

ANALYSIS

3 November 2016

Education Level of Women Grows Fast

The level of formal education has been growing at a rapid pace in the Czech Republic. In the age group of 25-64 years the population has been stagnating in the last decade yet the number of persons having tertiary education increased by over a half of million. At the same time, the numbers of persons of this age group having merely primary education, and especially those having secondary education without A-level examination (with apprenticeship certificate) dropped. This got reflected in the current supply and demand in numerous occupations.

Low natality since the 1990s has contributed to a relatively small increment to the population of the Czech Republic. What, however, changed substantially is the level of formal education. The changes can be demonstrated in the population group aged 25 - 64 years, which covers the vast majority of persons who have finished their education and are economically active. In the twenty-year period 1995 - 2015 the total number of these persons grew by 628 thousand to yield 5 959 thousand persons. Since 2005 the increment to this group number has been solely very low (46 thousand persons).

Concerning educational attainment, there have been big changes over the twenty years as follows:

- the number of persons with primary education (ISCED 0-2) dropped substantially – by a half million persons to 408 thousand persons;
- the number of persons with secondary education without A-level examination (mostly those with apprenticeship certificates) declined by 125 thousand persons, and the number markedly dropped in recent years; in the period from 2005 to 2015 the number fell by 362 thousand persons;
- conversely to the development in the number of persons with primary education or with secondary education without A-level examination, the number of graduates from secondary schools with A-level examination grew by 505 thousand persons; in recent years, however, their number have undergone no significant change;
- the number of graduates from tertiary education increased enormously by three quarters of million persons (increase between 2015 and 1995 reached the extraordinary value of 134%); the growth in the number of higher education graduates was noticeable namely in the recent five years.

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Population aged 25-64 years by educational attainment in the years 1995, 2005, and 2015

Educational attainment CZ-ISCED 2011	Period			Increase (decrease)			
	Thousand persons			Thousand persons		Percentage	
	1995	2005	2015	2015 / 1995	2015 / 2005	2015 / 1995	2015 / 2005
Total	5330,6	5913,4	5959,0	628,4	45,6	11,8	0,8
Of which:							
Primary education and no education	909,1	595,7	407,6	-501,4	-188,1	-55,2	-31,6
Secondary education without A-level examination (incl. with apprenticeship certificates)	2278,0	2515,1	2152,6	-125,3	-362,4	-5,5	-14,4
Secondary education with A-level examination	1581,9	2029,9	2087,2	505,4	57,3	31,9	2,8
Tertiary education	561,4	772,1	1310,9	749,5	538,8	133,5	69,8

Source: CZSO, Labour Force Sample Survey

In accordance with the classification of CZ-ISCED 2011 the successful graduation from bachelor, master, and doctoral studies and also higher professional education are considered to be tertiary (higher) education. In 2015 the age group of 25-64 years was dominated by graduates from master studies (953 thousand persons out of the total number of 1 311 thousand persons having tertiary education). The bachelor studies were passed by 214 thousand persons, there were 108 thousand graduates of higher professional schools and there were 36 thousand graduates of doctoral studies. It can be assumed, that a portion of graduates from higher professional schools or bachelor studies would proceed in studies at a higher level of the tertiary education. This education level does not include graduates from conservatoires with absolutorium examination, which accounted for 11 thousand persons in the last year, for the reason of incomparability of time series.

Number of Females with Tertiary Education is Higher than That of Males

The structure of educational attainments in males and in females has been different for a long time. The whole period since 1995 is characterised by a decline in the number of males with primary education (by 118 thousand persons over twenty years). Almost 43% males aged 25-64 years have apprenticeship certificates or earned secondary education without A-level examination (1 286 thousand persons). Their number, compared to that in 1995, has not changed much, yet in recent years there is a noticeable descending trend. Since 2010 their number fell by 163 thousand persons, i.e. by over 11%.

On the contrary to the group of persons with primary education and with apprenticeship certificates, the numbers of males with A-level examination, and namely, those with higher education have been growing. Over the twenty-year period since 1995 the number of males with A-level examination increased by 280 thousand persons, yet since 2008 their number has been more or less steady. Conversely, in the whole period evaluated the number of tertiary education graduates has been growing. In the two decades the number of males aged 25-64

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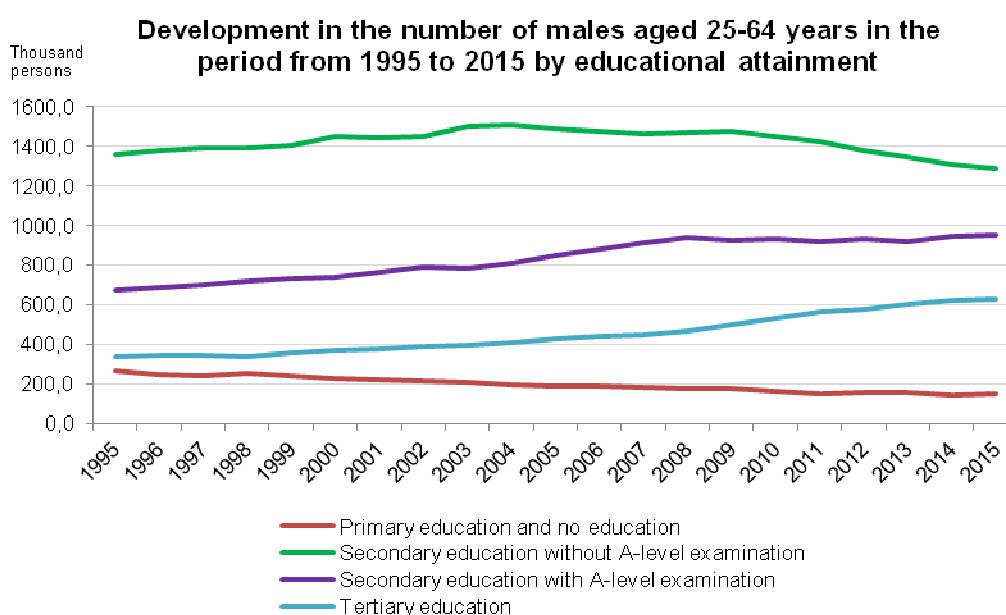
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years with this educational attainment increased by 286 thousand persons to reach 627 thousand persons, which is almost by 84% more than that in the middle of the 1990s.



Source: CZSO, Labour Force Sample Survey

The situation in the group of females is rather different. Over the twenty years the number of females with primary education or with no education substantially dropped. In 1995 there was still the number of females with secondary education without A-level examination virtually equal to that of females with secondary education with A-level examination, but solely in the recent two decades the former decreased by over 160 thousand persons.

Females with secondary education with A-level examination are still the largest group (39%). Similarly as in the case of the holders of apprenticeship certificates, a significant decline in their number has been seen in recent years and in the last year their number fell below the level in 2005.

The reduction in the number of females with primary and secondary education has been compensated by an extraordinary increase in the number of females with higher (tertiary) education. In 2015 there were 684 thousand females aged 25-64 years with tertiary education, which is over three times more than in 1995. The enormous growth of females with this educational attainment is also documented by the fact that in 2012 the number of females with higher education was already higher than that of males and the difference in between males and females has been growing at a fast pace since then.

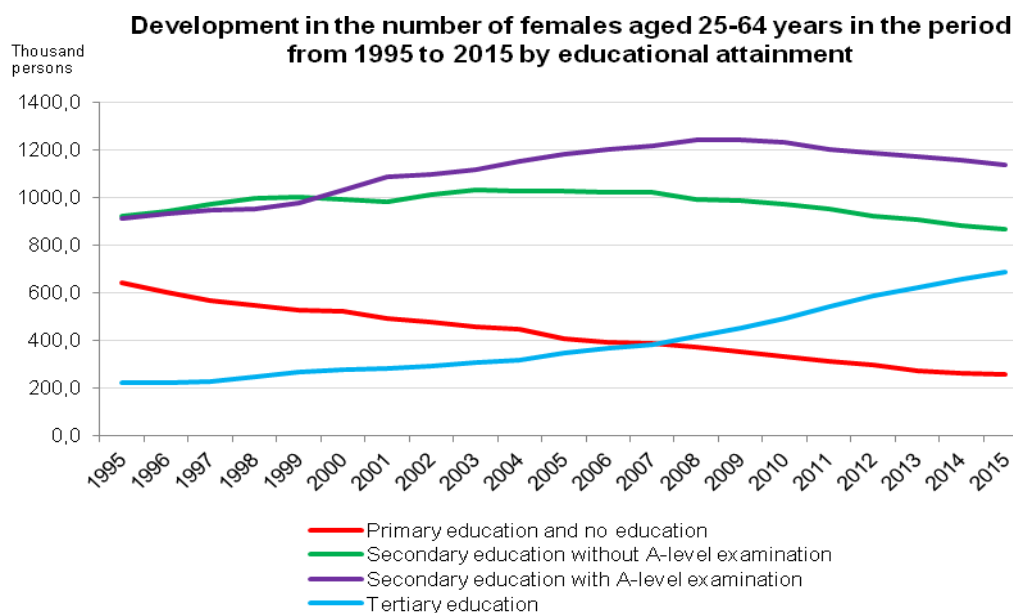
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Source: CZSO, Labour Force Sample Survey

The share of higher education graduates in the population of the aged 25-64 years reached 22% in the Czech Republic in the last year, which is still less than in majority of the EU Member States. While the average for the whole EU was 30%, it was also Germany, for instance, which had a lower share of tertiary educational attainment holders in the population (less than 28%). This has been changing fast, however. The share of the young, who finished or still are studying tertiary education, is completely different from that in the elder generation.

The shares of tertiary education graduates in the population of the forty and fifty years old do not differ much. The much more serious fact is the far largest group of people aged 35-44 years shows a high share of graduates with A-level examination or without it, yet the share of tertiary education graduates in this group is relatively low. Significant portion of these persons graduated from secondary education in the 1990s when possibilities to study tertiary education were limited. On the contrary, the present capacities of universities and alike schools enable to pass the formal educational attainment to substantial proportion of the young population.

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Population by age group and by educational attainment in 2015

Age group	Total	Educational attainment CZ-ISCED 2011				Total	Educational attainment CZ-ISCED 2011			
		Primary education and no education	Secondary education without A-level examination (incl. with apprenticeship certificates)	Secondary education with A-level examination	Higher education		Primary education and no education	Secondary education without A-level examination (incl. with apprenticeship certificates)	Secondary education with A-level examination	Higher education
		Thousand persons					Percentage			
20 - 24 years	607,1	58,3	122,6	360,1	66,1	100,0	9,6	20,2	59,3	10,9
25 - 29 years	693,3	45,7	168,1	259,2	220,0	100,0	6,6	24,3	37,4	31,7
30 - 34 years	742,7	44,4	199,5	276,8	222,0	100,0	6,0	26,9	37,3	29,9
35 - 39 years	901,1	41,3	295,0	330,5	234,3	100,0	4,6	32,7	36,7	26,0
40 - 44 years	859,8	33,1	337,8	325,0	163,9	100,0	3,8	39,3	37,8	19,1
45 - 49 years	694,5	33,1	267,2	252,3	141,9	100,0	4,8	38,5	36,3	20,4
50 - 54 years	676,7	39,4	272,0	235,0	130,1	100,0	5,8	40,2	34,7	19,2
55 - 59 years	666,7	69,9	289,9	200,0	106,9	100,0	10,5	43,5	30,0	16,0
60 - 64 years	724,2	100,8	323,2	208,4	91,9	100,0	13,9	44,6	28,8	12,7
25 - 64 years	5959,0	407,6	2152,6	2087,2	1310,9	100,0	6,8	36,1	35,0	22,0

Source: CZSO, Labour Force Sample Survey

Data for the group of 25-29 years of age are to a certain extent affected by the fact that some of them have not finished their formal education yet. These are, first of all, secondary school graduates who have been still studying tertiary education. On condition that they will complete their studies successfully then they would increase the share of persons with tertiary educational attainment in this age group to 36%. The share of those preparing themselves in tertiary education is especially high in the group of the aged 20-24 years, in which the share of tertiary study graduates, in case these persons all successfully complete the studies, the share of higher education graduates could hypothetically reach over 45%, which is a value attained in countries with the highest shares of tertiary education as Nordic Countries, for instance. And then, even the potential tertiary education studies of secondary schools graduates at higher age is not taken into account.

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Great Differences in Formal Educational Attainment among Regions

The population structure by educational attainment differs much among regions. If educational attainment structure of the population aged 25-64 years is compared by region then it is namely Prague, which has an extraordinary high share of residents with tertiary educational attainment (almost 40%). The share is virtually three times higher than the shares of higher education graduates in the Karlovarský Region and Ústecký Region. The Jihomoravský Region has the share of higher education graduates above average and the limit of twenty percent was also surpassed in the Středočeský, Olomoucký, and in Zlínský Regions.

Prague, at the same time, boasts the lowest share of persons with basic education and a substantially lower share of persons with secondary education without A-level examination. It follows from the previously performed analyses that it is just higher education graduates who commute to large cities at high numbers and thus the number of present population with this educational attainment is therefore raised in these cities, especially in Prague and in Brno.

Population aged 25 - 64 years by educational attainment and by region in 2015

Territory	Total	Educational attainment CZ-ISCED 2011				Total	Educational attainment CZ-ISCED 2011			
		Primary educa- tion and no educa- tion	Secondary education without A-level examina- tion (incl. with apprenti- ceship certifica- tes)	Secon- dary educa- tion with A-level exami- nation	Higher educa- tion		Primary educa- tion and no educa- tion	Secondary education without A-level examina- tion (incl. with apprenti- ceship certifica- tes)	Secon- dary educa- tion with A-level exami- nation	Higher educa- tion
		Thousand persons					Percentage			
Czech Republic	5959.0	407.6	2152.6	2087.2	1310.9	100.0	6.8	36.1	35.0	22.0
Region:										
Hl. m. Praha	738.1	24.4	130.5	290.7	292.6	100.0	3.3	17.7	39.4	39.6
Středočeský	747.1	40.3	268.3	277.7	160.8	100.0	5.4	35.9	37.2	21.5
Jihočeský	357.4	23.4	143.2	125.9	64.9	100.0	6.5	40.1	35.2	18.2
Plzeňský	326.7	25.8	124.8	114.2	61.9	100.0	7.9	38.2	35.0	18.9
Karlovarský	169.9	20.9	70.4	57.5	21.1	100.0	12.3	41.4	33.8	12.4
Ústecký	463.1	61.2	184.7	153.9	63.0	100.0	13.2	39.9	33.2	13.6
Liberecký	245.1	22.5	97.8	84.4	40.5	100.0	9.2	39.9	34.4	16.5
Králové- hradecký	304.2	19.5	119.2	109.0	56.5	100.0	6.4	39.2	35.8	18.6
Pardubický	287.7	18.7	115.1	99.1	54.8	100.0	6.5	40.0	34.4	19.0
Vysočina	283.0	15.7	123.7	96.7	46.9	100.0	5.5	43.7	34.2	16.6
Jiho- moravský	663.4	35.5	214.3	231.5	182.0	100.0	5.4	32.3	34.9	27.4
Olomoucký	356.2	23.8	147.9	112.9	71.4	100.0	6.7	41.5	31.7	20.0
Zlínský	329.1	17.3	139.5	106.5	65.8	100.0	5.3	42.4	32.4	20.0
Moravsko- slezský	687.9	58.7	273.1	227.3	128.8	100.0	8.5	39.7	33.0	18.7

Source: CZSO, Labour Force Sample Survey

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In the latest twenty years it was not solely the level of formal education what has been changed, yet there have also been essential changes to the composition of graduates by broad groups and fields of education. In order to assess these changes the data for 2005 and for 2015, processed by unified methodology of the ISCED97, were employed. The base was the group of the aged 25-64 years, again.

In the group of persons with secondary education without A-level examination, mostly with apprenticeship certificates, there is a substantial slump in three fields of education. First of all, in the wide field of engineering, manufacturing and construction, although it is still the most frequent of all the levels and fields of education. The number of such persons has been reduced by almost 300 thousand over mere ten years. The drop on this level became also in the fields of agriculture and of social sciences, business and law.

In the second largest group of persons with secondary education with A-level examination changes in the focus on fields of education were not that considerable as among persons with mostly apprenticeship certificates. Relatively great increases in graduates from humanities and arts and from the field of services are worthy of note.

The largest change in study focus can be found in the group of graduates from tertiary education. A fast growth in the group was, however, not uniform. In 2005 the most frequent field of studies was the group of engineering, manufacturing and construction. While the total increase in the number of graduates from tertiary education was 70%, the increase in the group of engineering, manufacturing and construction was, however, relatively the lowest of all (by one fourth) and in the last year the number of this field of education graduates fell to the second rank. Concerning the total number of graduates it was surpassed by the broadly defined field of social sciences, business and law, the number of graduates from which has grown by 126% over the decade! The group of health and welfare has also shown a high relative increase.

Population having secondary and tertiary educational attainment aged 25-64 years by field of education in 2005 and 2015

Population aged 25-64 years	Period		Increase (decrease) 2015 / 2005	Index 2015 / 2005
	2005	2015		
	Thousand persons			Percentage
Educational attainment				
Secondary education without A-level examination of which broad groups and fields of education of the ISCED 97:	2515.1	2152.6	-362.4	85.6
2 - Humanities and arts	27.4	23.8	-3.6	86.7
3 - Social sciences, business and law	321.9	279.1	-42.8	86.7
5 - Engineering, manufacturing and construction	1762.1	1465.3	-296.8	83.2
6 - Agriculture, forestry and fishery and veterinary	118.0	85.7	-32.3	72.6
8 - Services	250.0	282.1	32.1	112.8
Secondary education with A-level examination of which broad groups and fields of education of the ISCED 97:	2029.9	2087.2	57.3	102.8
0 - General Programmes	234.0	218.3	-15.7	93.3

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1 - Education	74.3	46.2	-28.1	62.2
2 - Humanities and arts	37.8	50.3	12.5	133.1
3 - Social sciences, business and law	491.6	534.8	43.3	108.8
4 - Science	32.7	29.5	-3.2	90.3
5 - Engineering, manufacturing and construction	682.5	722.7	40.2	105.9
6 - Agriculture	126.2	114.0	-12.2	90.3
7 - Health and welfare	204.2	175.9	-28.3	86.1
8 - Services	146.2	193.7	47.6	132.5
Tertiary education	772.1	1310.9	538.8	169.8
of which broad groups and fields of education of the ISCED 97:				
1 - Education	141.9	190.1	48.2	133.9
2 - Humanities and arts	51.4	84.8	33.4	164.9
3 - Social sciences, business and law	161.8	365.4	203.6	225.9
4 - Science	59.4	124.7	65.3	209.8
5 - Engineering, manufacturing and construction	204.2	256.1	51.9	125.4
6 - Agriculture	47.4	61.4	14.0	129.5
7 - Health and welfare	73.6	166.1	92.6	225.8
8 - Services	32.1	61.9	29.9	193.2

Source: CZSO, Labour Force Sample Survey

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The employment rate in the group of aged 25-64 years is in the Czech Republic one of the highest in the whole European Union. At the same time, the Czech Republic features the highest share of people, who successfully graduated, from secondary education, at least. It is specific to the Czech Republic to have a high share of secondary education graduates, with apprenticeship certificates or with A-level examination, in the largest age groups of younger middle age over 35 years. On the other hand, the share of tertiary education graduates has in an extraordinary manner increased in weaker generations. This holds to the whole group of the younger than 35 years (by way of illustration the number of the young aged 15-19 years reached 460 thousand persons in the last year, which is virtually a half of the aged 35-39 years). In any case this difference in educational attainment will bring long-term effects.

It is questionable to which degree the Czech Republic education system will predict the development of the country economy and will respond to the needs to provide for the structure of occupations necessary. This will also undoubtedly be affected by the system of life-long education, which should contribute to expanded professional skills and abilities namely of working persons of the middle and elder productive ages.

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