, 2012).

The process of the integration has started 20 years ago. From the beginning, the municipality identified three key areas of development, which were addressed simultaneously i) education, ii) employment iii) housing (Musinka, 2012). Key stakeholders attached to these areas were identified and engaged: the local administration, social workers, employers, local school and the community centre.

Establishing a local municipal company helped employ some Roma from the local community. This company is run by the municipality and uses local materials and employs local residents. It uses its profits to address the specific social issues that the local community is facing. At the same time the municipality helped with formalisation of property rights (see above). Land regularization was followed by the housing projects and municipality has built its own social flats, partly financed by the municipal company. Renters were carefully selected and supported by local social and community workers. The school closely cooperate with Roma families and the educational process is provided by qualified teachers, some of who speak Romani. The Roma community was engaged in the implementation of projects and participated in home construction works and other activities (World Bank, 2014a).

More trained Roma personnel are needed

As much as possible, programmes to improve the situation of the Roma should be designed in consultation with the communities they are intended to help. This would reduce the risk that they are imposed from outside rather than facilitating contacts that Roma themselves wish to make.

There are already some successful EU funded pilot projects which rely on direct involvement of Roma mediators, who are better able to understand the needs of the community than outsiders. For example, trained Roma health assistants work as a bridge between the community and the local health authorities to improve access to health care for Roma. They accompany sick people to the doctor, interpret if necessary and encourage up-take of vaccinations (see above). International experience indicates that, over the years, mediators have effectively mitigated some of the challenges faced by Roma when seeking health care (OSF, 2014). Another example is Roma Civil Neighbourhood Watch, in which Roma act as mediators with police officers, who may otherwise be seen as repressive outsiders. They patrol around their local settlement and help the police solving difficult problems and conflict situations.

More trained personnel within individual ministries and local agencies are also needed, who can facilitate dialogue and cooperation between the Roma populations and public institutions. It is important to integrate successful EU-funded programmes into national policies and scale up, so that Roma health assistants and Roma Neighbourhood Watch can become an integral part of public services. In addition, Roma mediators in different areas of public services should be explored, for example Roma teaching assistants or Roma social workers. These assistant professions should be provided with a clear career path to regular mainstream professions. For example, Roma health care assistants should be provided with the possibility and additional training to continue with their carriers in the healthcare sector and become nurses or carers.

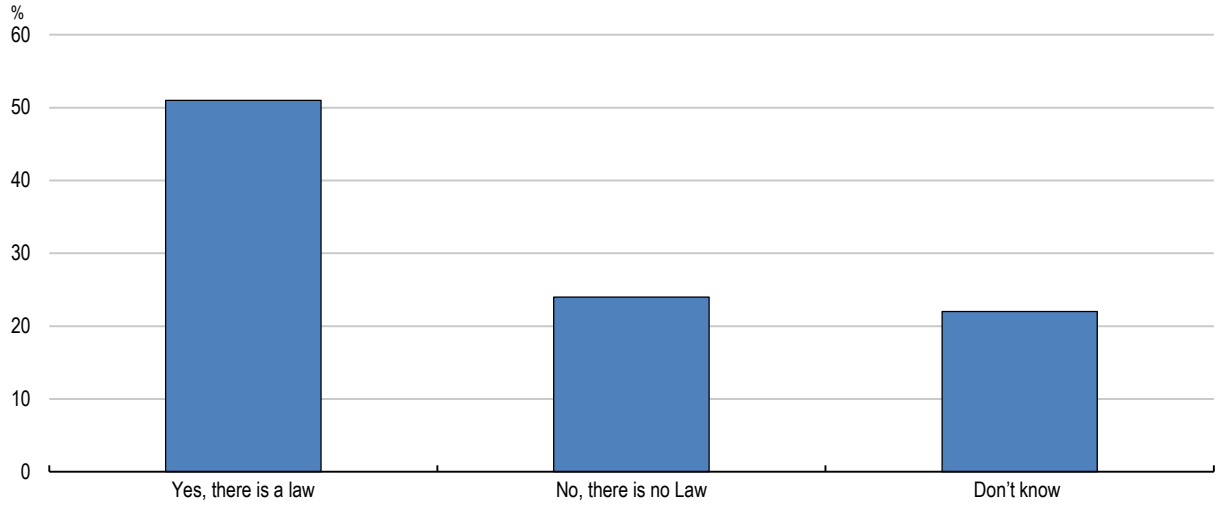
Addressing the attitudes of the general population

Roma inclusion efforts may be more effective if they take into account the attitudes of the general public and especially if they can reduce the general animosity and mistrust between the Roma and non-Roma. Therefore, policy changes towards Roma integration should go hand in hand with work to address prejudice against the Roma among parts of the majority population.

In recent years progress has been made in putting together a legal and policy framework to tackle discrimination against the Roma. However, outreach to the Roma groups remains

ineffective: most Slovak Roma (80% of all those surveyed) are unaware of the existence of any organisations that can offer support or advice to people who have suffer from discrimination (FRA, 2016), and half of all Roma are unaware of anti-discrimination laws (Figure 1.26).

Figure 1.26. Awareness among Roma of laws prohibiting discrimination (%)



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

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The legal framework must therefore be supported by institutions implementing and disseminating information about its existence more widely. The Plenipotentiary office should be given additional funding for this purpose. Also, public campaigns should be launched to discourage discrimination. In addition, courses on diversity and sensitivity to minorities should be given to students in schools. An advocacy campaign to promote respect for, and understanding of, the Roma minority should be directed at public employees such as teachers and doctors. Finally, real-life success stories of Roma people should be widely shared.

Interaction and mutual understanding between Roma and non-Roma groups should be fostered. Increased funding should go to local-level projects of mutual interest to Roma and non-Roma that require collaboration between the two. Such projects could help increase the interaction between them and could increase mutual understanding. For example, multi-functional community centres can be built to serve as childcare centres and summer kindergartens for Roma and non-Roma children (World Bank, 2014b).

Recommendations to enhance social inclusion of Roma

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

Promoting an integrated approach to Roma inclusion

- ***Give the office of the Plenipotentiary a bigger role in coordinating national policies and ensuring integrated provision of public services to Roma where they live.***
- ***Involve Roma in the development and operation of integrated health, education and employment services.***
- ***Scale up successful EU-funded pilot programmes, such as community centres and health mediators, and ensure sustained financing through the national budget.***
- Develop statistics to monitor and evaluate the effectiveness of Roma support programmes.

Enhancing Roma inclusion in education

- ***Continue to expand the provision of high-quality early education and care, engage with parents to advertise its benefits, and remove financial barriers to attendance.***
- Provide more funding for disadvantaged schools, particularly for Roma teaching assistants and higher salaries for teachers teaching in disadvantaged schools.
- ***Increase the number of teaching assistants speaking Roma, and provide Slovak language support for Roma children.***
- Reduce the participation of Roma in special schools by better diagnostics and outreach towards Roma parents.

Strengthening Roma access to the labour market

- Increase spending on those training programmes for the unemployed of proven effectiveness.
- Design and develop a network of second-chance education providers.

Improving Roma living conditions

- Provide support to formalisation of Roma property rights, including legal, financial and technical support to municipalities and Roma households.
- Scale up the housing assistance microfinancing project to the national level.
- Strengthen public investment in basic infrastructure in Roma settlements.

Bolstering Roma access to health care

- Expand health-care mediator programmes, with more mediators specialising in maternal health information and preventive check-ups for mothers.
- Provide exemptions from surcharges for medicines for disadvantaged groups.
- Provide funding for vaccination programmes, regular disinfection and rat extermination programmes in Roma settlements.

Promoting financial inclusion in the Roma communities

- Introduce a social micro-credit loan scheme that is coupled with financial education courses for marginalised communities.

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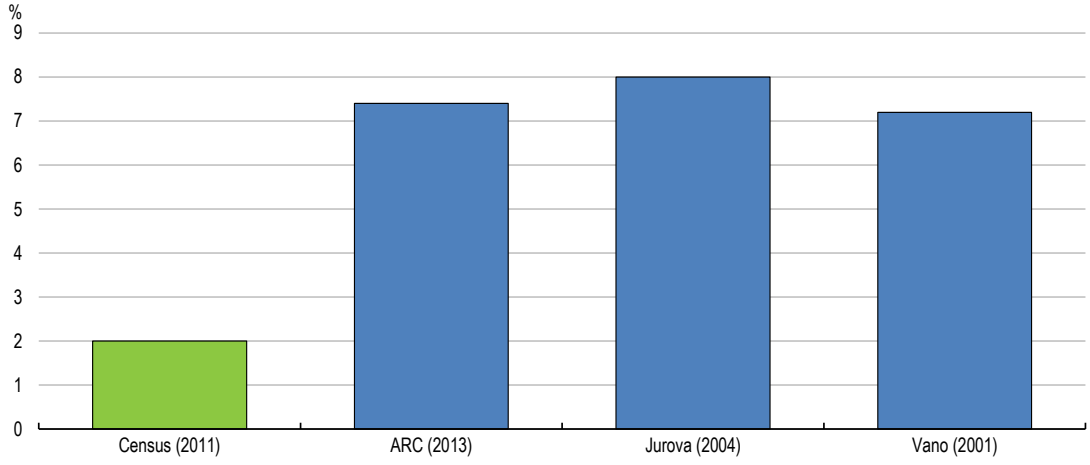
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Annex 1.A. Data on Roma

Most data regarding the Roma is surrounded by uncertainty, therefore should be treated with caution. At present official statistics do not provide reliable and accurate data on Roma. Data collection based on ethnicity is prohibited in the Slovak Republic. Moreover, the usual self-identification questions, such as in the census, are significantly biased and differ from experts' estimates (Ivanov et al., 2012). The most obvious explanation is an unwillingness to reveal one's Roma identity due to the stigma associated with "belonging to Roma" (Makkonen, 2007). Therefore, the Roma respondents in the self-identifying questionnaires tend to choose Slovak ethnicity instead, which understates the true size of the Roma community. According to the latest official Census data, the share of the Roma population in the population is only 2%, which is in stark contrast with experts' estimates that are higher by as much as four-fold (Figure A.1).

Figure A.1. Estimates of the size of the Roma populations differ

Share of the Roma in the total population (%)



Source: B. Vaňo (2001), *Demografická charakteristika rómskej populácie v SR.* http://www.infostat.sk/vdc/pdf/rom.pdfhttp://www.infostat.sk/vdc/pdf/rom.pdf; UNDP (2014), *Atlas rómskych komunít na Slovensku 2013*; Regionálne centrum Rozvojového programu OSN pre Európu a Spoločenstvo nezávislých štátov; A. Jurova (2004), *Rómovia na Slovensku*, in: ŠUTAJ, Š. (ed.). *Národ a národnosti na Slovensku – Stav výskumu po roku 1989 a jeho perspektívy*, Universum, Prešov, pp. 247 – 71; Census (2011), Statistical office of the Slovak Republic https://census2011.statistics.sk/

There are different available approaches and possible sources of information that can generate the data necessary for monitoring different aspects of Roma inclusion, such as field surveys or using self-identification questionnaires or through proxies such as Roma-language proficiency. The different sources have their strengths and weaknesses; therefore it is best to use them in a complementary manner (Ivanov et al., 2015).

The most reliable source in the Slovak Republic is the Atlas of Roma communities (ARC) in Slovakia (UNDP, 2014), which contains detailed data from the Roma communities. ARC was prepared by the Ministry of Labour, Social Affairs and Family, the UNDP Regional Centre in cooperation with the University of Prešov, the Plenipotentiary Office for Roma Communities and the Slovak Association of Towns and Municipalities. The work on ARC included field-work, which engaged approximately 30 researchers, including activists, employees of the Roma Plenipotentiary Office They visited 1070 municipalities.

Most of the data in the chapter are based on ARC and survey data, including the FRA survey in 2016 and UNDP survey in 2011. The FRA Survey are representative for Roma living in the administrative units in nine EU member states, including the Slovak Republic with density of Roma population higher than 10% and the findings reflect the situation of up to 80% of Roma living in EU Member States (FRA, 2016). Moreover, matching the administrative data with the ARC (Geva, Hidas and Machlica, 2019) provided additional findings of the situation of up to 90% of Roma living in the Slovak Republic estimated by Atlas of Roma communities.

Chapter 2. Increasing the benefits of Slovakia's integration in global value chains

Heavy involvement in international trade and global value chains has been an effective way for promoting Slovakia's economic and social catch-up. Large foreign direct investment inflows have helped develop a competitive export-led manufacturing industry, with a strong specialisation in the automotive and electronics sectors, fostering robust growth and productivity performance with good fiscal and external balance results. However, the benefits of this development strategy have diminished since the 2008-09 crisis and the subsequent slowdown in world trade growth. Moreover, over the years Slovakia's integration into world trade has remained for a large part based on downstream activities of value chains that incorporate little domestic value added, such as the assembly of imported intermediate goods, and further expansion of this growth model is hindered by employers' increasing difficulties in finding skilled labour. There is a need to help local firms to better benefit from foreign companies' know-how, further prepare the workforce for the increasing digitalisation and automation of most industries, promote the diversification of the economy and, in particular, strengthen the role of the services sector. This assessment, which is derived from the first part of this chapter, is followed by a discussion of the changes required to better leverage Slovakia's experience with global value chains. All in all, a broad range of well-coordinated policies is called for. This entails better adapting the skills of the workforce to the changing needs of the labour market, enhancing the business environment, improving transport infrastructure and stimulating firms' innovation capacity.

Strong and successful integration into global value chains is positive for growth and living standards

Slovakia has benefited from its strong integration into global value chains

Integration into global value chains (GVCs) offers opportunities for a rapid economic and social catch-up to an emerging economy like Slovakia. Integration into GVCs can boost productivity through a more efficient international division of labour. They also generate greater economies of scale and efficiency for small economies by increasing access to external markets and underpinning exports. In principle, intensive participation in GVCs, based on inward direct investments, can also foster productivity gains across the economy through knowledge spillovers from multinational enterprises.

Slovakia's increased participation in GVCs in recent decades has led to a sharp increase in external trade as shown by a gross export and import decomposition using the OECD-WTO Trade-in-Value Added database (Box 2.1) (Figure 1.22). As a result, the country's openness has increased steadily, with the average GDP share of imports and exports exceeding 90% in 2016-17 (Panel B).

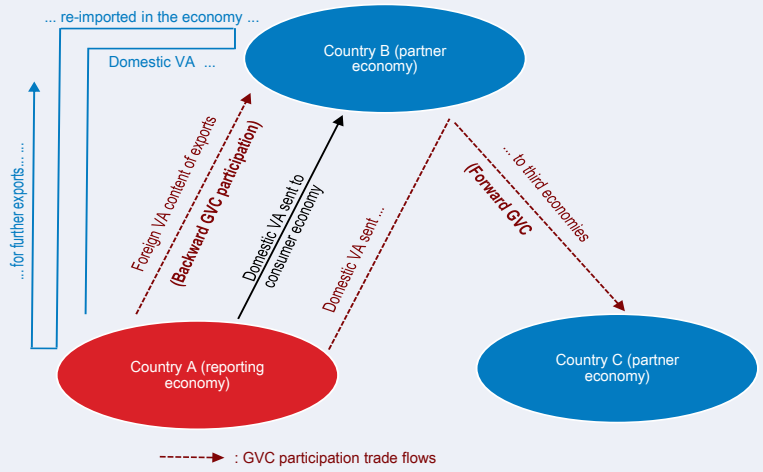
Box 2.1. Integration into GVCs - Terminology of some statistical indicators

The growth of international trade in recent decades has to a large extent been stimulated by the development of global value chains (GVCs). To measure the extent and nature of this phenomenon in OECD countries, new statistical indicators were elaborated using the OECD-WTO Trade in Value Added Database. This box provides some explanation of some of these indicators and their terminology, which are used in various places in this chapter. By measuring gross exports in terms of added value, these indicators can in particular be used to decompose gross exports into the following four components as shown in Figure 2.1 and quantified in the case of Slovakia in Figure 2.2:

- Domestic value added sold to the consumer economy. It represents the domestic value added embodied either in final or intermediate goods or services that is directly consumed by importing economies.
- Forward GVC participation. It is the domestic value added contained in the intermediate goods or services exported to an economy that is then re-exported to a third economy.
- Backward GVC participation or foreign value added content of exports. This indicator represents the value added of imported inputs embodied in exported goods and services.
- Re-imported domestic added value. It is the domestic value added embodied in exports of intermediate inputs that is imported back, for example, as part of final goods or services. This component is usually much smaller than the other three components (It is thus not visible in Figure 2.2).

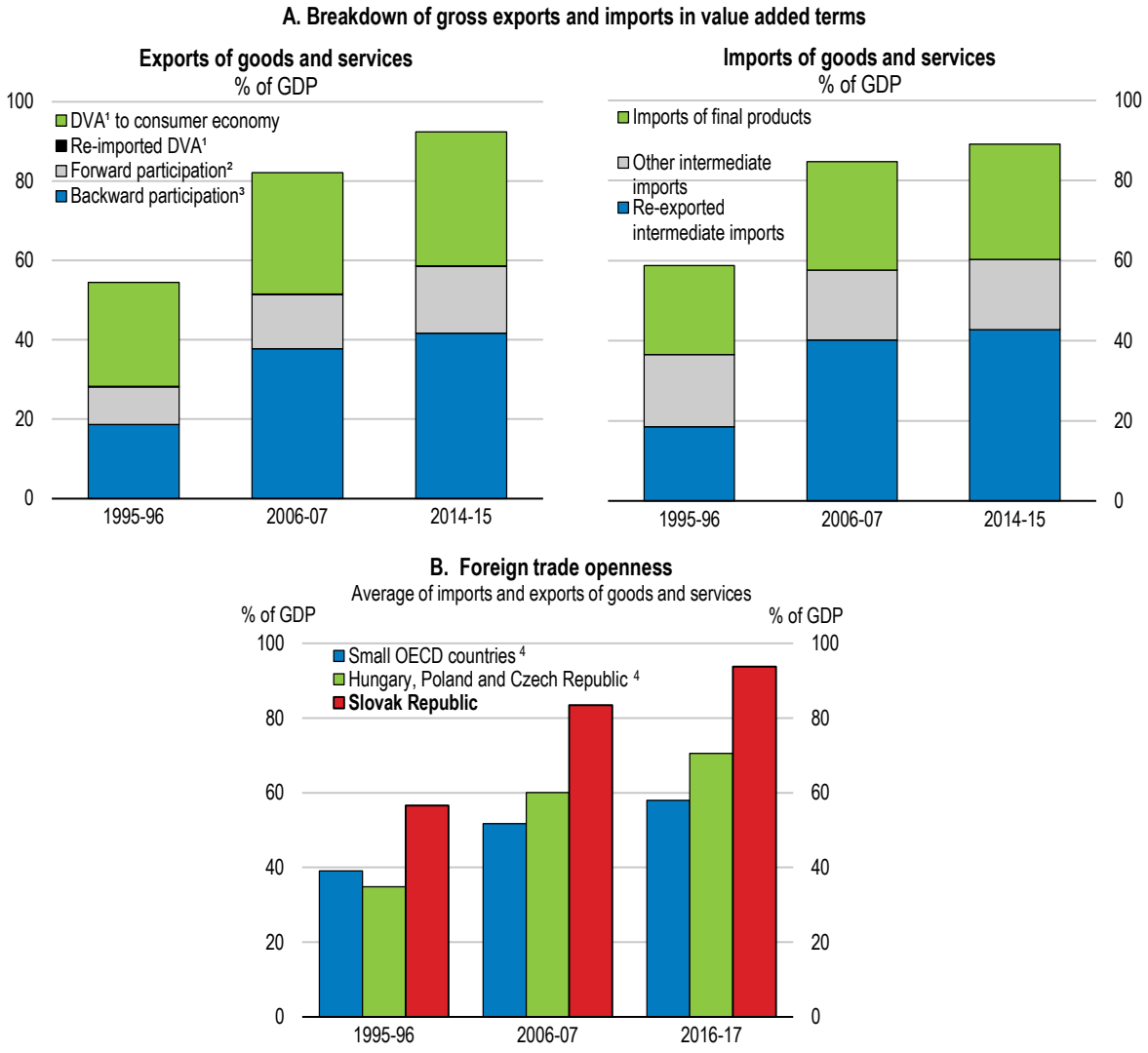
An economy's participation in GVCs is measured by the sum of the two components of backward and forward participation. By convention, individual economies are indeed assumed to participate in GVCs either by importing foreign inputs to produce goods and services for export (backward GVC participation) or by exporting domestically produced inputs to partners responsible for downstream production stages (forward GVC participation).

Figure 2.1. A visualization of the value added components of gross exports and GVC trade flows



Source: OECD-WTO TiVA Database.

Figure 2.2. Rising integration in GVCs has boosted foreign trade openness



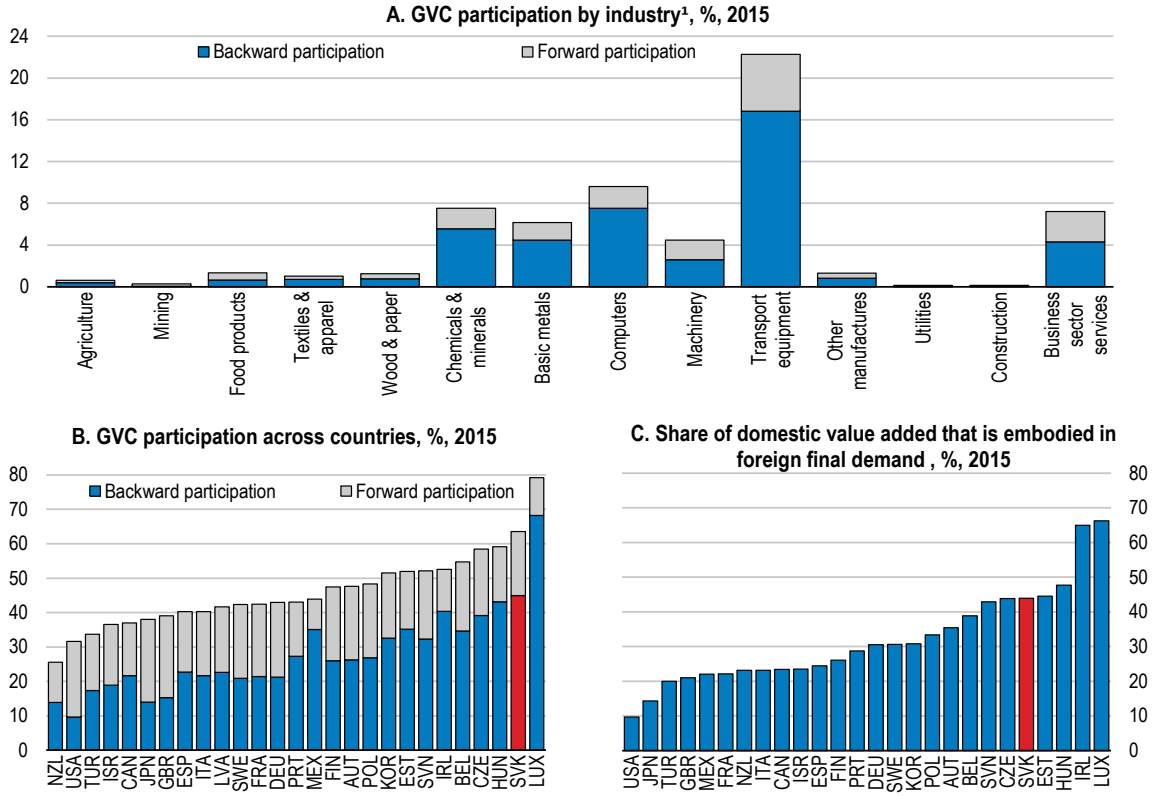
1. Domestic Value Added.
2. Forward participation is measured by domestic value added embodied in foreign exports as share of gross exports of the source country.
3. Backward participation is measured by the foreign value added content of exports as a share of gross exports.
4. Unweighted average.

Source: Calculations based on OECD-WTO Trade in Value Added (TiVA) Database; OECD TiVA nowcasted estimates Database and OECD Economic Outlook Database.

StatLink https://doi.org/10.1787/888933902453

Slovakia's participation in GVCs is particularly prevalent in the manufacturing sector, especially in the transport and electronic equipment industries (Figure 2.3, Panel A). It is also characterised by a high proportion of foreign inputs in exports, whereas the use of Slovak inputs in other countries' exports is low, as is also the case in other small economies (Panel B). This indicates that Slovakia's role in GVCs is more about assembling imported inputs than supplying parts and components to other GVC participants. In 2015, 45% of Slovak GDP depended on foreign demand, which is high by international standards (Panel C).

Figure 2.3. Slovak participation in GVCs is high, especially in manufacturing



Note: The indicator at the industry level is expressed relative to total country exports.
Source: Calculations based on OECD-WTO Trade in Value Added (TiVA) Database.

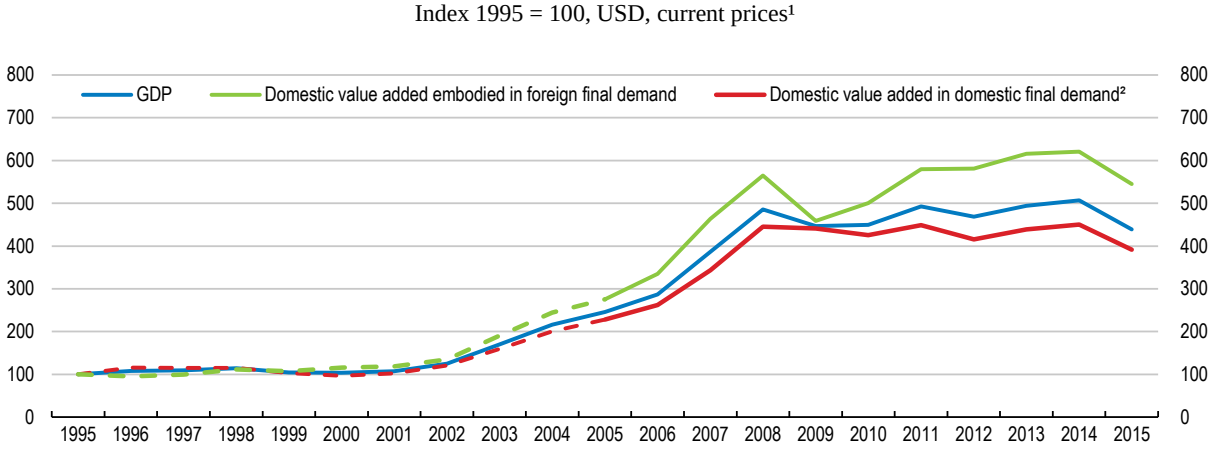
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This rapid integration into GVCs has mainly resulted from large inflows of foreign direct investments (FDI) (Vladová, A., 2017a). The FDI stock represented 54% of GDP in 2015, i.e. 0.28% of the total FDI stock in the OECD, which far exceeds Slovakia's weight in terms of OECD GDP (0.17%). Several factors have contributed to this trend: the country's advantageous geographic location in the heart of Europe; the availability of a low-cost but skilled labour force; its euro membership since 2009; all combined with a cautious budgetary and financial policy, which has helped preserve both a stable economic and social environment and strong competitiveness. Thanks to these FDI inflows, mainly from the European Union (particularly Germany) and to a lesser extent from the rest of the world (notably Korea, United States), the Slovak economy has become a significant export platform mainly through its integration into European GVCs. In total, foreign multinationals accounted for 22% of private employment in 2015, and 35% of Slovak private-sector value added excluding agriculture and finance (OECD, 2017a). In the key electronics and automotive industries, the proportion of employment and value added generated by foreign multinationals is between 80% and 95%.

This increased involvement in world trade has generated significant benefits. It has acted as a driving force for the economy, and this has been reflected in the strength of exports and the creation of value added from foreign demand since 1995, despite the effects of the 2008-09 crisis (Figure 2.4). The sectors that are the most integrated into GVCs, and therefore the most export-focused, have developed comparative advantages, which have

led to productivity gains that are stronger than in other sectors and other OECD countries (Figure 2.5) (Miroudot and Cadestin, 2017a; Berthou et al., 2015). This has helped Slovak GDP per capita to gain significant ground on the more advanced countries, with a positive impact on employment, the public accounts and the external balance (Luptáčik et al., 2013).

Figure 2.4. Increased integration in world trade has strengthened the economy

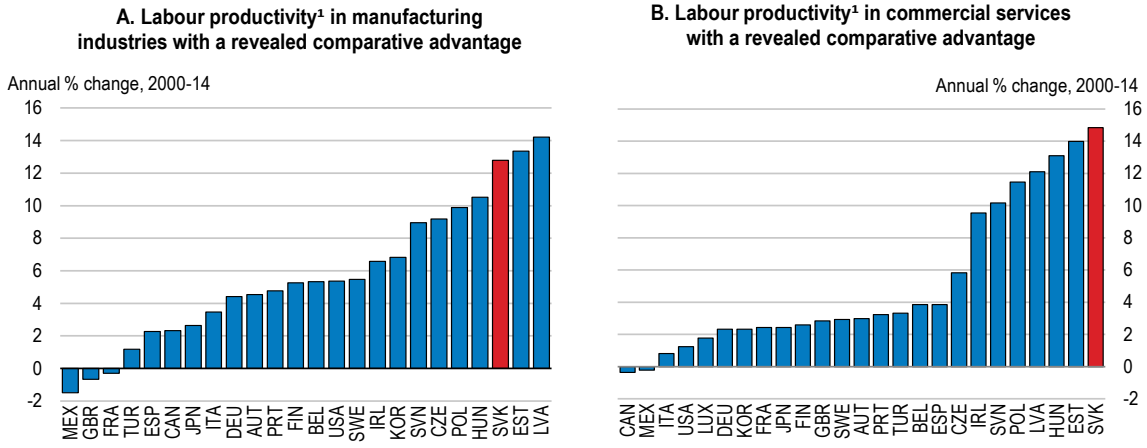


1. There is a break in time series for domestic value added in foreign final demand as well as in domestic final demand from 2004 to 2005 as the data from 2005 onwards have been revised. Growth rates for 2005 onwards have been applied to the time series 1995 to 2005.
2. Value added in domestic final demand is calculated as total value added minus domestic value added embodied in foreign final demand.

Source: OECD Economic Outlook Database and OECD Trade in Value Added (TiVA) Database.

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Figure 2.5. High participation in GVCs has boosted productivity



Note: Value added and employment data for industries with a RCA in value-added terms above 1 in 2014 are summed for each country to obtain the average growth in employment, value added and productivity. Manufacturing does not include mining and utilities.

Source: Miroudot, S. and C. Cadestin (2017), "Services in Global value Chains: Trade patterns and gains from specialisation", OECD Trade Policy Papers, No. 208, OECD Publishing, Paris; OECD STAN Database;

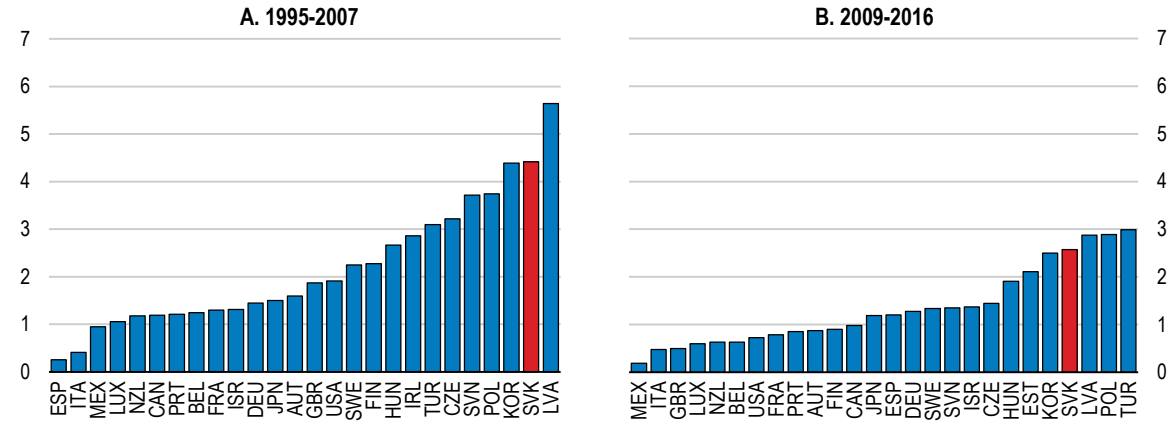
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The benefits of the integration process have fallen since the 2008-09 crisis

The very fast growth in productivity until 2007-08 has slowed significantly ever since, even if it remains high by international standards (Figure 2.6). The slowdown in the globalisation process since the crisis, reflected in the reduced growth of international trade (Haugh et al., 2016), has been accompanied by a deceleration in Slovak integration into GVCs (Figure 2.7, Panel A), which seems to be partially connected to a marked downturn in FDI inflows (Panel B).

Figure 2.6. Labour productivity gains have decelerated since the global financial crisis

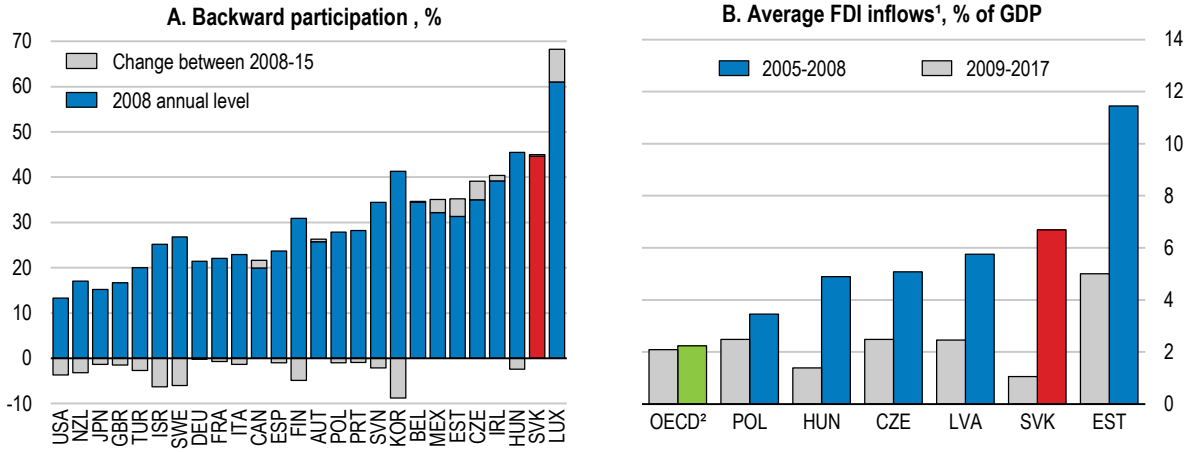
Labour productivity[1], annual % change



Note: Labour productivity is measured by GDP per hour worked (constant prices).
Source: OECD Productivity Database.

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Figure 2.7. FDI inflows and participation in GVCs have weakened since the crisis



1. Data are excluding resident SPEs (special purpose entities) when available.
2. Average of OECD countries without Iceland, Ireland and Luxembourg.
Source: OECD-WTO Trade in Value Added (TiVA) Database; and OECD International Direct Investment Statistics Database.

StatLink https://doi.org/10.1787/888933902548

In addition, the growing difficulties of foreign firms in finding a skilled labour force could limit the benefits that Slovakia could derive from its participation in GVCs in the future. According to recent surveys, 90% of automotive firms consider that the lack of skilled labour is the main obstacle preventing them from increasing their direct investment in the country (PwC, 2017). Rising labour costs, including those for low-skilled labour, also seems to have led to rationalisation efforts in the electronics sector where companies, most of which are foreign, reduced their workforce by over a third between 2009 and 2016, and where plant closures have recently been announced (OECD, 2018a; Dennik, 2018). These developments suggest that the benefits of the Slovak growth model of recent years might be shrinking, and that the country now needs to strengthen its own capacity to innovate and adopt new technologies to continue to allow for a catch-up in incomes and wages. In the longer term Slovakia could also suffer from its poor demographic prospects, which are set to be shaped by a sharp population ageing (OECD, 2017b).

Another, more general, source of concern is the future development of GVCs. Progress in digitalisation technologies with the Internet of things, Big Data, the cloud, autonomous robots and 3D printing could permanently slow GVC expansion (Baldwin, 2016). These technologies will facilitate cheaper, higher quality and better tailored production in the advanced economies, thus reducing labour costs and leading, under some scenarios, to a relocation of the production process and a reduction in the intensity of international exchange (De Backer and Flaig, 2017). This phenomenon could also be exacerbated by more protectionist trade policies. To date, however, empirical assessments point to only a modest relocation, even if a shift in GVCs to a more regional level has been observed (De Backer et al., 2016). Slovakia's firm roots in neighbouring European GVCs could moreover be an asset for the country. New investments in the automotive sector in 2016-17 show that the country continues to attract European multinationals.

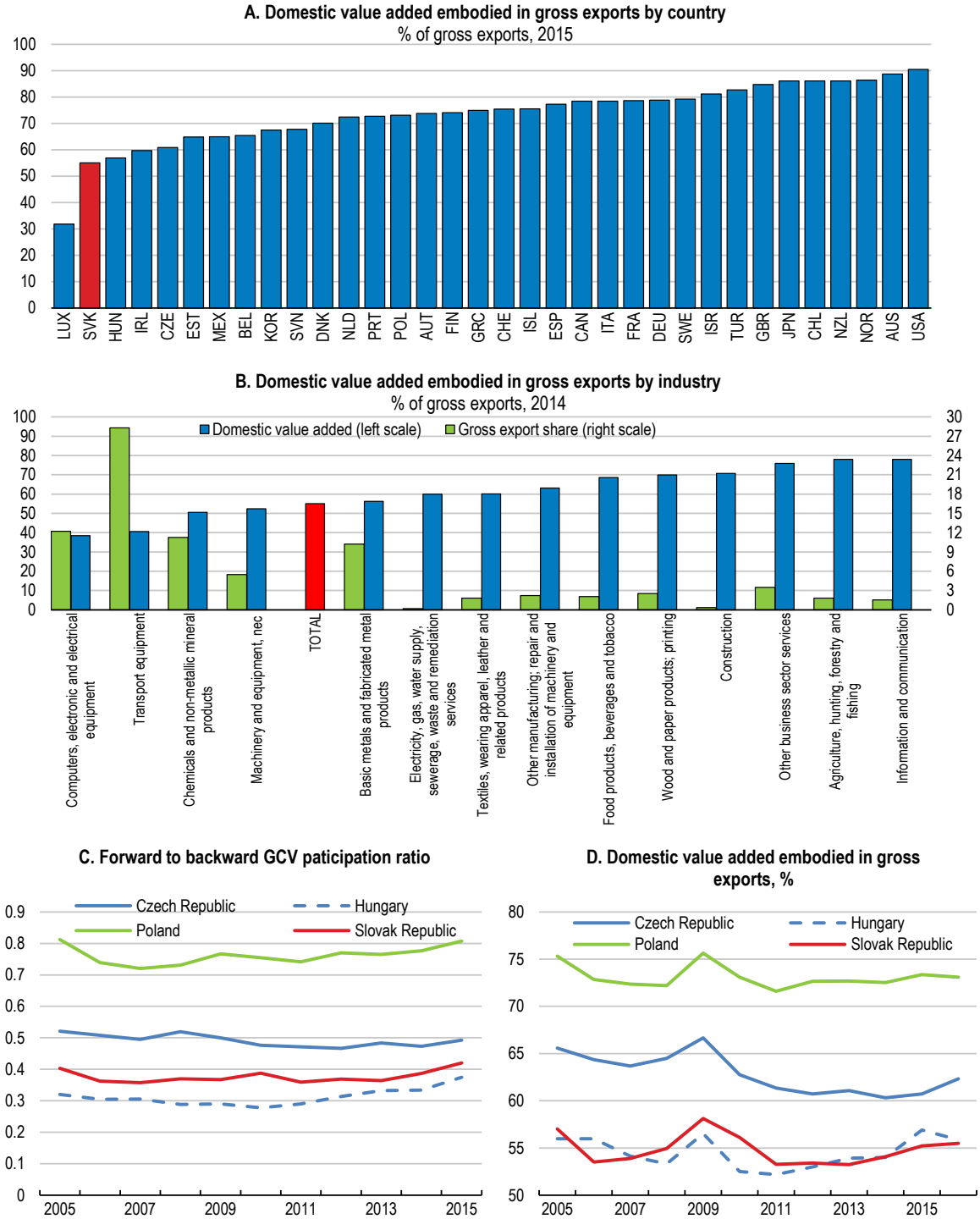
An improvement in the quality of Slovakia's role in GVCs would be useful

Slovakia's benefits from participating in GVCs are limited by its downstream positioning in value chains

While FDI inflows into Slovakia have certainly helped develop a more competitive, export-focused manufacturing industry, the extensive use of imported intermediate inputs in Slovakia's exports implies that the proportion of domestic value added in its exports is low by international standards, as in the case in the other Central European countries (Damjanovic and Banerjee, 2018) (Figure 2.8, Panel A). This situation reflects the Slovak economy's positioning on markets such as the assembly of imported intermediate inputs, which tends be a low value-added GVC activity (Vladová, 2017a) (Panel B). About 40% of Slovakia's imports are intermediate goods that are embodied in its exports (OECD, 2015b). Accordingly, the country only enjoys some of the benefits of the strong gains in export market share since the end of the 1990s, which are mostly attributable to the entry of multinationals into the automotive and electronic equipment sectors. Multinational companies established in Slovakia employ only a limited labour force. In the automotive sector, moreover, Slovakia's positioning downstream in the value chain has hardly changed over recent years (De Backer and Miroudot, 2013) (Box 2.2). During the early 2000s, the VAX ratio, which measures the share of domestic value added in gross exports, has declined significantly, partly due to compositional changes in exports towards more manufacturing (Banerjee and Zeman, 2019). However, since 2005, the VAX ratio, as well as the ratio between forward and backward GVC participation have remained stable,

indicating that Slovakia's position in GVCs have not significantly changed over this period (Panel C, D).

Figure 2.8. Domestic value added in exports is relatively low and stable



Source: OECD-WTO Trade in Value Added (TiVA) Database.

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Box 2.2. The development of the Slovak automotive sector

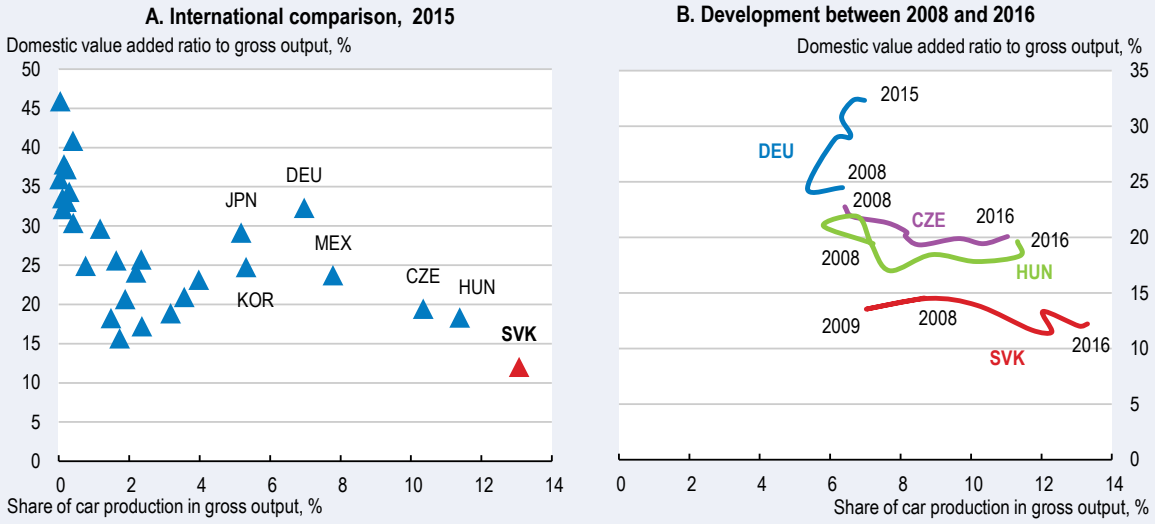
As the OECD's 2017 Economic Survey indicated, the automotive sector has been one of the key factors behind the strong growth of the Slovak economy in recent decades (OECD, 2017b). Over the past ten years there has been over a fivefold increase in the number of cars produced to one million vehicles a year, making the country the leading per capita car producer in the world. The starting point for the development of the sector was the arrival of several large foreign manufacturers (German as of 1993, Korean and French in 2006, British in 2016/17), whose investments and production have had significant direct and indirect benefits on the economy. The automotive industry alone generated one third of exports and 13% of the country's gross output in 2015, which is high by international standards. Moreover, the value added share of this sector, taking into account its indirect positive effects on the economy evaluated with input-output matrices, amounted to 11% of GDP (Luptáčik et al., 2013).

Nevertheless, the value added directly produced by the automotive industry (excluding its indirect effects) reached only 4% of GDP and the ratio of value added to gross output is, at 12%, lower than in other OECD countries (Figure 2.9, Panel A). Also, this ratio fell slightly between 2008 and 2015, despite a doubling of production in the Slovak automotive sector over the period (Panel B). Slovakia's positioning in this value chain, like Hungary's and the Czech Republic's, therefore seems to have barely improved, even if the increase in the size of the sector was accompanied by sharp productivity gains (Figure 2.10). This situation contrasts with the qualitative improvement registered by the German automotive industry over the same period: while car production remained at about 6% of total gross output in Germany between 2008 and 2015, productivity gains in the sector over this period were accompanied by an increase in the ratio of value-added to gross output from 25% to 32% (Vladová, 2017b).

In total, stronger exports and Slovakia's comparative advantage in the automotive sector have reflected a more quantitative than qualitative progression. In addition, further expansion is being hampered by growing difficulties due, in the short term, to a lack of skilled manpower to meet demand in the sector and, potentially in the longer term, to the need to adjust the expertise of this workforce to cope with foreseeable technological developments in the industry.

Ongoing radical changes in the automotive sector, which could see the development of electric cars, hydrogen-powered cars, autonomous cars, shared and connected or even flying cars, pose significant challenges for manufacturers and for the organisation of their value chains (PwC, 2018). Economic history teaches that significant technological changes can strongly alter the functioning and structure of certain sectors. In the IT sector, for example, the emergence of microcomputer technology has had major consequences for the organisation of the electronics industry with the emergence of new players and the weakening of previously dominant companies, such as IBM, whose market share in the overall computer industry declined from 60% in 1970 to 32% in 1980 (Burton, 1983).

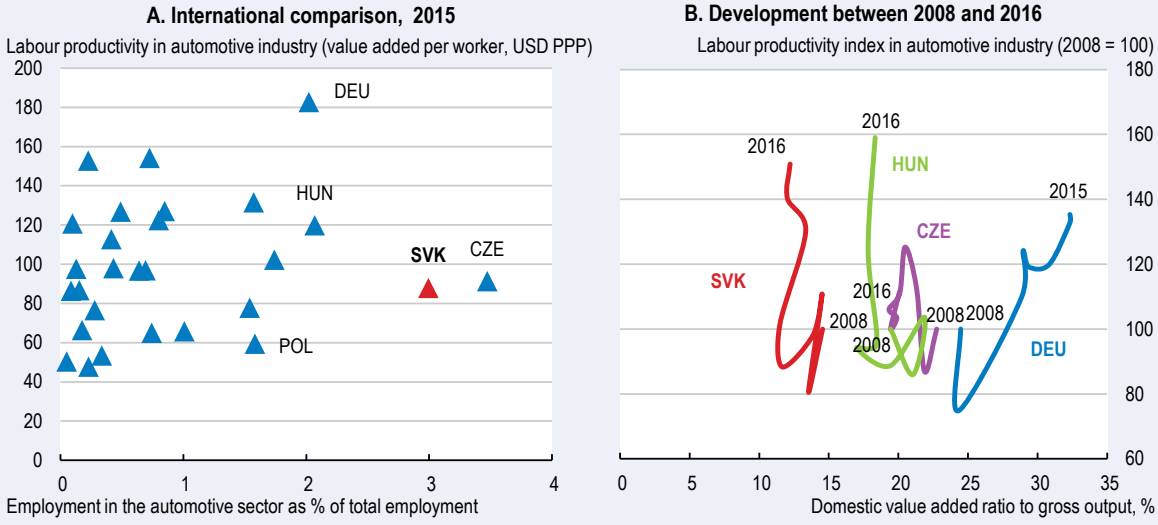
Figure 2.9. Ratio of domestic value added to gross output has remained weak in the automotive industry



Source: OECD STAN Database.

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Figure 2.10. Productivity in the automotive industry has improved sharply



Source: OECD STAN Database.

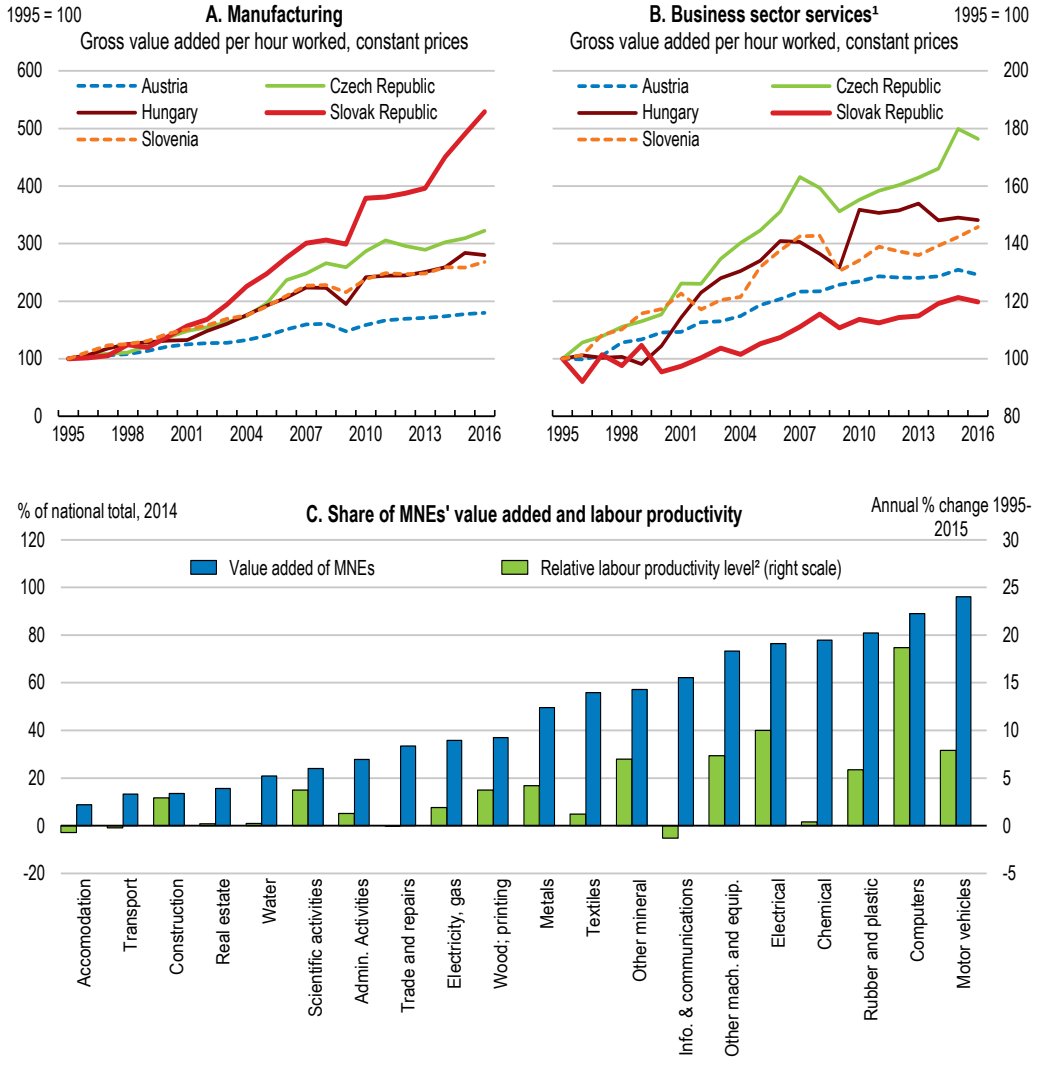
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Local firms seem to have reaped little benefit from foreign company know-how

Slovakia could make better use of the presence of foreign enterprises to strengthen the extension to local businesses of their technological know-how and/or management expertise. Indeed, local businesses seem to have reaped little benefit to date from the impact of this type of spillovers. The productivity catch-up of the Slovak economy to the more advanced countries has varied enormously between sectors and seems to be strongly

connected to efficiency gains directly generated by the arrival of large multinationals (Muzikarova, 2018). The productivity convergence process has been concentrated in manufacturing, where these multinationals are particularly present (Figure 2.11, Panel A and C). On the other hand, the productivity gap in the services sector has not closed, perhaps due to the lack of inward FDI (Panel B).

Figure 2.11. Productivity gains have been very modest in the services sectors



1. Excluding real estate.
2. Ratio of Slovak Republic to a simple average of the following countries: Austria, France, Germany and United Kingdom. Labour productivity is measured as GDP per worker in constant 2010 PPPs.

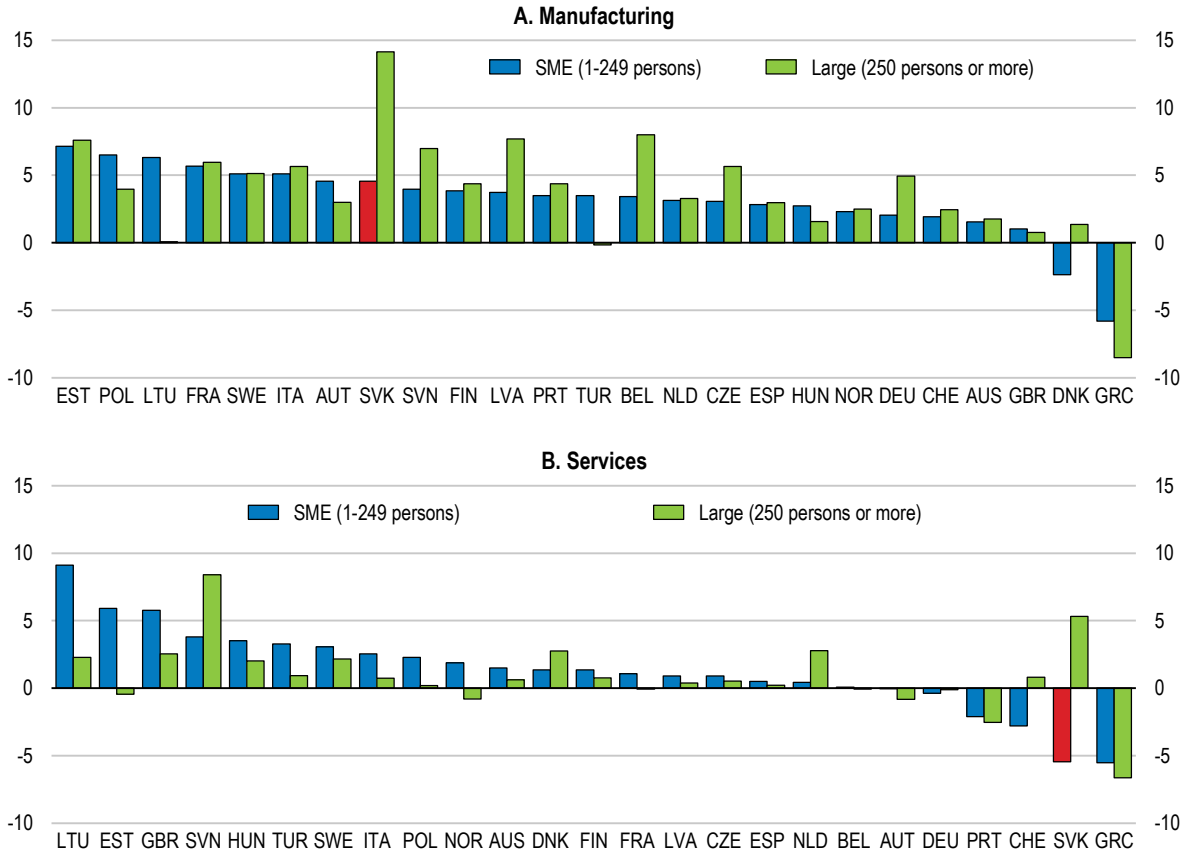
Source: OECD Productivity Database; OECD Activity of Multinational Enterprises Database; OECD STAN Database.

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Since 2009 there has also been a particularly pronounced divergence in productivity performance between large companies, many of them being foreign, and SMEs, which are most often local firms (Figure 2.12). An analysis carried out on firm-level data tends to confirm such development (Muzikarova, 2018).

Figure 2.12. Productivity gains have been much stronger in large firms than SMEs

Real value added per person employed, average annual rate, %, 2009-14 or latest available year

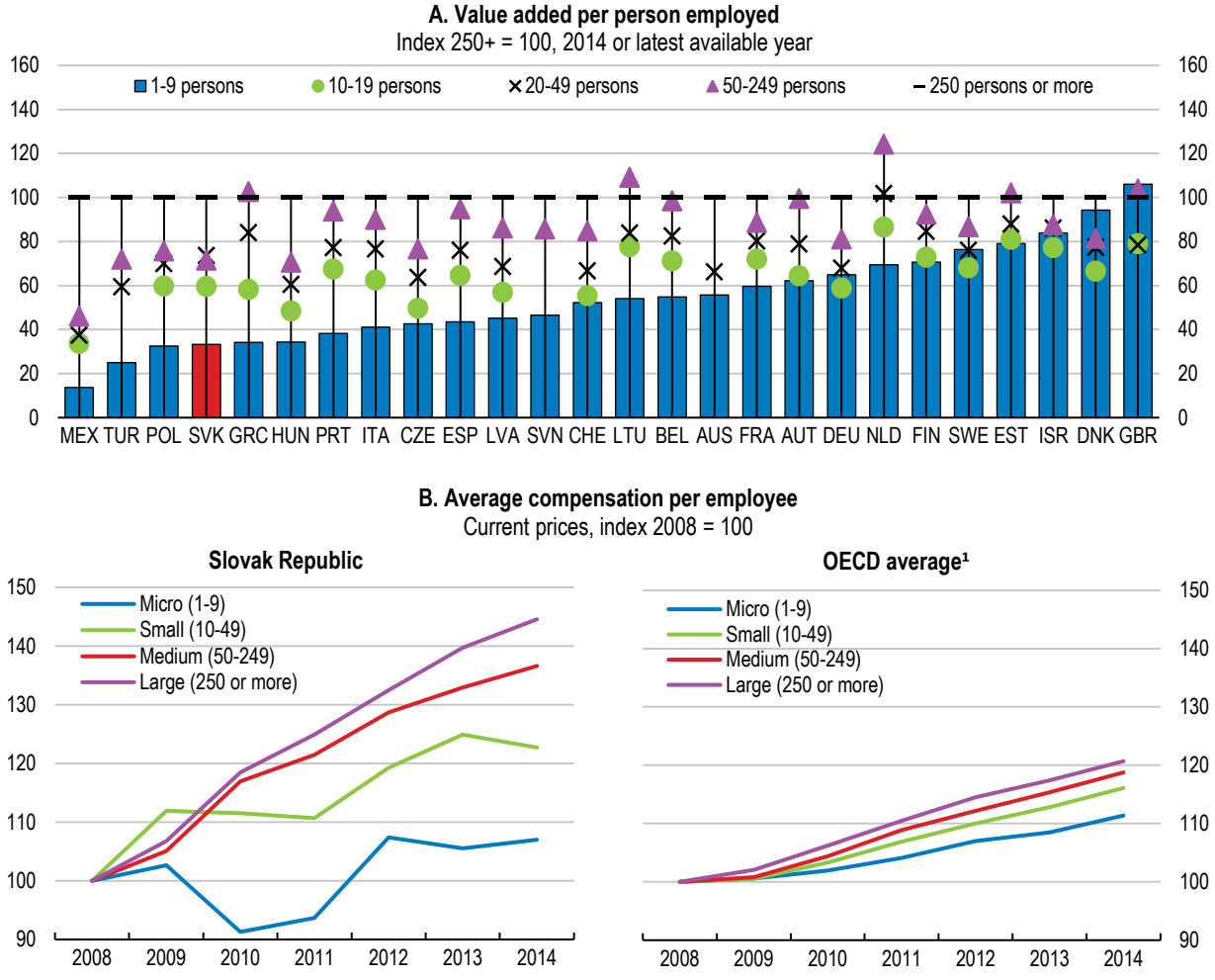


Source: OECD (2017), *Entrepreneurship at a Glance 2017*, OECD Publishing, Paris.

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Overall, the Slovak economy is characterised by a very heterogeneous industrial fabric where a small number of very efficient foreign enterprises rub shoulders with a large number of not very productive local businesses. The ten largest exporters, all of which are foreign, account for 40% of total exports compared to 20% to 30% in other small countries, including Sweden, Slovenia and Portugal (OECD, 2017c). Empirical research suggests that two-thirds of companies in Slovakia produce only one third of the total value added, and their workers have half the productivity of their remaining most productive counterparts (Vyskrabka, 2018). The disparity in productivity between small and large enterprises is higher than in most other OECD countries, and this widening gap is reflected in wage developments (Figure 2.13). Between 2009 and 2016 the difference between the average salary of workers in businesses with over 250 employees and that in those with up to nine employees increased by 40%, i.e. much more than in other OECD countries. Significant potential sources of efficiency could thus be better harnessed by encouraging local firms to modernise and facilitating the reallocation of resources to the most efficient among them.

Figure 2.13. There are large productivity gaps and rising wage disparities between small and large firms



Note: Average for available OECD countries.
Source: OECD (2017), *Entrepreneurship at a Glance 2017*, OECD Publishing, Paris.

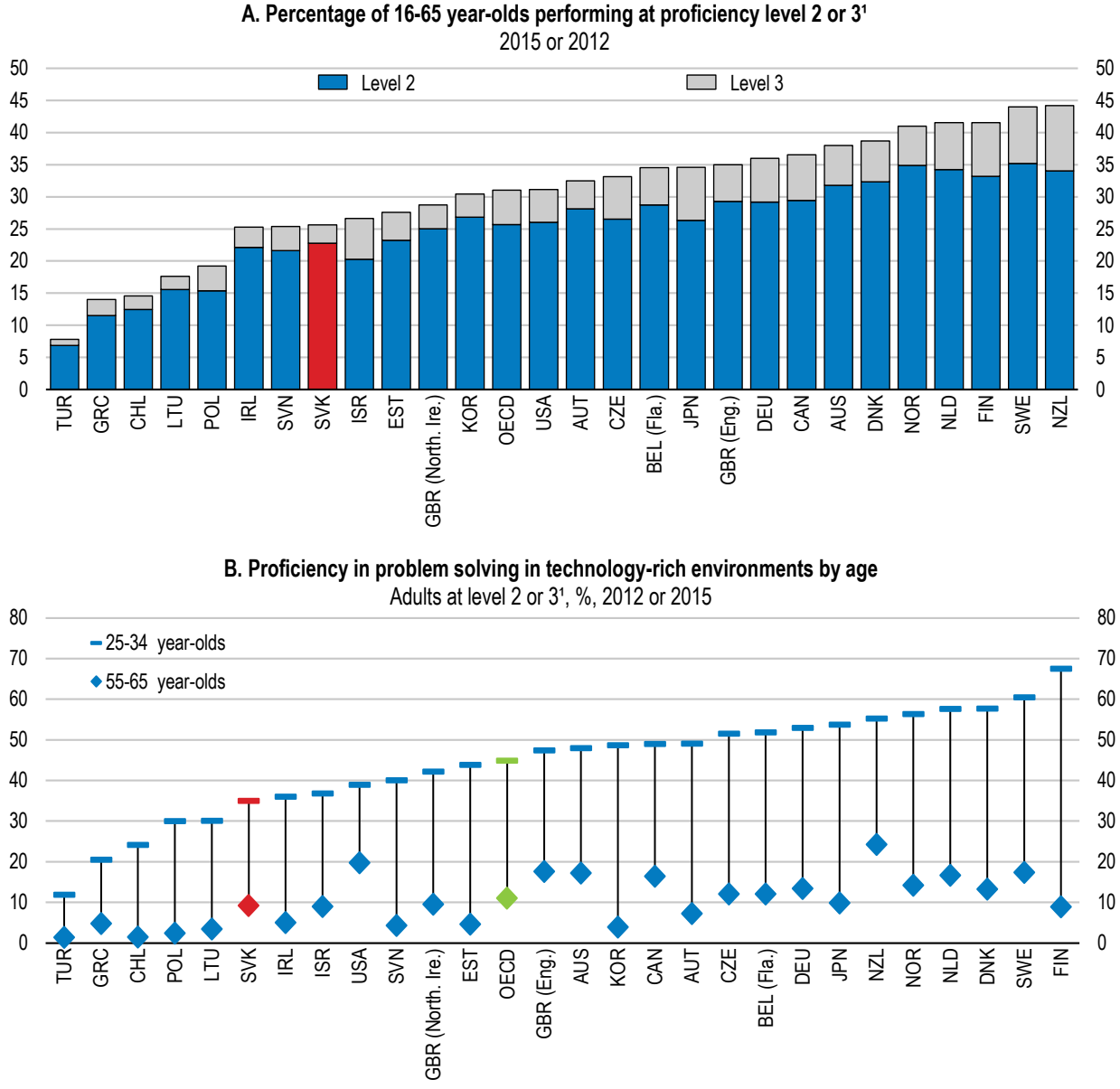
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The country seems insufficiently prepared for the increasing digitalisation and automation of the economy

The Slovak workforce does not seem sufficiently prepared for the digital expansion in the economy, neither qualitatively nor quantitatively. Only one-fifth of workers have the advanced cognitive skills required to assess problems and find solutions in technology-rich environments (Figure 2.14). In addition, there is an acute shortage of qualified workers in ICT, computers and electronics industries (OECD, 2017d). According to employers in the IT sector, 10 000 additional specialists (i.e. 14% of employment in the sector) are required, with this figure predicted to double in the next five years (Itas, 2016; Liptáková, 2017). Slovakia also seems vulnerable to the expected increase in automation, as growing demand for highly skilled labour is expected to replace the many predominantly medium-skilled jobs currently required for routine tasks (Figure 2.15). Adapting the competencies of the

workforce to these technological changes is necessary to benefit from them in terms of productivity and growth, and to boost wages and incomes.

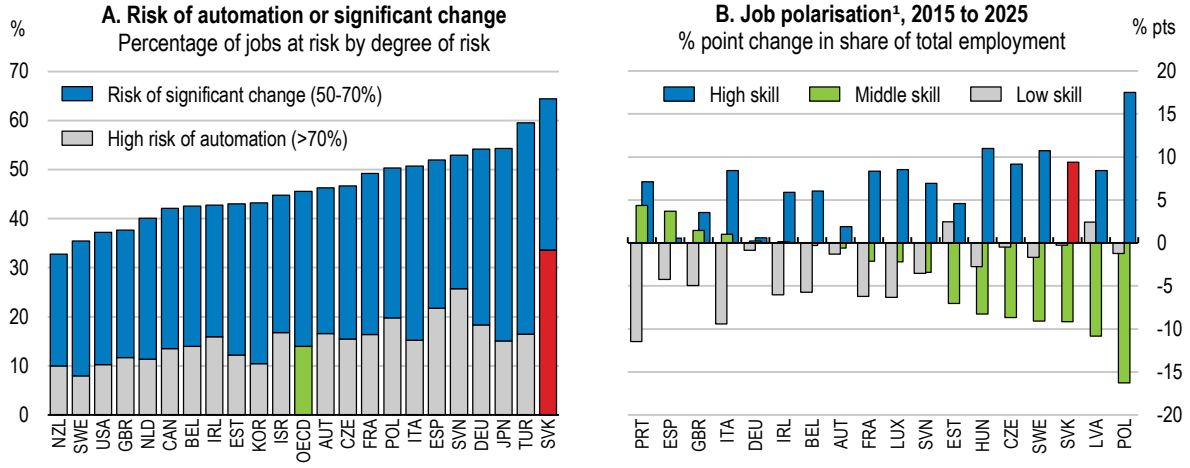
Figure 2.14. Proficiency in problem solving in technology-rich environments is relatively low



Note: Unlike individuals in level 1 those in level 2 and 3 have advanced ICT and cognitive skills to evaluate problems and solutions.
Source: OECD (2016), *Skills Matter: Further Results from the Survey of Adult Skills*, OECD Publishing, Paris.

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Figure 2.15. Slovakia's employment looks vulnerable to the likely increase in automation



Note: High-skill occupations include jobs classified under the ISCO-88 major groups 1, 2, and 3. Middle-skill occupations include jobs classified under the ISCO-88 major groups 4, 7, and 8. Low-skill occupations include jobs classified under the ISCO-88 major groups 5 and 9. The above chart includes 15 of the 18 listed industries. The excluded industries are the following: Agriculture, hunting, forestry and fishing (1), Mining and quarrying (2), and Community, social and personal services (18).

Source: L. Nedelkoska and G. Quintini (2018), "Automation, skills use and training", *OECD Social, Employment and Migration Working Papers*, No. 202, OECD Publishing, Paris. http://dx.doi.org/10.1787/2e2f4eea-en; European Centre for the Development of Vocational Training (Cedefop) (2017), *Forecasting skill demand and supply*, http://www.cedefop.europa.eu/en/events-and-projects/projects/forecasting-skill-demand-and-supply/.

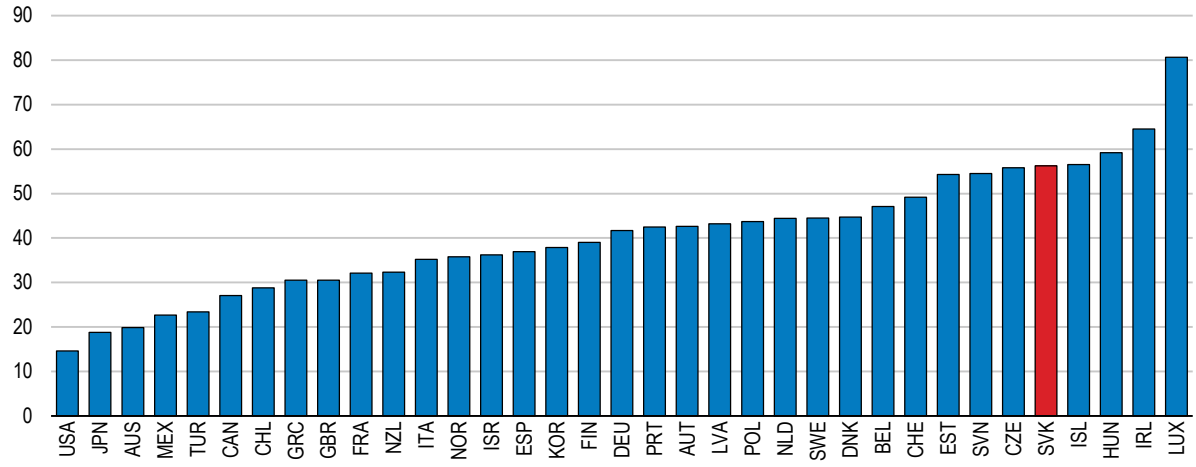
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Production and exports are concentrated in very few manufacturing industries

Although it may be difficult for Slovakia, like other small countries, to avoid a certain degree of specialisation, it would be useful to promote a greater diversification of the economy. Production and exports are characterised by a high degree of concentration in a limited number of sectors, notably the electronic and automotive industries (Vladová, 2017b). Slovakia's two leading export products represented 41% of goods exported in 2017 compared to an average of 24% for small European countries and 30% in the Czech Republic and Hungary. By creating agglomerations and successful industrial clusters in the automotive sector, this specialisation increased the country's appeal in this field, which in turn boosted specialisation in recent decades, and eventually made it a source of vulnerability. Slovakia's exposure in terms of output and employment (Figure 2.16) to fluctuations in world trade and external shocks is coupled with a strong dependence on a few sectors in which, moreover, sweeping technological transformations are expected in the not-too-distant future (McKinsey, 2017; PwC, 2018).

Figure 2.16. Slovak employment is strongly dependent on foreign final demand

Share of domestic employment embodied in foreign final demand, %, total economy, 2014



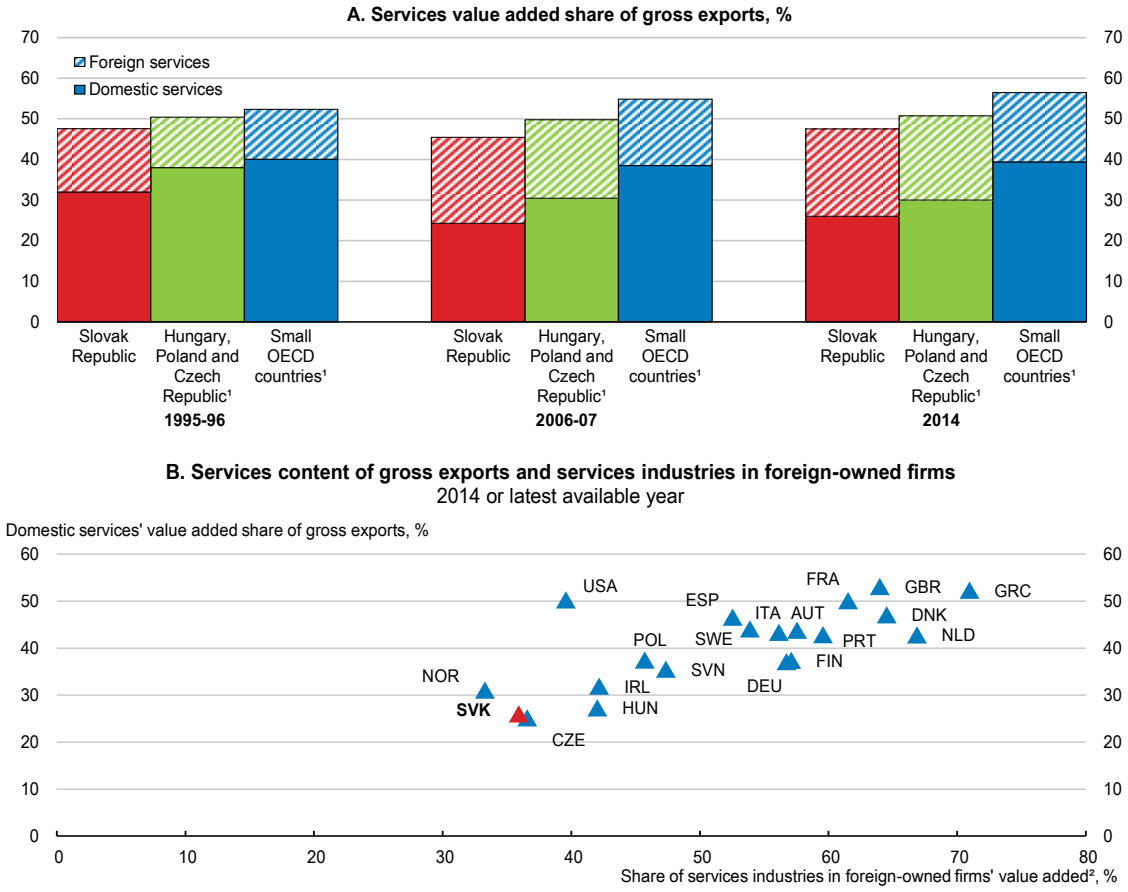
Source: OECD (2017), Science, Technology and Industry Sco reboard 2017.

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The heavy concentration of the production structure is partly related to the poor development of services in the economy. The extension of the role of services as a source of productivity gains and value creation in GVCs in most OECD countries (Miroudot and Cadestin, 2017b) has benefited Slovak enterprises rather little so far. The share of the domestic services value added embodied in total exports is substantially weaker than in the small OECD countries average (Figure 2.17, Panel A). This comparatively limited integration of Slovak domestic services in GVCs appears to be linked to the low level of FDI inflows in the sector (Panel B), but probably also to the local SMEs' difficulties in acquiring foreign companies' know-how, as mentioned above.

The economy would stand to gain from the promotion of a more diversified production structure, which encourages the development of services and highly knowledge-intensive activities, and this would reduce its vulnerability to the conditions on, and shocks to, global markets. Slovakia seems to be well equipped to broaden the structure of its exports by product and to diversify its production system. In 2016 it ranked 19th worldwide in the Economic Complexity Index, which measures countries' relative knowledge intensity (Hausmann and Hidalgo, 2010; Observatory of Economic Complexity, 2018). From this point of view, the recent development of shared services centres, which execute and manage specific operational tasks (finance, accounting, IT support, etc.) for several businesses or divisions within a single group, seems especially promising (Chovanec, 2018). FDI inflows into the services sectors have risen since 2009, and since 2000 Slovakia has registered the emergence and/or strengthening of comparative advantages in some services sectors, including the transport, engineering and technical trials and telecommunications sectors, which have recorded productivity and employment gains (Miroudot and Cadestin, 2017a).

Figure 2.17. Integration of Slovak domestic services in GVCs is low



1. Unweighted average.
2. Excluding financial and insurance services.

Source: OECD Activity of Multinational Enterprises Database; OECD-WTO Trade in Value Added (TiVA) Database; TiVA nowcasted estimates Database.

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Promoting policies designed to increase and leverage integration into GVCs

A broad range of well-coordinated reforms is needed

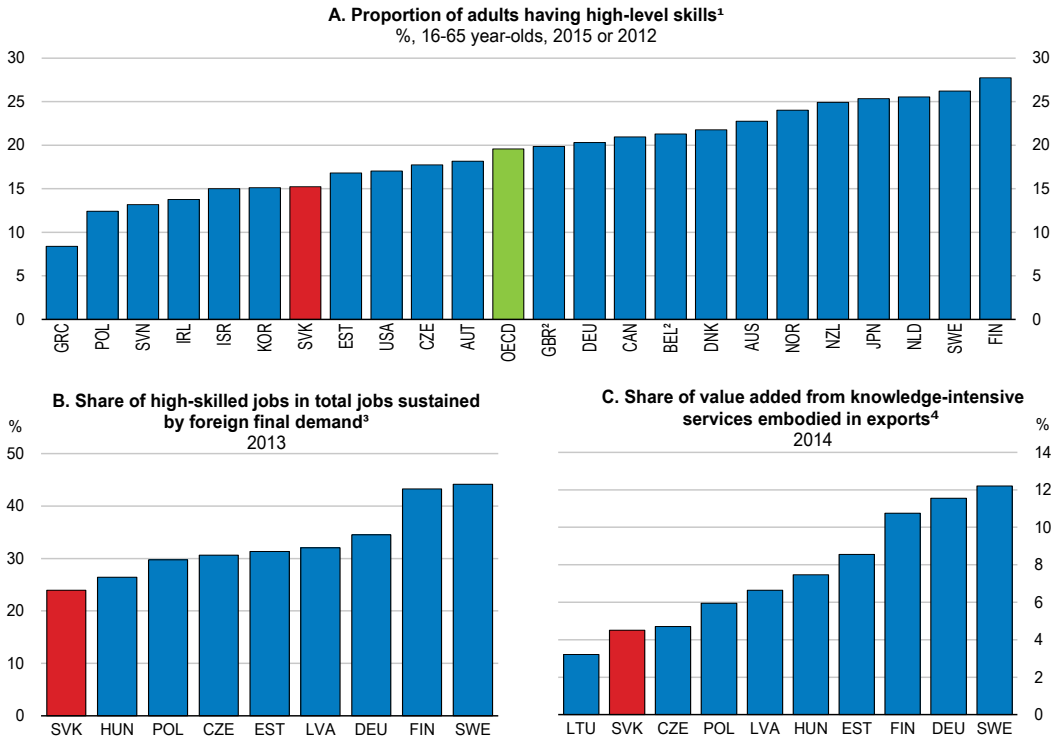
Although Slovakia's integration into global trade in recent decades has produced remarkable results, reforms are needed to improve the quality of this integration, correct certain imbalances and prepare the country for future changes in the international environment. The authorities should encourage the development of more diverse activities with greater added value by attracting new foreign investment and fostering the development of local businesses. To capitalise on the country's close connection to international markets, decision-makers must continue to nurture the business environment and strengthen policies that promote the dissemination of knowledge and the attraction and retention of highly skilled workers. It will also be important to ensure that the skills of the labour force are better matched to the constantly evolving needs of the labour market, stimulate businesses' innovation capacity and promote greater efficiency in the allocation of resources in the economy. To leverage the benefits from global value chains, a wide range of well-coordinated public policies should be encouraged, and this will require a whole-of-government approach (OECD, 2007d).

Improving the skills of the work force

A vital condition for improving Slovakia's position in global value chains is the existence of a sufficiently large pool of workers with a high level of education and skills. In the short term, inward migration could supply the economy with much needed working hands. For the longer term, a good system of education and training is especially important to strengthen the skills needed for the adoption and development of the technological innovations required in an economy increasingly based on knowledge. Improving the design and quality of education policies is also important, as it ensures broad distribution of the benefits drawn from increased integration in value chains and forestalls the widening inequalities often linked to the globalisation process (Lang and Mendez Tavares, 2018).

With its relatively low wage costs and evenly educated labour force, Slovakia has turned itself into an attractive market for foreign investors. Almost all Slovaks have at least upper secondary education, and few adults have low literacy or numeracy skills. However, the share of high-skilled adults in the total population and the skills and knowledge intensity of Slovak participation in GVCs is low (Figure 2.18).

Figure 2.18. The share of high-skilled adults and their contribution to GVCs is low



1. Average of percentage of adults scoring at PIAAC literacy or numeracy proficiency level 4 or 5, or scoring at problem solving in technology-rich environments level 2 or 3.
2. Data for Belgium refer only to Flanders, and data for the United Kingdom refer only to England.
3. OECD calculation of the decomposition of total employment sustained by exports into three groups of skills intensity defined according to major groups of the International Standard Classification of Occupations 2008: High-skilled occupations (ISCO 0 to 8 major groups 1 to 3), medium-skilled (4 to 7) and low-skilled (8 and 9).
4. OECD estimates based on the OECD Inter-Country Input-Output (ICIO) table and the OECD Bilateral Trade Database by Industry and End-Use (BTDIxE).

Source: OECD (2017), *Education at a Glance 2017: OECD Indicators ;* OECD (2017), *Skills Outlook 2017*: *Skills and Global Value Chains;* OECD/WTO (2016), *Statistics on Trade in Value Added (database).*

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Facilitating immigration of skilled workers

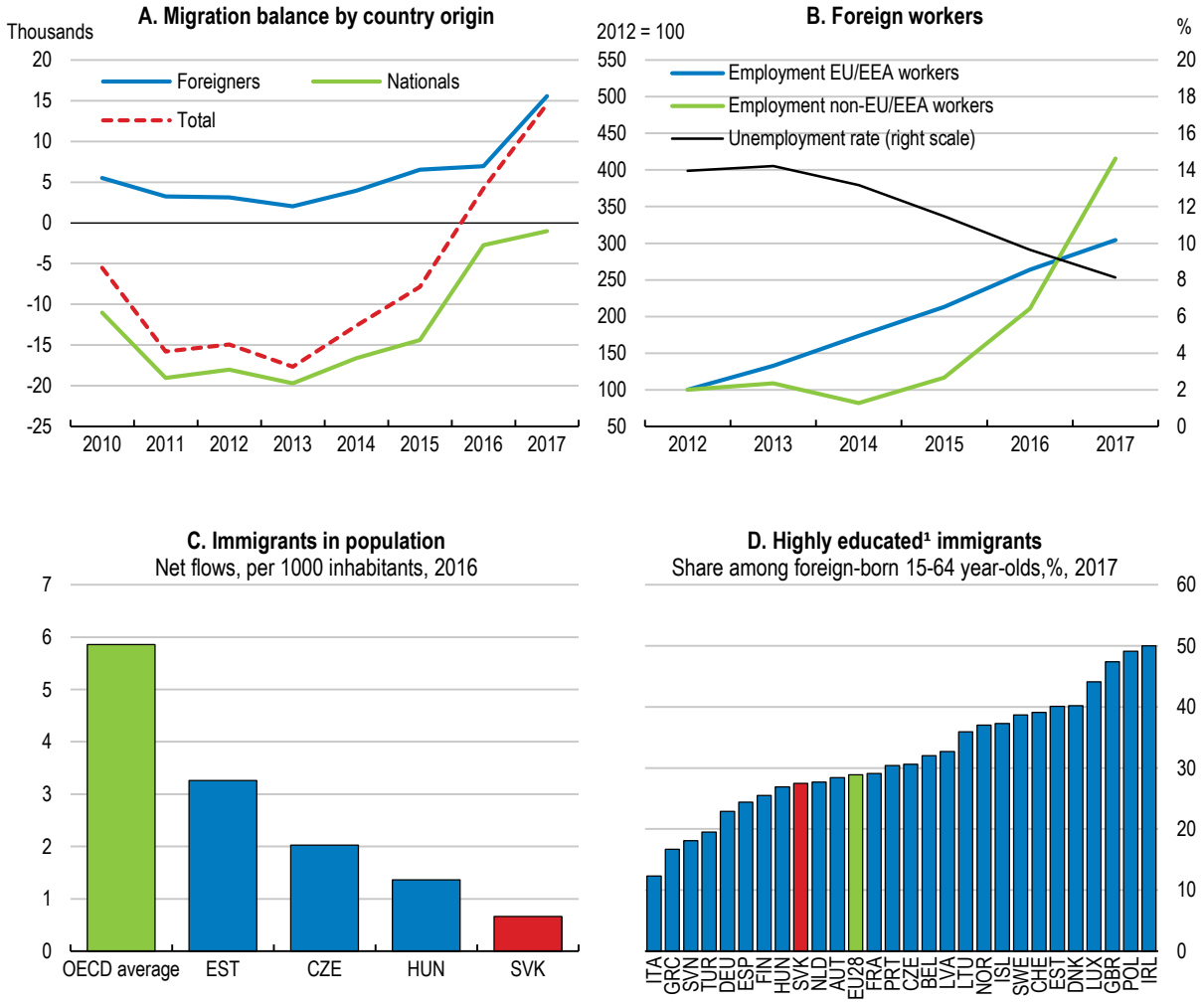
In the last 15 years, the net emigration from Slovakia has been substantial, as 300 000 people (or 6% of the population) left the country. This trend, driven by higher remunerations abroad, was particularly strong between 2004 and 2006, after the country's accession to the EU (Halus et al., 2017). With improved economic conditions, the migration balance reversed in 2016 and 2017 due to the return of a growing number of Slovaks living abroad and stronger foreign immigration (Rizman and Sacherová, 2018) (Figure 2.19, Panel A). This immigration has especially accelerated for nationals outside the EU and European Economic Area (EEA, particularly from Ukraine, Serbia, Russia and Vietnam), fuelled by shortage of domestic workers in a context of historically low unemployment (Panel B). Nevertheless, the foreign population in Slovakia represents only 1.2% of the total population, against 9.1% in the average OECD countries, and the average net annual inflow of foreigners remains proportionally very low compared to other countries (panel C). As Slovakia also attracts relatively few highly skilled foreign workers (Panel D), the recent improvement in net migration remains insufficient to meet the demand for labour, and this partly reflects stricter immigration rules than in other EU countries (OECD, 2017b), which results in too long procedures (between 6 and 9 months) for hiring non-EU/EEA workers (Pwc, 2017).

To correct this shortcoming, the authorities have made some changes to their recruitment procedures of skilled workers from non-EU/EEA countries. These procedures, which only apply for jobs with remuneration above a certain threshold, require a certification of the qualifications and diplomas that must be translated into Slovak, the granting of a residence permit, and the issuance of a work permit by the employment services, which must ensure that there are no Slovak workers available for the vacant post. To speed up this system, since May 2018 a facilitated procedure - including a labour market test exemption - is in place for occupations in shortage in district where unemployment is below 5% and for firms with less than 30% foreign workers. The shortage list is updated annually by a tripartite commission (MoF, 2018). In June 2018, the government also announced that it will provide special treatment for Volkswagen Slovakia, including simplifications for issuing work permits for foreign workers to help it meet its employment needs (Spectator, 2018).

These measures are going in the right direction, but their limited scope to only one aspect of the hiring procedures and a specific company seems insufficient. At the same time, the exempted occupations are mostly low- and middle-skilled jobs, because the definition of occupations in shortage is based on labour office data, where high skilled vacancies are rarely registered. Therefore, reducing and guaranteeing a maximum time for hiring procedures of non-EU/EEA workers is desirable for all firms without discrimination. For this, the authorities could, for example, apply the "silence-is-consent" principle for issuing residence permits and for certifying workers' qualifications beyond a certain period of time.

The government should develop a comprehensive strategy to keep ties with the large expatriate community. Returning emigrants could bring home skills, networks and financial capital (OECD, 2008). Many OECD countries provide online hubs for their citizens abroad advertising jobs, training, and business and research opportunities in the home country (DFA, 2015). Promoting ties between the diaspora and the country of origin can be an important source of knowledge transfer.

Figure 2.19. The migration balance has increased but is still low



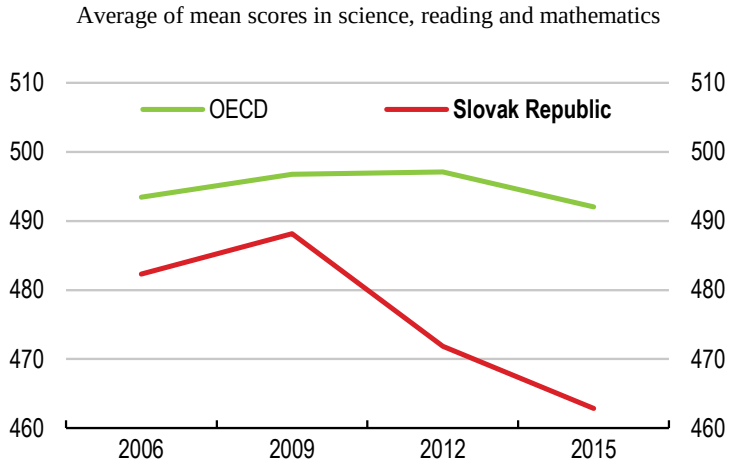
Note: People with tertiary education attainment at levels 5-8 (ISCED 2011).
Source: OECD Economic Outlook Database; OECD International Migration Database; Eurostat.

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Improving education

High skilled human capital availability is key to ensure sustainable growth. However, the quality of education provided by the Slovak secondary system is below the OECD average. PISA results for 15 year-olds are weak in international comparison and have deteriorated over time (Figure 2.20). Secondary schools are predominantly vocationally oriented, with 70% of all students at this level enrolled in vocational programmes, one of the highest shares in the OECD. Moreover, vocational students have generally lower levels in literacy and numeracy proficiency than general education graduates, as practical training crowds out more general academic skills (OECD, 2017b).

Figure 2.20. Students' education outcomes are weak and deteriorating



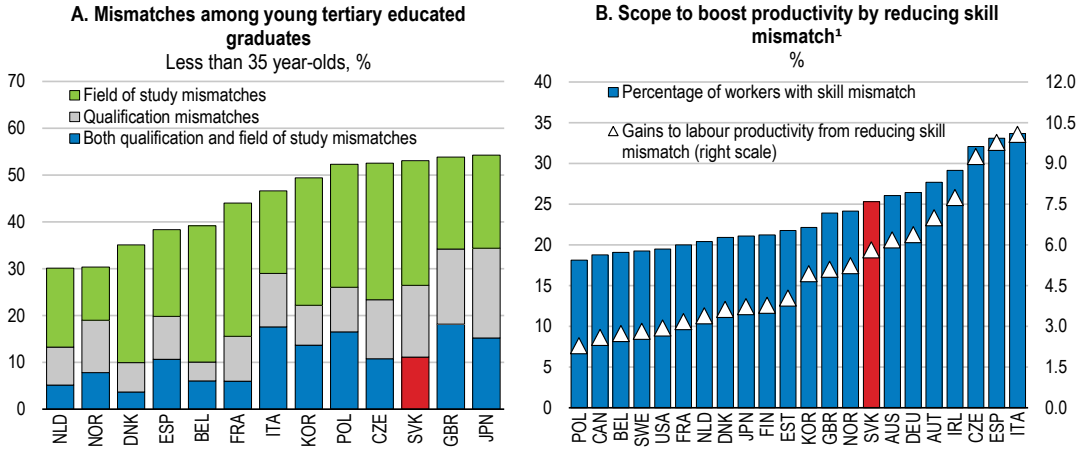
Source: OECD (2016), *PISA 2015 Results (Volume I): Excellence and Equity in Education*.

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The higher education system is also beset by serious failings. As stated in the previous Survey, there is a need to improve its average quality (OECD, 2017b). Slovak universities are poorly ranked in international comparison, given their limited available resources, weak research and training outcomes and low capacity to efficiently connect with other stakeholders, both foreign and domestic, including the business sector (U21, 2018). Over 14% of post-graduate students — the second-highest level in the OECD — go abroad for better-quality qualifications, with most (82%) moving to the Czech Republic, where they often remain to find work after they have completed their studies (Minacherovà, 2018a; Halus et al., 2017).

Courses at tertiary education level in Slovakia are not adequately balanced, with too great an emphasis on academic learning and very little practical experience. Qualifications and educational mismatches are high and costly (Figure 2.21, Panel A). Over half of all young people are affected by this problem, which is most pronounced for the relatively large numbers studying human and social sciences, while the proportion of students graduating in science, technology, engineering and mathematics (1.66% for those aged 20 to 29 in 2015) is lower than the EU average (1.91%) (EC, 2018a, TBP2). Qualifications are poorly matched to the needs of businesses involved in robotisation and the growing use of IT solutions, and graduates are insufficiently prepared to solve problems that are non-routine or require the use of a computer. Yet, entry into the era of Industry 4.0 (smart factories, Internet of Things, connected cars) seems to be inevitable within a five-year timeframe for two-thirds of businesses in the automotive sector (PwC, 2017). This major imbalance between the supply of and demand for skills on the labour market comes with a cost: it reduces the productivity and salaries of Slovak workers by an estimated 6%, a high level by international standards (Panel B).

Figure 2.21. Qualifications and educational mismatches in Slovakia are large and costly



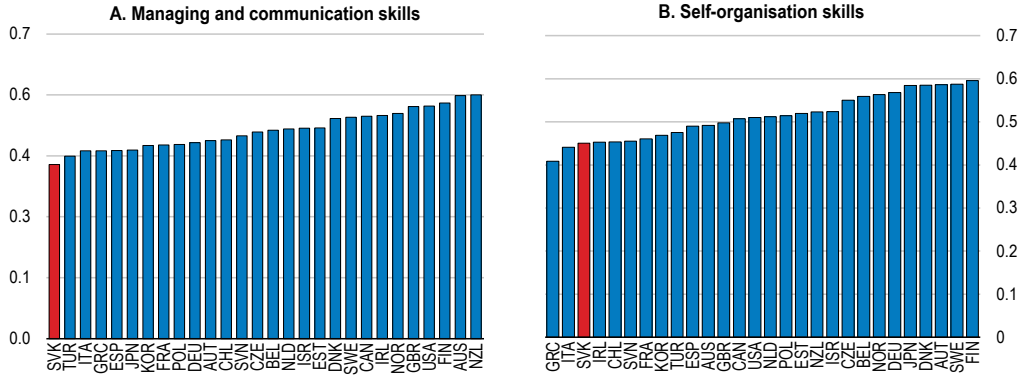
Note: The figure shows the percentage of workers who are either over- or under- skilled and the simulated gains to allocative efficiency from reducing skill mismatch in each country to the best practice level of mismatch. The figures are based on OECD calculations using OECD (2012), *Survey of Adult Skills*.
Source: OECD (2012), *The Survey of Adult Skills (PIAAC);* M. Adalet McGowan and D. Andrews (2015), "Labour market mismatch and labour productivity: Evidence from PIAAC data", *OECD Economics Department Working Paper*, No. 1209, OECD Publishing, Paris.

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The Slovak education system also seems to be insufficiently focused on the acquisition of soft skills, such as the ability to work with others, share information, organise one's work, and communicate with, influence and manage others (Figure 2.22). Given the digital transformation and the growing use of robots, the value of these social skills, which are required for tasks that cannot be automated or are complementary to cognitive skills, is rising (OECD, 2016a; Grundke et al., 2018). These gaps in Slovakia's education system may well be one of the factors holding back the performance and capacity of Slovak SMEs to fully harness the expertise of the foreign enterprises operating in the country. Differences in management practices can account for up to 30% of total factor productivity differences between countries (Bloom et al., 2017).

Figure 2.22. Slovak workers' soft skills seem under developed in a number of domains

Workers' task-based skills, index, 2012 or 2015



Note: A higher score is associated with a higher frequency of performing these tasks on the job. Data for Belgium refer only to Flanders and data for the United Kingdom refer to England and Northern Ireland jointly.
Source: OECD (2017), *Skills Outlook 2017: Skills and Global Value Chains*, OECD Publishing, Paris.

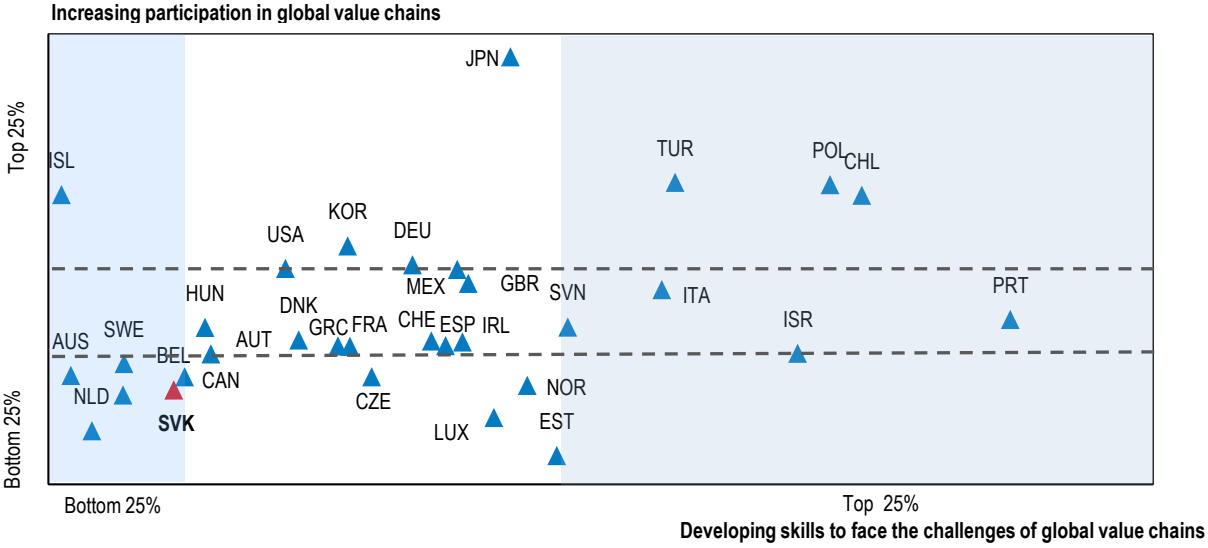
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While the higher education system is struggling with serious quality issues, it also trains relatively few students. Although the proportion of students graduating from higher education has doubled since 2000 to some 30% of the 20-34 age bracket, it remains below the OECD average (42%) and still falls some way short of the target of 40% by 2020 set by the authorities. With a significant share of students going abroad for better-quality higher education, the entry rate in Slovak tertiary education system is lower than the OECD average (OECD, 2017e). The country suffers from a particular shortage of ICT specialists, who represent only 2.9% of total employment, as compared to the EU average of 3.7% (EC, 2018a). Most research has found that the need for skilled labour is likely to continue to increase in most countries, in step with technological advances and the increased automation of routine jobs (OECD, 2018b; Keister and Lewandowski, 2016; Miklosovic and Radvanski, 2016). These needs could be significant in Slovakia, where 62% of jobs are likely to be replaced by robots or to undergo major change — a higher figure than in other countries (see Figure 2.15 above).

These difficulties reflect the slow pace of the education sector's response to changing needs in the labour market. By international standards the jump in younger workers' ICT skills compared to those of older generations has been modest (see Figure 2.14, Panel B, above). And this limited improvement in the average skills of the population seems to have contributed to the slow progress of Slovakia's integration into GVCs since 2000 (Figure 2.23).

Figure 2.23. Increases in skills and participation in global value chains has slowed since 2000

Changes in participation in global value chains and in skills, 2000-15



Note: The figure shows the scoreboard indicators capturing the development of participation in GVCs over 2000-11 and the evolution of skills. Countries in the upper part of the figure are among the top 25% that have increased their participation in GVCs the most while those in the lower part of the figure are among the bottom 25% that have increased their participation in GVCs the least. Countries in the right-hand side are among the top 25% that have increased their skills the most while those in the left-hand side are among the bottom 25% that have increased their skills the least. Countries in the middle are around the average.
Source: OECD (2017), *Skills Outlook 2017: Skills and Global Value Chains*, OECD Publishing, Paris.

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Slovakia's ongoing education reforms need to be fast-tracked to strengthen the links between the education system and the labour market. As technology is evolving quickly,

the need to promote workers' adaptability to rapidly changing labour market demand is becoming increasingly important, making it necessary to improve the level of general skills at secondary level. According to Hanushek et al. (2015), labour outcomes of VET graduates are lower than those following the academic track over the long run as skills acquired through VET may become obsolete more rapidly. Since the dominant role of VET at the secondary level in Slovakia is not expected to diminish much in the near future, vocational schools should offer a more balanced mix of general and practical skills, with sufficient time devoted to general skills acquisition. In any case, with more and more VET graduates entering tertiary education the need for general skills is increasing.

Making higher education more responsive to labour market needs is also required. To this end, setting up a graduate tracking system, as Poland did it few years ago (OECD, 2018c), would be useful, as stressed by the 2017 Survey. Improving educational counselling and career guidance to students would also be advisable. Recent steps in this direction, including the creation of centralised information outlets for students and their parents are welcome but should not be restricted to the dual work-study programmes (Minarechová, 2018b).

Tertiary education programmes should also be developed that have a greater professional focus: there is almost no vocational programme at the Bachelors level in Slovakia, and financial incentives push universities to produce too many students with little practical experience at Masters level (OECD, 2017b). Businesses also need, in general, to be more closely involved in the governance of higher education. Good co-operation between the business sector and universities has a number of positive effects: in some universities these initiatives have encouraged the development of business services centres, for example (Chovanec, 2018), and Slovakia is now well placed to develop new comparative advantages in these service sectors (OECD, 2017f). At end-2017 business service centres were the third largest employers in Slovakia after the automotive and electronic industries, with almost 36 000 workers. More than 70% of these employees were university educated and received an average salary about twice as high as the national average. Employment in this sector has also expanded relatively rapidly at an annual rate of about 10% over the last two years (Liptáková, 2018; AmCham, 2017).

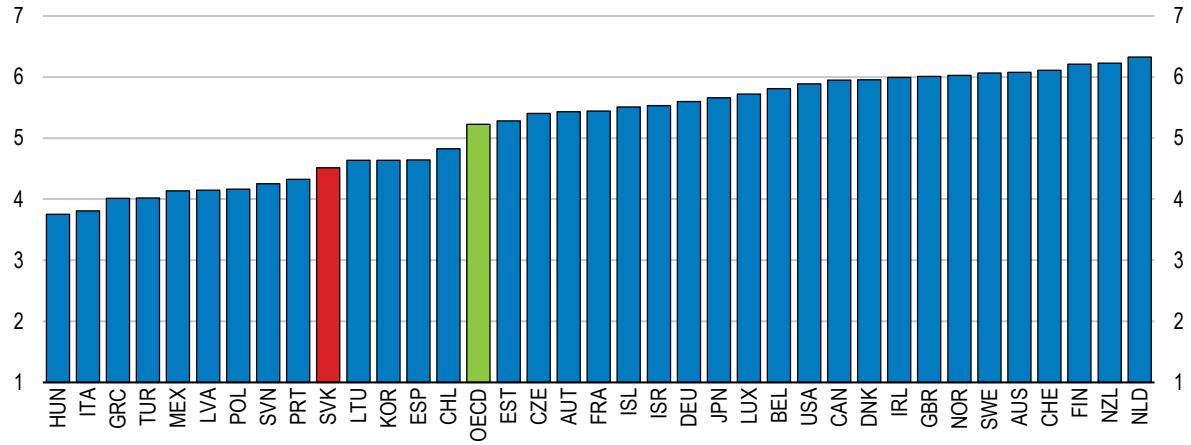
Authorities also need to make sure that students are better prepared for digital technologies. Work on this has already begun, with the Academy of Information Technologies' February 2017 launch of the programme Learning for the 21st Century. In September 2017 the government also introduced its Digital Coalition initiative, within the framework of the EU plan to improve the digital skills of students, workers, employers and job-seekers. All young people need a good command of basic ICT skills, given their increasing use in most professions and businesses. Moreover, training for ICT specialists should be more heavily promoted, given the pace of change in this sector, especially the sharp rise in needs for advanced engineering and machine-learning experience.

It would also be advisable to improve the acquisition of soft skills, especially in relation to management. It is not enough for workers to have the required skills in, for example, the digital sector — they need to be able to leverage them fully for the best results in terms of productivity and competitiveness. Good managers increase the effectiveness of committed resources by improving the organisation of work within the firm, selecting good candidates, optimising the use of each individual's skills, and training underqualified workers. However, professional management is underused in Slovak firms (Figure 2.24), probably because the large majority of them are small and managed by their owners. There could also be a failure of low-skilled company owners, especially those of older generations

influenced by the communist era, to appreciate the potential value that a university-trained marketing manager could bring. Providing opportunities for management training for those with managerial responsibilities without prior training in management is one way forward. Developing management skills, especially SMEs, could also be encouraged as in a number of OECD countries (OECD, 2017g). Moreover, complementary to a managerial skills development programme, Slovakia could emulate more specific policies such as developing business coaching programmes for SMEs (as in New Zealand) or supporting the establishment of management and entrepreneurs' networks to disseminate the adoption of good practices (as in the Netherlands and Finland) (OECD, 2016b).

Figure 2.24. Professional management is scarcely used

Reliance on professional management, score from 1 (lowest) to 7 (highest), 2017-18



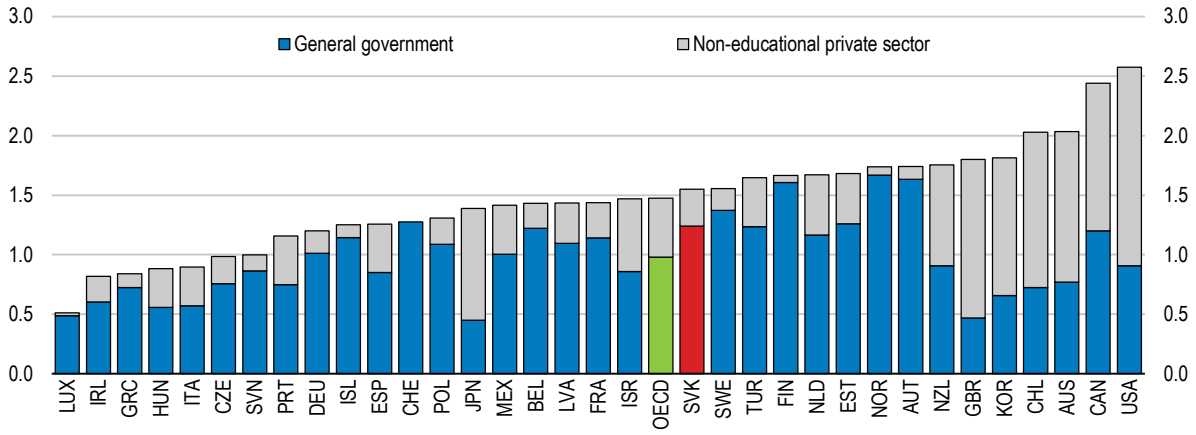
Note: Score based on responses to the question: "In your country, who holds senior management positions in companies? [1 = usually relatives or friends without regard to merit; 7 = mostly professional managers chosen for merit and qualifications]".
Source: World Economic Forum (2017), *The Global Competitiveness Index Historical Dataset 2007-2017*.

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Seeing these changes through, however, will require additional resources. The funding allocated to tertiary education in Slovakia is relatively low, coming to just 1.1% of GDP in 2014 compared to 1.6% in OECD countries on average (Figure 2.25). As a result of this low level of funding, which mostly consists of public money, teaching staff are paid comparatively little, and this has a knock-on effect on the development and quality of higher education. In ICTs in particular teaching roles vie with highly prized and better paid positions in industry for highly skilled IT staff (Minarechová, 2018a).

Figure 2.25. Spending on higher education is low

Expenditure on tertiary education (ISCED level 5 to 8), % of GDP, 2015



Source: OECD Educational finance indicators.

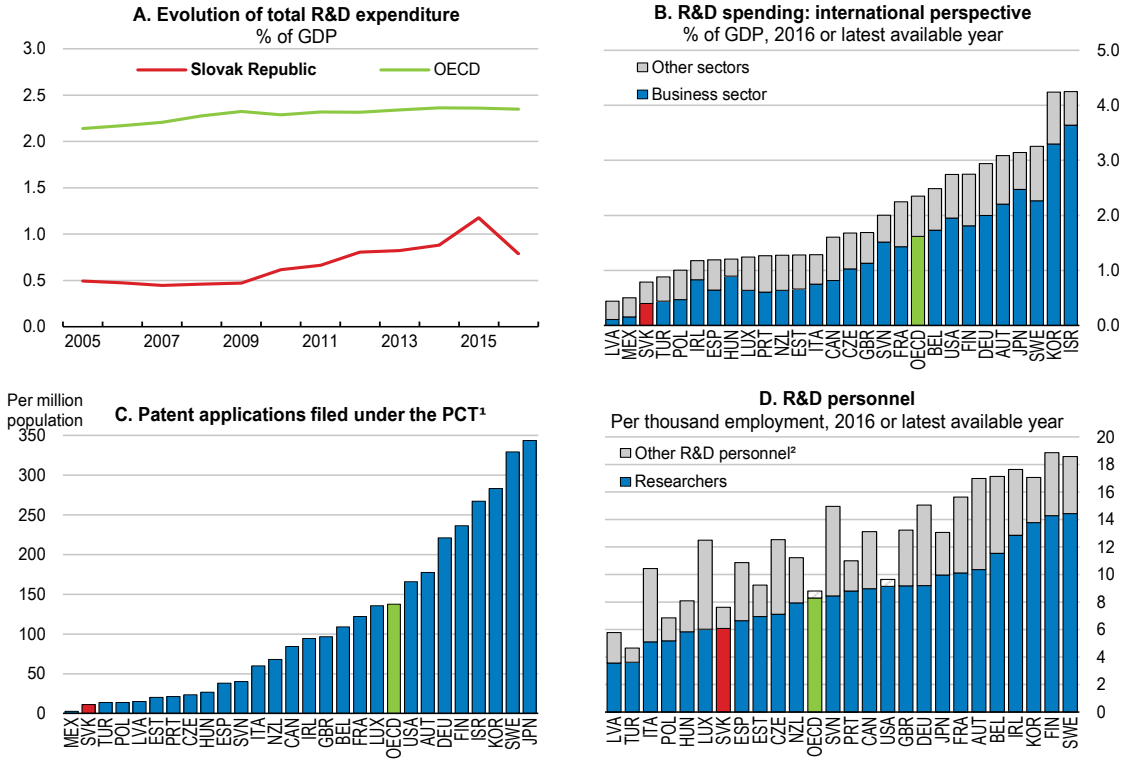
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Other OECD countries make use of financial instruments to influence the behaviour of higher education institutions. Governments, for example, use performance-based funding to reward institutions based on different indicators. For example, in Korea and Estonia the funding system shift more resources towards the tertiary institutions, whose graduates have better labour market outcomes (OECD, 2017h). More and more countries also use competitive grants allocation. Tertiary education institutions compete on the basis of peer-reviewed project proposals against a set of objectives of grant. It seems essential to increase Slovakia's investment in higher education in order to prepare for the future. To a large extent the government can expect to recoup the cost of these investments through tax revenues on the relatively high salaries of the best qualified workers (OECD, 2017i).

Promoting research and innovation

Stimulating innovation and research would help facilitate the transition towards a more diversified, knowledge-based economy, which would enable Slovakia to better reap the benefits of its participation in GVCs. The skills and knowledge intensity of Slovakia's involvement in global value chains is low (see Figure 2.18 above). In addition, the automotive sector is dominated by a small number of multinationals, which operate globally from the core through the direct ownership of all assemblers and most component suppliers (Pavlinek, 2012). In this case, it can be even more difficult to relocate the R&D from the core to its global low-cost brand in the Slovak Republic. The resources allocated to innovation by the country are also modest. Although expenditure on research and development (R&D) has increased over the past decade or so, it remained below 1% of GDP in 2016 compared to an OECD average 2% of GDP (Figure 2.26, Panel A). This expenditure is particularly low in the business sector, which employs a limited number of researchers by international standards, and files very few patent applications (Panels B, C and D), thereby reducing the country's capacity to develop higher value-added activities within value chains.

Figure 2.26. Resources devoted to private-sector research and innovation are low



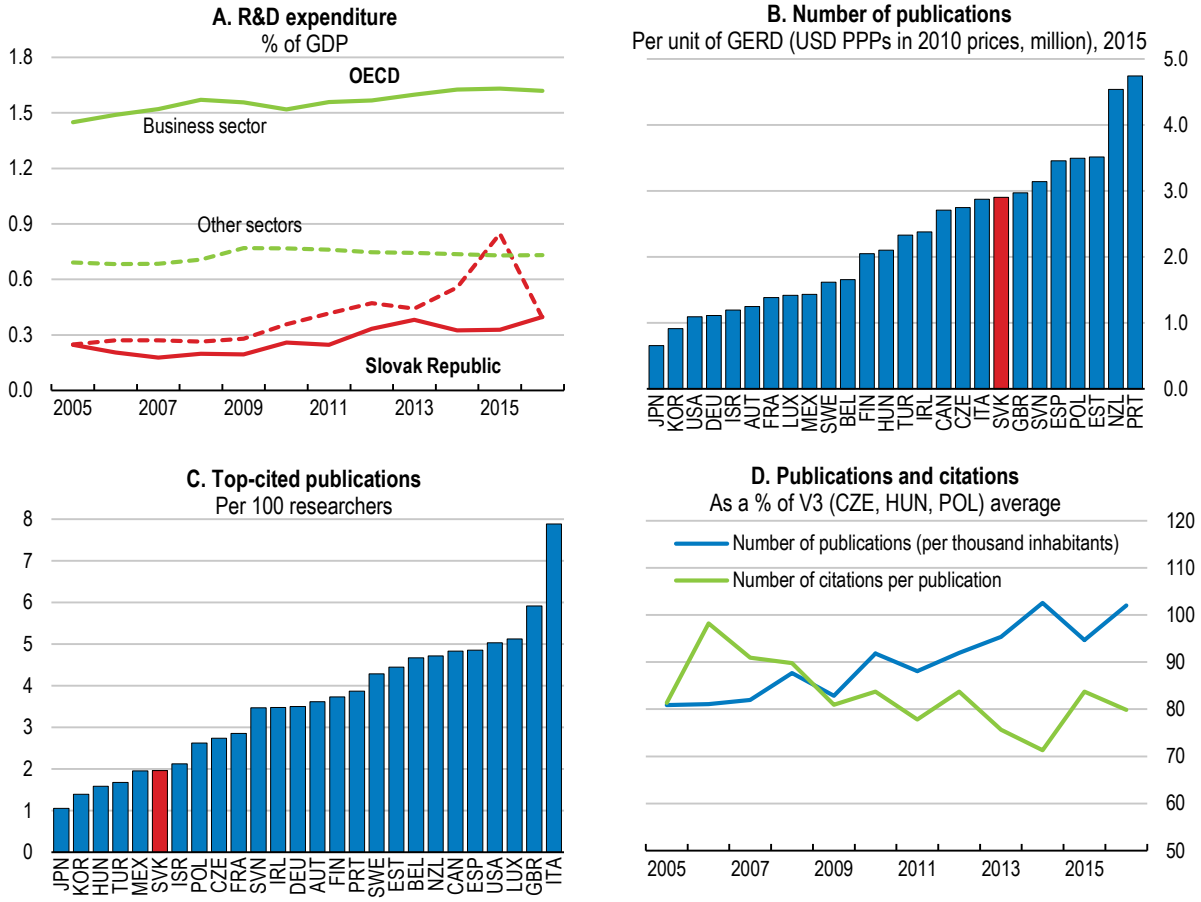
1. Patent Co-operation Treaty.
2. Data on other R&D personnel not available for OECD and the United States.
Source: *OECD Main Science and Technology Indicators Database*.

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One of the first challenges for the authorities is to improve the quality of public-sector research. On the back of EU structural funds, government spending on R&D has increased in recent years to a level close to the OECD average, despite a sharp decline in 2016 related to the start of the new EU funding cycle (Figure 2.27, Panel A). That said, the efficiency of, and return on, these investments are low. Between 2007 and 2013 research spending using EU funds was invested mainly in infrastructures and installations with no clear output improvement to date (MoF, 2018). Slovak academic research produces a large volume of publications, most of which are of low quality, and the increase in resources between 2007 and 2013 resulted in more publications but a decline in their citation rate compared to the other Visegrad countries (Panels B, C and D). The quality of research hardly influences the funding of higher education institutions (HEIs) as funding is determined by the volume, rather than the quality, of research. Accordingly, many HEIs are trying to keep their university status by producing as many research outputs as possible, even at the cost of reduced quality.

In this regards, the government recently launched an ambitious reform aiming to address these shortcomings and align the quality assurance system with international standards and introduced new methods for research evaluation. It will be important to ensure that external experts are appointed for quality evaluation.

Figure 2.27. The efficiency and quality of public research need to be improved



Source: OECD Main Science and Technology Indicators Database; OECD (2015), OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society, OECD Publishing, Paris; Scimago Journal Rank.

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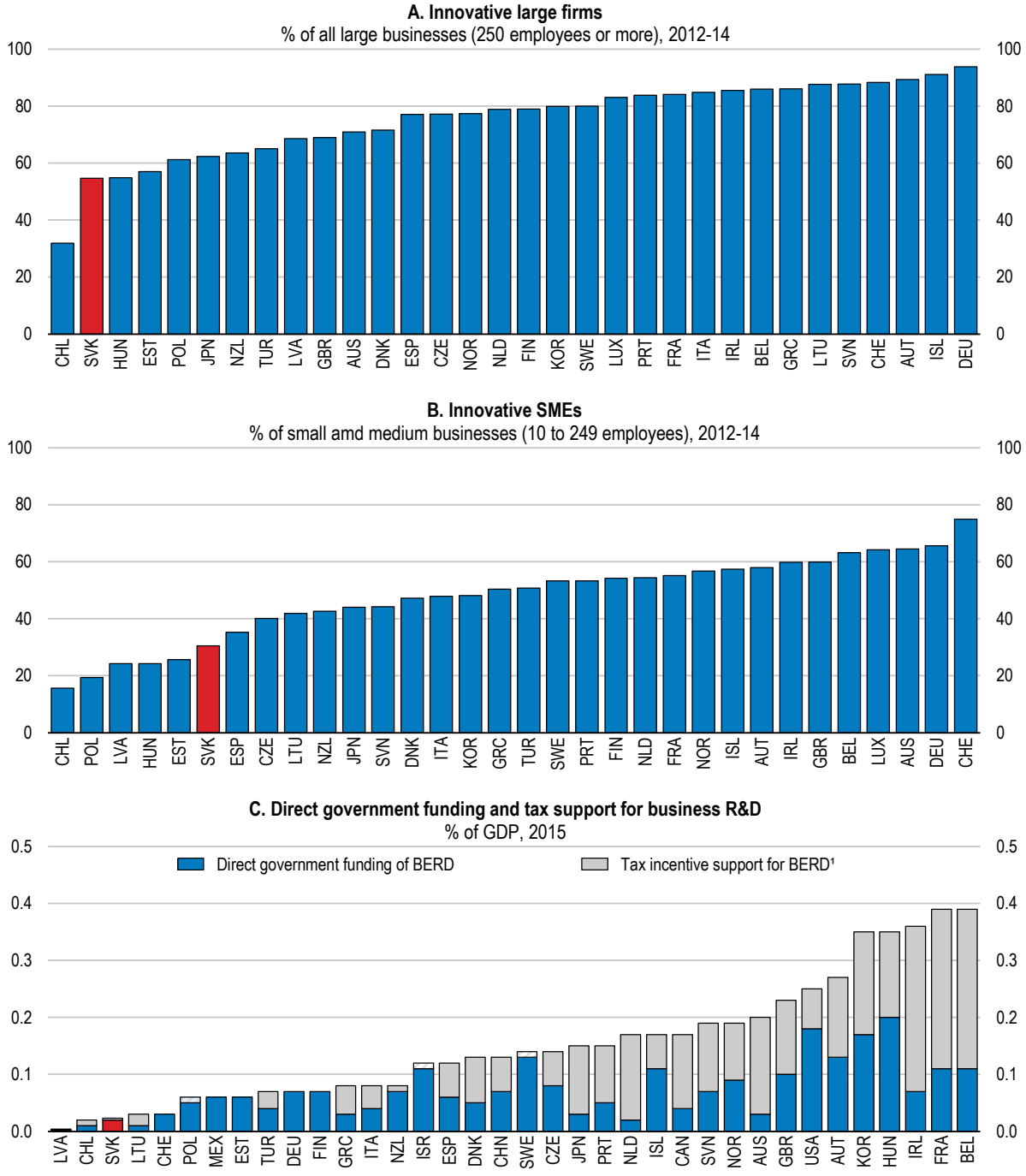
The effectiveness of public research is, moreover, undermined by its fragmented framework. R&D policy is encumbered by a lack of co-ordination between multiple stakeholders with responsibility in this domain, including several ministries and eight different government agencies (EC, 2016). These bodies tend to compete rather than co-operate over access to EU structural funds, for example, despite the fact that the purpose of these resources is to promote a horizontal research agenda for cross-cutting issues. The recent creation of a co-ordination committee, reporting to the Deputy Prime-Minister, to implement the European Regional Innovation Strategy (RIS3) is designed to solve these problems. Nevertheless, there is a need to support this welcome development by introducing the systematic monitoring and evaluation of the effectiveness of the use of these funds, which is currently lacking. In addition, a pooling of academic research initiatives could be advisable, as they are currently spread across the HEIs and the Slovak Academy of Science, which dilutes the resources available and the capacities of each institution in a small economy like Slovakia (EC, 2018b). To this end, the authorities should consider reducing the number of universities and create larger, internationally visible research units. As was mentioned before, the government launched recently reform, which should address these shortcomings with implementation phase starting in 2021.

It is also important to stimulate private-sector research and innovation, which have been rising only slowly over the last decade (see Figure 2.27, Panel A). Yet, given Slovakia's economic catch-up and the gradual increase in its labour costs, there is a growing need for firms to innovate to maintain and strengthen their competitiveness. The low level of business R&D spending reflects, on the one hand, the limited interest shown so far by multinationals located in Slovakia to develop research activities in the country and, on the other, the low investment by local firms, especially SMEs, in this domain (Figure 2.28, Panels A and B).

To stimulate research and innovation initiatives, tax incentives, which were previously very limited (Figure 2.28, Panel C), have been increased, by bringing the tax-deductible proportion of R&D expenditure for companies from 25% to 100% in 2017. In 2015 only 4% of SMEs used public support focused on innovation (Slovak Business Agency, 2016), despite the effect of the tax change. Tax incentives may help boost private investment in knowledge, since returns on R&D investments are difficult to appropriate by firms, as some of the resulting outcomes will leak out or "spill over" to other firms. In addition, SMEs and start-ups generally struggle to find the external financing required for innovation projects, whose outcomes are often uncertain. The effectiveness of these tax incentives will, however, depend on their design and the quality of their implementation. International experience shows that to be effective such policies must include rigorous *ex ante* and *ex post* evaluation systems (Appelt et al., 2016). This is all the more necessary in Slovakia as the risk of misuse of this public aid cannot be underestimated given the tax evasion problems that the country faces (OECD, 2017b).

To support innovation the authorities could also give greater priority to direct support schemes, such as grants, which are easier to monitor than tax deductions, which require checking more companies. A well-designed and properly focused strategy based on closer co-operation between private and public research could help strengthen the country's research capacities in areas such as the automotive sector. There are many needs in the latter area, such as the reduction of CO_2 emissions, the development of lightweight materials, improvements to car connection systems and safety and driver assistance systems (PwC, 2017). Creating centres of excellence for some of these domains could also increase the country's appeal for the research teams of large multinationals. Austria has, for instance, developed significant R&D activity related to the automotive sector, and it is pursuing interesting policy initiatives thanks to the COMET (Competence Centres for Excellent Technology) programme and the Christian Doppler Laboratories (Comet, 2018; Cdg, 2018), which have been successful in promoting research cooperation between companies and application-oriented research over the past two decades (Harms, 2018).

Figure 2.28. Boosting innovation in the private sector is necessary



Note: Data on tax incentive support are not available for Israel, Poland and Sweden.
Source: OECD (2017), *OECD Science, Technology and Industry Scoreboard 2017*: *The digital transformation*, OECD Publishing, Paris.

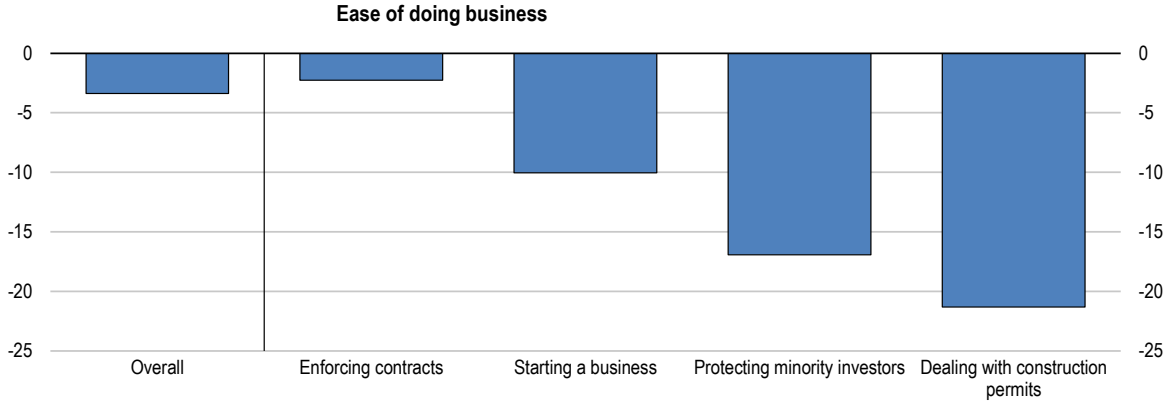
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Enhancing the business environment and the quality of regulation

A prerequisite for strengthening private-sector innovation is to put in place framework conditions for labour and product markets that are conducive to corporate research and experimentation. Regulations in these markets should not impose excessive costs on firms in the event of unsuccessful innovations, e.g. through inefficient insolvency policy, nor reduce their return on successful investment by hindering the possibility of efficient reallocation of the workforce and of capital. However, a favourable business environment is important not just for promoting the dissemination of knowledge and innovation, but also for boosting entrepreneurship and giving firms the impetus required to invest and create high-quality products at a lower cost and to promote a better integration into GVCs. Despite the progress made in product market regulation since 2008, several aspects of the business environment harm business performance in Slovakia, especially for SMEs, which employ 70% of the country's workforce.

In Slovakia the main shortcomings in the product market are due to ineffective administration and extensive red tape. According to the World Economic Forum dysfunctions in administrative management, along with corruption, are a serious obstacle for firms (WEF, 2017). Such dysfunctions can be seen, for example, in the inefficiency of the procedures for starting up a business, guaranteeing the protection of minority investors or granting building permits (Figure 2.29). On average, it takes, for instance, 300 days to obtain a building permit for a warehouse compared to an OECD average of 153 days (World Bank, 2019). According to the indicators in Doing Business 2019, there are also shortcomings in contract enforcement, which is essential for the proper functioning of businesses.

Figure 2.29. Inefficiency in the government sector and bureaucracy undermine business environment



Note: The distance to frontier (DTF) measure shows the distance of each economy to the "frontier," which represents the best performance observed on each of the indicators across all economies in the Doing Business sample since 2005. OECD high income includes 36 OECD countries excluding Mexico and Turkey.
Source: World Bank, Doing Business 2019.

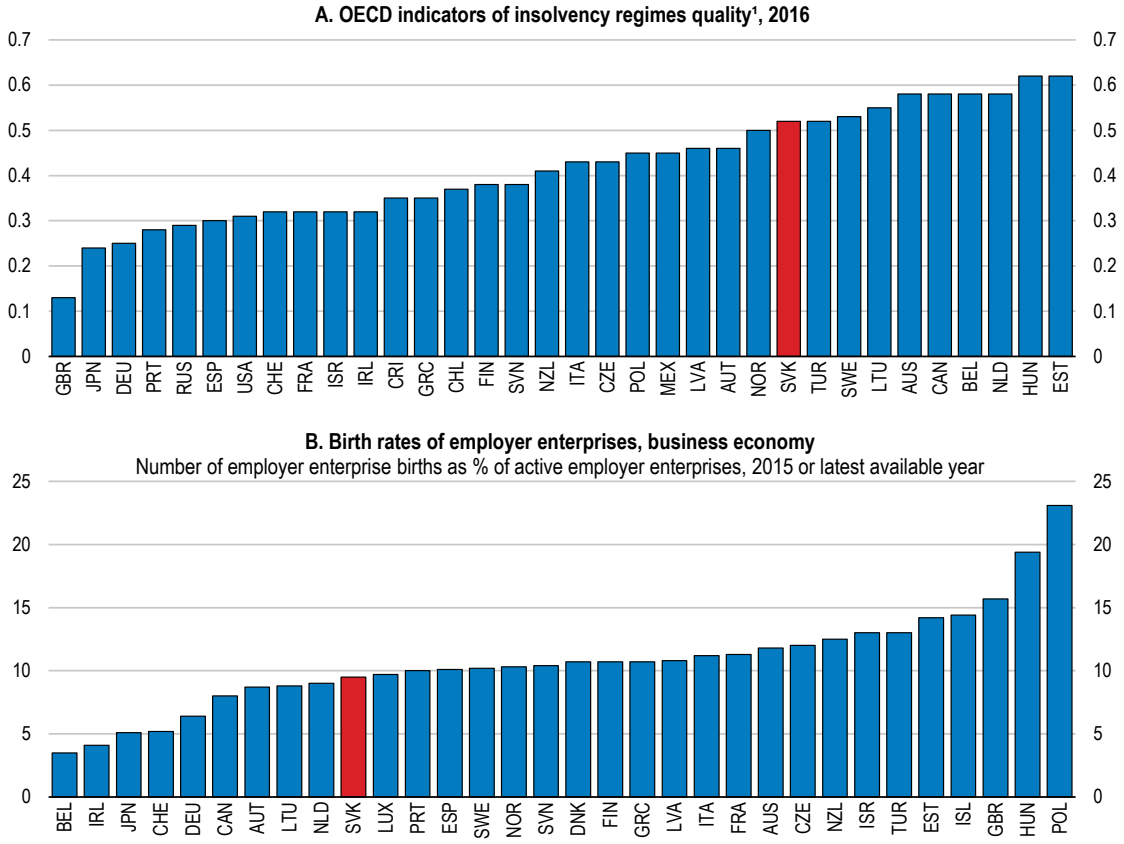
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Given the inefficiency of public management, the multiple administrative charges create a heavy burden, in particular for SMEs, as acknowledged by the authorities (Slovak Business Agency, 2017). According to the Slovak National Union of Employers, red tape increased by over 13% between 2007 and 2016 due to new obligations stemming from changes in corporate legislation (EC, 2018b). In addition, frequent amendments to this legislation create an unstable environment that is detrimental to conducting business. Between 2007

and 2016, for example, the trade law was amended six to seven times a year on average, and the labour code two to three times.

Shortcomings in insolvency procedures are another obstacle to the smooth functioning of product markets (Figure 2.30, Panel A). For a start, they are very slow, with an average disposition time of four years against an OECD average of less than two years. They are also costly, at around 18% of debtor assets compared to 9% on average in advanced countries (World Bank, 2019). These procedures lack preventive measures and early warning systems for struggling enterprises (Adalet McGowan et al., 2017). This bankruptcy system, whose use often imposes a stigma on entrepreneurs who are for the most part honest, is hardly conducive to experimentation and the emergence of start-ups, which are created at a slow pace by international standards (Panel B). An effective insolvency regime is nevertheless a necessary component of the process of creative destruction, which is inherent to the functioning of market economies and to the improvement of the allocation of resources in the economy (Adalet McGowan et al., 2017).

Figure 2.30. Gaps in the insolvency regime weakens entrepreneurship



Note: A higher value corresponds to an insolvency regime that is most likely to delay the initiation of and increase the length of insolvency proceedings. Composite indicator based on 13 components including: time to discharge; early warning mechanisms; special insolvency procedures for SMEs; creditor ability to initiate restructuring; availability and length of a stay on assets; degree of involvement of courts; distinction between honest and fraudulent entrepreneurs and the rights of employees. For more details, see Source.

Source: M. Adalet McGowan, D. Andrews and V. Millot (2017), "Insolvency Regimes, Zombie Firms and Capital Reallocation", *OECD Economics Department Working Papers*, No. 1399; M. Adalet McGowan and D. Andrews (2018), "The Design of Insolvency Regimes", *OECD Economics Department Working Papers*, forthcoming; *OECD Structural and Demographic Business Statistics (SDBS) Database*.

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The authorities are aware of these issues and have launched several reforms to address them. To cut red tape the government launched the "Once is Enough" initiative, which uses links between the administration's different databases to ensure that, as of July 2018, individuals and enterprises are no longer required to submit printouts of any documents already in the State's possession. The government has also launched a plan to reduce administrative charges over a period of four years. The first package of reforms presented in June 2017 comprised 35 measures, the nine most important of which entered into force at the end of 2017 in the form of provisions that streamlined and accelerated the granting of building permits (EC, 2018b). These reforms, which the authorities believe could save firms the equivalent of 44 million euros per year, were followed by the announcement of a second package of 25 measures in May 2018, mainly designed to facilitate certain aspects of managing SMEs and family-owned businesses, and two further packages are scheduled between now and 2020.

A strategic better-regulation document "RIA 2020" was also adopted by the government at the start of 2018 with the purpose of introducing both a pilot *ex post* assessment of regulations and a "one-in, one-out" principle whereby any new regulation affecting businesses must result in another regulation being phased out (MoF, 2018). The framework of the insolvency regime has also been improved with the online publication of a register of businesses and entrepreneurs declared insolvent, and the creation of a new legal concept of "company in crisis", which ensures that the claims of common creditors' on struggling businesses have priority over shareholder claims.

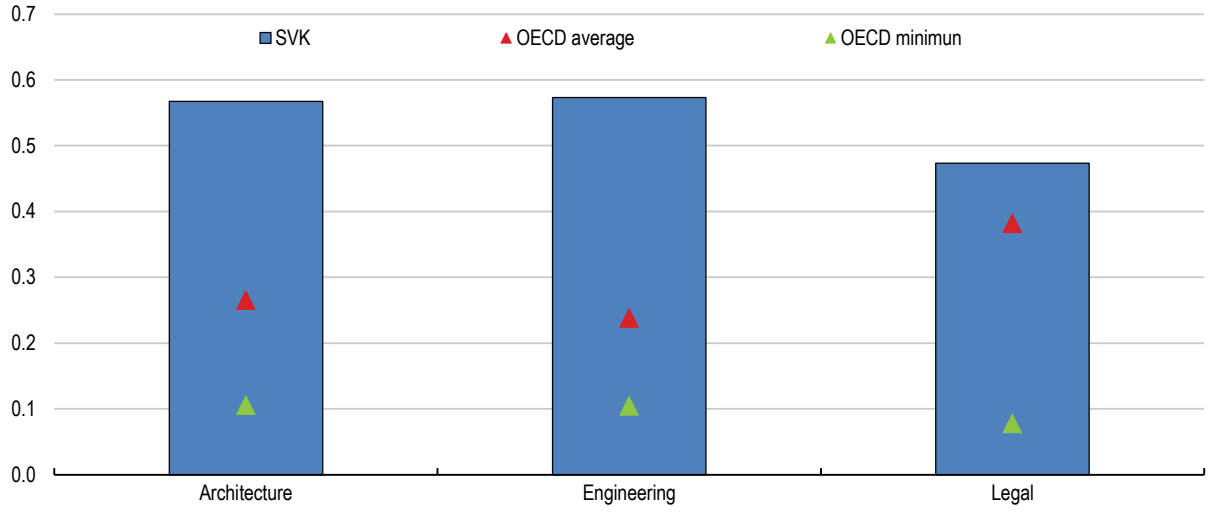
While this reform process, which covers many areas, is welcome, it is nevertheless important to pursue and expand it. For example, in order to further reduce the burden on businesses, the authorities should follow Portugal's example and adopt a "silence is consent" rule for administrative procedures as and when appropriate. The authorities should also follow the example of Denmark, Estonia and Norway, and step up the pace of the digital transformation of systems for granting permits and authorisations. Improving the management of legal procedures, especially for bankruptcies, would have positive repercussions on the business environment and the vitality of entrepreneurship. Information campaigns aimed at removing the prejudices and stigma associated with the bankruptcy of honest entrepreneurs would also be advisable, showing that entrepreneurial failure is part of the normal functioning of market economies and reflects a natural learning process for entrepreneurs in the realisation of their projects.

In terms of FDI policy, international evidence suggests that policies to attract foreign investments in high-tech industries are more effective when based on a comprehensive industrial policy, which includes a wide range of tools. These include human capital, infrastructure and public governance, which are key to attracting FDI (OECD, 2011) and are more broadly covered in this chapter. Nevertheless, investment aids provide a further boost to high-value added FDI. In April 2018, a new system of investment aid entered into force designed to encourage the development of higher value added activities. This will benefit new projects, such as research centres, and criteria for eligibility will no longer focus on the number of new jobs created but on the average salary of new jobs. This aid, which varies between 25% and 35% of investments in accordance with EU regulations, concerns around 20 projects a year, 80% of which are submitted by foreign enterprises. The government should abolish restrictions on foreign businesses entering the services sector in order to promote diversification into services, including through FDI (Figure 2.31). Such restrictions, especially on providers of legal services, architects and engineers, are high.

These regulatory barriers substantially limit foreign competition in several services sectors, especially professional services such as civil engineering, legal services and architecture. For example, in architecture and engineering services, Slovakia imposes residency and nationality requirements as preconditions for obtaining a license to practice (OECD, 2017j). Also, shares in businesses in these sectors must be majority owned by licensed professionals, who must also constitute a majority on their boards. Similarly, an authorisation from the Slovak authorities is needed to practice national and international law, and all the shares in law firms must be owned by locally licensed lawyers, and their boards must comprise locally licensed lawyers. There are also restrictions for accountants, tourist guides and real estate agents (EC, 2018b). All of these barriers tend not just to penalise the efficiency of these sectors, but also to make Slovak enterprises less suited to meeting the needs of foreign clients, thus reducing their capacity to integrate into value chains (Miroudot and Cadestin, 2017a).

Figure 2.31. Entrepreneurship barriers affect the professional services

OECD Services Trade Restrictiveness Index (STRI)[1], scale from 0 to 1 (most restrictive), 2017



Note: The indices are calculated on the basis of the STRI regulatory database which contains information on regulation. The STRI database records measures on a Most Favoured Nation basis. Preferential trade agreements are not taken into account.
Source: OECD (2018) Services Trade Restrictiveness Index.

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Improving transport infrastructure

Transport infrastructure investment can boost total factor and labour productivity *inter alia* by decreasing trade costs and increasing international trade (Donaldson, 2018). This is of particular importance for Slovakia, whose development is based to a large degree on a strategy of closer integration into international trade. A reliable, low-cost transport network offering fluid connections to other countries is vital to the competitiveness of businesses whose intense trading with other players in production chains must be highly co-ordinated and adhere to precise schedules. Efficient and close connections between regions are also needed to promote balanced growth and allow the whole country to attract investment. By facilitating participation in the labour market, fast and reliable transport links make it possible for the country to mobilise all its labour resources and increase the productivity,

pay and well-being of the population. To promote sustainable development, Slovakia also needs high-quality public and urban transport in order to avoid congestion and to protect the environment by limiting pollution and greenhouse gas emissions.

Failings of the transport system

Although Slovakia's transport network has helped contribute to its tight integration into international trade, its failings prevent the country from reaping the full benefits of its privileged position in the centre of Europe and the opportunities generated by its participation in GVCs. Transport infrastructure is also very unevenly distributed across the territory, contributing to the significant regional disparities between Bratislava and the north, on the one hand, and the central and eastern parts of the country on the other (Figure 2.32). These disparities have been increased by the country's investment focus since the early 1990s on expanding the motorway network and upgrading the rail network around the capital and northwest of the country (Michniak, 2015). The Slovak expressway and motorway network is also underdeveloped compared to the EU average: links between the country's main cities have not all been completed, leading to longer journey times, although current projects slated for completion in 2020 should partly correct this. Recent research into transport modernisation in some regions has highlighted the concomitant benefits in terms of lower unemployment thanks to the development of business activity in the tourist sector, for example (Habrman and Žúdel, 2017; Mikloš and Habrman, 2018).

Figure 2.32. Unequal distribution of transport infrastructure contributes to regional inequalities

Regional unemployment rate in %, 2017

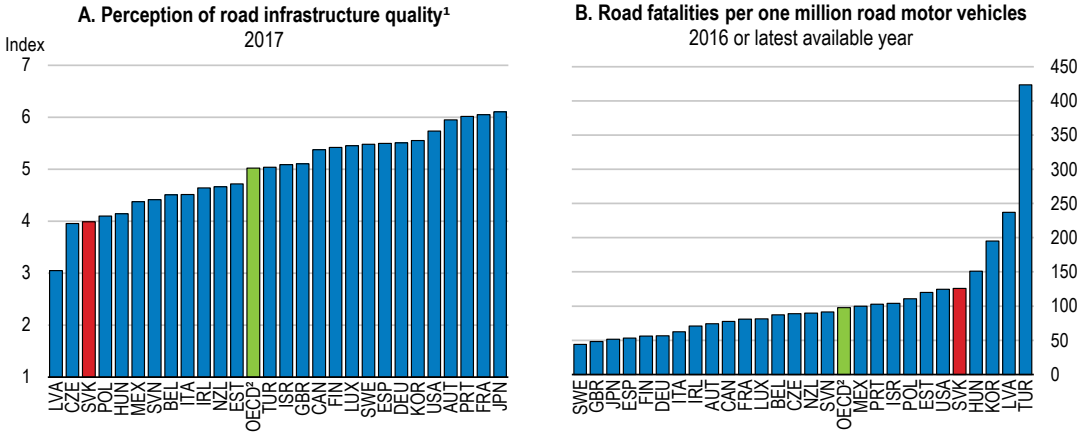


Source: OECD (2018), OECD Regions at a Glance 2018 (forthcoming).

Slovak motorways are of good quality, having benefited from investment in recent decades, but the rest of the road network is beset by serious deficiencies. The condition of the first-class road network, which is denser than in the EU on average, has deteriorated dramatically since the beginning of the 2000s owing to insufficient maintenance and repair. In 2016, 38% of these roads were in bad or critical condition, and the perceived quality of Slovak road infrastructure ranked among the lowest in the OECD (Figure 2.33, Panel A). The situation is, in fact, likely to deteriorate further, given the under-resourcing of the public company that manages the network, the Slovak Road Administration Authority (SSC). Its annual maintenance budget of around EUR 50 million between 2017 and 2019 is far below the estimated amount that would be required (EUR 64 million) to properly

fulfil its mission (MoF, 2018). Road fatalities have been falling in Slovakia since 2000, but remain high by international standards (Panel B), and are higher on secondary roads than expressways.

Figure 2.33. Road infrastructure quality and security need to be improved



1. Index from 1 (lowest score) to 7 (highest score).
2. Unweighted average of available countries.

Source: *ITF-OECD Transport Statistics Database*; World Economic Forum (2018), *The Global Competitiveness Index Historical, 2007-2017.*

StatLink https://doi.org/10.1787/888933902928

Rail transport is also of inadequate quality. One of the difficulties of the network, just 43% of which has been electrified, is that like all public transport it is increasingly underused. Only a quarter of all journeys were taken using public transport in 2014, compared to almost half 20 years earlier (MoTRCD, 2016). The sharp rise in the number and use of private cars fuelled by rising living standards, which has caused the decline in rail travel, has also undermined the resources of public rail companies and led to a decrease in repair and maintenance work. As a result, there are speed restrictions on many parts of the network, which lengthen transit times both for passengers and freight, and further diminish the attractiveness of this mode of transport. Falling passenger numbers on public transport, moreover, have pushed up the cost of the subsidy, paid for with public money, because central and local government are required to provide a minimum service.

The management of transport infrastructure need to become more efficient

The authorities are anxious to solve these problems in a country where investment in transport is greater than average in OECD countries, as in other catch-up countries (Figure 2.33), and they have assessed the effectiveness of spending in this sector as part of their "Value for Money" initiative (MoF, 2016). Several shortcomings were detected, both in the management of investments and in that of operating costs, which led to some modifications and reform proposals. Improvements are indeed needed regarding the allocation of resources between investment and maintenance spending as well as project-selection procedures. A comparison of infrastructure governance systems in different countries, based on a detailed survey (Hertie Governance School, 2016), does confirm that Slovak infrastructure project management is relatively inefficient.

Improving project selection procedures

There is a particular need for increased transparency and rigour of project selection procedures, which have only recently started to make use of cost-benefit analyses (CBAs). The decision was taken in 2016 to automatically carry out these analyses for all transport projects costing over EUR 20 million. In order to improve benchmarking, projects will be evaluated using CBAs based on a common methodology, which is in the process of being drawn up. In accordance with best international practice this methodology will include a quantification of not only the economic impacts of projects, but also of their effects on the environment and public health, and analyses based on qualitative multi-criteria evaluation of impacts that are harder to quantify. It has also proved necessary to correct the flaws in internal project selection procedures revealed by an International Transport Forum report (ITF, 2018). This means using more reliable unit price data for these procedures, drawn from a historical database of information gathered during previous projects. Improving the selection process will also mean carrying out a risk assessment for some costs and including a quality-assurance system based on independent assessment throughout a project's development. Provisions along these lines have been included in the 2018 Slovak National Reform Programme (MoF, 2018).

These reforms will be useful. To complete the task, the authorities should also systematically publish the detailed CBAs of the projects under consideration before any decision is taken. It would also be advisable for the decision-makers to then be required to give reasons for their choices, especially those that go against the technical assessments. The creation of an independent agency responsible for selection-process quality control, like Infrastructure Australia, would also be a positive step. Such an independent body could, moreover, be responsible to systematically collect data during the planning, procurement, construction and early operating phases of transport projects and carry out regular *ex post* CBA audits (ITF, 2017).

Increasing the quality of rail and road transport

An analysis of the effectiveness of transport spending highlighted the need to increase the resources for infrastructure repair and maintenance (MoF, 2016). In the case of the rail sector this will mean rationalising and making savings on operating costs and divesting part of the rail network, which is one of the densest in Europe (MoF, 2018). The average cost per kilometre of Slovak rail transport is high—76% higher than that of the Czech Republic, for example — because of the staffing levels required to run a system in which the lines are under-automated and the use of rolling stock is sub-optimal (MoTRCD, 2016; Kubáček, 2017). A re-evaluation of the costs and benefits of less used routes is also needed. Cost-benefit analyses would help determine for which local lines subsidies are justified to keep them running and which ones should be closed and property and track sold off. In this process the authority should reconsider providing free rides for some class of passengers, including students and pensioners, which is a very inefficient way of providing social support to these population groups, if it is seen as desirable. Network maintenance could then focus on improving the operation of lines with a potential for development. Rail transport is the backbone of public transport, but cannot effectively cover zones where there are too many stations, needlessly lengthening journey times. This strategy would, however, require closer links and co-ordination with other forms of transport (coach, urban public transport and private cars), including the development of integrated pricing, allowing consumers to combine the use of different public services (train, bus and urban transport) in a given zone.

As the authorities have acknowledged, it will be necessary to devote more resources to first-class roads (MoF, 2018), and, for this to happen, they will have to reconsider the system of road infrastructure management by two different entities with separate budgets. First, they should narrow the maintenance funding gap between the National Motorway Company (NDS), which enjoys sufficient resources to guarantee the good general condition of motorways and expressways, and the Slovak Road Administration Authority (SSC) which manages first-class roads. In 2014 NDS spending on road maintenance came to an average of EUR 22 000 per kilometre, while SSC spent just EUR 5 000 per kilometre, which is a disproportionate distribution in the light of the difference in maintenance costs of motorways and roads (MoTRCD, 2016). Whereas the NDS, which is a public company, uses its own resources, generated by toll revenues (managed by satellite for heavy goods vehicles and motorway vignettes for private cars), the SSC is financed out of the government budget — insufficiently, and especially so since EU funds may not be used for maintenance work. Furthermore, the NDS uses its own machinery and labour to carry out fast network repairs when needed, but the SSC, which subcontracts most maintenance work, does not have the same level of resources. As a result it is less responsive and slow to carry out work after the winter, for example, which leads to further deterioration.

Although the transport sector's priority is to improve the efficiency of its management, it would also do well to make some adjustments to its funding. The first and most important of these concerns the maintenance of first-class roads, which urgently need additional resources. Some of the extra funds could potentially be generated by efficiency gains if, for example, the management of the road and motorway networks were merged. It would also make sense to accompany such a grouping with an increase in the new entity's own resources, as the SSC funding problem is unlikely be solved by a better management. In general, to promote good management of transport infrastructure, it is desirable to fund the services they provide through user charges, rather than the state budget, and to include cost recovery in the price of services (Glaeser, 2016). The direct payment of these services by users would also increase discipline in the selection of investment projects. In this spirit, the use of a vignette system to collect road tolls from private cars could be extended to first-class roads for this purpose. As suggested in the 2017 Survey, pollution charges and taxes could also be raised by linking the registration tax on vehicles to their emissions levels, as is the case in most EU Member States (OECD, 2017b).

The authorities must also continue to improve the administration's capacity to mobilise European Structural Funds, which amount to almost EUR 15 billion for 2014-2020, i.e. around 3% of GDP per annum. Efficient use of these resources is needed, for example to electrify the parts of the rail network that have not as yet been electrified and that deserve to remain in operation, and to ensure interoperability with networks in neighbouring countries as part of the development of the trans-European transport system. Despite making progress in co-ordinating the management of these funds, difficulties remain because of the high rate of staff turnover, due in part to the political cycle, which is damaging to both the continuity and the institutional expertise of the administration (MoF, 2018). Greater transparency in project selection and public procurement would also help (EC, 2018b; OECD, 2017b).

Recommendations to increase the benefits of Slovakia's integration in global value chains

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

Improve tertiary education

- Increase resources devoted to tertiary education and consider concentrating them on fewer, better performing, institutions.
- ***Publish high-quality analysis of graduates' labour market outcomes. Increase the time spent on general and digital training in vocational education.***
- Ensure that salaries and working conditions of tertiary-level teaching staff are adequate to attract highly-qualified professionals in all fields of study.
- Further involve businesses in higher education governance and introduce a general system of career guidance.
- Create vocational bachelor programmes and strengthen practical experience in higher education curriculum.
- Provide opportunities for management training for those with management responsibilities, especially in SMEs.

Promote research and innovation

- ***Include research collaboration with innovative companies in the assessment of universities and public research institutions.***
- Create larger, internationally visible research units and reorient HEI research funding to foster research at high international standards; adapt evaluation criteria accordingly.
- Carefully monitor the implementation of the more generous R&D tax incentives recently adopted.
- Consider providing direct support for centres of competence to strengthen public-private collaboration for research and innovation in areas such as the automotive industry.

Improve the business environment and the quality of regulation

- ***Continue to work with the ongoing Council of Europe project on judicial reform, and implement its suggestions.***
- Accelerate the handling of insolvency procedures.
- Further reduce the administrative burdens on enterprises by developing e-government, especially services to businesses, and adopt a "silence is consent" rule for administrative procedures, as and when appropriate.
- Lower licensing restrictions for legal services, architects and engineers.

Enhance transport infrastructure management and services

- Create an independent agency to monitor the quality of the project selection process.
- Introduce systematic publication of cost-benefit analyses of transport projects with mandatory justification of policy-makers' choices.
- Further improve the administration capacity to mobilise the EU structural funds thanks to greater transparency in project selection and public procurements.

Rationalise and improve maintenance of road transport infrastructure

- Create a single entity in charge of the management of motorways and first class roads.

- Consider extending the use of tolls by a vignette system for private vehicles for first class roads and linking car registration fee to their emissions to foster user funding of transport infrastructure and lower environmental costs.

Streamline railways management

- Rationalise railways infrastructure management by reducing personnel cost, implementing remote control of transport and optimising the use of rolling stock.
- Focus maintenance for railways network on the lines with a potential for development. Privatise some local routes and sell underutilised infrastructure. Enhance liaison and coordination with other modes of transport (coaches, urban public transport or private cars).

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