

Chapter 1

School education in the Czech Republic

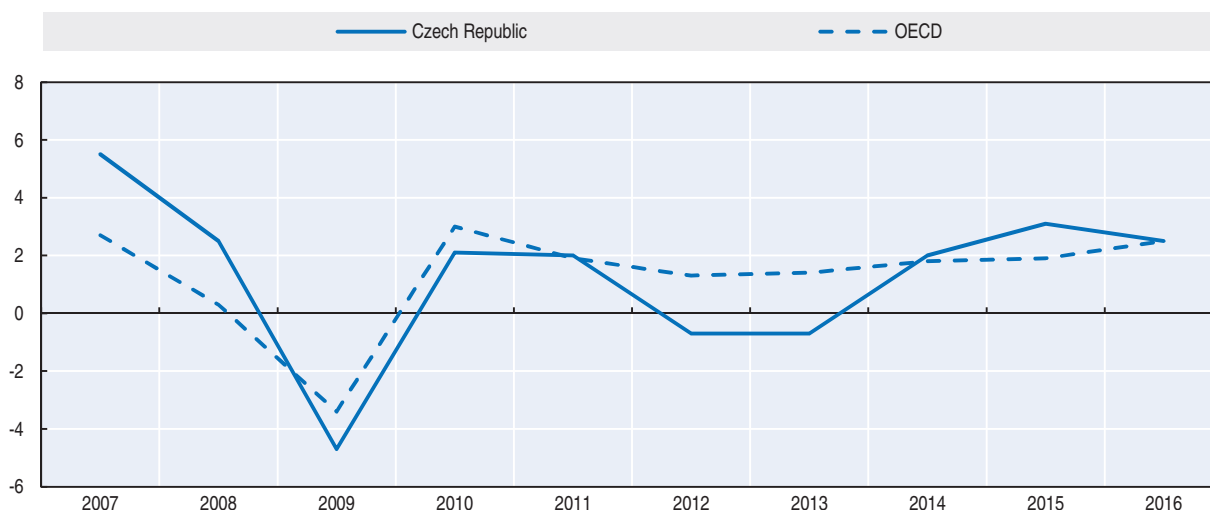
This chapter presents an overview of the economic and demographic context in the Czech Republic, including the impact of the international financial crisis and demographic changes on the funding and organisation of schooling. It also provides a brief description of the Czech school system for international readers. Finally, it presents evidence on the quality, equity and efficiency of the Czech school system.

Economic, governance and demographic context

Economic growth has returned, but the recession impacted the young

Prior to the international financial crisis, the annual growth rate in the Czech economy was above OECD average levels. However, the Czech Republic is one of the OECD countries where the international financial crisis had the greatest impact on economic growth. Between 2007 and 2009 growth in real Growth Domestic Product (GDP) declined by ten percentage points (Figure 1.1). The main factor behind economic contractions was weak domestic demand, but slowing export market growth also played a role (OECD, 2014a). At the start of the economic recovery in mid-2013 GDP had fallen by nearly 4% below its pre-crisis peak (OECD, 2014a). Economic growth picked up strongly in 2015 (OECD, 2016) and is predicted to continue in 2016 (Figure 1.1).

Figure 1.1. **Recent and projected growth in real GDP (%)**



Note: Figure shows projected growth in real GDP in 2015 and 2016.

Source: OECD (2015a), OECD Employment Outlook 2015, http://dx.doi.org/10.1787/empl_outlook-2015-en.

The unemployment rate is lower than on average in the OECD (Table 1.1). But unemployment rates vary significantly among Czech regions, from 3.3% in Prague to over 11.4% in the Ústí region (Figure 1.A1.3). The international financial crisis impacted the Czech labour market. Relative to the OECD area, employment growth has slowed more in the Czech Republic and was negative in 2009, 2010 and 2011 (OECD, 2015a, Table 1.A1.1). Notably, the youth unemployment rate has increased significantly and is now above the OECD average (Table 1.1). In general, youth were hit hardest by the recession in OECD countries. The Czech youth unemployment rate remains lower than on average in OECD members within the European Union (EU) (22.2% in 2014) (Eurostat, 2015).

Poverty rates are much lower in the Czech Republic compared to in the OECD on average (Table 1.1). While they increased following the crisis (OECD, 2015b, Figure 3.6), they are now just below pre-crisis levels (Table 1.1). Poverty rates for Czech children are relatively high and this is a growing concern in OECD countries generally (Table 1.1).

Table 1.1. **Indicators of social inclusion**

	Czech Republic				OECD average			
	2000 ¹	2007	2013	2014	2000 ¹	2007	2013	2014
Unemployment rate (age 15-64) (%)	8.8	5.4	7.0	6.2	6.2	5.8	8.1	7.5
Youth unemployment rate (age 15-24) (%)	17.0	10.7	19.0	15.9	11.9	12.0	16.2	15.0
Poverty rate (relative threshold) (%)	5.8	5.5	5.3	-	-	11.0	11.2	-
Poverty rate for children (age 0-17) (%)	10.2	8.8	10.3	-	-	-	13.3	-

Note: The poverty threshold is 50% of median disposable income in each country.

1. Unemployment rate data are for 2000 and poverty rate data are for 2004.

Source: OECD (2015a), *OECD Employment Outlook 2015*, http://dx.doi.org/10.1787/empl_outlook-2015-en, Table D; OECD (2015b), *In It Together: Why Less Inequality Benefits All*, <http://dx.doi.org/10.1787/9789264235120-en>; and OECD.Stat (n.d.), Income Distribution and Poverty Database, <http://stats.oecd.org/Index.aspx?DataSetCode=IDD#>.

As in other OECD countries, wage restraint helped to limit employment losses during the recession (Table 1.1), however, in the Czech Republic there was a real decline in wages which has contributed to economic hardship, especially for those on lower incomes (OECD, 2015a). Notably, following the crisis the minimum wage relative to the median national wage has decreased by five percentage points. Compared to both median and average national wages, the minimum wage in the Czech Republic is the lowest in the OECD (OECD, 2015a, Figure 1.11). The working hours required to escape poverty on a minimum wage are unrealistic for a lone parent; for two-parent households on a minimum wage both parents would need to work to ensure that children do not grow up in poverty (OECD, 2015a). Also, there are indicators that work has become more precarious with one in ten Czech workers now in temporary work (this represents a 25% increase between 2007 and 2014 (OECD, 2015a, Figure 1.7).

Fourteen self-governing regions with a large number of self-governing municipalities

In 2002, there was a significant reform of public administration in the Czech Republic when fourteen self-governing regions were established, including Prague the capital city. This move away from a centralised governance structure notably gave the 14 regions autonomy to govern their own education system. Four of the Czech regions are home to nearly half (47%) of the Czech population: Prague, Central Bohemia, Moravia-Silesia and South Moravia (Table 1.2). The Czech regions mainly operate schools providing upper secondary education.

There are over 6 000 self-governing municipalities in the Czech Republic, of which only 453 are urban municipalities (Table 1.2). Among these, there are five “cities”, that is, municipalities with over 1 million inhabitants: Prague, Brno, Ostrava, Plzen and Liberec. The vast majority of Czech municipalities, therefore, are “rural”, having less than 3 000 inhabitants. Half of the total municipalities in the Czech Republic are concentrated in four regions: the Central Bohemian region (18%), the Vysocina region (11%), the South Moravian region (11%) and South Bohemian region (10%). Municipalities operate pre-school and basic schools (primary and lower secondary education), although not all Czech municipalities have a school (see Chapter 2).

An ageing population with low levels of migration

The Czech Republic has a population of 10.5 million (Table 1.2). As in a number of OECD countries, the Czech population is ageing. Between 1990 and 2015, the Czech population aged 15 to 64 grew by 2.6%, but the Czech population aged 65 or older grew by 47%, while at the same time the population aged 15 years or younger shrank by 28%.¹ The decline in the school age population has been steep (see Figure 1.3). Ageing populations are a common challenge in the European Union. By 2030, the old-age dependency ratio (65 years or older / population aged 15 to 64) in the Czech Republic is predicted to be 35, that is ten percentage points higher than the 2013 ratio (European Commission, 2015a, Table 1.1.14). While this would remain just below the EU average, these population projections indicate significant pressures on securing funding for education in the future, given increased needs for pension funding. In 2011, the Czech Republic spent 8.9% of GDP on public pensions, which is above the OECD average of 7.9% (OECD, 2015c). The Czech Republic is gradually raising the age of retirement (as are other OECD countries) to 66 years, with steeper increases for women so as to level out the retirement ages for men and women. Currently, men retire at age 62 years and 8 months and women at age 61 years and 4 months (OECD, 2015c).

Table 1.2. Czech regions: area, population and number of municipalities

Territorial unit	Area (km ²)	Population			Number of municipalities				
		Total (thousands)	Percentage of the national total	Average age (years)	Total	Percentage of the national total	Rural (< 3 000)	Urban (> 3 000)	Of which: City (> 1 million)
Czech Republic	78 868	10 538	100	41.7	6 253		5 800	453	5
Prague	496	1 259	12	42.0	1	0.0	-	1	1
Central Bohemia	11 016	1 315	12	40.7	1 145	18.3	1 073	72	-
South Bohemia	10 057	637	6	41.9	623	10.0	590	33	-
Pilsen	7 561	575	5	42.1	501	8.0	472	29	1
Karlovy Vary	3 314	299	3	41.8	132	2.1	114	18	-
Usti	5 335	824	8	41.2	354	5.7	318	36	-
Liberec	3 163	439	4	41.4	215	3.4	193	22	1
Hradec Kralove	4 759	552	5	42.3	448	7.2	419	29	-
Pardubice	4 519	516	5	41.7	451	7.2	424	27	-
Vysocina	6 796	510	5	41.9	704	11.3	679	25	-
South Moravia	7 195	1 173	11	41.9	673	10.8	625	48	1
Olomouc	5 267	636	6	42.0	399	6.4	373	26	-
Zlín	3 963	585	6	42.2	307	4.9	276	31	-
Moravia-Silesia	5 427	1 218	12	41.8	300	4.8	244	56	1

- : Absolute zero.

Source: Czech Statistical Office (2015), *Statistical Yearbook of the Czech Republic – 2015*, www.czso.cz/csu/czso/statistical-yearbook-of-the-czech-republic-2015, Table 2.3 and author calculations.

Birth rates were low in the early 2000s, but increased considerably between 2005 and 2010; the number of live births has been relatively stable since 2011 and stands at 109 860 in 2014 (Czech Statistical Office, 2015, Table 4.10). Population growth between 2003 and 2012 has been driven by migration (Table 1.3). However, the Czech population remains ethnically very homogenous. Among OECD countries, the Czech Republic has one of the lowest proportions of foreign-born population, although since 2000 this increased significantly and stood at 7.0% in 2013 (OECD, 2015d, Figure 1.11). There are less than half a million foreigners with resident permits (4.1% of the population in 2013) (OECD, 2015d). The proportion of foreign residents with permanent residence has been steadily increasing since 2010 and in 2014 stands at 55%,

Table 1.3. **Components of population growth in the Czech Republic**

	Growth per 1 000 inhabitants						Level (thousands of individuals)
	2005	2010	2012	2013	Average		2013
					2003-07	2008-12	
Total	3.0	2.5	1.0	-0.4	3.4	3.5	-4
Natural increase	-0.6	1.0	0.0	-0.2	-0.3	0.7	-2
Net migration	3.5	1.5	1.0	-0.1	3.9	2.7	-1

Source: OECD (2015d), *International Migration Outlook 2015*, http://dx.doi.org/10.1787/migr_outlook-2015-en.

that is, a quarter of a million permanent residents (Czech Statistical Office, 2015, Table 4.21). Between 2003 and 2012, the largest inflows of migrants have been from the Slovak Republic, the Ukraine and Vietnam. These three nationalities made up 57% of foreign residents in the Czech Republic (OECD, 2015d). In 2013, migrants from the Slovak Republic were the most numerous, at the same time the largest outflows were Ukrainian nationals (a net outflow of 7 000 Ukrainians in 2013). Bussolo, Koettl and Sinnott (2015) estimate the need for a net migration of 4.6 per 1 000 inhabitants between 2015 and 2025 to meet the population replacement rate. This is much higher than the net migration over recent years (Table 1.3).

In 2013/14, migrants made up less than 2% of the school population (MŠMT, forthcoming). The proportion of migrants in the PISA 2003 sample was 1.3% and in the PISA 2012 sample was 3.2%. In both surveys there was a clear performance disadvantage for migrant students, but this was not as pronounced as in the OECD on average (OECD, 2013a, Table II.3.4b). A closer look at the performance of the three major migrant groups shows above average performance for students from Vietnam and below average performance for students from the Slovak Republic and the Ukraine (OECD, 2013a, Table II.3.11).

Increase in educational expenditure since 2005, but investment in schooling remains comparatively low

Compared to other OECD countries, the Czech Republic has more limited potential resources available for education as indicated by its comparatively low national income (in 2012, per capita Gross Domestic Product [GDP] was USD 25 364 compared to USD 33 732 on average in the OECD) (Figure 1.2). Contrary to in the OECD on average, since 2000 the Czech Republic has gradually increased public expenditure on education as a percentage of total public expenditure (from 8.0% to 8.9%; compared to a decrease from 11.8% to 11.6% on average) (OECD, 2015e, Table B4.2). Over the same period, public expenditure has also increased as a percentage of GDP (from 3.2% to 3.7%).

Between 2005 and 2012, expenditure at the primary, secondary and post-secondary non-tertiary levels increased by 14%, that is, at exactly the same pace as in the OECD on average (OECD, 2015e, Table B1.5a). However, due to the decline of 15% in the Czech school population over the same period (see also Figure 1.3), expenditure per student increased by 34% – a bigger increase than in the OECD on average (21%) (OECD, 2015e, Table B1.5a). A far greater increase occurred in expenditure per student at the tertiary level and this increased at a greater rate than in the OECD on average (33% increase in the Czech Republic; 11% in the OECD on average) (OECD, 2015e). This is reflected in the indicator of expenditure as a percentage of GDP: since 2005 expenditure at the primary and secondary level had slightly decreased, but in 2012 was back at the 2005 level (2.8%); in contrast, expenditure at the tertiary level has steadily increased from 1.0% of GDP to 1.4% in 2012 (OECD, 2015e, Table B2.2).

Compared to the OECD on average, expenditure per student at the primary level is particularly low (Table 1.4). For primary and lower secondary education, expenditure on educational institutions relative to GDP is 0.7 percentage points lower than on average in the OECD. Cumulative expenditure per student (aged 6 to 15) is among the lowest in the OECD (USD 54 519 compared to USD 83 382 on average) (Figure 1.2). Based on these indicators as well as the comparatively smaller proportion of the Czech adult population educated to the tertiary level, the OECD (2014a) classes the Czech Republic among the OECD countries with the most challenging demographic, social and economic contexts for compulsory education. Other OECD countries in this group include other Central European countries Hungary, Poland and the Slovak Republic, and also Chile, Mexico, Portugal and Turkey.

Table 1.4. **Key indicators on investment in education, 2012**

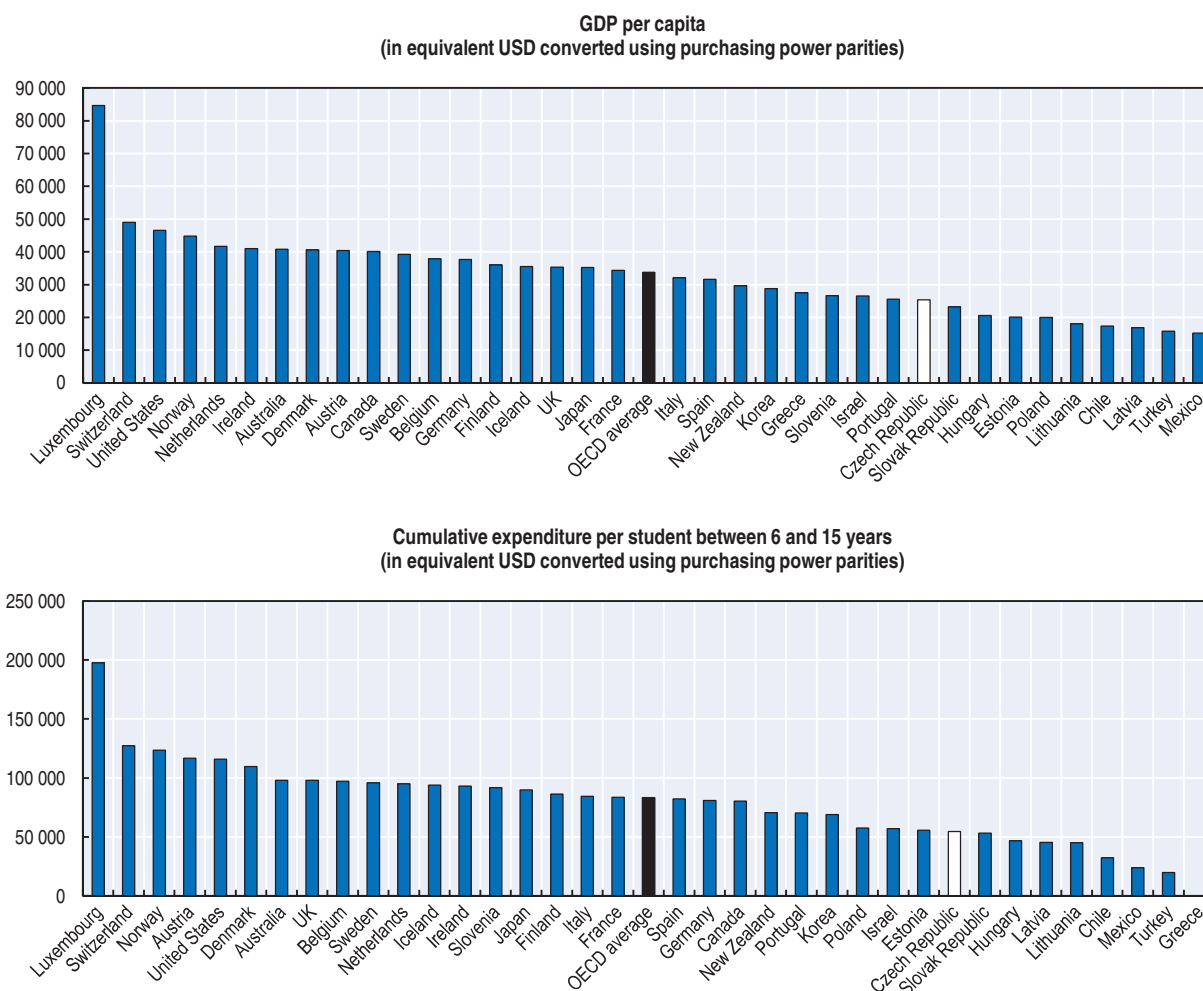
		Czech Republic	OECD average
Annual expenditure per student (in equivalent USD, using PPPs)	Primary education	4 728	8 247
	Secondary education	7 469	9 518
	Tertiary (including Research and Development activities)	10 319	15 028
Expenditure on educational institutions as a percentage of GDP (%)	Total primary to tertiary	4.2	5.2
	Primary and lower secondary	1.7	2.5
	Upper secondary	1.1	1.2
Total public expenditure on primary to tertiary education	As a percentage of total public expenditure (%)	8.9	11.6

Source: OECD (2015e), *Education at a Glance 2015: OECD Indicators*, <http://dx.doi.org/10.1787/eag-2015-en>.

Indicators of low levels of trust in society and in the government

According to the results of various opinion surveys, there appears to be a generally low level of trust in Czech society. For example: results from a Pew Research Centre survey in 2007 revealed around 60% of individuals surveyed did not agree with the statement “Most people in this society are trustworthy” (Cerna, 2014, Figure A.9); also, Czech adults participating in the OECD Survey of Adult Skills reported comparatively low levels of interpersonal trust (e.g. OECD, 2014c, Chart A8.4). There also appears to be a growing lack of trust in the Czech government: results from the International Social Survey Programme point to a deterioration in the level of trust in government administrators (civil servants) in the Czech Republic between 1996 and 2006 (Cerna, 2014, Figure A.8); and results of the Gallup World Poll indicate that the international financial crisis has further fuelled the perception that the Czech government is corrupt (OECD, 2014d, Figure 7.9). According to Guasti et al. (2014) there is strong government rhetoric on the need to tackle corruption which is a problem on all political sides and both the Czech media and police play an active role in exposing political corruption.

However, there appears to be greater trust in the education system. According to results of the Gallup World Poll, just over 60% of individuals surveyed in the Czech Republic reported having confidence in the education system in both 2006 and 2012, which is similar to the average among participating countries (Cerna, 2014, Figure 2).² However, in the Strategy for Education Policy of the Czech Republic until 2020 (hereafter “Strategy 2020”), it is stated that: uncertainty over what policy moves would be taken by the ministry and other key policy makers has intensified a growing level of uncertainty in the education system; and mutual trust between the various stakeholders in education has been diminishing (MŠMT, n.d.).

Figure 1.2. **Comparatively low national income and investment in schooling**

Note: Reference year is 2010.

Source: OECD (2014b), PISA 2012 Results: What Students Know and Can Do (Volume I, Revised edition, February 2014): Student Performance in Mathematics, Reading and Science, <http://dx.doi.org/10.1787/9789264208780-en>, Table 1.2.27.

The school system in the Czech Republic

The Czech school system is highly differentiated and is organised around three main stages: first stage of basic education; second stage of basic education; and secondary education.

Basic education (compulsory school education: primary and lower secondary education)

Czech children must attend school for a period of nine years. Compulsory school attendance commences at the beginning of the school year following the day a child turns six years old, unless deferment is granted.

First stage of basic education (primary education)

All children complete the first five years of compulsory education (School Years 1 to 5) in a basic school, typically from ages 6 to 10. This corresponds to the first stage of basic education and is equivalent to primary education internationally (ISCED [International Standard Classification of Education] 1).

Second stage of basic education (lower secondary education)

The second stage of basic education comprises four years (School Years 6 to 9) from the typical ages of 11 to 14 years. Most children continue the second stage of basic education in a basic school. However, from the age of 11 or 13, children may select to study lower secondary education (ISCED 2) in a different institution:

- a *gymnasium* (schools offering either six- or eight-year study programmes). Students demonstrating strong academic skills may enter a *gymnasium* on completion of the 5th year at the typical age of 11 (8-year study programme), or possibly on completion of the 7th year at the typical age of 13 (6-year study programme)
- or a *conservatoire*. Students with a special artistic talent may, on completion of the 5th year of basic school (at typical age of 11), enrol in an 8-year study programme.

Admission to these school types may require children to complete an entrance examination or aptitude test. All such conditions and requirements are set by the school.

Basic education for children with special educational needs

Children with special educational needs can follow basic education in mainstream classes of basic schools (individual integration), in special classes of basic schools (group integration) or in special schools which are designed for students with specific educational needs. Within the appropriate framework, children with special educational needs may follow a ten-year programme.

Secondary education (non-compulsory education: upper secondary education)

“Secondary education” comprises an offer of different educational programmes, on completion of which the majority of students acquire a qualification internationally equivalent to an upper secondary qualification (ISCED 3). Studying from the typical age of 15 and in different school types, students may acquire:

- “Secondary education” (two-year programmes which do not require a certificate of completion, this is actually classified as ISCED 2). In 2013, 0.4% of students in secondary schools were enrolled in such programmes (MŠMT, forthcoming). These are offered by **practical schools** and are geared towards entering the job market. Students are typically aged 15 to 16.
- “Secondary education with a certificate of apprenticeship” (two- or three-year programmes). In 2013, 21.8% of students in secondary schools were enrolled in such programmes (MŠMT, forthcoming). These are offered by **vocational secondary schools** and are mainly geared towards preparing students for access to the labour market, but can also lead to further study. Students are typically aged 15 to 17 when following these programmes.
- Or “secondary education with a general certificate of education” (four-year programmes). In 2013, 71.9% of students in secondary schools were enrolled in such programmes (MŠMT, forthcoming). Some students in *conservatoires* would also study toward this qualification.
 - ❖ **Gymnasia and lyceums:** These offer students various branches of study programmes and are mainly geared towards preparing students for further education and study. Such programmes and schools are regarded as prestigious. Students are typically aged 15 to 18 when following these programmes, but may enrol in a *gymnasium* at an earlier age (age 11 or 13).

- ❖ **Technical secondary schools:** These offer students four-year technical secondary programmes and are mainly geared towards preparing students for higher vocational education and study. Such programmes and schools are regarded as prestigious. Students are typically aged 15 to 18 when following these programmes.
- ❖ **Conservatoires:** These develop skills in basic and basic artistic education, and prepare students for the performance of exacting artistic and pedagogical activities in the branches of education: music, dance, singing and dramatic art. In 2013, 0.1% of students in secondary education were enrolled in 18 conservatoires.

Evidence on the quality, equity and efficiency of the Czech school system

A highly educated population, typically attaining upper secondary education

Compared to other European countries, a higher proportion of Czech citizens aged 25 to 64 years has attained upper secondary education: 92% compared to 75% on average in the OECD (OECD, 2014c, Table A1.2a). In fact, upper secondary is the highest level of education attained by the vast majority of Czech 25-64 year-olds (73%, compared to 44% on average in the OECD) (OECD, 2014c, Table A1.5b). This is similar to in other Eastern European countries, although, with the exception of Prague, the Czech regions dominate the top ten European regions on this indicator (Ballas et al., 2012, Table 3.15). In 2012, upper secondary graduation rates in the Czech Republic were around the OECD average (82% in the Czech Republic; 84% in the OECD) (OECD, 2014c, Chart A2.1). The majority of upper secondary graduates had completed an academic programme preparing the students for entry to university (58%; 61% on average in the OECD).

Historically low level of tertiary attainment, but a rapid expansion

Historically, the proportion of the Czech population that has attained tertiary education is comparatively low. In 2012, 19% of 25-64 year-olds held a tertiary qualification, compared to 32% on average in the OECD (OECD, 2014c, Table A1.3a). However, a steadily increasing proportion of young Czechs attains tertiary education and first-time graduation rates from university programmes are now just above the OECD average. In 2012:

- The first time graduation rate from university programmes was 40% – just above the OECD average and three times as many as in 1995 (13%) (OECD, 2014c, Table A3.2a).
- Twenty-eight per cent of Czech 25-34 year-olds had attained tertiary education (OECD, 2014c, Table A1.3a), representing an annual growth rate of 7.9% since 2000 – more than twice the rate than on average in the OECD (OECD, 2014c, Table A1.4a). The growth rate in tertiary education attainment is particularly pronounced among Czech women aged 25 to 34 (9.6%, compared to 6.0% for men) (OECD, 2014c, Table A1.4b).
- The difference between the younger and older generations in levels of tertiary attainment in the Czech Republic was slightly above the difference on average in the OECD (OECD, 2014c, Chart A1.3).
- Entry rates into university programmes were just above the OECD average (60% compared to 58% in the OECD) (OECD, 2014c, Table C3.1a) and have more than doubled since 2000 (25%) (Table C3.2a).

The link between educational attainment and employment is particularly pronounced

Employment rates are considerably lower for Czechs who do not have upper secondary education (41% compared to 73% with upper secondary education) and are 43 percentage

points lower than those who have tertiary education – one of the biggest employment disadvantages among OECD countries (OECD, 2014c, Table A5.1a). Equally, unemployment rates for those without upper secondary education are significantly higher: in 2012, 25.5% for 25-64 year-olds, compared to 13.6% on average in the OECD, and 32.8% for 25-34 year-olds, compared to 19.8% on average in the OECD (OECD, 2014c, Table A5.2a). At the same time, results from the OECD Survey of Adult Skills indicate that among OECD countries the Czech Republic has the highest rates of skills mismatch with just under 30% of workers over-skilled (OECD, 2013c).

Toward the end of compulsory education Czech students perform around the OECD average

According to results from the OECD Programme for International Student Assessment (PISA), Czech 15-year-olds perform around the OECD average in the reading and mathematics assessments and above the OECD average in the science assessment (Table 1.5). Across the different PISA performance areas, the Czech Republic has average proportions of both high and low performers, with the exception of fewer low performers in science – the area where Czech average performance was strongest (Table 1.5). However, between the PISA 2003 and 2012 assessments, there has been a steady decline in student performance on the mathematics assessment.

Table 1.5. Educational outcomes in international comparison

	Average performance in PISA score points (PISA 2012)			Trend in mathematics performance (PISA 2003-12)	Annualised change in PISA score points	Percentage of 35-44 year-olds with tertiary education
	Mathematics	Reading	Science			
Austria	506 ¹	490 ¹	506	Steady, unchanged	0.0	21
Czech Republic	499	493	508 ¹	Steady decline	-2.5 ¹	18
Germany	514 ¹	508 ¹	524 ¹	Steady improvement	1.4 ¹	29
Hungary	477 ¹	488 ¹	494 ¹	Accelerating decline	-1.3 ¹	21
Poland	518 ¹	518 ¹	526 ¹	Accelerating improvement	2.6 ¹	24
Slovak Republic	482 ¹	463 ¹	471 ¹	Steady decline	-1.4 ¹	17
OECD average	494	496	501	Annualised change	-0.3	34

1. Value that is significantly above or below the OECD average (columns 1 to 3) or statistically significant (column 5). Data from OECD PISA 2012 reflect results of Czech students at both the lower secondary and upper secondary levels. In PISA 2012, 44.1% of participating Czech students were in the 10th year (upper secondary education), while 51.1% were in the 9th year and 4.5% were in the 8th year (lower secondary education) (OECD, 2014b, Table A2.4a).

Source: OECD (2014a), OECD Economic Surveys: Czech Republic 2014, http://dx.doi.org/10.1787/eco_surveys-cze-2014-en; and OECD (2014b), PISA 2012 Results: What Students Know and Can Do (Volume I, Revised edition, February 2014): Student Performance in Mathematics, Reading and Science, <http://dx.doi.org/10.1787/9789264208780-en>.

Selection from age 11 and strong link between school socio-economic composition and performance

The Czech Republic's school system ranks among the most horizontally stratified in the OECD. Children may be selected to enrol in an eight-year *gymnasium* programme as early as age 11; on average in the OECD the first age of selection is 14 years (Table 1.6). Insights from PISA 2012 results show a very strong association between the school's average socio-economic composition and the average performance of its students – more than double the score point difference found in the OECD on average (Table 1.6). Students in the most socio-economically advantaged schools scored an average of 588 points in the

Table 1.6. **Selected indicators of equity in student performance, PISA 2012**

Indicator		Czech Republic	OECD average
Top performers (%)	Mathematics	13	13
	Reading	6	9
	Science	8	8
Low performers (%)	Mathematics	22	23
	Reading	17	18
	Science	14	18
Gender performance difference in PISA score points (girls minus boys)	Mathematics	-12	-11
	Reading	39	38
	Science	-1	-1
First age of selection		11	14
Number of distinct programmes/schools for 15-year-olds		6.0	2.6
Students who repeated a year (%)		5	12
Variance in performance explained by economic, social and cultural status (ESCS) (%)	Mathematics	16	15
	Reading	15	13
	Science	14	14
Score point difference associated with a one unit increase in ESCS	Mathematics	51	39
	Reading/Science	46	38
Score point difference in mathematics associated with an one unit increase in school average ESCS		89	35

Note: Top performers = students performing at PISA level 5 and above; low performers = students performing below PISA level 2.

Source: OECD (2014b), PISA 2012 Results: What Students Know and Can Do (Volume I, Revised edition, February 2014): Student Performance in Mathematics, Reading and Science, <http://dx.doi.org/10.1787/9789264208780-en>; OECD (2013a), PISA 2012 Results: Excellence through Equity (Volume II): Giving Every Student the Chance to Succeed, <http://dx.doi.org/10.1787/9789264201132-en>; OECD (2013b), PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices, <http://dx.doi.org/10.1787/9789264201156-en>.

mathematics assessment – this compares to the Czech average performance of 499 points (OECD, 2013a, Table II.4.2).

By age 15, Czech students can be in 6 distinct educational programmes – twice the OECD average number. Some research has shown that family background strongly influences access to six- and eight-year *gymnasium* programmes (e.g. Koucký et al., 2004 and Münich, 2005 in Santiago et al., 2012). According to MŠMT (forthcoming) results of the Eurostudent V survey indicate a high degree of social selectivity that increase the differentiation of schools at all levels of the education system and favour the reproduction of elites. While students' socio-economic background explains the same amount of variance in overall performance as in the OECD on average, the performance disadvantage for those from less advantaged socio-economic backgrounds is much greater than on average in the OECD (Table 1.6).

Access for children from more advantaged families to the most “prestigious” educational tracks (six- or eight-year *gymnasium* programmes) appears to be confirmed in international data showing that the Czech Republic has the lowest educational upward mobility rate of all OECD countries: 71% of 25-34 year-olds have the same attainment as their parents (compared to the OECD average of 52%); only 17% of 25-34 year-olds have exceeded their parents' educational attainment (compared to the OECD average of 32%) (OECD, 2015e).

Comparatively low proportions of early school leavers and students who have repeated a school year

There is a comparatively low proportion of Czech 18-24 year-olds leaving school early (in 2014: 5.5% in the Czech Republic; 11.1% in the European Union on average), although

this is increasing gradually, in contrast to the decreasing trend in the European Union (European Commission, 2015b). Similarly, a much lower proportion of Czech fifteen-year-olds reported having repeated a year at some stage of their schooling compared to on average in the OECD (Table 1.6).

However, it is an established practice in the Czech Republic to delay a child's enrolment in basic school. In 2014/15, 19% of children admitted to Year 1 of basic education were older than 6 years.

Gender differences mirror those in the OECD in compulsory education, but become more pronounced in tertiary education

The magnitude and direction of performance differences between Czech boys and girls at age 15 mirrors that of their counterparts in the OECD on average (Table 1.5). Girls show a clear performance advantage in reading; boys perform better at mathematics; and there is no difference in science performance. However, in terms of access to and completion of tertiary education, Czech women dominate more than on average in the OECD. In 2013, the percentage of female tertiary graduates in the Czech Republic were among the highest in the OECD: 66% from 2-3 year programmes, 63% from bachelor's or equivalent and 61% from master's or equivalent, compared to OECD averages of 56%, 58% and 56% respectively (OECD, 2015e, Table A3.4). While women make up the majority of new entrants to tertiary education in all but three OECD countries, the Czech Republic sees the largest share of women (58%, compared to the OECD average of 54%) (OECD, 2015e, Table C3.2). At the same time, unlike in other OECD countries (with the exception of Korea), higher skilled Czech women are equally likely to be outside the labour force, compared to lower skilled women (OECD, 2013c).

Economic and educational inequalities among the Czech regions

Regional income (as measured by GDP) varies significantly within the Czech Republic. Half of the Czech national GDP is concentrated in the four regions with the largest populations (Table 1.2): Prague (25%), the Central Bohemian region (11%), the South Moravian region (10%) and the Moravian-Silesian region (10%) (Table 1.A1.1). All except the Moravian-Silesian region also enjoyed higher than the national average economic growth between 2005 and 2011 (Table 1.A1.1). In contrast, the two poorest regions (Liberec region and Karlovy Vary region) had very low growth compared to the Czech national average over the same period (Table 1.A1.1). However, with the exception of Prague, the proportion of 25-64 year-olds whose highest level of attainment is upper secondary education does not vary greatly among the Czech regions (Table 1.7). The population in Prague stands out as being comparatively much better educated and features among the top ten European regions with the lowest proportions of population over 15-years-old that has attained less than upper secondary education (Ballas et al., 2012, Table 3.18).

However, there are pronounced disparities among the Czech regions in terms of tertiary education attainment (Table 1.6). The regions Karlovy Vary and Ústí (collectively classified as the Northwest in European statistics) feature among the ten European regions with the lowest proportion of persons aged 15 or over with tertiary education (Ballas et al., 2012, Table 3.22). These regions also have the highest unemployment rates in the Czech Republic (Figure 1.A1.3) and a low proportion of students in tertiary education (Table 1.6). The literature suggests that, where education plays an important role, levels of tertiary education are most strongly linked with stronger regional economic performance and, therefore, rates of access to tertiary education and keeping tertiary graduates in a region

Table 1.7. **Educational attainment and proportion of the population in education for Czech regions**

	Educational attainment – Percentage of population aged 15 years or more with:			Students in tertiary education as a proportion of 20-24 year-olds in the region (%)	Students in all levels of education as a proportion of total population in the region (%)
	Tertiary education	Upper secondary and post-secondary non-tertiary education	Pre-primary, primary and lower secondary education		
Prague	25.8	63.5	10.7	100	28.7
Southeast	13.7	69.4	16.9	72.9	22.6
Southwest	11.5	71.1	17.3	44.2	19.6
Moravia-Silesia	11.4	68.6	20.0	52.5	21.5
Central Bohemia	10.9	72.5	16.6	5.6	14.7
Northeast	10.6	72.1	17.4	32.3	19.3
Central Moravia	10.3	71.0	18.6	37.2	20.1
Northwest	7.0	69.2	23.8	20.4	18.5
Range among regions	18.7	8.9	13.1	94.4	14.0

Note: The table presents European data according to the Nomenclature of Territorial Units for Statistics classification Level 3 (NUTS3). Southeast comprises the Vysočina region and the South Moravian region; Southwest comprises the Central Bohemian region and the Pilsen region; Northeast comprises the Liberec region, the Hradec Kralove region and the Pardubice region; Central Moravia comprises the Olomouc region and the Zlín region; and Northwest comprises the Karlovy Vary region and the Ústí region.

Source: Ballas, D. et al. (2012), *Mind the Gap: Education Inequality across EU Regions*, European Commission by the NESSE network of experts, European Union, Tables 4.7 and 4.8.

are critical factors for economic performance (Ballas et al., 2012). When comparing regions across Europe, Prague has one of the highest proportions of students in tertiary education in relation to the 20-24 year-old population in the region (100%; joint third highest proportion across European regions), while the Central Bohemian region that surrounds Prague has the second lowest proportion among European regions (5.6%) (Ballas et al., 2012, Tables 3.10 and 3.11).

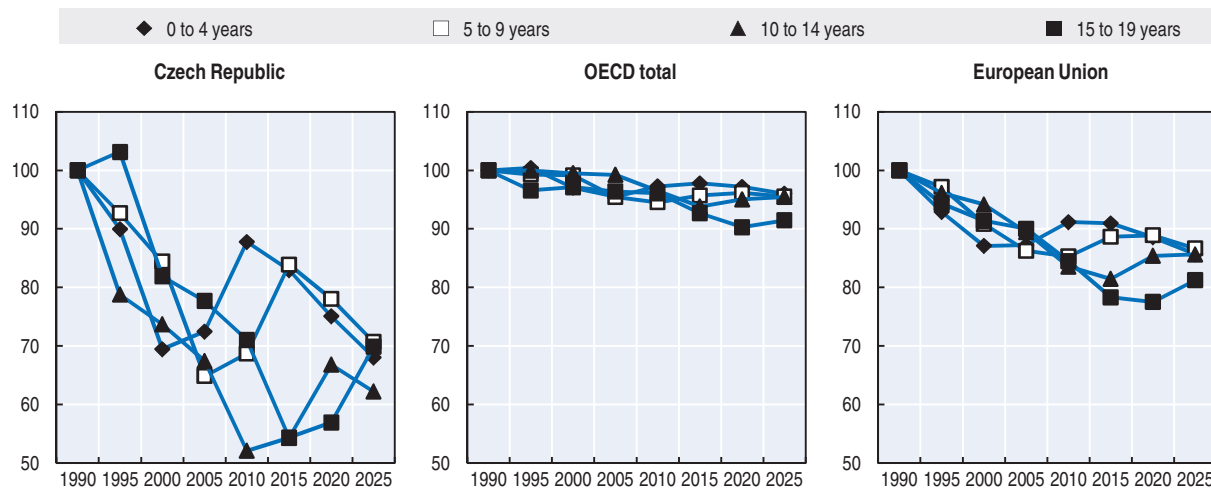
Unfortunately, there are no internationally comparable data allowing the comparison of performance between different Czech regions in the PISA assessments. However, results do allow a comparison of student performance on average between rural and urban areas. Among the Czech 15-year-olds participating in PISA 2012, 27% were in schools located in a city (over 1 million inhabitants), 66% were in schools located in a town (between 3 000 and 100 000 inhabitants) and 8% were in rural schools (fewer than 3 000 inhabitants) (OECD, 2013a, Table II.3.3a). Compared to observed performance differences between rural and urban areas internationally, these were rather moderate in the Czech Republic and were almost entirely accounted for by socio-economic differences (OECD, 2013a, Table II.3.3a).

Steep decline in the school age population has challenged the efficiency of the school network

One of the greatest challenges in recent years to the Czech school system has been the steep decline in the school-age population (MŠMT, forthcoming). The number of students in the Czech school system (compulsory education, upper secondary education and post-secondary non-tertiary education) dropped from 1.958 million in 1990/91 to 1.648 million in 2013/14, that is, a reduction of 16%. This decline has been dramatic in comparison to the evolution in the school-age populations in the European Union and certainly compared to in the OECD (Figure 1.3). While the decline has hit all age groups in compulsory and upper secondary education, demographic pressures hit lower secondary and upper secondary education the hardest: compared to in 1990, there was almost half the number of 10-14 year-olds

Figure 1.3. **Variation in school age population in the Czech Republic compared to in the OECD and the EU**

1990 = 100



Source: OECD.Stat (n.d.), Historical population data and projections (1950-2050), Demography and Population (database), https://stats.oecd.org/Index.aspx?DataSetCode=POP_PROJ.

in the Czech Republic in 2010; and the number of 15-19 year-olds is predicted to remain over 40% lower than the 1990 numbers until 2020 (Figure 1.3). While birth rates improved between 2000 and 2010, which saw an increase in capacity in primary education (the first stage of basic education), they have started to decline and this is predicted to continue over the coming years (Figure 1.3). This will exert renewed pressure on primary education (first stage of basic education).

Notes

1. While the number of people aged 65 or older increased from 1.296 million in 1990 to 1.91 million in 2015, over the same period the size of the population aged 15 or younger shrank from 2.223 million to 1.6 million (OECD database, Historical population data and projections [1950-2050]).
2. Internationally, reported levels of trust were highest in Ireland, Iceland and Finland (just over 80%); the Czech Republic was one of fourteen countries where between 60% and 70% of individuals reported confidence in the education system; in 12 countries, levels of trust were lower than 60% (in 9 between 50% and 60%; and in one below 50%); and in 14 countries levels of trust were higher than 70% (Cerna, 2014, Figure 2).

References

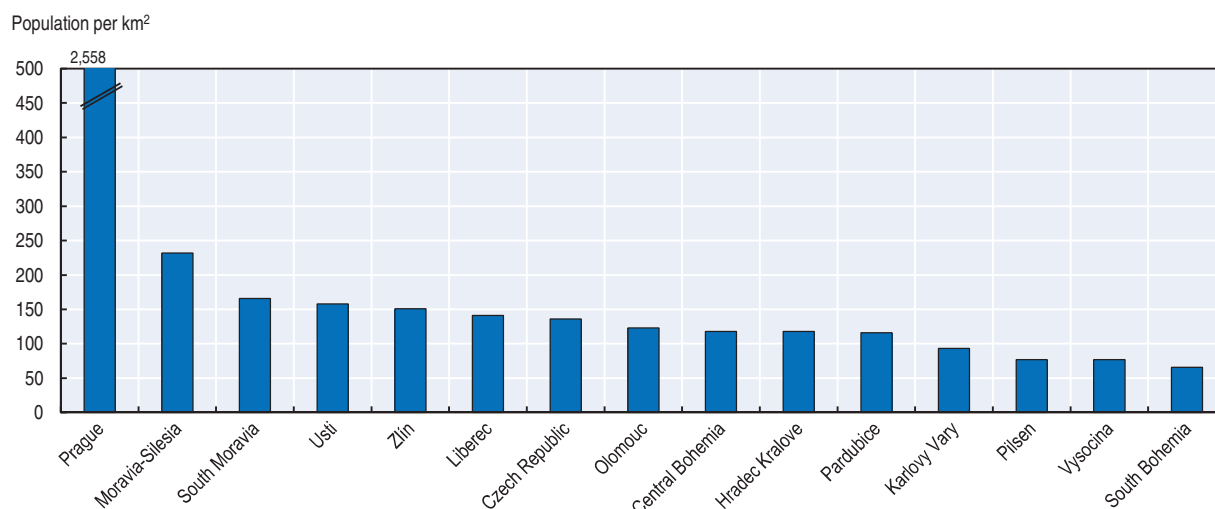
- Ballas, D. et al. (2012), *Mind the Gap: Education Inequality across EU Regions*, An independent report authored for the European Commission by the NESSE network of experts, European Union.
- Bussolo, M., J. Koettl and E. Sinnott (2015), *Golden Aging: Prospects for Healthy, Active, and Prosperous Aging in Europe and Central Asia*, World Bank, Washington, DC, <https://openknowledge.worldbank.org/handle/10986/22018>.
- Cedefop (2015), *Spotlight on VET – Anniversary Edition*, Vocational Education and Training Systems in Europe, Cedefop information series, Publications office of the European Union, Luxembourg.
- Cerna, L. (2014), "Trust: What it is and Why it Matters for Governance and Education", OECD Education Working Papers, No. 108, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5jxswcg0t6wl-en>.
- Czech Statistical Office (2015), *Statistical Yearbook of the Czech Republic – 2015*, Czech Statistical Office, Prague, www.czso.cz/csu/czso/statistical-yearbook-of-the-czech-republic-2015.

- European Commission (2015a), *The 2015 Ageing Report: Underlying Assumptions and Projection Methodologies*, European Commission, Brussels, http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee8_en.pdf.
- European Commission (2015b), *Education and Training Monitor 2015: Czech Republic*, European Commission, Brussels.
- Eurostat (2015), *Unemployment Statistics*, Eurostat statistics explained online database, http://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment_statistics.
- Guastia, P. et al. (2014), *Sustainable Governance Indicators: 2014 Czech Republic Report*, Bertelsmann Stiftung, Gütersloh.
- Koucký, J. et al. (2004), "Učení pro život, Výsledky výzkumu OECD PISA 2003" [Learning for life, outcomes of OECD Survey PISA 2003], special annex to *Učitel'ské noviny*, Vol. 107, No. 46, Prague.
- MŠMT (forthcoming), *OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools National Background Report: Czech Republic*, Czech Ministry of Education, Youth and Sports, Prague.
- MŠMT (n.d.), *Strategy for Education Policy of the Czech Republic until 2020*, Czech Ministry of Education, Youth and Sports, Prague.
- Münich, D. (2005), *Estimating the Impact of School Quality, Selection, and Supply on Student's Achievements: Evidence from the Czech Nation-wide Testing of Youth*, mimeo, Charles University, Prague.
- OECD (2016), *OECD Economic Surveys: Czech Republic 2016*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eco_surveys-cze-2016-en.
- OECD (2015a), *OECD Employment Outlook 2015*, OECD Publishing, Paris, http://dx.doi.org/10.1787/empl_outlook-2015-en.
- OECD (2015b), *In It Together: Why Less Inequality Benefits All*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264235120-en>.
- OECD (2015c), *Pensions at a Glance 2015: OECD and G20 Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/pension_glance-2015-en.
- OECD (2015d), *International Migration Outlook 2015*, OECD Publishing, Paris, http://dx.doi.org/10.1787/migr_outlook-2015-en.
- OECD (2015e), *Education at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/eag-2015-en>.
- OECD (2015f), *OECD Regional Statistics (database)*, <http://dx.doi.org/10.1787/region-data-en>.
- OECD (2014a), *OECD Economic Surveys: Czech Republic 2014*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eco_surveys-cze-2014-en.
- OECD (2014b), *PISA 2012 Results: What Students Know and Can Do (Volume I, Revised edition, February 2014): Student Performance in Mathematics, Reading and Science*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264208780-en>.
- OECD (2014c), *Education at a Glance: OECD Indicators 2014*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/eag-2014-en>.
- OECD (2014d), *Society at a Glance 2014: OECD Social Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/soc_glance-2014-en.
- OECD (2013a), *PISA 2012 Results: Excellence through Equity (Volume II): Giving Every Student the Chance to Succeed*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264201132-en>.
- OECD (2013b), *PISA 2012 Results: What Makes Schools Successful (Volume IV): Resources, Policies and Practices*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264201156-en>.
- OECD (2013c), *OECD Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264204256-en>.
- OECD.Stat (n.d.), *Income Distribution and Poverty, Social Protection and Well-being (database)*, OECD.Stat, <http://stats.oecd.org/Index.aspx?DataSetCode=IDD#>.
- OECD.Stat (n.d.), *Historical population data and projections (1950-2050), Demography and Population (database)*, OECD.Stat, https://stats.oecd.org/Index.aspx?DataSetCode=POP_PROJ.
- Santiago, P. et al. (2012), *OECD Reviews of Evaluation and Assessment in Education: Czech Republic 2012*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264116788-en>.

ANNEX 1.A1

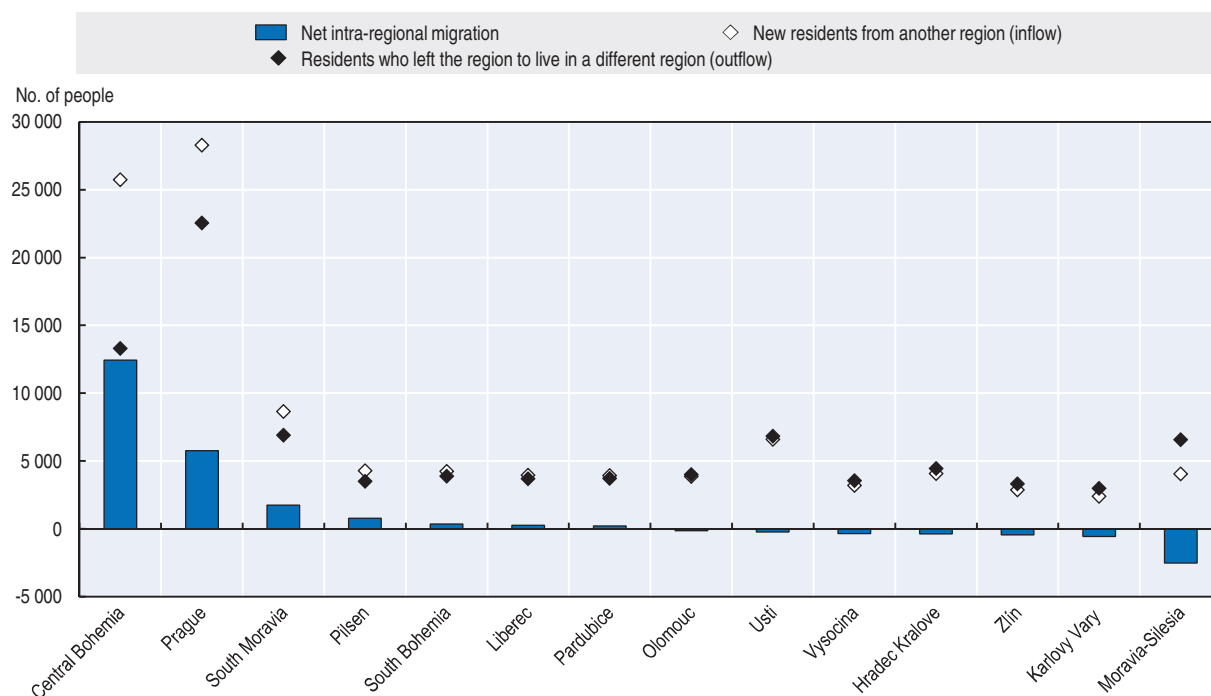
Data for Chapter 1

Figure 1.A1.1. **Population density in different Czech regions, 2012**



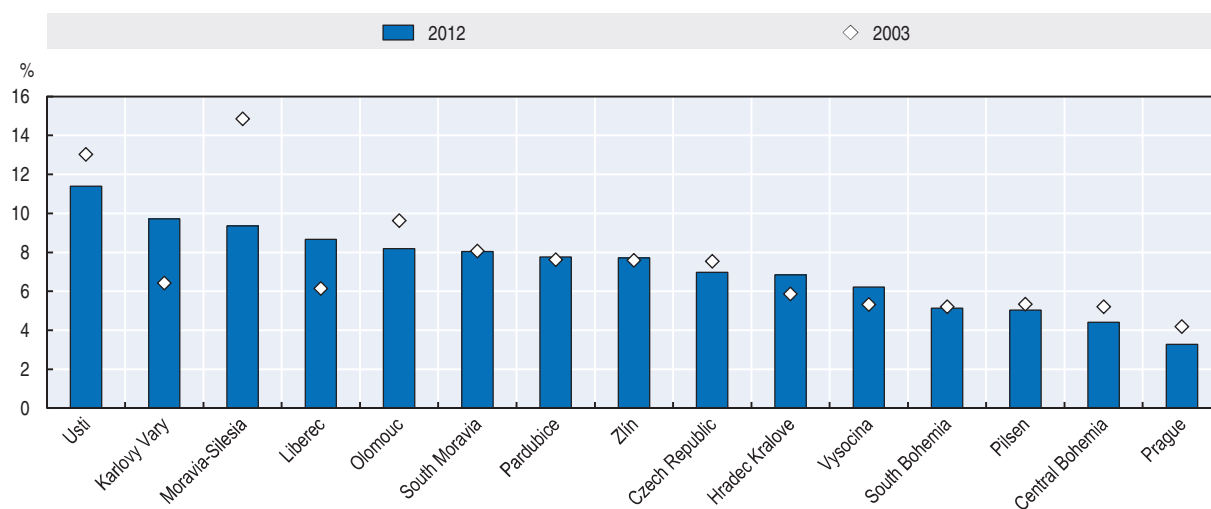
Source: OECD (2015f), OECD Regional Statistics (database), <http://dx.doi.org/10.1787/region-data-en>.

Figure 1.A1.2. Intra-regional migration in the Czech Republic, 2011



Source: OECD (2015f), OECD Regional Statistics (database), <http://dx.doi.org/10.1787/region-data-en>.

Figure 1.A1.3. Unemployment rates in Czech regions, 2012 and 2003



Source: OECD (2015f), OECD Regional Statistics (database), <http://dx.doi.org/10.1787/region-data-en>.

Table 1.A1.1. Growth in national and regional GDP between 2000, 2005 and 2011
 USD millions, Constant prices, constant PPP, OECD base year 2005

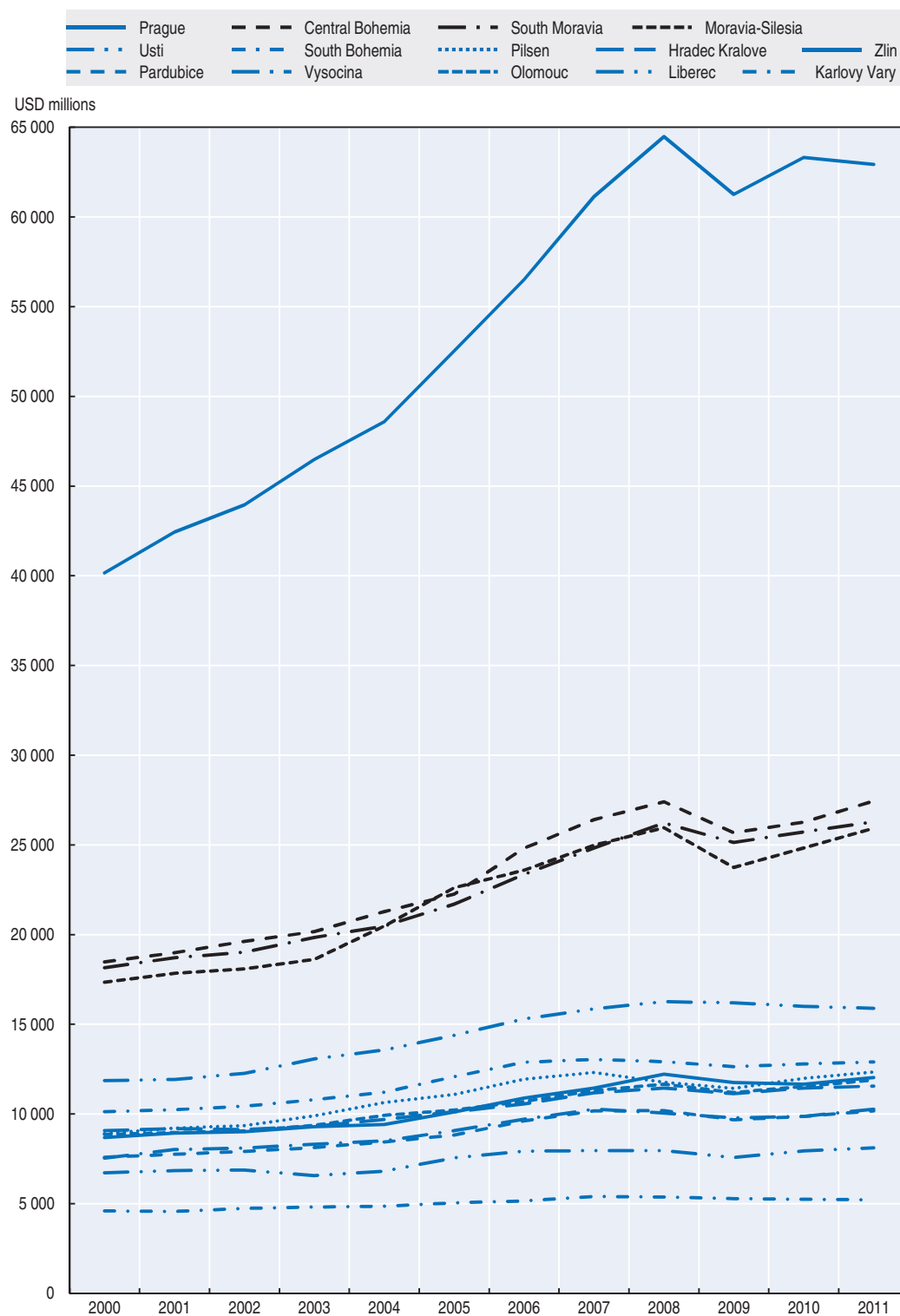
	GDP (USD)			Index of change (2005 = 100)	Proportion of national GDP (2011) (%)
	2000	2005	2011		
Central Bohemia	18 481	22 261	27 444	123	10.8
South Moravia	18 157	21 697	26 281	121	10.4
Prague	40 168	52 534	62 924	120	24.9
Zlin	8 683	10 116	12 041	119	4.8
Olomouc	8 851	10 225	11 901	116	4.7
Czech Republic	178 129	217 659	252 993	116	..
Pardubice	7 591	8 820	10 171	115	4.0
Moravia-Silesia	17 353	22 613	25 923	115	10.2
Hradec Kralove	9 080	10 135	11 559	114	4.6
Vysocina	7 543	9 078	10 274	113	4.1
Pilsen	8 910	11 090	12 347	111	4.9
Usti	11 868	14 394	15 892	110	6.3
Liberec	6 716	7 562	8 110	107	3.2
South Bohemia	10 122	12 080	12 900	107	5.1
Karlovy Vary	4 604	5 053	5 223	103	2.1

Note: Czech regions are presented in descending order of growth in regional GDP between 2005 and 2011.

.. : not available.

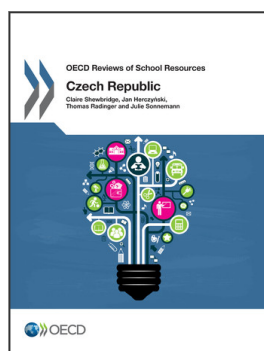
Source: OECD (2015f), OECD Regional Statistics (database), <http://dx.doi.org/10.1787/region-data-en> and author calculations.

Figure 1.A1.4. Regional GDP
Constant prices, constant PPP, OECD base year 2005



Note: The Czech economy further contracted between 2011 and mid-2013 (see Figure 1.1).

Source: OECD (2015f), OECD Regional Statistics (database), <http://dx.doi.org/10.1787/region-data-en>.



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