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POPULATION DEVELOPMENT IN THE CZECH REPUBLIC IN 2017

Jana Křestánová¹⁾ – Roman Kurkin²⁾ – Markéta Šafusová³⁾

ABSTRACT

The article analysis the demographic situation in the Czech Republic in 2017 and sets it in the context of demographic trends in the past decade. The study describes the development of individual components of population change and the effects they have on population size and the age and marital structure. The population of the Czech Republic grew as a result of the positive balance of international migration and positive natural change in 2017, and the total fertility rate and marriage rates increased as well. Life expectancy at birth for men and women stagnated. The total abortion rate also stagnated, although the induced abortion rate slightly decreased. The total divorce rate increased after three years of decline.

Keywords: demographic development, population, age structure, nuptiality, divorce, fertility, abortion, mortality, migration, Czech Republic

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INTRODUCTION

Since 2003 the population of the Czech Republic has been increasing (except in 2013, when there was both negative natural change and a negative balance of international migration). In 2017 it further increased by 31,235 (the highest figure since 2009) to 10,610,055 (on 31 Dec.). The increase last year resulted mainly from a positive balance of international migration (28,273), while natural change added smaller number (2,962) to the increase.

There were 3,693 more deaths than in 2016 with the number growing to 111,443 in 2017. However, life expectancy at birth stagnated for both men and women at 76.0 years and 81.8 years, respectively. The infant mortality rate slightly decreased year on year from 2.8‰ to 2.7‰.

The number of live births increased in 2017 for the fourth year in a row to 114,405 live births (the highest values since 2010). However, it remained

about 5,000 lower than in 2008, when the intensity of fertility was lower than in 2017. The main reason is the lower number of women of reproductive age at the time than ten years ago. The share of children born outside marriage has been going up every year since 1988 and in 2017 it reached 49.0%. In comparison with the EU as a whole, it is a slightly higher figure (*Eurostat*, 2018a).

The total fertility rate in the Czech Republic rose steadily from 2011 (1.43 live births per woman) to 2017 (1.69 live births per woman). This figure is also now higher than in the EU-28 (1.60; *Eurostat*, 2018b). In the last decade, the fertility rates of women aged 30 and over in particular increased. The mean age of women at childbirth (live births) rose by 0.9 years from 2007 to 2017 to 30.0 years, but in the last five years it has stagnated at 29.9–30.0 years. The net reproduction rate rose by 0.03 to 0.82 girls per women, which was influenced not only by the increased intensity

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of fertility, but also by slightly the better mortality conditions for women of reproductive age.

The number of abortions has declined in the long term because of a decrease in the number of induced abortions. The total number of all abortions in 2017 (35,012) is the lowest figure since 1958, when induced abortion was legalised. Spontaneous abortions have

stagnated at around 13–14,000 in the last decade. The trends correlate strongly with the number of pregnancies.

The number of marriages and the total first marriage rates increased in the last four years. There were 21% more marriages in 2017 than in 2007. The total first marriage rate rose from 51.4% for men

Table 1: Population and vital statistics and the main analytic indicators of demographic development, 2007–2017

Indicator	2007	2012	2013	2014	2015	2016	2017
Population and vital statistics							
Live births	114,632	108,576	106,751	109,860	110,764	112,663	114,405
Deaths	104,636	108,189	109,160	105,665	111,173	107,750	111,443
under 1 year of age	360	285	265	263	272	317	304
Marriages	57,157	45,206	43,499	45,575	48,191	50,768	52,567
Divorces	31,129	26,402	27,895	26,764	26,083	24,996	25,755
Abortions	40,917	37,733	37,687	36,956	35,761	35,921	35,012
induced abortions	25,414	23,032	22,714	21,893	20,403	20,406	19,415
Immigrants	104,445	30,298	29,579	41,625	34,922	37,503	45,957
Emigrants	20,500	20,005	30,876	19,964	18,945	17,439	17,684
Natural increase	9,996	387	-2,409	4,195	-409	4,913	2,962
Net migration	83,945	10,293	-1,297	21,661	15,977	20,064	28,273
Total increase	93,941	10,680	-3,706	25,856	15,568	24,977	31,235
Mid-year population (thousands)	10,322.7	10,509.3	10,510.7	10,524.8	10,542.9	10,565.3	10,589.5
Intensity indicators							
Total first marriage rate - males (%)	64.5	53.2	51.4	53.1	55.1	56.2	57.6
- females (%)	71.1	60.6	59.0	60.8	62.4	64.3	65.4
Mean age at first marriage - males	31.2	32.3	32.3	32.3	32.4	32.2	32.2
- females	28.6	29.6	29.8	29.8	29.8	29.9	29.8
Total divorce rate (%)	48.7	44.5	47.8	46.7	46.5	45.2	47.2
Mean duration of marriage at divorce	12.3	12.8	13.0	13.1	13.0	13.1	13.2
Total fertility rate	1.44	1.45	1.46	1.53	1.57	1.63	1.69
Mean age of mothers at childbirth	29.1	29.8	29.9	29.9	30.0	30.0	30.0
Mean age of mothers at 1st birth	27.1	27.9	28.1	28.1	28.2	28.2	28.2
Share of live births outside marriage (%)	34.5	43.4	45.0	46.7	47.8	48.6	49.0
Net reproduction rate	0.70	0.70	0.71	0.74	0.76	0.79	0.82
Total abortion rate	0.54	0.51	0.52	0.51	0.51	0.51	0.51
Total induced abortion rate	0.34	0.31	0.32	0.31	0.29	0.30	0.29
Life expectancy at birth - males	73.7	75.0	75.2	75.7	75.6	76.0	76.0
- females	80.1	81.0	81.2	81.7	81.5	81.8	81.8
Infant mortality rate (%)	3.1	2.6	2.5	2.4	2.5	2.8	2.7

Notes: First marriage indicators are based on the nuptiality life tables for singles. Life expectancy at birth is derived from life tables, which are based on a new methodology: <https://www.czso.cz/csu/czso/life-tables-methodology>

Source: Czech Statistical Office; authors' calculations.

and 59.0% for women in 2013 to 57.6% and 65.4% in 2017. However, the figures were lower than in 2007. The total divorce rate stabilised at the level of almost half of all marriages ending in divorce.

The population of the Czech Republic is ageing. Population ageing started back in the 1980s. This process is reflected in the increasing mean age of the population, the median age, and the index of ageing. Since 2006 there have been more inhabitants aged 65 and over than those aged 0–14. The share of the population of productive age decreased from 71.2% in 2007 to 65.0% in 2017.

POPULATION BY AGE AND MARITAL STATUS

In 2017, the population of the Czech Republic increased by 31,200 to 10,610,055 inhabitants (Table 2). Compared to 2007, the increase amounted to almost 229,000 persons. The population growth is mainly

due to the positive balance of foreign[international] migration. In 2017, most of the total increase of 31,200 persons was due to international migration, the balance of which amounted to 28,300 persons.

Since 2009 only the population children and seniors has been increasing. The number of children aged 0–14 years increased by 1% each year between 2012 and 2017 and the number of seniors (65+ years) by 3%. While the category of children has been growing since 2008, the number of people aged 65 and over has been increasing since the mid-1980s. Conversely, the number of people of productive age declined by 1% each year in 2012–2017 (the decline in this category has been occurring since 2009).

At the end of 2017, there were 6,899,195 people in the 15–64 age group. The share of persons this age group represents in the population of the Czech Republic fell to 65.0% in 2017. The share of 15–64 year-olds in the population was at its largest since World War II in 2006 and 2007 (71.2%). The strongest

Table 2: Age distribution of the population, 2007–2017 (31 Dec.)

Age group/Indicator	2007	2012	2013	2014	2015	2016	2017
Population (thousands)							
Total	10,381.1	10,516.1	10,512.4	10,538.3	10,553.8	10,578.8	10,610.1
0–14	1,476.9	1,560.3	1,577.5	1,601.0	1,623.7	1,647.3	1,670.7
15–64	7,391.4	7,188.2	7,109.4	7,056.8	6,997.7	6,942.6	6,899.2
65+	1,512.8	1,767.6	1,825.5	1,880.4	1,932.4	1,988.9	2,040.2
in: 65–69	473.8	635.9	657.3	671.1	693.0	691.4	684.5
70–74	363.0	423.6	452.8	482.0	495.2	532.7	569.7
75–79	327.5	302.0	303.5	308.6	323.7	340.1	358.6
80–84	223.6	238.0	237.2	236.6	232.0	229.2	226.6
85+	96.6	126.1	128.2	131.3	135.0	138.7	141.8
Share in total population (%)							
0–14	14.2	14.8	15.0	15.2	15.4	15.6	15.7
15–64	71.2	68.4	67.6	67.0	66.3	65.6	65.0
65+	14.6	16.8	17.4	17.8	18.3	18.8	19.2
Characteristics of age distribution							
Average age	40.3	41.3	41.5	41.7	41.9	42.0	42.2
Median age	39.1	40.4	40.8	41.1	41.5	41.9	42.3
Index of ageing ¹⁾	102.4	113.3	115.7	117.4	119.0	120.7	122.1
Age dependency ratio ²⁾	53.9	57.5	58.6	59.8	61.4	63.2	64.8

Notes: 1) The number of people aged 65 and more per 100 children aged 0–14.

2) The number of children aged 0–19 and people aged 65 and more per 100 people aged 20–64.

Source: Czech Statistical Office; authors' calculations.

generations in the Czech Republic, who are people born in the 1970s (1974 and 1975), are currently in productive age. In 2017, these generations, which are numerically the largest ones, were in the 40–44 age group.

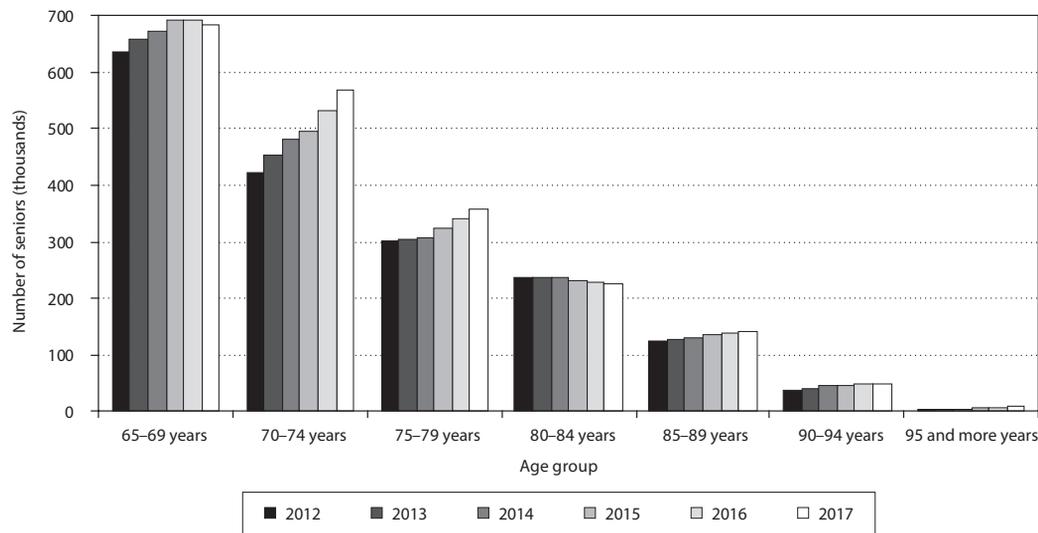
The number of children aged 0–14 years has increased since 2008. At the end of 2017, children accounted for 15.7% of the population (equalling a total of 1,670,677 persons). In the year 2017, the number of children increased by 23,400, and since 2007 the number has grown by 193,800. In the children's age category the biggest five-year age group was that of children aged 5–9 (585,200), including the generations born in 2008–2012. On the other hand, the least numerous age is that of children aged 10–14 (524,800), but due to year-on-year growth of 5% the differences between age groups have decreased.

The seniors age group (aged 65 and over) underwent the most dynamic changes in recent years. At the end of 2017, there were an estimated total of 2,040,183 people in this age group; this was 0.5 million more than in 2007 and 51,300 more than at the end of 2016. In 2017, the oldest category of the population made up 19.2% of the total population (4.7 percentage

points more than in 2007). The numerically largest five-year age group in the senior population remains people aged 65–69, who accounted for about one-third of all seniors. Between 2007 and 2017, the group of seniors aged 90–94 years has grown relatively the most (more than doubling). However, it continues to account for a small percentage of the senior population (2.4% in 2017).

All analytic indicators of the age structure provide evidence of the ongoing process of population ageing (Table 2). The average age of the population of the Czech Republic has increased by 0.1 to 42.2 years in 2017. There was a difference of three years between men and women; in 2017 the average age of men was 40.8 years and it was 43.6 years for women. The median age shifted by 0.4 to 42.3 years in 2017 and did not differ much from the average age for the population as a whole. The index of ageing increased to 122.1 seniors aged 65+ per 100 children under the age of 15 (seniors have outnumbered children since 2006). Between 2007 and 2017, the total age dependency ratio increased from 53.9 to 64.8 dependent persons per 100 persons in productive age. The growth of the total age dependency ratio reflects mainly

Figure 1: Number of seniors by age, 2012–2017 (31 Dec.)



Source: Czech Statistical Office.

the development of the number of seniors, which has been increasing significantly to the detriment of people in productive age.

The structure of the population in the Czech Republic by marital status has already been changing for several decades, with an increasing share of single and divorced people and a decreasing share of married and widowed people. Married men and

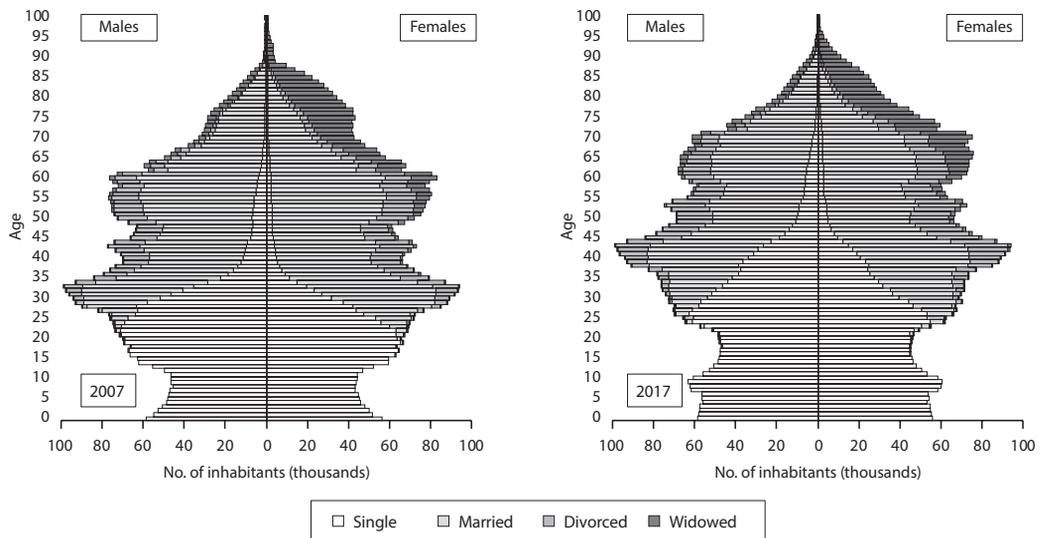
married women form the majority, but their share has been decreasing since the early 1980s. At the end of 2017, 46.9% of the population aged 15 years and over were married. The share of widowed people in the population has changed the least. Between 2007 and 2017 the share of widowed people fell from 8.5 to 8.3%, with a decline in the proportion of widowed women owing to the faster improvement of male

Table 3: Population 15+ years by marital status and sex, 2007–2017 (31 Dec.)

Marital status	2007	2012	2013	2014	2015	2016	2017
Population (thousands)							
Single	2,553.4	2,706.5	2,725.3	2,748.5	2,765.9	2,782.3	2,801.3
Married	4,592.7	4,366.2	4,309.1	4,271.8	4,236.1	4,211.8	4,191.8
Divorced	1,003.2	1,123.8	1,144.8	1,164.6	1,180.6	1,193.4	1,206.6
Widowed	754.8	759.3	755.7	752.3	747.5	744.0	739.8
Percentage of the population 15+ years							
Single	28.7	30.2	30.5	30.8	31.0	31.2	31.3
Married	51.6	48.8	48.2	47.8	47.4	47.2	46.9
Divorced	11.3	12.5	12.8	13.0	13.2	13.4	13.5
Widowed	8.5	8.5	8.5	8.4	8.4	8.3	8.3

Source: Czech Statistical Office; authors' calculations.

Figure 2: Population by age, sex and marital status, 2007 and 2017 (31 Dec.)



Source: Czech Statistical Office.

mortality. Conversely, the share of single people in the population aged 15 years and over increased (by 3 percentage points to 31.3%), as did the share of divorced people (by 2 percentage points to 13.5%).

The structure of the population by marital status significantly differs by age and it gradually changes from year to year in every age group (Figure 2). Between 2007 and 2017 the most pronounced change was among inhabitants in their thirties. The number of *de iure* single persons has increased progressively and between 2007 and 2017 the age at which married people outnumber single persons shifted from 30 to 35 years. The share of single men grew most in the 35–39 age group (from 21.8 to 46.0%), while for single women it was in the 30–34 age group (from 25.5 to 48.9%). On the other hand, married persons aged 30–34 years recorded the largest decrease in their share (from 49.8% in 2007 to 30.9% in 2017 for men and from 62.6 to 44.8% for women). In the oldest age groups (65 years and over), the structure of men and women by marital status depends mainly on the level of mortality. Men aged 65+ years were mostly married (72.5% in 2017, 76.1% in 2007), while women in this age group were mostly widowed (43.0% in 2017, 52.5% in 2007) due to excess mortality among many (especially among young and middle-aged men).

NUPTIALITY

In the year 2017, there were 52,600 marriages among the inhabitants of the Czech Republic, which was

1,800 more than in the previous year and the most since 2008. The number of marriages has been declining since the early 1990s. The decline stopped in 2013, when the lowest number of marriages (43,500) was recorded. The number of marriages grew in the years that followed, even in 2017, when it rose by another 3.5%.

In 2017, marriages of both single and divorced and widowed persons were added. A total of 20,038 men (76.2% of the total number of grooms) and 40,336 women (76.7% of the total number of brides) married for the first time in 2017. The share of protogamous marriages was 67.7% of the total number of marriages in 2017, and the absolute number of such marriages was 35,600. The number of higher-order marriages is roughly one-third the number of first marriages and account for about a quarter of the total. In 2017, 12,529 men and 12,231 women entered into such a marriage.

The age structure of bridegrooms in 2007–2017 changed towards an increasing number of brides aged 35 or more, and a declining number of couples under the age of 25. The proportion of brides under the age of 25 decreased from 21 to 12.7% between 2007 and 2017 and the proportion of grooms in the same age group decreased from 8.5 to 5.6%. Conversely, the proportion of brides aged 35 and over grew from 19.8 to 30.0% and the proportion of grooms increased from 29.4 to 42.8%.

According to nuptiality life tables for 2017, 57.6% of men and 65.4% of women would enter into their first marriage by their 50th birthday. This was 6.9 percentage

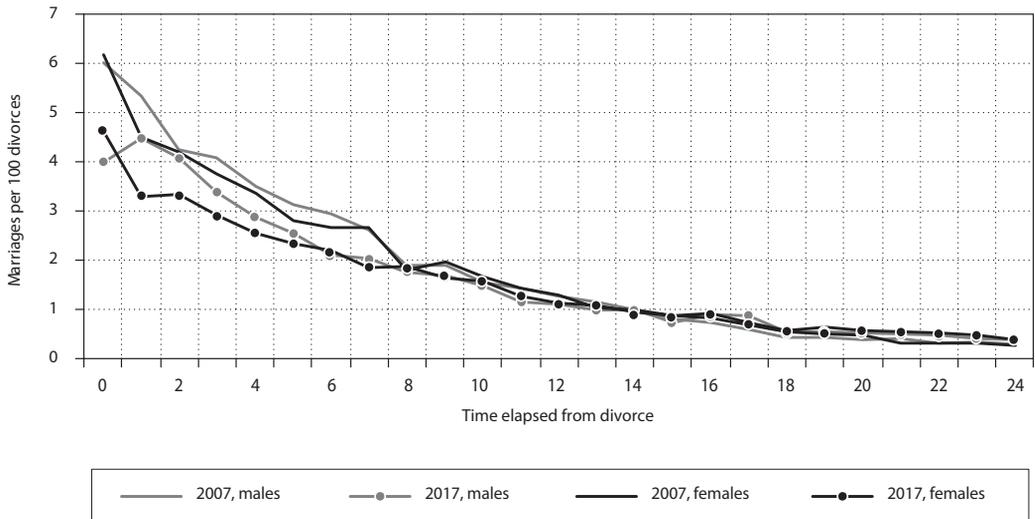
Table 4: Marriages by order, 2007–2017

Indicator	2007	2012	2013	2014	2015	2016	2017
Total marriages	57,157	45,206	43,499	45,575	48,191	50,768	52,567
Marriages of two singles	36,247	29,684	28,877	30,785	32,689	34,284	35,574
Remarriages (for both)	9,620	6,899	6,604	6,514	6,975	7,467	7,767
Male order of marriage - first	41,752	33,816	32,743	34,691	36,884	38,578	40,038
- higher	15,405	11,390	10,756	10,884	11,307	12,190	12,529
Female order of marriage - first	42,032	34,175	33,029	35,155	37,021	39,007	40,336
- higher	15,125	11,031	10,470	10,420	11,170	11,761	12,231
Protogamous marriages (%)	63.4	65.7	66.4	67.5	67.8	67.5	67.7
Remarriages (%) - males	27.0	25.2	24.7	23.9	23.5	24.0	23.8
- females	26.5	24.4	24.1	22.9	23.2	23.2	23.3

Note: Protogamous marriages - both partners are marrying for the first time.

Source: Czech Statistical Office; authors' calculations.

Figure 3: The remarriage rates of divorcees by sex and time elapsed since divorce, 2007 and 2017



Note: Rates of the second kind by the divorce duration.
Source: Czech Statistical Office; authors' calculations.

points lower for men and 5.7 percentage points lower for women than in 2007. Based on the first-marriage probabilities for 2017, the mean age at first marriage would be 32.2 years for males and 29.8 years for females, provided that the probabilities remained unchanged. These figures have not changed significantly in recent years, but compared to 2007 they were higher by 1.0 years for men and 1.2 years for women.

In 2017 the total remarriage rate of divorcees was 42.5% for males and 40.8% for females. Like the total first marriage rate, the lowest rate was observed in 2013 (34.7% for males and 33.5% for females). On average men would remarry 8.6 years and women 9.0 years after divorce (provided that the remarriage rates remained stable in the future). The total marriage of divorced men is slightly higher than for divorced women. The remarriage rate is the highest in the first years after divorce and decreases with the time elapsed since divorce. Compared to 2016, the average time between divorce and remarriage increased by 0.1 year; compared to 2007 it was 1.3 years for men and 1.5 years for women. The shift to an older age was caused by a decrease in marriages within a shorter interval after divorce and an increase in marriages in the interval of 15 years or more after divorce.

DIVORCE

Statistics compiled from data obtained from the Ministry of Justice of the Czech Republic show there were a total of 25,800 divorces in the year 2017, which is 759 more than in the previous year. Four-fifths of the divorces were a first divorce (80.7% for men and 81.4% for women in 2017). Along with the total number of divorces, there was also an increase in the number of divorces of couples with minor children and in the number of children of divorced couples in 2017. Divorce affected 23,752 minor children, 897 more than in the previous year (but 3,800 fewer than in 2007). Divorces among people/couples with minor children (total of 15,196) accounted for 59.0% of the total number of divorces, while there were no minor children in the case of 10,559 divorces (41.0%). In most cases the divorced families had only one (50.5% in 2017) or two minor children (43.7%). In the 2007–2017 period there was an increase in the share of families with two children (by almost 5 percentage points) to the detriment of single-parent families (a decline of almost 6 percentage points). The average number of children per divorced marriage was 1.5–1.6 children.

Table 5: Divorces, 2007–2017

Indicator	2007	2012	2013	2014	2015	2016	2017
Total divorces	31,129	26,402	27,895	26,764	26,083	24,996	25,755
Percentage of repeated divorces - males	20.0	19.4	20.0	20.1	19.3	19.7	19.3
- females	19.4	19.1	19.1	19.4	18.8	19.2	18.6
Divorces without minor children	12,721	11,213	11,974	11,557	11,090	10,270	10,559
Divorces with minor children	18,408	15,189	15,921	15,207	14,993	14,726	15,196
- percentage of total	59.1	57.5	57.1	56.8	57.5	58.9	59.0
Number of minor children in divorced marriages	27,546	22,983	24,335	23,119	23,187	22,855	23,752
- average number of minor children per divorce with minors	1.50	1.51	1.53	1.52	1.55	1.55	1.56

Source: Czech Statistical Office; authors' calculations.

Table 6: Divorce indicators, 2007–2017

Indicator / Time elapsed	2007	2012	2013	2014	2015	2016	2017
Total divorce rate (%)	48.7	44.5	47.8	46.7	46.5	45.2	47.2
Mean duration of marriage at divorce (years)	12.3	12.8	13.0	13.1	13.0	13.1	13.2

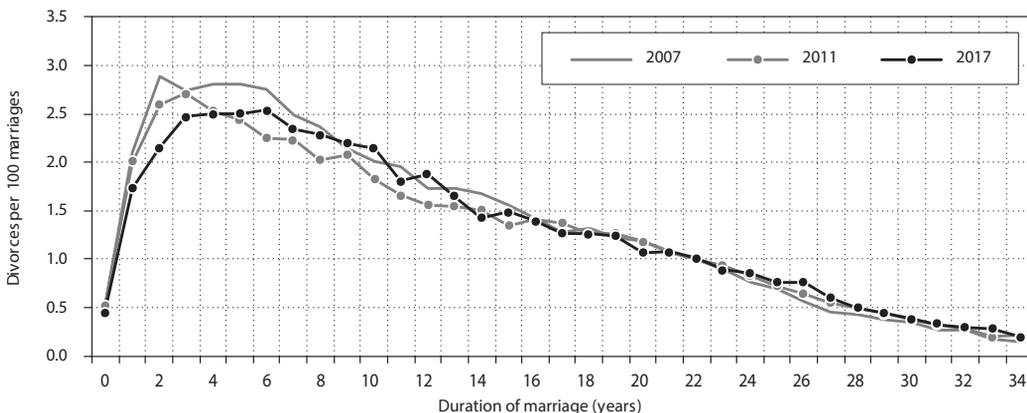
Divorce rates (per 100 marriages)

0–4	2.2	2.0	2.1	2.0	1.9	1.8	1.8
5–9	2.5	2.1	2.3	2.3	2.3	2.3	2.4
10–14	1.8	1.6	1.8	1.6	1.7	1.7	1.8
15–19	1.4	1.3	1.4	1.3	1.3	1.2	1.3
20–24	1.0	0.9	1.0	1.0	1.0	0.9	1.0
25–29	0.5	0.5	0.6	0.6	0.6	0.6	0.6
30+	0.2	0.2	0.2	0.2	0.3	0.2	0.3

Note: The total divorce rate and mean duration of marriage at divorce are the result of the distribution of reduced divorce rates by time elapsed since entering into marriage.

Source: Czech Statistical Office; authors' calculations.

Figure 4: Divorce by duration of marriage, 2007, 2011 and 2017



Source: Czech Statistical Office; authors' calculations.

In terms of the duration of a marriage until divorce, most divorces usually occur after 5–9 years of marriage (divorce after this duration of marriage has dominated since the beginning of the 21st century). In 2017, there were 5,751 divorces after 5–9 years of marriage, which accounted for 22.3% of all divorces. The second-largest group was divorces after 10–14 years of marriage (4,633, 18.0% of the total). The share of divorces after 25–29 years (9.5% in 2017) and divorces after more than 30 years (8.2%) of marriage has had an increasing trend (since 2007).

If the divorce rate continues to be based on the duration of marriage in 2017, the divorce would be 47.2% of marriages ending in divorce on average after 13.2 years of marriage. Compared to 2016, the total divorce rate increased by 1.9 percentage points, but it was 1.6 percentage points lower than in 2007. The divorce rate was highest after 5–9 years of marriage. However, the number of divorces per 100 marriages after 5–9 years of marriage was lower in 2017 than in 2007 (it declined from 2.51 to 2.36 divorces per 100 marriages). On the other hand, for long-term marriages, the divorce rates show an increasing trend. The average duration of marriage until divorce has increased with fewer fluctuations over the last two decades, reaching 13.2 years in 2017 (0.9 years more than in 2007). The increase in the average length of

marriage until divorce is a reflection of a decrease in the divorce rate among shorter marriages and its increase after the interval of 25 years or more since marriage.

FERTILITY

The Czech Statistical Office recorded a total of 114,405 live births in 2017, which is 1,742 more than the year before. A higher number of children born in the Czech Republic was last observed in 2010, when the figure was 117,153. The number of newborns has risen in the last four years (Table 7). Compared to 2007 there was a small decrease in the number of live births, which was caused by the smaller number of women of reproductive age, on the contrary the intensity of fertility rose. The number of stillbirths compared to last year dropped from 420 to 384. The stillbirth rate declined year-on-year from 3.7 ‰ to 3.3 ‰ and reached its lowest level since 2012.

The structure of live births by birth order has not changed significantly in a ten-year perspective. First-order births accounted for 46–49% of live births, second-order births for 37–39%, and third- and higher-births for 14–15%. In the last year-on-year comparison there has been an increase in the number of live births in all birth orders. Most of the increase

Table 7: Live births by birth order and marital status of the mother, 2007–2017

Indicator	2007	2012	2013	2014	2015	2016	2017
Live births	114,632	108,576	106,751	109,860	110,764	112,663	114,405
– first order	54,050	51,476	51,092	52,106	53,223	54,918	55,726
– second order	43,400	41,826	40,078	41,196	41,276	41,302	41,832
– third and higher order	17,182	15,274	15,581	16,558	16,265	16,443	16,847
Marital status of mother							
Single	32,026	40,581	41,655	44,985	46,887	48,807	50,379
Married	75,095	61,488	58,751	58,593	57,788	57,930	58,314
Divorced	7,208	6,299	6,134	6,089	5,911	5,730	5,539
Widowed	303	208	211	193	178	196	173
Percentage of live births outside marriage	34.5	43.4	45.0	46.7	47.8	48.6	49.0
– first order	43.9	54.5	55.7	57.3	58.0	58.5	58.6
– second order	24.0	31.6	33.4	35.6	37.5	38.2	39.0
– third and higher order	31.5	38.1	39.3	40.6	40.8	41.7	42.3

Source: Czech Statistical Office; authors' calculations.

was between firstborns (from 54,918 to 55,726), followed by second-order births (41,302 to 41,832) and third- and higher-order births (from 16,443 to 16,847). The most pronounced relative increase was in the last group (by 2.5%).

The number of live births to single mothers increased from 48,807 in 2016 to 50,379 in 2017. The number rose by 57.3% compared to 2007. Live births to married mothers also rose slightly in a year-on-year comparison to 58,314 in 2017, but in a longer ten-year perspective the figure has declined by 22.3%. The number of children born to mothers with some other marital status slightly declined in 2017. The share of live births outside marriage increased from 34.5% in 2007 to 49.0% in 2017. The largest share was identified among first-order births (58.6% in 2017); among third- and higher-order births 42.3% were born outside marriage and among second-order births it was 39.0%. The share of births outside marriage increased from 2007 in all birth orders, and relative growth was highest among second-order births.

Besides birth order, other major differential characteristics of extramarital births are the age and

educational attainment of the mothers. Unmarried motherhood is much more common at a young age, between 15 and 19 years (95.1% in 2017). In contrast, it is least common among mothers in the 30–39 age group (41.2% in 2017). The share of live births outside marriage was higher in all age groups between 2007 and 2017, but the relative growth was greatest among mothers with the smallest share of extramarital births, so there is an evident trend towards homogenisation. Extramarital births are less common among women with higher levels of education, who traditionally have a more conservative approach towards reproductive behaviour (Rychtaříková, 2003). In 2017, 80.9% of births to women with basic education were extramarital. Among tertiary-educated women the figure was only 31.2%. However, in a long-term perspective the share of births outside marriage has increased relatively the most among the highest educated group of women. In 2007 only 16.3% of this subpopulation gave birth outside marriage, and the figure was 68.7% for women with basic education.

The intensity of fertility measured as the total fertility rate (TFR) increased from 1.63 children per

Table 8: Fertility indicators, 2007–2017

Indicator/Age group	2007	2012	2013	2014	2015	2016	2017
Total fertility rate – total	1.44	1.45	1.46	1.53	1.57	1.63	1.69
– first order	0.69	0.72	0.73	0.76	0.79	0.83	0.86
– second order	0.53	0.54	0.53	0.56	0.57	0.58	0.60
– third and higher order	0.22	0.19	0.20	0.21	0.21	0.22	0.23
Net reproduction rate	0.70	0.70	0.71	0.74	0.76	0.79	0.82
Mean age of mother at childbirth – total	29.1	29.8	29.9	29.9	30.0	30.0	30.0
– first order	27.1	27.9	28.1	28.1	28.2	28.2	28.2
– second order	30.1	31.0	31.0	31.1	31.2	31.2	31.3
– third and higher order	33.1	33.3	33.2	33.3	33.4	33.3	33.4
Age group:	Age-specific fertility rates (per 1,000 females)						
15–19	11.2	12.0	11.7	11.9	11.7	11.8	11.9
20–24	48.0	42.5	41.9	43.0	45.5	49.4	50.8
25–29	105.8	93.4	92.4	95.6	97.0	99.4	103.7
30–34	89.8	98.1	98.2	104.4	106.3	109.2	111.9
35–39	30.6	38.4	40.0	43.2	45.3	47.6	49.8
40–44	4.6	6.6	7.1	7.4	8.4	8.7	9.1
45–49	0.2	0.3	0.3	0.4	0.4	0.5	0.5

Source: Czech Statistical Office; authors' calculations.

woman in 2016 to 1.69 one year later. It was at its highest level since 1992 and the TFR rose for the sixth year in a row. At the beginning of the observed period, it was the highest in 2008 (1.50 children per woman), after which there was a decline to 1.43 in 2011, and since then it has been growing again.

The last year-on-year increase was mainly the result of the increase in the first-order fertility rate, the increase in the age-specific fertility rates among almost all age groups, and the higher intensity of both marital and non-marital fertility. The total first-order fertility rate increased by 0.03 children per woman, while second-order fertility increased by 0.02 and third- and higher-order fertility increased by 0.01. The net reproductive rate also increased from 0.70 in 2007 to 0.82 in 2017, not only because of the rise in the level of fertility, but also because of the slight decrease in the mortality intensity of women of reproductive age.

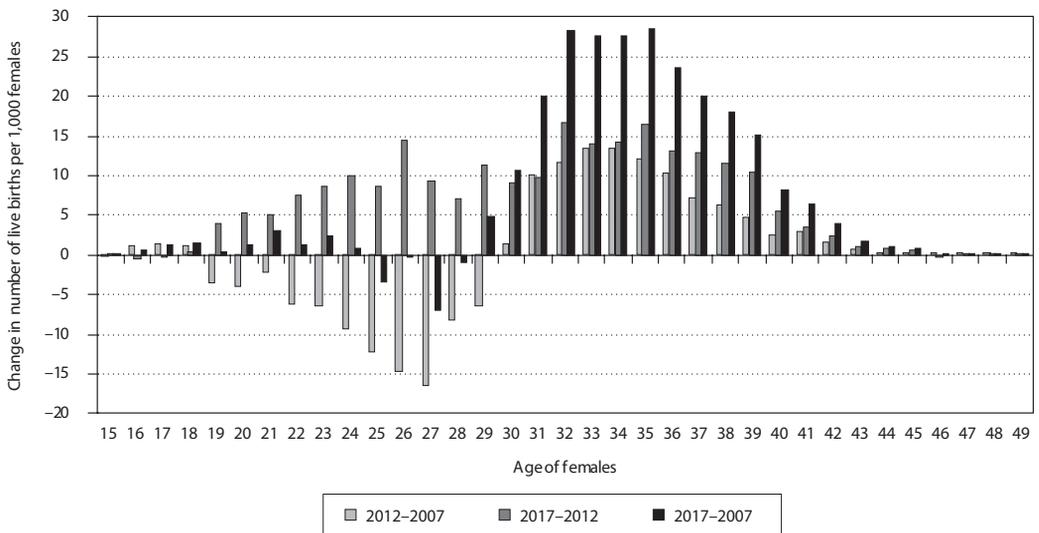
The mean age of mothers at childbirth has stagnated in the last three years at 30.0 years. The slow-down in the trend of postponing having children to a later age has already been apparent for the last five years. In comparison with 2012 the rise was 0.2 years, while in contrast with 2007 it was

0.9 years. Between 2007 and 2017 the mean age of mothers at second-order birth increased the most, by 1.2 years, while for first-order births it increased by 1.1 years and for third- and higher-order births by only 0.3 years.

The highest intensity of fertility has since 2011 been in the 30–34 age group of women. The average age-specific fertility rate was 111.9 children per 1,000 females at this age in 2017. In a ten-year perspective the highest absolute increases were in the 30–34 and 35–39 age groups, with a slight increase in all other age groups except those aged 25–29. However, the increase is in relative numbers generally higher in the older age groups, e.g. in the 45–49 age group age-specific fertility was 2.6 times higher in 2017 than in 2007.

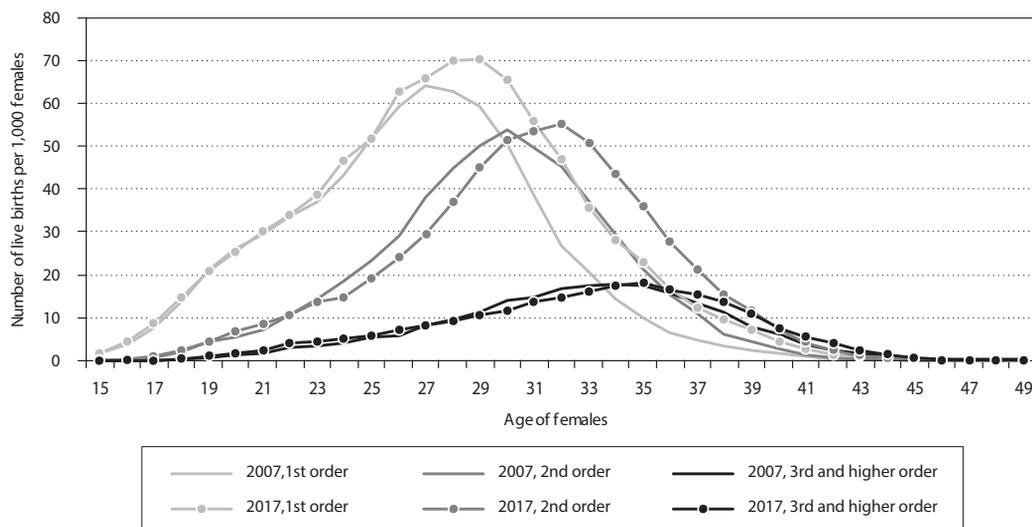
The highest intensity of fertility shifted to an older age in each birth order between 2007 and 2017 (Figure 6). Younger age groups (i.e. before the peaks in the curves in 2007) had in general lower or the same fertility rates in 2017, but this was not noteworthy enough to eliminate the higher intensity in the older age groups in the same year, which led to a higher intensity of fertility in each birth order.

Figure 5: Change in age-specific fertility rates by age of females, 2007–2017



Source: Czech Statistical Office; authors' calculations.

Figure 6: Age-specific fertility rates by age of females and by birth order, 2007 and 2017



Note: *) The number of live births of given birth order per 1,000 women of the given age.

In 2007 birth order was surveyed for all births, in 2017 only for live births.

Source: Czech Statistical Office; authors' calculations.

ABORTION

The number of registered abortions⁴⁾ was 35,012 in 2017 (which is historically the lowest number since 1958, when induced abortions were legalised). There were 909 fewer abortions than in the previous year and 5,905 fewer than in 2007. The main reason for this trend was the decrease in induced abortions⁵⁾ (ČSÚ, 2015e). There were 19,415 abortions of this type in 2017, which was 991 fewer than in 2016 and 5 999

fewer than in 2007 (Table 9). In contrast, the number of spontaneous abortions⁶⁾ first rose from 14,102 in 2007 to 14,629 in 2009, followed by a decrease to 13,515 in 2012. In the last five years, the number of spontaneous abortions has increased, with the exception of a slight year-on-year decline in 2017 by 22 to 14,190 (the trends partly reflect the development in the number of live births, or more specifically in the number of pregnancies). The share of spontaneous

4) The data on abortions are obtained from the Institute of Health Information and Statistics of the Czech Republic (IHIS CR).

5) Induced abortions: legally induced abortion by means of vacuum aspiration can be performed in the early stages of gestation (i.e. up to the 7th week in the case of a first pregnancy and to the 8th week in other cases) and by a method other than vacuum aspiration up to the 12th week of gestation, or for health reasons to the 24th week of gestation.

6) Until 31 March 2012 spontaneous abortions referred to: the spontaneous expulsion of a foetus from the uterus, where:

- a) the foetus shows no signs of life and its birth weight is less than 1,000 g, or the weight cannot be measured, and the gestation period was shorter than 28 weeks;
- b) the foetus shows one or more signs of life but its birth weight is less than 500 g and it does not survive for more than 24 hours after birth;
- c) only the ovum without the foetus or only the decidua was extracted.

Since 1 April 2012 spontaneous abortions refer to: spontaneous expulsion of a foetus from the uterus where the foetus shows no signs of life and its birth weight is lower than 500 g, or, the weight cannot be measured, and the gestation period was shorter than 22 weeks.

Table 9: Abortions, 2007–2017

Indicator	2007	2012	2013	2014	2015	2016	2017
Abortions	40,917	37,733	37,687	36,956	35,761	35,921	35,012
– induced abortions	25,414	23,032	22,714	21,893	20,403	20,406	19,415
– spontaneous abortions	14,102	13,515	13,708	13,857	14,082	14,212	14,190
– ectopic pregnancies	1,401	1,186	1,265	1,206	1,276	1,300	1,405
Abortions – single females	16,022	17,373	18,050	17,999	17,852	18,371	18,397
– married females	19,428	15,393	14,705	14,214	13,368	13,150	12,485
– divorced females	4,711	3,949	3,928	3,766	3,505	3,442	3,088
Induced abortions – single females	11,016	11,566	11,883	11,604	11,067	11,463	11,247
– married females	10,716	8,385	7,774	7,459	6,687	6,421	5,891
– divorced females	3,280	2,622	2,620	2,433	2,203	2,061	1,787

Source: Czech Statistical Office; authors' calculations.

abortions rose from 34.5% to 40.5% in the last decade, while the share of induced abortions decreased from 62.1% to 55.5%. Ectopic pregnancies were recorded in about 3.0%–3.6% of cases between 2007 and 2016 and the share rose to 4.0% in 2017. The share of induced abortions for medical reasons was 20.2% out of all induced abortions in the last recorded year. The most common method of induced abortion in 2017 was surgical (75.8%), followed by pharmacological (21.0%).

The structure of women of reproductive age by marital status and changes to this structure (see

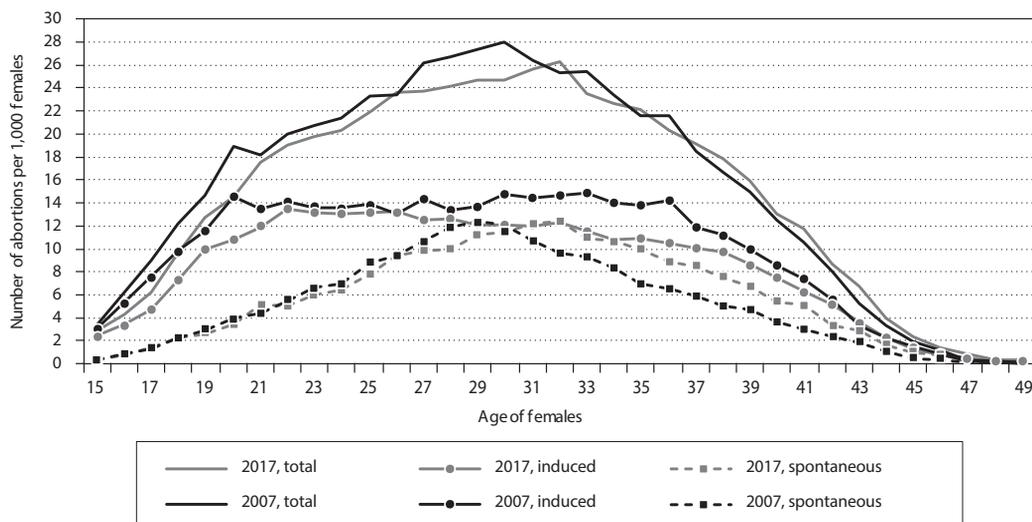
the section on Population by age and marital status) greatly influence the number of abortions by marital status of women. The share of single women has been growing and the share of married women diminishing in this subpopulation. Abortions have been most common among single women since 2011, while previously they had been most common among married women. There were more abortions among single women in 2017 than in 2007. The figure rose from 16,022 to 18,397. The number of abortions to married women declined significantly from

Table 10: Abortion indicators, 2007–2017

Indicator/Age group	2007	2012	2013	2014	2015	2016	2017
Total abortion rate	0.54	0.51	0.52	0.51	0.51	0.51	0.51
Total induced abortion rate	0.34	0.31	0.32	0.31	0.29	0.30	0.29
Total spontaneous abortion rate	0.18	0.18	0.18	0.19	0.20	0.20	0.20
Mean age at abortion	29.9	30.2	30.1	30.3	30.3	30.5	30.5
Mean age at induced abortion	29.6	29.7	29.5	29.7	29.7	29.8	29.7
Mean age at spontaneous abortion	30.4	31.0	31.1	31.2	31.1	31.5	31.6
Age group:	Induced abortion rates (per 1,000 females)						
15–19	7.6	6.8	7.2	6.6	6.1	5.8	5.6
20–24	13.9	12.9	12.9	12.4	12.1	12.1	12.5
25–29	13.7	13.3	13.5	13.0	12.2	12.9	12.7
30–34	14.5	13.3	13.0	13.0	12.4	12.5	11.7
35–39	12.3	11.3	11.3	11.0	10.2	10.5	9.9
40–49	3.1	2.9	2.9	3.2	3.1	3.2	3.1

Source: Czech Statistical Office; authors' calculations.

Figure 7: Abortion rates by type of abortion, 2007 and 2017



Source: Czech Statistical Office; authors' calculations.

19,428 in 2007 to 12,485 in 2017; the last year-on-year change was by 665. Divorced women also had fewer abortions – there were 4,711 abortions among divorced women ten years ago and 3,088 in the last recorded year.

The number of induced abortions has decreased significantly in the last decade; however, it did not decrease among single women (Table 9). The figure was 11,016 in 2007 and 11,247 in 2017; the peak number was 11,883 in 2013. A profound drop was recorded among married women (from 10,716 to 5,891; by 230 in 2017) and divorced women (from 3,280 to 1,787; by 274 in 2017). Since 2007 a higher number of single women had an induced abortion than the number of married women.

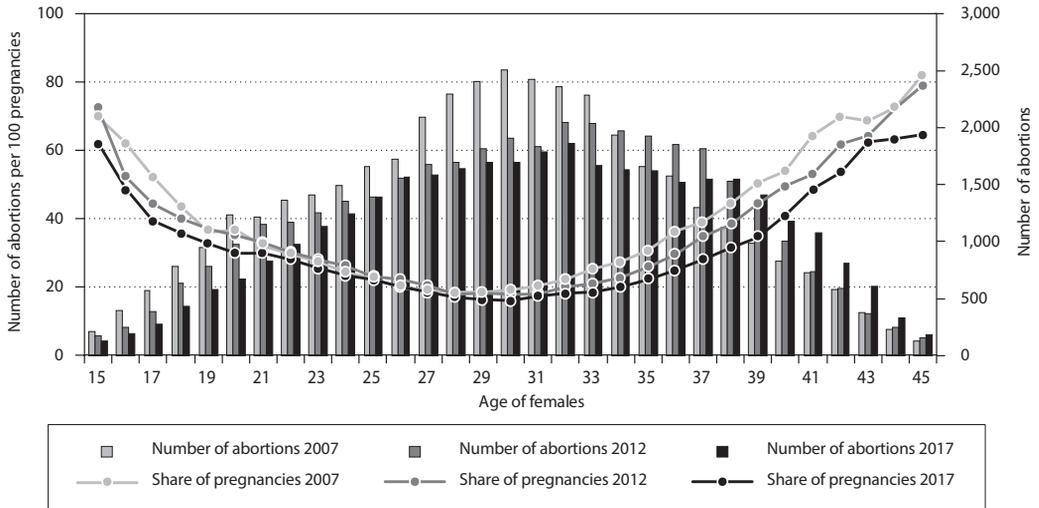
The share of induced abortions out of all abortions decreased in all categories of women's marital status in the last decade. The lowest figure was among married women (47.2% in 2017), while single (62.1%), divorced (57.9%) and widowed women (60.7%) recorded higher shares. The share of induced abortions decreases as education level rises. The figure ranged from 42.4% among tertiary-educated women to 75.8% among women with basic education. The share of induced abortions has decreased in all educational categories

in the last ten years. The most profound decrease was among tertiary-educated women.

The total abortion rate declined from 0.54 to 0.51 abortions per woman in the last decade (Table 10). The figure stagnated between 2010 and 2017, when the total abortion rate ranged from 0.51 to 0.52. This trend was caused by the development of the total induced abortion rate, which declined from 0.34 to 0.29 between 2007 and 2017 (by 0.01 in 2017). Conversely, the total spontaneous abortion rate increased from 0.18 to 0.20 in the same period (stagnation in 2017). The mean age at abortion stagnated in 2017 at 30.5 years. In the long term, it increased from 29.9 in 2007. The trends differed according to the type of abortion: the mean age of women at the time of an induced abortion stagnated over the last ten years between 29.5 years and 29.8 years, while the mean age of women at the time of a spontaneous abortion increased from 30.4 years in 2007 to 31.6 years. This development was linked to the rising age at pregnancy.

Induced abortion rates declined in the last decade at almost every age, while the most profound relative drop was in the 15–20 and 30–37 age groups (Figure 7). The highest rates were for women aged 21 to 32, where the values ranged from

Figure 8: Share of pregnancies ended in abortion and number of abortions by age of females, 2007–2017



Source: Czech Statistical Office; authors' calculations.

11.9 to 13.4 induced abortions per 1,000 women in 2017. The spontaneous abortion rates declined between 2007 and 2017 mainly for women under the age of 30, while, conversely, they rose from this age, and the intensity of the increase grew the older the age of women. The spontaneous abortion rates curve was more like the age-specific fertility curve. The highest rate of spontaneous abortions in 2007 was for women aged 29 (12.4 spontaneous abortions per woman). Ten years later, the curve's peak shifted to 32 years (also 12.4 spontaneous abortions per woman).

The total abortion rates were the lowest at the beginning and end of the reproductive period. The highest values were reached in 2017 at the age interval of 26 to 33 years, where the abortion rate ranged between 23.5 and 26.2 abortions per 1,000 women. In the last decade, abortion rates have declined, especially among women under age 36 (except for a few years), while in the case of older women abortion rates increased at every age and the relative increase was higher with older women.

The share of pregnancies that ended in abortion was the highest in the youngest and the oldest age groups (Figure 8). For the age group 15–19, it was 37.5% in 2017 and it was 67.6% for the sub-population

of women aged 45–49 years in the same year. The absolute numbers of abortions at these ages were not high (they accounted for 5.7% of all abortions in 2017). The share of pregnancies that ended in abortion dropped from 26.3% in 2007 to 23.4% in 2017. In the last decade, this indicator has declined at all ages – the least for the 25–29 age group and the most for women aged 40–44.

MORTALITY

The number of deaths increased by 3,693 compared to 2016 (only by 270 compared to 2015) and reached 111,443 in 2017. This was the highest figure since 1998. Male deaths account for 51% of deaths. The number of deceased under 1 year of age decreased by 13 to 304 in 2017. The infant mortality rate also slightly decreased to 2.7 deaths per 1,000 live births, which was 15% less than in 2007.

The share of deaths at the age 80 and over increased in the long term among both men and women. The increase in the last decade was 6 percentage points for both sexes and the proportion of deaths among people aged 80 years and older reached 33.1% for men and 58.1% for women in 2017. The share of deaths

Table 11: Deaths, 2007–2017

Indicator	2007	2012	2013	2014	2015	2016	2017
Deaths	104,636	108,189	109,160	105,665	111,173	107,750	111,443
- males	52,719	54,550	55,098	53,740	55,934	54,880	56,442
- females	51,917	53,639	54,062	51,925	55,239	52,870	55,001
Deaths under 1 year of age	360	285	265	263	272	317	304
Infant mortality rate (‰)	3.1	2.6	2.5	2.4	2.5	2.8	2.7
Share of deaths at the age 80 and over (%) - males	27.1	31.5	32	32.5	33.2	32.7	33.1
- females	52.3	57.2	57.6	57.9	58.8	57.7	58.1
Share of deaths at the age 90 and over (%) - males	3.9	4.9	5.5	6.2	6.5	6.8	7.3
- females	11.9	14.2	15.4	16.9	18.1	18.2	19.7
Life expectancy of males at age: 0	73.7	75	75.2	75.8	75.8	76	76
65	15	15.6	15.7	16	16	16.1	16.1
80	6.6	7	7.2	7.3	7.5	7.3	7.3
Life expectancy of females at age: 0	80.1	80.9	81.1	81.7	81.4	81.8	81.8
65	18.3	18.9	19.1	19.5	19.3	19.7	19.6
80	7.8	8	8.2	8.5	8.2	8.7	8.6

Source: Czech Statistical Office; authors' calculations.

at the age of 90 and over increased too. It was 3.9% for men and 11.9% for women in 2007 and it rose to 7.3% and 19.7% in 2017. This development is the result of changes in the age structure and the decrease in mortality. The mean age of death for men was 69.5 years in 2007 and 72.6 years a decade later. It was 77.4 and 79.6 for women in the same calendar years.

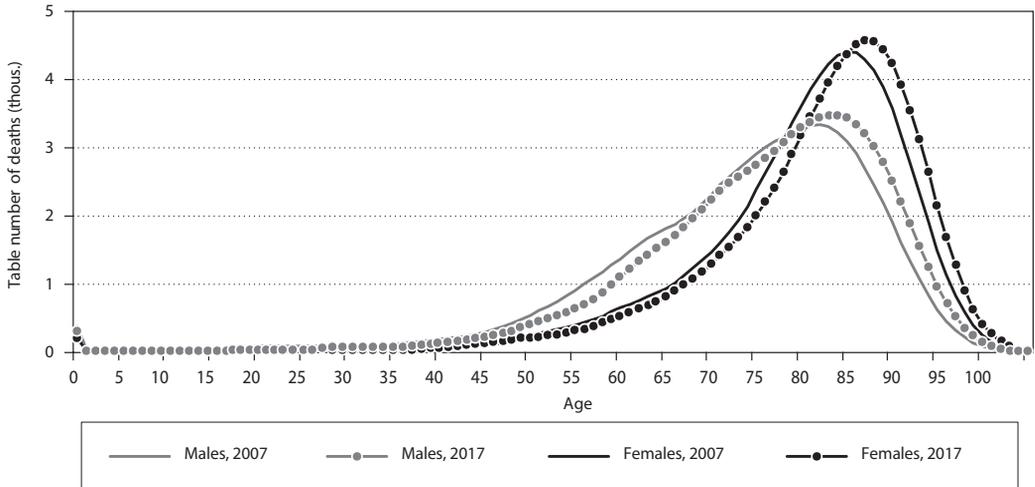
Life expectancy at birth⁷⁾ reached 76.0 years for men in 2017; the increase over the last decade was 2.34 years, with an average rate of growth per year of nearly a quarter of a year. The figures for life expectancy at birth for women are: 81.9 years in 2017, with an increase over the last decade of 1.79 years, and an average rate of growth per year of less than a fifth. The overall rise between 2007 and 2017 was mainly caused by the lower mortality of men aged 50–64 and women aged 75–84. In 2017, women had a life expectancy at birth that was 5.84 years higher than that of men, but the difference between women and men showed a slowly decreasing trend (it was 6.39 years in 2007, and 6.62 years five years earlier). Trends in mortality by sex in the age groups between 45 and 64 years are what most influenced this decrease.

The indicators for the table number of deaths are derived from life tables and are not affected by the changing age structure of the population (Figure 9). Even this indicator reflects the shift in deaths to an older age in both sexes, while for women the largest table deaths are concentrated more within a shorter age span. The most common age at the time of death shifted from 82 to 83 years for men between 2007 and 2017; among women it rose by two years from 85 to 87 years. The table numbers of deceased men exceeded the table numbers of deceased women in the past year up to the age of 80, and after there were more deaths among women than men.

In the last ten years, most people died in the first quarter of the year and in December. By contrast, the lowest number of deaths was recorded in the summer months and in September. The year 2017 did not differ from this trend, but the peak in seasonal mortality in the first two months of the year was much more pronounced, as in January 23% more people died than was the average in the last decade and in February it was 9% more. The increase in the absolute number of deaths in 2017 mainly results in more deaths in January and February.

7) In 2018, starting with data for 2017 or rather 2016–2017, the Czech Statistical Office (CZSO) changed the methodology for processing of life tables: <https://www.czso.cz/csu/czso/life-tables-methodology>.

Figure 9: Life-table deaths by sex and age, 2007 and 2017



Source: Czech Statistical Office; authors' calculations.

Table 12: Deaths by months, 2007–2017

Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
2007	9,295	9,533	8,791	8,535	8,424	7,870	8,302	7,829	8,242	8,581	8,693	9,164
2012	9,315	9,718	9,591	9,410	8,555	8,479	8,489	8,255	8,247	8,573	8,627	9,189
2013	10,023	10,286	9,948	9,566	8,479	8,565	8,665	8,107	8,213	8,534	8,506	8,866
2014	8,833	8,867	9,031	8,654	8,326	8,243	8,496	8,171	8,579	8,835	8,592	9,586
2015	10,542	11,371	9,791	9,261	8,560	8,049	8,755	9,027	8,302	8,829	8,595	8,710
2016	9,209	9,369	9,313	8,884	8,536	8,381	8,301	8,235	8,193	8,834	8,798	9,930
2017	11,960	10,724	9,338	8,751	8,633	8,399	8,097	8,376	8,583	9,106	8,857	9,177

Note: Standardization on the same number of days (30) in the month. The highest number of deaths by month in given year in bold.

Source: Czech Statistical Office; authors' calculations.

INTERNATIONAL MIGRATION

The number of immigrants was 34,922 (the highest figure since 2008) and it exceeded the number of emigrants (17,684) by 28,273 (the highest value since 2009) in 2017.⁸⁾ Positive net migration was 8,209 higher than in 2016. In 2013 the figure was even negative (-1,297), which has happened only once

in the last decade. The volume of migration rose by 8,699 to 63,641 in the last year. Males made up 58.4% of immigrants and 56.3% of emigrants in 2017. Last year the figure was 55.5% for immigrants and 54.0% for emigrants.

Migrants aged 15–34 have contributed most to positive net migration in the long term and did

8) Data was provided from the Central Population Register Record (ISEO), administered by the Ministry of the Interior of the CR, and the Foreigners' Information System (CIS), administered by the Directorate of the Alien Police Service of the CR.

Table 13: International migration, 2007–2017

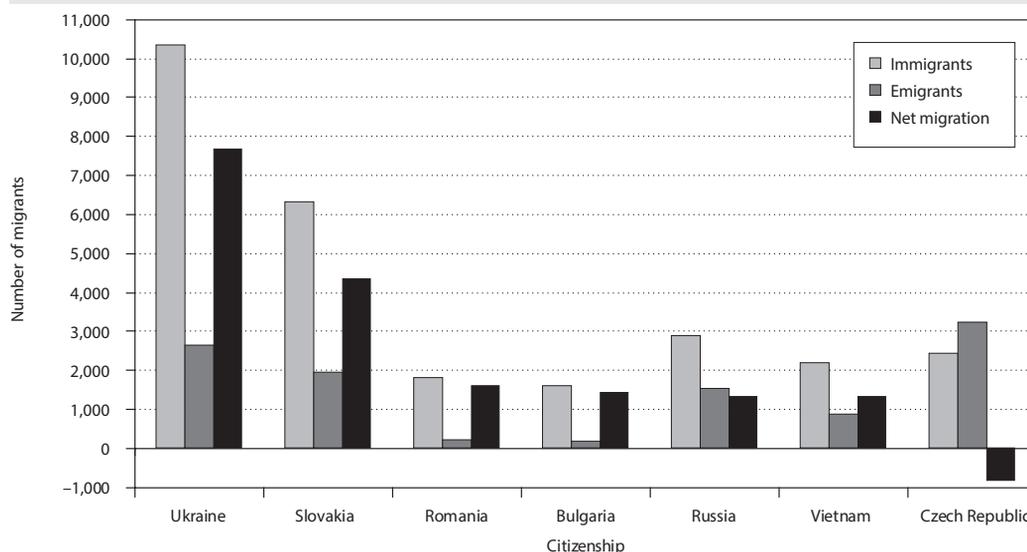
Indicator	2007	2012	2013	2014	2015	2016	2017
Immigrants	104,445	30,298	29,579	41,625	34,922	37,503	45,957
- males	63,721	17,054	16,467	23,115	19,022	20,817	26,839
Emigrants	20,500	20,005	30,876	19,964	18,945	17,439	17,684
- males	12,727	11,901	18,040	11,238	10,502	9,417	9,964
Volume of migration	124,945	50,303	60,455	61,589	53,867	54,942	63,641
Net migration	83,945	10,293	-1,297	21,661	15,977	20,064	28,273
at the age: 0–14	5,174	1,754	1,190	3,685	3,406	3,270	3,328
15–34	51,021	7,932	3,036	13,197	11,023	13,225	18,437
35–64	27,002	420	-5,528	4,571	1,420	3,356	6,311
65+	748	187	5	208	128	213	197

Source: Czech Statistical Office; authors' calculations.

so also in 2017 (Table 13). This subpopulation of net migration has been positive in every year in the last decade. There were 18,437 more immigrants than emigrants in this age group in 2017 (and they accounted for 65% of net migration). By five-year age groups, the highest net migration was in the 25–29 age group in 2017 (6,287). Ten years ago, the figure was highest among those aged 20–24. Net migration was lower among people between

the ages of 35 and 64 (6,311 in 2017) compared to those in the 15–34 age group. Negative net migration among this subpopulation was observed in 2010 and 2013. The net migration of children aged 0–14 was positive in all observed years but was nonetheless markedly lower than in the 35–64 age group (3,406 in 2017). Older migrants aged 65 and over contributed only minimally, but positively (in each year), to net migration (by 197 in 2017).

Figure 10: International migration by selected citizenship*, 2017



Note: *) Citizenships whose number of immigrants, emigrants or net migration was among the top five in 2017.

Source: Czech Statistical Office.

Net migration rates by age were higher at the beginning of life (migration with parents), among migrants aged 18–20 (migration related to the end of secondary school), and among migrants aged 21–30 (those entering the labour market) than among other ages in 2017.

The positive net migration in 2017 was mainly made up of citizens from Ukraine (7,690), Slovakia (4,356), Romania (1,602), Bulgaria (1,437), Russia (1,346) and Vietnam (1,316; Figure 10), which together accounted for 63% of total net migration,

while migrants with Czech citizenship contributed to net migration negatively (–826).

The largest number of immigrants were citizens of Ukraine (10,340), followed by Slovaks (6,328) and Russians (2,891) in 2017. The majority of emigrants were Czechs (3,256), Ukrainians (2,650) and Slovaks (1,972) in the same year. Romanians and Bulgarians accounted for small numbers of emigrants; however, the numbers of immigrants they accounted for were high – 1,829 1,620 immigrants, respectively, which resulted in high positive net migration rates for these countries.

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A CENTURY OF FERTILITY TRANSITION IN SLOVAKIA¹⁾

Branislav Šprocha²⁾

ABSTRACT

Over the past more than 100 years several changes in the fertility process have occurred in Slovakia. Over a relatively short time these changes significantly transformed the character of reproduction. The main aim of the paper is to point out some of the main changes in fertility on its trajectory from a high to a low and then to a very low level during the 20th and the early 21st century. Using a long time series we analyse trends in the fertility quantum and tempo. We point to a significant decline in fertility from more than 5 children to below the threshold level of 2 children, both in a cross-sectional and a cohort approach. These changes were affected by a significant transformation in the structure of women by parity and parity progression ratios. We describe an inter-cohort decline in family size and the gradual dominance of a two- and three-child family model with a very low rate of childlessness and a small share of women with one child. We analyse in detail the postponement transition among the youngest cohorts born in the second half of the 1970s and the first half of the 1980s. In reference to the results of our analysis, we also attempt to forecast the possible future completed fertility levels and parity distributions. The most probably scenario is found to be a rapid increase in the proportion of one-child families with a slight rise in the level of childlessness and a decrease in the proportion of families with two or more children.

Keywords: low and very low fertility, total fertility rate, completed cohort fertility, parity progression ratio, postponement, recuperation, Slovakia

Demografie, 2018, **60**: 333–346

INTRODUCTION

Fertility development in Slovakia over the past 100 years can be divided into three major phases. The first, which started at the end of the 19th century and ended after the Second World War, was associated with the transformation from an agrarian society with large families towards a modern and increasingly urban and industrialised society with prevailing fertility control.

During the second phase, from the second half of the 1950s until the collapse of state socialism in 1989, population development in Slovakia were influenced by the communist dictatorship, centrally planned

economy, and socialistic greenhouse, which gave rise to a particular so-called socialistic reproductive regime (see, e.g., *Sobotka*, 2004). Fertility was situated within a very specific environment for family formation and childbearing, which resulted in early motherhood and early childbearing, an increasingly dominant orientation towards the two-child family model, a low rate of childlessness, and fertility being squeezed into a narrow age span (e.g. *Potančoková et al.*, 2008; *Sobotka*, 2004, *Sobotka*, 2011).

The third and so far the last phase started at the beginning of the 1990s and has basically lasted

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to the present. The collapse of the autocratic and centrally planned system led to rapid changes in the cultural, economic, social, and political contexts of reproduction. The discontinuity of living conditions brought about a significant transformation of reproductive behaviour. A pattern of early childbearing, which was typical in Slovakia until the end of the 1980s, was replaced by a pattern characterised by delayed motherhood. The dynamic decline in fertility to a very low (lowest-low) level, a more heterogeneous age pattern of childbearing, and a decrease in the universality of parenting, marriage, and the two-child model are some of the major changes that have occurred (*Potančoková et al.*, 2008). However, in the last more than 10 years, we can observe a fertility recovery. The total fertility rate rose to more than 1.5 children per woman and Slovakia no longer ranks among the countries with lowest-low fertility. This trend is due to the increase in fertility, especially in the second half of reproductive age, resulting from the start of the recuperation phase of deferred births.

The main objective of this paper is to describe in a long-term perspective the changes in fertility that have occurred in the Slovak population in the last approximately 100 years. The article does not seek to analyse or discuss these changes in detail or to compare them to other works devoted to this issue. Instead, on the occasion of the 100th anniversary of the independence of Czechoslovakia, we want to recall some of the known and less-known facts relating to the fertility of women in Slovakia. In addition, we will try to present some new findings. We will focus on the impact of changes in parity progression ratios on the completed cohort fertility decline. The main question is how the parity transformation influenced and which parity contributed most to the decline in cohort fertility to such low levels. Another objective is to analyse the impact of the transformation of reproduction on cohort fertility. By using the benchmark model, we will describe the postponement transition observed in the cohorts of women born from the late 1960s to the mid-1980s. The research question is how significantly postponement influenced

the decline in fertility at a younger age and, at the same time, how successful women were in making up for postponed reproductive intentions in connection with birth parity. In reference to the knowledge we obtain from this we then try to simulate possible developmental scenarios for completed cohort fertility rate and the structure of women by parity.

The article is structured as follows. Following the introduction and the section on data and methods, we provide some basic information about fertility trends in Slovakia over the past 100 years. First, we look at the period fertility trends and then we analyse fertility development using the cohort approach. In the next section, we discuss changes in the structure of women by parity and the parity progression ratio and their effect on completed cohort fertility rate. In the last part, special attention is given to the postponement transition and its possible impact on completed cohort fertility and the structure of women by parity.

DATA AND METHODS

Our study is based on two main approaches. In the period view we used age-specific fertility rates and the total fertility rate as the main indicators of intensity and mean age at first birth as a timing indicator. The main problem is the availability of input data. Data necessary to calculate age-specific fertility rates are not available until 1900 in Hungarian statistics. From 1925 on, absolute birth³⁾ figures are combined not only with the age at birth, but also with true birth order. This is an essential input for calculating the mean age at first birth using age- and birth-order-specific fertility rates ('rates of the second kind'; for more information about historical data on fertility, see *Šprocha – Tišliar*, 2017). In the period approach we take into account three major fertility thresholds. We can speak of a low fertility rate when fertility is below replacement level. Very low fertility is reached when the total fertility rate falls below 1.5 children per woman (*Billari*, 2005). And finally, the lowest-low fertility is when fertility is below 1.3 children per woman (*Kohler et al.* 2002). In addition, we also use Coal's indexes (e.g. *Pavlík et al.*, 1986) and the Coale-Trussell fertility model

3) Data refer to all births - both live- and still-born - combined.

(Coale – Trussell, 1974, Coale – Trussell, 1978). The index of marital fertility (Ig) and the parameter (m') is what indicates the degree of fertility control in marriage. Both indicators determine the level of conscious regulation of marital fertility. Coale's indices are based on indirect standardisation, where the Hutterite religious community - a population that is assumed not to practise fertility control - is used as the standard. The Coale-Trussell model defines fertility control as a married couple's conscious decision to avoid having more children based on the number of children they already have. Such a decision will be reflected in the age-specific birth rates for married women. Consequently, in populations that practise fertility control, the frequential fertility curve should decrease faster in proportion to age than in populations with natural fertility. According to Coale and Trussell (Coale – Trussell, 1978: 203) the model hypothesises that in any population the ratio of marital fertility m_x to natural fertility n_x at an age (x) is given by:⁴⁾

$$\frac{m_x}{n_x} M \exp^{(m \cdot v_x)}$$

To calculate the marital fertility rate m_x we used available census data from the years 1880, 1890, 1900, 1910, 1921, 1930, 1950, and 1961. The higher the parameter (m'), the more widely fertility control is practised. Values lower than 0.3 and negative values are typical for a population with very low or no fertility control (Coale – Trussell, 1978).

Using population censuses between 1950 and 2011 we will also try to point out some of the major changes in cohort fertility in Slovakia. In the cohort perspective, low fertility is when the completed cohort fertility rate drops below 2 children per woman. Very low cohort fertility is when the completed cohort fertility rate falls below 1.75 children per woman (see Zeman *et al.*, 2018).

In the cohort approach we examine the development of the completed fertility rate, the structure of women by their number of children, and the cohort parity progression ratio. The cohort parity progression ratio (PPR) to the first birth for childless women in cohort (C) is calculated as follows:

$$PPR_C^{0,1} = CFR_C^1$$

For higher birth orders ($i > 1$) the equation is:

$$PPR_C^{i-1,i} = \frac{CFR_C^i}{CFR_C^{i-1}}$$

where CFR_C^i is the cohort fertility rate as an average number of children of birth order (i) born to women in a given cohort (C).

Another important part of our analysis was the decomposition of the decline in the completed fertility rate by changes in the parity progression ratio. We applied the decomposition method designed for this purpose and applied by Zeman *et al.*, 2018. This approach takes into account the sequential character of childbearing as a chain of transitions from lower to higher parities (more Zeman *et al.*, 2018). For the purpose of a more detailed analysis of cohort fertility changes in the youngest cohorts of women - born from the late 1960s to the mid-1980s - we closely examined the process of postponement and recuperation according to birth order using the benchmark model (for more, see Sobotka *et al.*, 2011).

A cohort analysis of the postponement transition enabled us to analyse the onset, dynamics, and ultimately the scale of this transformation. By using the classic cohort benchmark model (see Sobotka *et al.*, 2011) we are able to identify the rate at which fertility was postponed, the rate at which recuperation took place, and finally the level of total decline of completed fertility at the end of reproductive age. Combining these results with projection scenarios for recuperation levels, we created a prediction of the hypothetical development of the completed cohort fertility rate for Slovak women born between 1975 and 1985.

Following Sobotka *et al.*, 2011, we constructed four indicators:

- 1) the postponement measure as the maximum difference in cumulated cohort fertility between the benchmark cohort and the analysed cohort;
- 2) the recuperation measure as the absolute fertility increase in the analysed cohort, from the age at which maximum postponement is reached until the end of reproductive age;
- 3) the final difference as the total difference in the completed cohort fertility of the analysed cohort

4) The five-years values of n_x and v_x were drawn from paper Coale and Trussell, 1978, Table 1, p. 205.

at the end of reproductive age compared to the benchmark cohort;

- 4) the recuperation index as the ratio of the recuperation and the postponement measure.

These four indicators of the postponement transition were used to formulate five projection scenarios for the completed cohort fertility and the structure of women by parity. The first is a constant scenario using a fixed recuperation index from the last known cohort. The second scenario is a development scenario where we used the mean value of the recuperation index in the last five available cohorts (1970–1974). The remaining three scenarios were based on the hypothetical continued growth of the recuperation index from the last empirically derived value in the 1974 cohorts up until the 1985 cohort using a growth rate of 5%, 10%, and 15%-10%-5%, respectively. The last mentioned scenario attempts to simulate the divergent levels of recuperation between individual birth orders. We only considered scenarios with a growth in the recuperation index because a further decline is not supported by the trend in the period fertility rates.

PERIOD FERTILITY TRENDS

In the past more than 100 years Slovakia has had periods of very high and very low fertility within the European area. It witnessed periods of relative stability in fertility patterns and also ones of abrupt changes (Potančoková *et al.*, 2008).

Slovakia had one of the highest fertility rates in Europe throughout the 20th century (Frejka – Sardon, 2004). This is confirmed by the development of the total fertility rate (TFR) (Figure 1). At the beginning of the 20th century the TFR only gradually declined. Although we do not have the necessary data for the wartime period, we can expect that the TFR fell sharply at that time. This is indirectly confirmed by the marked decline in the crude birth rate (CDR). After the First World War, we can see a significant increase in the crude birth rate (38‰ in 1921) and the TFR. However, the positive effect of the compensatory post-war phase

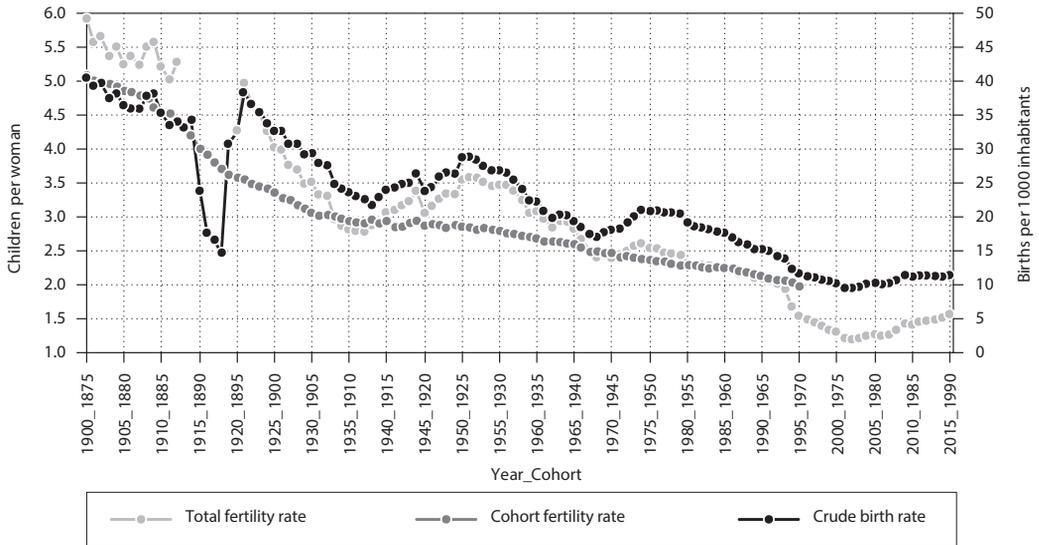
was quickly exhausted and the TFR began to decrease dynamically. By 1937 it had fallen to below 2.8 children per woman. The interwar period is considered a key period in the spread of the conscious control of fertility as part of the first demographic transition (e.g. Šprocha – Tišliar, 2017). As well as the significant decline in the TFR, there are some other findings that confirm this.

First, between 1925 and 1937 the contribution of women aged 35 and over to the total fertility began to decline. The main factor behind the TFR's decline was the decrease in higher-order births. The sharp increase in the birth intervals for higher-order births and a value of below 0.5⁵⁾ for Coale's index of marital fertility suggest fertility control started and began to spread in Slovakia from the late 1920s (see Šprocha – Tišliar, 2017). Further evidence of conscious fertility regulation is the development of parameter ('*m*') from the Coale-Trussell fertility model (Coale – Trussell, 1978). The first decade of the 20th century shows only very little evidence of fertility control. The value of parameter ('*m*') before the First World War was 0.26 (1900) and 0.31 (1910). In contrast, by 1930 parameter ('*m*') had reached almost 0.5, which is clear evidence of the gradual society-wide implementation of deliberate fertility control.

The years of the Slovak Republic were accompanied by a slight recovery in the TFR, mainly due to favourable social developments, a significant drop in unemployment, and the adoption of a whole range of family-policy measures (e.g. the introduction of family wages, family allowances, allowances for civil servants, Christmas help, maternity protection – the prohibition of induced abortion, the sale and promotion of contraception). The maximum TFR was reached in 1944 (3.4 children per woman). In contrast to the preceding period, the last year of the war was marked by unfavourable developments, as military operations took place directly on the territory of Slovakia and living conditions deteriorated. Fertility declined as a result, which was followed by a temporary increase in fertility up to the year 1951. The first half of the 1950s marks the onset of a steady fertility decline. This trend was reinforced by the deterioration of

5) A decline in marital fertility caused by deliberate fertility control is observed if Coale's index of marital fertility drops below 0.5 (van de Walle, 1974).

Figure 1: Crude birth rate, total fertility rate (1900–2016) and completed cohort fertility rate (1875–1970)



Note: In order to be comparable to the period total fertility rate, the cohort fertility rate was shifted by 25 years.

Source: Népnozgalma 1900–1912; Pohyb obyvateľstva (Population Dynamics) 1919–1937; Štatistické zprávy (Statistical Reports) 1942–1943; Pohyb obyvateľstva na Slovensku (Population Dynamics in Slovakia) 1945–1948, 1949–2017; Vekové složení obyvateľstva v letech (Age Structure of the Population in the Years) 1920–1937 a 1945–1979; SO SR DATAcube; Census 1950–2011, authors' calculations.

welfare conditions after the 1953 monetary reform was introduced and induced abortions were made available on demand in 1957, which significantly affected the intensity of fertility. Consequently, the TFR dropped below 3 children per woman. Coale's index of marital fertility (below 0.35)⁶ and the small 'm' of the Coale-Trussell fertility model (above 1.0 in all age groups) indicates the society-wide implementation of deliberate fertility control (Šprocha – Tišliar, 2017).

Fertility continued to decline until a series of family policy measures were adopted (e.g. extending basic maternity leave, increasing the birth allowance, special maternity grants, and loans to newlywed couples) in the early 1970s. These resulted in a temporary increase in the TFR. The main effect was on the tempo of fertility whereby it became concentrated within a narrow age interval (Potančoková et al., 2008). From the second half of the 1970s the TFR declined steadily to reach replacement level at the end of the 1980s.

The abrupt termination of the autocratic and centrally planned system in Slovakia, and the ensuing political, social, and economic transition generated rapid changes in family formation, partnership relationships, and childbearing (Frejka 2008). The TFR quickly dropped from replacement level to 1.5 children per woman in the early 1990s. At the end of the 1990s and the beginning of the 21st century the total fertility rate fell to the lowest-low level (1.3 children per woman; see Kohler et al. 2002) and then stabilised at a very low level (up to 1.5 children per woman). The low period TFR at the beginning of the 21st century was the result of the low fertility of older women born in the 1950s and 1960s, who still behaved according to the socialist model and by this period their reproduction had already ended, and also a result of the low fertility of young women born during the 1970s, who postponed their reproduction to an older age. The decline in fertility associated with the postponement of fertility at a younger age

6) This value is generally considered to definitively mark the end of the first demographic transition (e.g. Pavlík et al., 1986).

and the changes in the timing of birth (especially first births) significantly affected the values of the period fertility indicators. On the other hand, developments in recent years have shown an increase in fertility rates aged 27+, probably as a result of recuperation. In the period approach, however, analysing these changes is problematic. Therefore we will try to analyse them through a cohort approach (see below) that better describes the nature of the spread of the postponement transition.

Delaying parenthood has become a universal feature of Slovak fertility trends since 1989 (Potančoková *et al.*, 2008). In the last more than two decades, we have seen an intensive trend of the postponement of childbearing. The mean age at first birth rose between 1990 and 2016 from 22.6 years to 28 years.

Fertility postponement is reflected in the transformation of the age pattern of fertility (Figure 2). Period fertility rates below age 25 have fallen markedly since the beginning of the 1990s. This fall in intensity at a young age is only to a limited extent offset by an increase in fertility among women aged 27+. In addition, this recuperation has only occurred in the last decade. As Bongaarts and Sobotka (2012: 83) point out, the demographic explanation for these changes lies

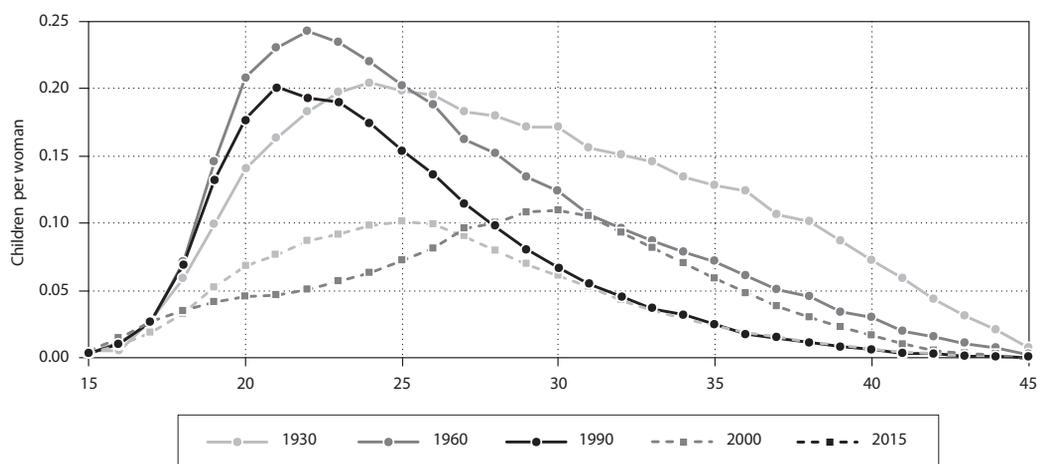
in the weakening of period tempo effects and a cohort-driven recuperation at a later age of the births that were postponed at a younger age. As a result of these changes, the current total fertility rate (1.52 children per woman) in Slovakia is still significantly below the replacement threshold (2.1 children per woman).

COHORT FERTILITY TRENDS (1875–1969)

The long-term changes in period fertility described in the previous section were reflected in the cohort fertility rate and in fertility age patterns. Unlike the period view, the cohort approach allows us to analyse the real intensity of fertility. Changes in cohort fertility only occur only if there is a long-term and significant transformation of reproductive behaviour. Cohort indicators are therefore characterised by a considerable rate of inertia against random short-term changes, which period indicators often respond to significantly.

The cohort fertility rate of women born in the second half of the 1870s reached levels close to 5 children per woman (see Figure 1). Beginning with these cohorts, the cohort fertility rate starts to decline. We can assume that these were the first cohorts to experience the onset of the demographic transition,

Figure 2: Age-specific fertility rates in selected years



Source: Pohyb obyvateľstva (Population Dynamics) 1928–1930, Pohyb obyvateľstva na Slovensku (Population Dynamics in Slovakia) 1945–1948, 1949–2017; Věkové složení obyvateľstva v letech (Age Structure of the Population in the Years) 1920–1937 and 1945–1979; SO SR DATAcube; authors' calculations.

but the fastest decline in cohort fertility was observed among women born between 1885 and 1895. The decline then continued in subsequent cohorts, but at a slower pace (see Šprocha – Tišliar, 2017). The start of the next gradual decline in completed cohort fertility can be observed in the cohorts born in the second half of the 20th century. This trend continued up until the youngest cohorts that have completed reproduction (see Figure 1). The completed cohort fertility rate of women born at the beginning of the 1970s dropped below two children per woman.

Fertility decline is in all the phases studied here coupled with changes in the parity composition of women. Over 50% of women born in the late 1870s gave birth to 5 or more children on average. Beginning with the cohort born in 1885 this share began to decline and in the cohorts born at the end of the 19th century (1890–1894) only one-third of women had 5 or more children. This downward trend continued with the next cohorts (Figure 3). In contrast, the share of women with two or three children rose. During the state-socialist era, an orientation towards a two-child family began to prevail (Potančoková et al., 2008) and the share of women with two children increased. The proportion

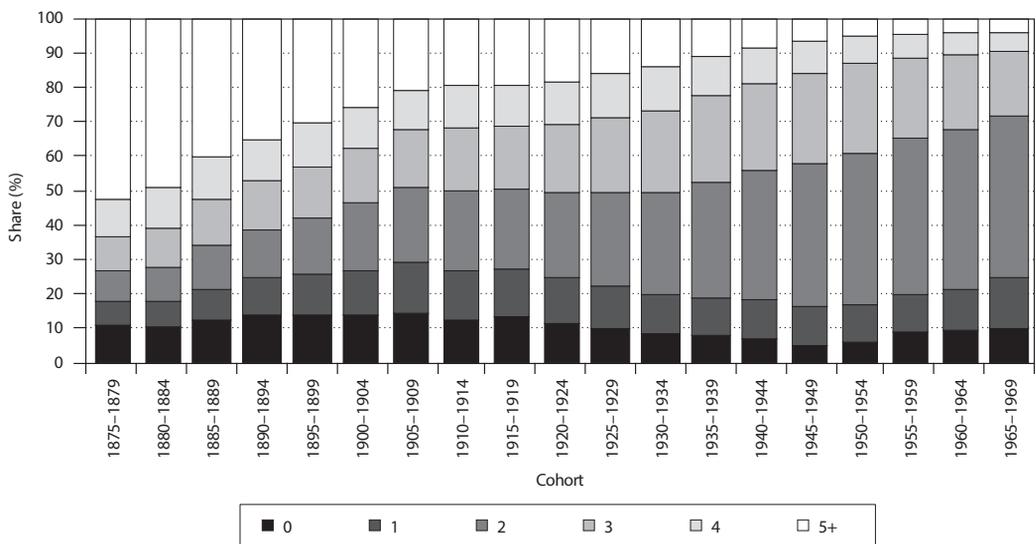
of women with two children reached its highest level (46–47%) among women born in the 1960s.

Childlessness among older cohorts was a more widespread phenomenon. As demonstrated by research on childlessness in the wider European area (e.g. Rowland, 2007, Sobotka, 2017), it was not just in Slovakia that it was common. The highest proportion of childless women (more than 14%) was observed in the cohorts born at the end of the 19th and the beginning of the 20th century. These cohorts were the ones most severely affected by the adverse conditions of the Great War and by the economic crisis of the 1930s. Childlessness among women who were of childbearing age during the state-socialist period was not common: only 6–10% women from the 1930–1969 cohorts never had a child.

Among Slovak women the one-child family model was also unusual. The highest proportion (14–15%) of women with one child was in the cohorts from the beginning of the 20th century. It was only 11% among women born in 1930–1959. In younger cohorts it has increased to 15%.

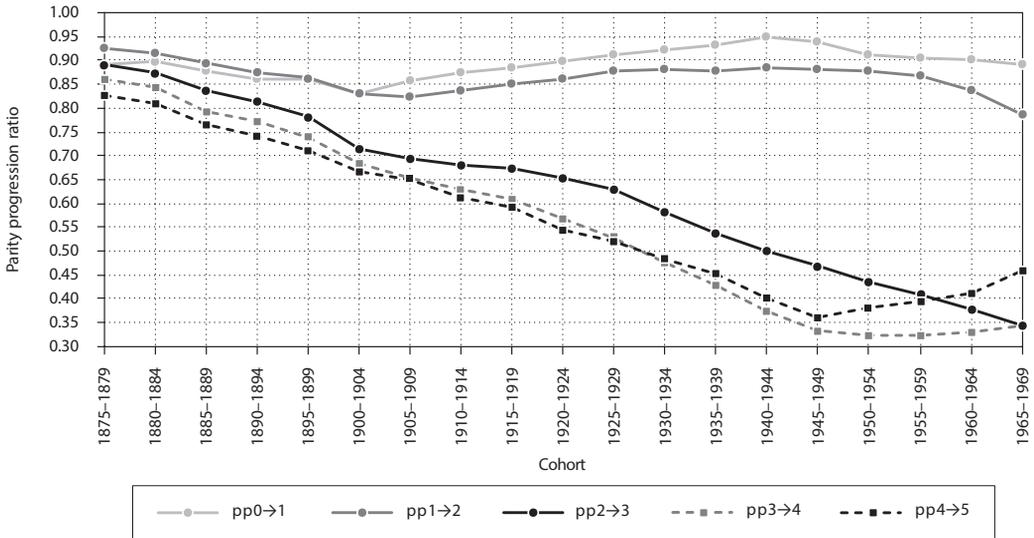
The decrease in family size was also reflected in a significant decline in the parity progression ratio to

Figure 3: Cohort parity distribution among women born in 1875–1969



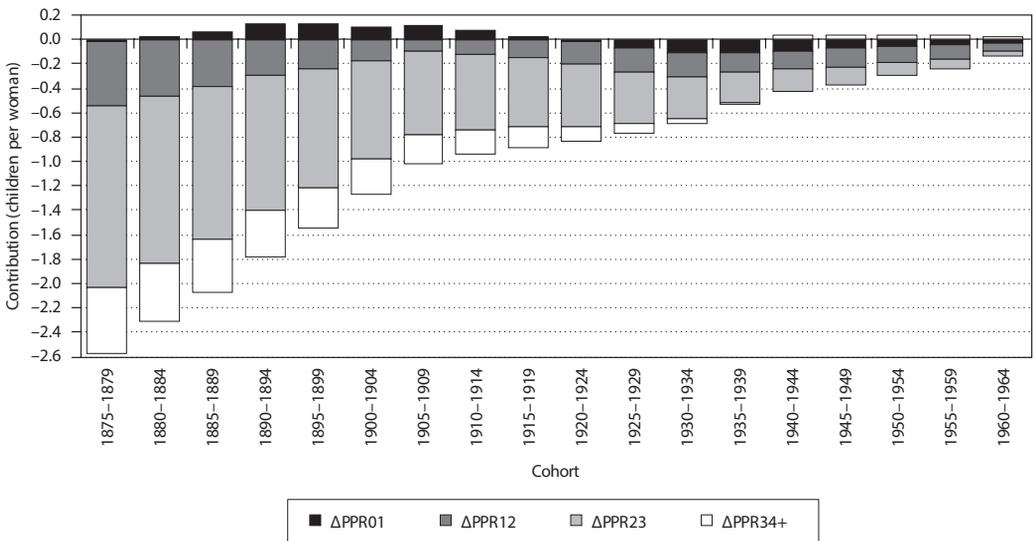
Source: Census 1950–2011, authors' calculations.

Figure 4: Parity progression ratios among women born in 1875–1969



Source: Census 1950–2011, authors' calculations.

Figure 5: How changes in the parity progression ratio to first (Δ PPR01), second (Δ PPR12), third (Δ PPR23), fourth and higher-order births (Δ PPR34+) have contributed to the decline in completed cohort fertility among women born in selected cohorts (1875–1979, 1880–1884 etc.) and 1965–1969



Source: Census 1950–2011, authors' calculations.

third- and higher-order births (Figure 4). Due to the low rate of childlessness and the gradual predominance of the two-child family, the probability of a first and a second child remained high. Only younger cohorts were affected by a slight decrease in parity progression ratios (Figure 4).

A very important question is which parity changes contributed most to the decline in cohort fertility to below replacement level. To find an answer this question we used the decomposition method (see *Zeman et al.*, 2018), which takes into account the sequential character of childbearing as a chain of transitions from lower to higher parities. The fertility decline has been driven by the decrease in transitions to third births in the cohorts born in 1875–1944. The decline among the cohorts 1945–1964 was mostly due to a decrease in transitions to second and especially first births (Figure 5).

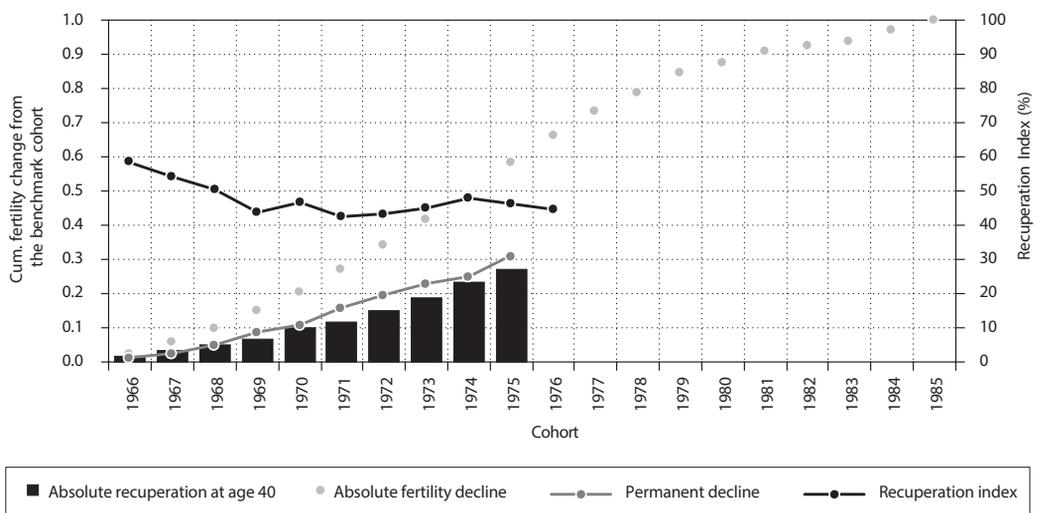
POSTPONEMENT AND RECUPERATION FROM A COHORT PERSPECTIVE

Fertility postponement is one of the most prominent trends that can be observed in the demographic behaviour of the Slovak population after 1989, and it is reflected in a significant drop in the cohort fertility rate

starting with the cohorts born in the second half of the 1960s. One of the main characteristics of reproductive behaviour in Slovakia used to be early motherhood. The cohort mean age at first birth for women born in 1935–1965 remained at a stable value of 22.0–22.5 years. This long-term trend was first disrupted in the cohorts from the mid-1960s. Subsequent cohorts are characterised by a sharp increase in cohort mean age at first birth. The postponement of childbearing can already begin to be seen in the cohorts born in 1965–1969. We therefore selected the 1965 birth cohort as the benchmark cohort (more *Sobotka et al.*, 2011).

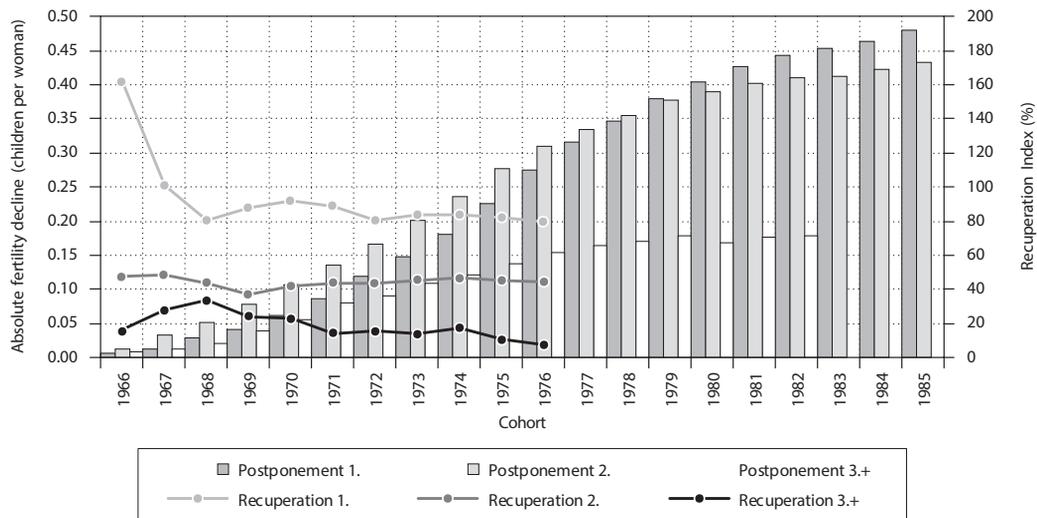
The differences in the cumulative cohort fertility rates between the observed cohort and the benchmark cohort continue to grow wider up until the cohorts from the early 1980s, after which postponement begins to slow down. As we can see in Figure 6, fertility postponement accelerated in the cohorts born in the early 1970s. The political and social changes ushered in by 1989 are obviously what had the most profound impact on the reproduction of women born in the early 1970s. By the age of 27 or 28 (when the postponement effect peaked), women born in the mid-1980s had on average one child fewer than women from the 1965 benchmark cohort.

Figure 6: A summary of the postponement and recuperation process



Source: Authors' calculations.

Figure 7: Postponement rates and recuperation index according to birth-order



Source: Authors' calculations.

The extent of the final differences in the completed cohort fertility rate between each observed cohort and the benchmark cohort depends also on the recuperation rate. However, it is necessary to note that the effect of postponement and subsequent recuperation differs widely by birth order (Sobotka et al., 2011). First-birth postponement is the most frequent in the postponement transition (Figure 7). We can assume that the final differences in the completed cohort fertility rates of the observed and benchmark cohorts will be saturated by a weak recuperation effect in second- and higher-order births. The transformation of the cohort fertility of women born in the 1970s and 1980s indicates that their completed fertility will be considerably lower than two children per woman.

Having surveyed the total postponement rates for the cohorts of women born between 1975 and 1985, we can now prepare projection scenarios for recuperation levels and then create a forecast for the hypothetical development of the CCFR for Slovak women born between 1975 and 1985.

It is immediately apparent that if there is on significant change in the observed recuperation (constant and development scenarios), the CCFR would continue to decline in the 1975–1985 cohorts. The average number of children per woman would fall well below 1.6 children

(Figure 8). According to the 5% scenario, the completed cohort fertility rate would stabilise among women born in the first half of the 1980s at 1.6 child level. Only if the recuperation index increases more rapidly in the near future, will we be able to speak of a trend towards a slight increase in the completed cohort fertility rate among the cohorts from the 1980s (to 1.68 children per woman in the 1985 cohort).

Different levels of assumed first-birth recuperation lead to significant differences in future childlessness rates. In the constant and development scenarios there would be a further gradual increase beyond the 20% threshold. The 5% scenario would see the level stabilise at 18%. Only a more dynamic first-birth recuperation could lead to some reduction in the level of childlessness (Figure 9).

Despite the different recuperation scenarios, it is clear that the cohorts born between 1975 and 1985 will have different parity distributions than older cohorts. This is because the postponement of the transition to motherhood affects the transition to subsequent births. If the recuperation of second and higher-order births does not strongly intensify in the near future we will witness a trend towards a rapid increase in the proportion of one-child families and a decrease in the proportion of families with two or more children (Figure 10 and 11).

Figure 8: Observed and projected completed cohort fertility rates according to various projection scenarios

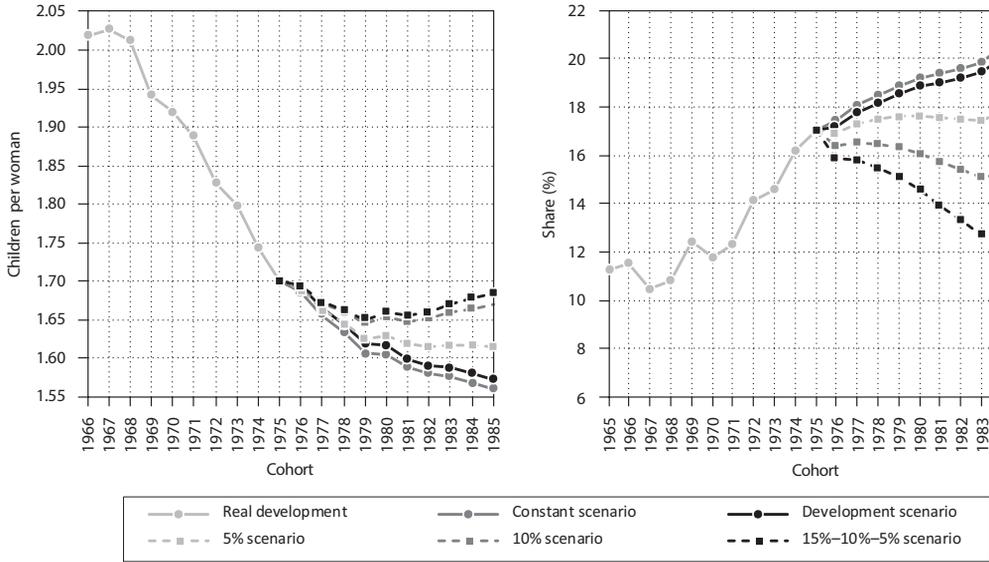
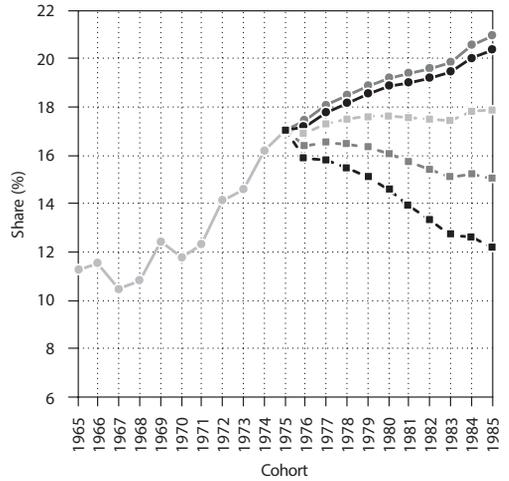


Figure 9: Observed and projected childlessness according to various projection scenarios



Source: Authors' calculations.

Figure 10: Observed and projected share of women with 1 child according to various projection scenarios

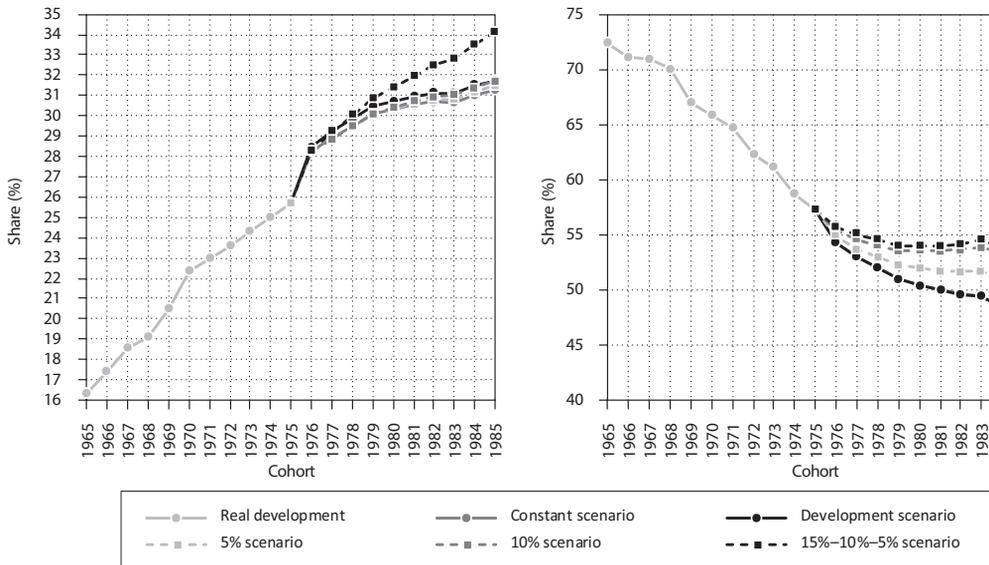
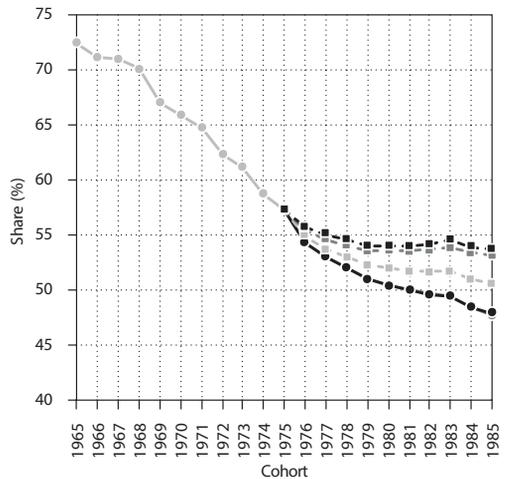


Figure 11: Observed and projected share of women with 2 or more children according to various projection scenarios



Source: Authors' calculations.

CONCLUSION

Over the last 100 years, the fertility process in Slovakia has undergone very important changes. The intensity, tempo, and character of age-specific fertility rates transformed significantly. The total fertility rate dropped between the start of the 20th century and the end of the 1980s from almost 5 children per woman to replacement level. The break-up of the Soviet bloc and the overall transformation in the 1990s dramatically influenced the further development of fertility. A significant postponement of fertility and an overall change in childbirth timing have resulted in a very dynamic decline in fertility intensity. For over a decade Slovakia ranked among the countries with the lowest birth rate in the world. However, in the last approximately 10–15 years, we have seen some recuperation and fertility has been slowly increasing.

In the cohort view, it is possible to identify a substantially continuous decline in completed cohort fertility. This trend was the result of the rise and spread of the demographic transition and (in younger cohorts) a gradual drift towards the two-

child family model. These changes were affected by a significant transformation in the structure of women by parity and parity progression ratios. We can identify a decline in family size and the gradual prevalence of the two- and three-child family model, with a very low level of childlessness and small share of women with one child. The last dynamic transformation of fertility took place after the collapse of the previous political regime. Delayed parenthood has become a universal feature of Slovak fertility trends since 1989. This delay in childbearing has been reflected in a transformation of the age pattern of fertility with a significant drop in the period and cohort fertility rates.

According to our projection, women born in the second half of the 1970s and the first half of the 1980s will end up with the lower completed cohort fertility, well below very low cohort fertility, and with a different parity distribution than older cohorts. In our opinion, the most likely scenario is a rapid increase in the proportion of one-child families and a decrease in the proportion of families with two and more children

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The 10th Conference of “Young Demographers” Will Take Place in February 2019

Traditionally the Conference of Young Demographers offers an exceptional opportunity to spend two days discussing current demographic issues and above all an opportunity for students and young scientists to learn and get opinions and advices from their more experienced counterparts, colleagues, and teachers from all over the world or at least Europe. The already 10th annual Conference of Young Demographers will take place on the **7th and 8th February 2019** in Prague at the Faculty of Science (Albertov 6, Prague 2). The traditional topic of the conference, “*Actual Demographic Research of Young Demographers (not only) in Europe*”, is as wide as possible so that the conference can be open to demographers and scientists with various research interests and orientations.

Except for the Young Demographers, the event is traditionally supported by the Department of Demography and Geodemography, Geographical Institute (Faculty of Science of Charles University), SAS Institute of the Czech Republic and the Czech Statistical Office. Moreover, this year also LONGPOP-INT project and University of Economics in Prague are among the supporters.

At the conference, all the participants will have an opportunity to present their current research and discuss it with colleagues from other countries or fields of study. Although the conference is primarily intended for Ph.D. students of demography, all young (or a bit older) researches (not only demographers) are welcome. The working language of the conference is English.

At the end of the conference, the SAS Institute of the Czech Republic and the Institute of Sociology

of the Czech Academy of Sciences, partners of the conference, will hand out an award for the best presentation using SAS software and the best presentation with a social context.

A session for non-demographers is planned again. For this session, topics on which demographers may share common scientific ground with researches from other fields are planned and perhaps new areas of cooperation could be developed.

On the **6th February 2019**, workshop on current research and modern methods in historical demography will be organized in cooperation with Association for Young Historical Demographers. The workshop capacity is limited. The workshop program could be found online.

If you are interested in passive participation at the conference, please visit our website (www.demografove.estranky.cz/en/). The passive participant registration will be opened until 1st February. More information about the conference and workshop can be found online (<http://www.demografove.estranky.cz/en/>) or you can follow us on Facebook (<http://www.facebook.com/young.demographers>).

In case of any questions please feel free to contact us at the e-mail address (yd.demographers@gmail.com).

We are looking forward to meeting you in Prague! On behalf of the Organizing Committee.

Klára Hulíková, Olga Kurtinová, Petr Mazouch,
Jakub Fischer, Barbora Kuprová, Jitka Slabá, Oldřich Hašek,
Kateřina Maláková and Jiří Ruml

THE BIRTH OF A COUNTRY OF IMMIGRATION: THE CASE OF THE CZECH REPUBLIC

Markéta Seidlová¹⁾

Czechia has traditionally been a country of emigration rather than immigration and for decades had almost no foreign population (from the end of World War II until the beginning of the 1990s), but it is currently by far the most attractive country for long-term and permanent immigrants in the Central European post-communist region (*Drbohlav – Seidlová, 2016*). Immigrants make up about 5.1% of the population of Czechia (based on citizenship), with Ukrainians the most numerous group, followed by Slovaks, Vietnamese and Russians.

In this paper, we will present both the history of migration flows in the country in the aftermaths of World War II and during the communist regime (1945–1989) as well as the current situation and the implications of both regimes and their specific economic and demographic situation for the country's migration policy. Due to the nature of the chosen subject, the main question is what caused the changes in the migration flows and in the nature of migration policy, and the only method that can be used to determine this, especially for the historical part, is an analysis of secondary sources. However, even given its rather descriptive character, this article could be very useful for readers abroad, and especially for those in countries of the Western world, where immigration has been an everyday matter in the life of society since at least the 1960s.

THE IMMIGRATION SITUATION IN CZECHIA BEFORE 1989

In the years between the end of World War II (1945) and the fall of the communist regime (1989), two main periods can be distinguished in Czechia: one directly reflecting the consequences of the war and its end (1945–1948), and the one that followed and began with Communist Party seizing power and ending with the fall of the communist regime (1948–1989).

1945–1948

The fact that politics is the decisive factor in international migration can be shown through the example of the new geopolitical situation that arose in the aftermath of the Second World War (*Černík, 2004*). The massive movements of the population during this period affected the whole of Europe, including Czechoslovakia.²⁾ Although no exact data are known, it can be estimated that in Czechoslovakia alone 5 million people were displaced, of which about 4 million were in the Czech Lands (*Horáková, 2000*).

Between 1945 and 1947, about 2.8 million Germans were expelled from Czechoslovakia and displaced, mostly from the border regions of the Czech lands (see Table 1). Approximately 90,000 Hungarians returned from the southern regions of Slovakia to Hungary, and around 50,000 people were moved from Czechoslovakia to Ukraine and other parts of the Soviet Union (*Horáková, 2000*). The departure of ethnic Germans was the biggest factor that contributed to the national homogenisation of the

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2) In 1993, former Czechoslovakia split into independent Czechia and Slovakia. Czechoslovakia, which united those two countries in a kind of federation, had existed since 1918.

Table 1: International migration in what is now Czechia, 1945–1947 (thousands)

Year	Immigration	Emigration	Migration balance
1945	35.0	1,177.0	-1,142.0
1946	45.0	1,630.0	-1,585.0
1947	51.1	1.3	49.8
Total	131.1	2,808.3	-2,677.2

Note: Estimates.

Source: Andrlé, 1993 in Horáková, 2000.

country (in 2001, 94% of the population declared themselves to be of Czech nationality – CSU, 2003).

The depopulated border areas of the Czech lands were progressively settled both by the Czech population and by compatriots and migrants from abroad. Between 1945 and 1949, some 130,000 re-emigrants came to the Czech lands. The largest group were 33,000 Czechs from Volyně (Ukraine) (*Janská – Drbohlav*, 1999). More than 21,000 people, mostly Slovaks from Transylvania, were relocated from Romania. Between 1946 and 1947, about 12,000 Bulgarian farmers moved in, followed by another group of 4,000 Bulgarians in 1954 (*Horáková*, 2000).

Strong migratory flows to the abandoned border regions also arrived from Slovakia. In addition to Slovaks, this group included Slovak Roma and Hungarians. It is estimated that 16,700 Roma from Slovakia migrated to the Czech Lands in 1947 alone (mainly to the borderlands) (*Pavelčíková*, 2004).

A specific group of migrants consisted of political refugees from Greece who had left their country as a result of the ongoing civil war between 1946 and 1949 and who were granted asylum in Czechoslovakia. A total of at least 14,000 of these refugees arrived in Czechoslovakia and most of them settled in northern Moravia (*Otčenášek*, 2003).

AFTER 1948

After 1948, the migratory situation in the country developed in a very specific political, economic and demographic context. The nature of the economic situation was significantly influenced by the political situation. The full expropriation of production and services has been completed and the collectivisation of agriculture had taken place. After overcoming the troublesome post-war situation, economic growth in the second half of the 1950s was about 5% per

annum of GDP growth per capita. Later, however, it decreased and from the mid-1970s there was minimal GDP growth, which mostly remained around 1% (*Maddison*, 2009).

The Czech economy thus lagged considerably behind the speed of development in Western European states, but it maintained a leading position within the socialist block. Central planning mainly supported the development of heavy industry and mining, while the services sector was left behind. Due to inefficient employment, there was almost no unemployment. On the contrary, throughout this period, the expanding economy was struggling with a labour shortage, and both the migration and the population policy of the state responded to this (*Drbohlav et al.*, 2010).

International migration at that time was for the most part reduced in form to illegal emigration to the Western world, which was relatively substantial, but it is difficult to determine its size. The highest estimates are that the population lost around 550,000 inhabitants through migration for the period 1948–1989 (*Srb*, 2004). So in this period the Czech lands retained its emigration character.

During this period there was no explicitly formulated immigration policy, except for an asylum policy, which was adopted into socialist legislation in 1960 (*Baršová – Barša*, 2005). The migration of Czechoslovak citizens was subject to the so-called visa policy of the state, which allowed only a very limited number of citizens to travel to non-socialist countries. Leaving the state without an official permit was illegal, and illegal immigrants automatically lost Czechoslovakian/Czech citizenship and were sentenced to prison for several years (*Drbohlav et al.*, 2010).

Between 1948 and 1989, there were two major waves of emigration that responded to political events. The first was linked to the Communist Party's entry into power in 1948 and the second to the occupation

Table 2: Population lost due to migration in what is now Czechia, 1948–1990 (thousands)

Period	Legal migration balance	Illegal emigration	Total
1948–1949	3.9	-250.0	-246.1
1950–1960	-2.4	-32.5	-34.9
1961–1970	-47.7	-116.8	-164.5
1971–1980	-7.8	-43.2	-51.1
1981–1990	-13.7	-40.0	-53.7
Total	-67.7	-482.5	-550.3

Note: Estimates.

Source: Andrlé, 1993 in Horáková, 2000.

of Czechoslovakia by Warsaw Pact troops in 1968. Available data on emigration in the 1948–1949 period (or 1948–1953) are very different. While the figures based on demographic balance data (Srb, 2004, Paukertová, 2000) report about 250,000 emigrants (see Table 2), other estimates are lower and range from 40,000 to 60,000 emigrants (Tigríd, 1990, Vaculík, 2002).

Political reasons for emigration have often been linked to economic circumstances and to efforts to find a place with better living conditions. Most emigrants were young people, with an average age of 35 years, and many travelled with their families. The emigrants were economically active persons and the majority of them were employed in qualified professions (Drbohlav, 1994). The main target countries for emigration were Austria, Germany, the United States, and Canada.

Nevertheless, there was also a regulated and not very significant amount of immigration. The most important part of these immigrants were ethnic Czechs or Slovaks from Central and Eastern Europe coming back for family reasons (Černík, 2004).

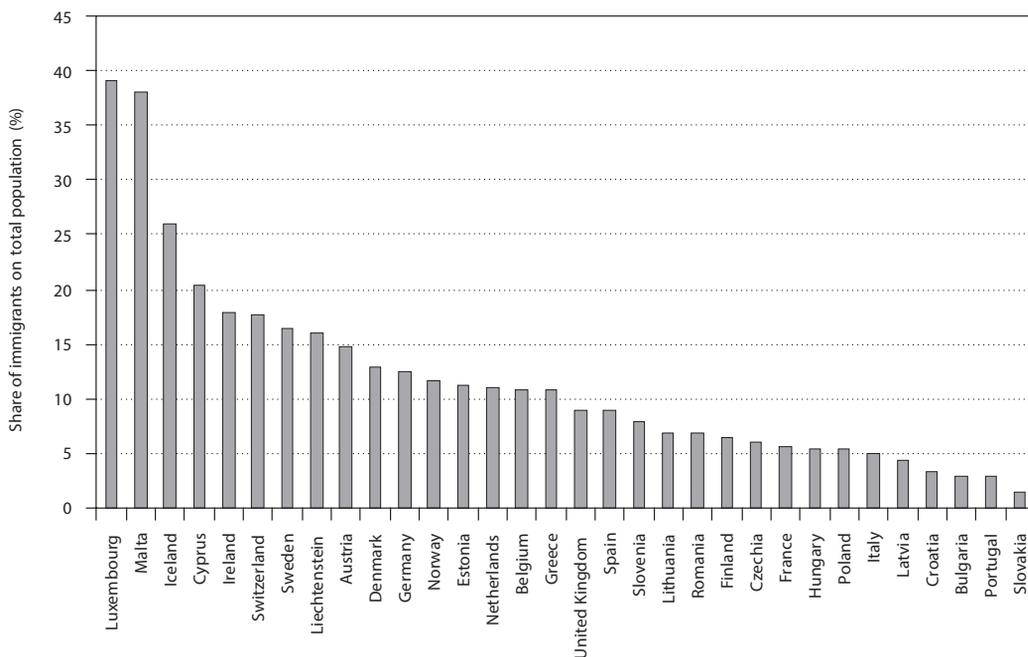
In the mid-1970s, a discussion of labour shortages started in the Czechoslovak Parliament, which led to reflections on the enforcement of a more active immigration policy. The development of industry in Prague in particular was unthinkable without the labour generated by internal and external migration. An important role was played by the temporary immigration of workers and apprentices from other socialist countries. Within the framework of intergovernmental agreements with other socialist countries under so-called international assistance workers came mainly from Poland, Vietnam, and Cuba, but also from Yugoslavia, Hungary, Angola, Mongolia, and North Korea (Boušková, 1998).

However, the immigrants were often segregated and were not visible in society at that time. Their lives were mostly enclosed within the manufacturing plants they worked in and the localities they lived in, where they resided in dormitories (collective accommodation) (Drbohlav, 2004). In the case of Vietnamese, the immigration in the socialist era became an important foundation for ‘new’ immigration flows from that country after 1990.

AFTER 1989

The main factor behind the radical change in (not only) migration patterns in Czechia was the ‘Velvet Revolution’ in 1989, which ushered in a new political, economic, and social regime based on a free democratic society and a free-market economy. Since the very beginning of the 1990s, the deep-reaching transformation and globalisation of society (along with the milestones of the establishment of an independent Czechia by the separation from Slovakia in 1993, and joining NATO in 1999, the European Union in 2004, and the Schengen area in 2007) was accompanied by changes in migration flows. Hence, over time Czechia became first a transit country to Western Europe and then an immigration country (with positive net migration). A unique combination of pull factors, such as the speed of the economic and political transformation, particular migration policies (or non-policies), and a good economic performance and demand in the labour market (especially between 1993 and 1997 and then 2004 and 2008) have drawn immigrants to this country (Seidlová, 2015; Drbohlav – Seidlová, 2016), even though the share of immigrants in the total

Figure 1: Share of immigrants out of the total population of selected European countries (2016)



Source: Eurostat, 2018a.

population still remains rather low in comparison with other European countries (see Figure 1).

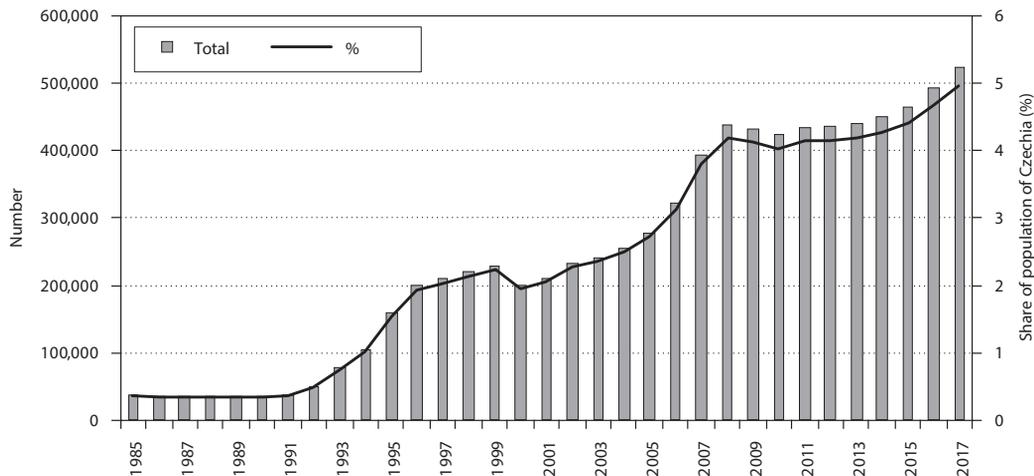
The change in migration flows and dependence on adopted policy become clear when we simply look at the number of immigrants. In 1993 only 78,000 foreign nationals lived in Czechia and they represented 0.8% of the population. One year later, in 1994, there were already about 104,343 foreign nationals living in Czechia, most of them from Poland (20,021 persons; 19.2% of all foreign nationals), Slovakia (16,778 persons; 16.1%), Ukraine (14,230 persons; 13.6%), Vietnam (9,633 persons; 9.2%) and Germany (4,195 persons; 4.0%) (CSU, 2018a; MVCR, 2018a). At the end of March 2018 (last available data), there were a total of 535,970 foreign nationals living in Czechia, representing 5.1% of the total population (based on citizenship) (see Figure 2).

Two-thirds of the current immigrant population (65.8%) came from 5 countries (when comparing 1994 to 2016, the only change is that Russia replaced

Poland among the top 5), whilst almost one-quarter came from just one country – Ukraine (120,431 persons; 22.5%). Ukrainians are thus currently the most numerous group of immigrants, and have been well established in Czechia for more than 20 years. The second biggest group comprises Slovaks (113,177 persons; 21.1%), the third Vietnamese (60,296 persons; 11.2%), the fourth Russians (37,201 persons; 6.9%), and the fifth Germans (21,315 persons; 4.0%) (MVCR, 2018a). In other words, nearly half of all foreigners (40.7%) are citizens of three countries outside the EU (Ukraine, Vietnam and Russia), one-quarter (25.1%) are citizens of two neighbouring EU member states (Slovakia and Germany), and about a third (34.2%) is made up of citizens of all other countries in the world (see Table 3).

In terms of their spatial distribution, most immigrants are concentrated in large cities, especially in Prague and in the surrounding Central Bohemia Region, and a little less also

Figure 2: Rising number of immigrants in Czechia (1985-2017)



Source: CSU, 2018a.

in two other big cities, Brno and Ostrava. Relatively more immigrants (especially Vietnamese and Russians) also live in the border areas with Germany (see Figure 3).

Most economically active immigrants are employed (about 380,000), only a minority has a trade licence (86,000) (see Figure 4).

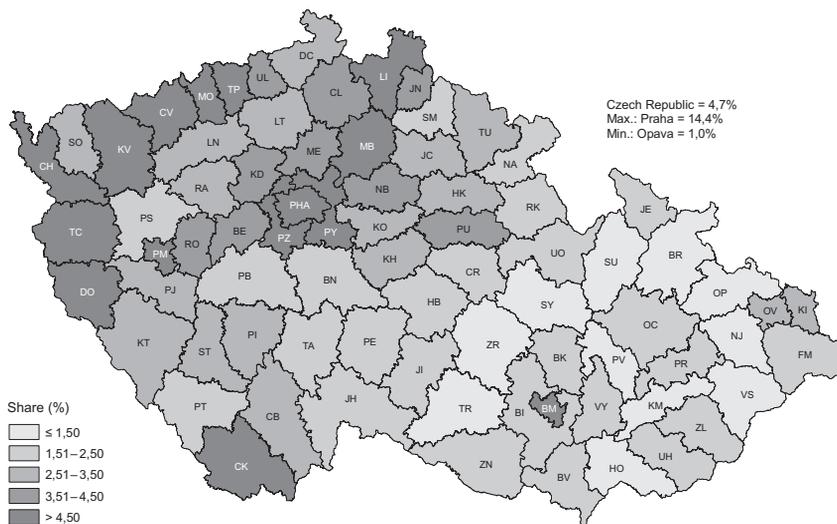
About 2,000 persons have applied for Czech citizenship each year over the past decade, and a significant increase in the number of applications (by two to three times) has been recorded since 2014 as a result of a change in legislation that newly allows dual citizenship, i.e. it is only from 2014 that people can acquire Czech citizenship without having to give

Table 3: Foreign nationals living with a valid residence permit in Czechia (31 March 2018)

Citizenship		31 March 2018	
		Number	Share of foreign nationals (%)
1	Ukraine	120,431	22.5
2	Slovakia	113,177	21.1
3	Vietnam	60,296	11.2
4	Russia	37,201	6.9
5	Germany	21,315	4.0
6	Poland	20,831	3.9
7	Bulgaria	14,312	2.7
8	Romania	13,119	2.4
9	United States	9,039	1.7
10	Mongolia	8,357	1.6
	Other	117,892	22.0
Total		535,970	100.0
The three most numerous groups (i.e. 1 + 2 + 3)		293,904	54.8

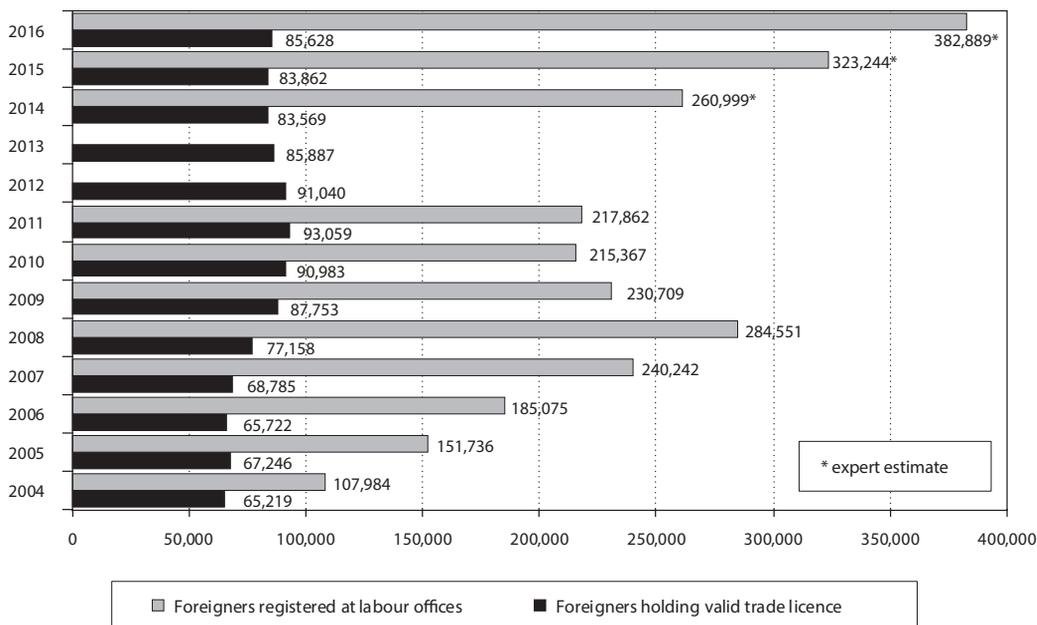
Source: MVCR, 2018a.

Figure 3: Share of foreign nationals in the population of the districts in Czechia (as at 31 December 2016)



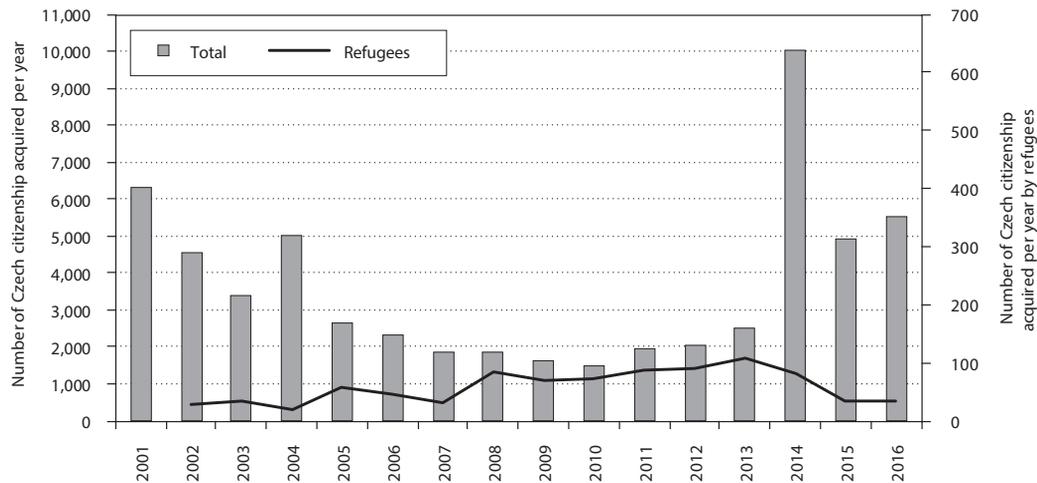
Source: CSU, 2018b.

Figure 4: Immigrants on the Czech labour market (2004–2016)



Source: CSU, 2018b.

Figure 5: Acquisition of Czech citizenship (2001–2016)



Source: CSU, 2018b.

up their original citizenship, which is very appealing to foreign nationals (see Figure 5).

THE POPULATION OF ASYLUM SEEKERS AND OF REFUGEES

In addition to economic immigrants, there are those who are seeking international protection (asylum or subsidiary protection).³⁾

As the overall figures for the last 30 years suggest (see Figure 6), Czechia has never been an important target for asylum-seekers. However, one can notice that there was a significant increase in requests for asylum in 2001, but this was caused by a change in legislation (see below), which introduced new rules and caused considerable difficulties for foreign nationals. Applying for asylum became a very popular strategy as it allowed to foreign nationals to stay and work until the decision about asylum was made (*Drbohlav – Seidlová, 2016*).

As well as the low number of requests, Czechia has also traditionally applied rather a very restrictive policy in terms of granting asylum. Of 86,128 persons who applied for this status between 1997 and 2017, only

2,571 (i.e. 2.99%) received it. And this has remained the trend: in the year 2017, of the 1,450 persons who applied for protection, only 29 persons (i.e. 2.0%) were granted asylum (MVCR, 2018b).

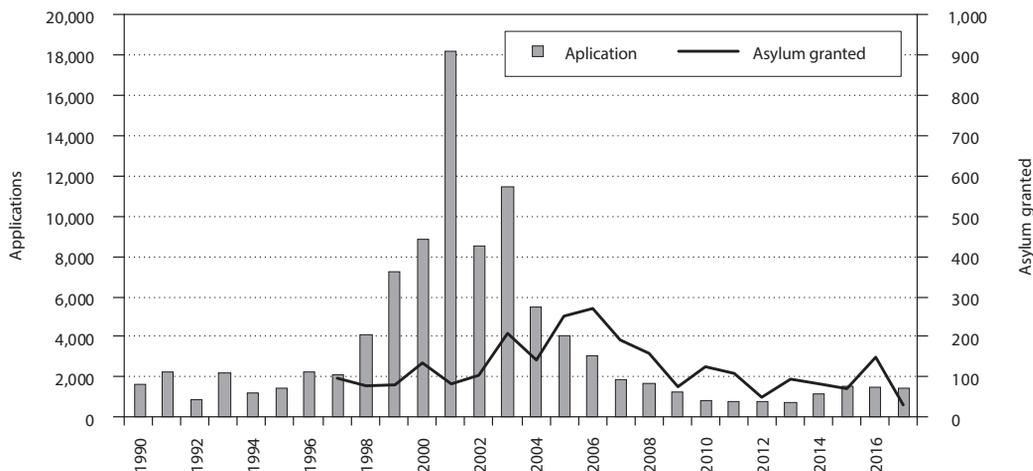
As concerns the countries of origin, a traditionally large share (about 50%) of asylum-seekers are citizens of Ukraine. The other countries that rank among the 'top 10' change over time and reflect current political (and other) events in all countries of the world, and reflect even Czech policy on asylum-seekers (as, for example, the decision in 2016 to grant asylum to 20 Christian Iraqi families).

In 2017, a total of 1,450 persons have claimed international protection in Czechia. Out of them, more than one-third were Ukrainians (435 persons – 30.0%). The second and third most represented groups were citizens of Armenia and Georgia (129 persons i.e. 8.9% each group) and the fourth one was made up of citizens of Azerbaijan (127 persons – 8.8%). As these figures indicate, Czechia is still not one of the main targets of asylum-seekers coming to Europe, even though its neighbouring country is Germany, which had 222,560 applications for international protection in 2017,⁴⁾

3) Persons seeking international protection, asylum, or subsidiary protection – in short, 'asylum-seekers'.

4) In 2016, these figures accounted even for 745,155 in the case of Germany (and for Italy it was 122,960 and for France 84,270) (Eurostat, 2018b).

Figure 6: Asylum seekers in Czechia (1990-2017)



Source: CSU, 2018b; MVCR, 2018b.

and it is also well behind Italy (128,850 applications in 2017) or even France (99,330 applications in 2017), the three main targets within the European Union in 2016 (Eurostat, 2018b).

EVOLUTION OF CZECH MIGRATION POLICY

In the preceding paragraphs we saw what the attitude of the state was towards migrants from the end of World War II to 1989 and the very specific politic, economic, and demographic conditions for the development of international migration in this era. We then explained very briefly the key elements of the transition and looked at the current situation with respect to international migrants in Czechia. To complete the picture, we have to add also how migration policy itself has developed over the past 30 years. In general, we can distinguish the following main periods:

1990–1996

The new situation in society led to a total change in migratory legislation based on principles of a free and democratic society. However, migration policy and

international migration in general were not at the forefront of state interest. Foreign nationals only had to register and nothing else was essentially required of them. On the other hand, they could not obtain a permanent residence permit or citizenship. If they wanted to stay in the country, their only option was to marry a citizen of the Czech Republic. The application for different types of residence permits, introduced for the first time in the legislation, could be submitted directly on the territory of the Czech Republic (now it can almost only be done at the embassies) (Barša – Baršová, 2006; Drbohlav et al., 2010).

1996–1999

In this period, different types of residence permits for foreign nationals in the Czech Republic were formally established: for long-term or short-term residence in the country. New legislation prepared for the future accession of the Czech Republic to the EU also gradually began to apply. At the end of this period, important laws on migration were adopted in 1999 and entered into force in 2000, namely the Asylum Act (Act No. 325/1999 Coll.) and the Act on the Entry and on the Residence of Foreigners (Act No. 326/1999 Coll.). These laws significantly

tightened the rules for the entry and residence of foreign nationals and led to a temporary decrease in the number of immigrants (and an increase in the number of asylum-seekers – see above). However, the decrease in the number of migrants was also partly due to the economic crisis and to rising unemployment (for example, the increase in unemployment rates from 3.9% in 1996 to 8.7% in 1999; CSU 2011). It became possible for foreign nationals who had been living in the country for more than 10 years (on a ‘long-term residence visa’) to obtain the status of permanent residents, which created the first step for the possibility of later gaining citizenship.

2000–2004

In the period preceding the accession of the Czech Republic to the EU, Czech migration policy became more active and began to gain a more systematic form. In 2000, the Concept for the Integration of Foreign Nationals was approved and adopted at the state level, and it is still in effect today. The government also adopted the general principles of a migration policy, but they were more in the nature of a declaration. A very specific manifestation of this policy was a government project called ‘Selection of Qualified Foreign Workers’, which raised relatively high hopes, but its real impact was at the end very minimal. This project offered foreign nationals who participated in it the possibility of obtaining permanent residence in a shorter period. In spite of the relatively high budget for promoting the project abroad, only about 3,500 people joined the project during its 7 years of life and in fact most of the participants in the project were foreign nationals who had graduated from Czech universities (or secondary schools).

2004–2007 (2008)

The accession of the Czech Republic to the European Union introduced a new distinction between foreign nationals residing in the country: EU citizens and citizens of so-called third countries. Economic growth, which generated a strong demand for foreign labour, and a low unemployment rate (below 5%; CSU, 2011) became the main pull factors for immigrants, who

came to the country in large numbers. The total number of foreign nationals in the Czech Republic in this period reached 400,000.

2008–2013

The next period, characterised by the global economic crisis, brought a significant reduction in job vacancies in the labour market and the government was therefore forced to undertake steps in order to reduce immigration. Two main tools were used for this purpose: First, the issuing of working visas (and extensions to working visas already issued) to foreign nationals from the main source countries of immigration (i.e. from Ukraine, Vietnam, and Mongolia) was suspended. Second, a so-called ‘Voluntary Returns’ project was launched: it offered immigrants who lost their jobs in the Czech Republic and did not have the means to return to their country of origin some financial assistance for this return journey in exchange for the promise that they would not work for some time in the Czech Republic. Also, this project did not fulfil all the expectations the government had placed in it, since only about 2,000 immigrants, mostly from Mongolia, took advantage of the possibility to return to their country of origin. This period was also characterised by a clear preference in the labour market for Czech labour (or possibly labour from other EU countries).

2014 – TODAY

In 2014, the Coordinating Body for Border Protection and for Migration, which was formally established as early as 2006, became more active. In July 2015, a new migration policy strategy was adopted, focusing on legal migration, illegal migration, and a return policy, along with more ‘traditional’ areas such as asylum, the integration of foreign nationals, and the free movement of persons within the EU.

The main objective of this strategy was to solve the ‘migration crisis’ at that time, even though Czechia remained almost untouched by the influx of asylum-seekers in Europe (see above) as the average annual number of persons seeking asylum hovers around 1,500 and asylum is then granted on average to only 3% of them.

Now that the economic situation has improved, the Czech government is currently more concerned with migration for economic reasons. The Czech economy needs labour from abroad, and therefore the government actively tries to attract workers – especially Ukrainian citizens, who have a long tradition of migrating to the Czech Republic for work purposes. Two special programmes for both highly qualified and lower-qualified workers were launched in November 2015 and August 2016, with an annual quota of 500 and 5,000 persons, respectively.

New laws include the one on dual citizenship (in force since 2014, see above), and a significant and extensive amendment to the Act on the Entry and on the Residence of Foreign Nationals from 1999, which has been under preparation for years. The main purpose of the second one should among other things be that courses on everyday life in Czech society would be mandatory for all applicants for any kind of long-term residence permit.

Foreign nationals can apply for a permanent residence permit in the Czech Republic after 5 years of legal residence in the country (if they meet other conditions stipulated in the law, such as that they can demonstrate knowledge of the Czech language, they have not been convicted of an intentional crime, they fulfil the obligations of paying taxes, health insurance, etc.) and after 5 years of permanent residence they may apply for citizenship.

Overall, from 1990 until the present migration policy has, in a sense, moved in a full circle away from a discriminatory model to a multicultural one and then to one of civic integration, i.e. it went from viewing immigrants as a group to seeing immigrants as individuals who need to integrate into majority society at their own pace (such as managing language, acquainting themselves with Czech history and culture, etc.), while maintaining a relationship to their country of origin or the community of their compatriots.

Moreover, it is a largely reactive policy instrument with clear signs of a lack of any systematic approach: Czech migration policy is not based on detailed socio-economic analyses of current and future trends. It has been possible, however, to see over time a distinct shift from a passive to a more active and more

systematic approach to addressing migration issues both politically and practically.

In creating Czech migration policy, the role of the Ministry of the Interior, i.e. the Department of Asylum and Migration Policy, is crucial in the long term. It has recently become clear that the Ministry of the Interior is strengthening this role, which can be considered one aspect of the process of centralising decision-making on migration policy. It is also worth highlighting the strong influence of the EU on the development of Czech migration policy (the ‘Europeanisation’ of migration policy).

Another important aspect is that the Czech migration policy is not politicised – so far, the bureaucratic approach to managing migration issues has prevailed here. Change came along with the 2015 refugee crisis – migration and integration issues became a highly politicised theme that was used in pre-election campaigns, but it remains a question whether this will have a long-term effect.

CONCLUSION

In this paper, we presented an overall picture of developments in the field of international migration in Czechia from 1945 till 2018: the migrant population and its composition, the population of asylum-seekers and refugees, and the evolution of migration policy. As the current number suggests, we can predict that the migrant population will continue to have a significant place in the everyday life of Czech society, which will still present a challenge for the authorities on both the national and the local level.

The main challenge for current Czech migration policy is that it is fragmented, a problem that should be addressed as soon as possible. Another problem lies in the fact that there are insufficient financial resources to cover activities related to migration in general and to the integration of foreign nationals into the major society: the main burden is placed on non-governmental organisations, which are financed only through short-term grants. Moreover, like in other EU countries, it is almost impossible to gain funding for activities aimed at integrating EU citizens into the majority society: while they enjoy the benefits of the free movement of persons within the EU, that does

not mean that they do not face problems such as not knowing the language of the new country they have moved to. Moreover, it is important to remember that Czech is a very difficult language for most foreigners and it would be more than desirable for there to be resources that could be used to teach them Czech for free up to the B2 level. The strong role played by the Ministry of the Interior regarding these issues is by no means the best arrangement, as it is on the one hand a repressive body responsible

for border protection and the maintenance of public order, and on the other hand also the institution responsible for the integration of immigrants. Rather, in matters concerning the employment of foreign nationals, for example, the Ministry of Labour and Social Affairs should be given a stronger role. In addition, we can also see a lack of any clear division of responsibilities between different ministries relating to the integration of immigrants at the local level.

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SUMMARY

From the end of World War II to the last decade of the 20th century, the Czech Republic was mostly an emigration country and also quite a homogeneous nation. Nowadays, this European country, with 535,000 legally resident foreign nationals on its territory (as of March 2018), is the most attractive migratory destination of all the former communist countries in Europe. The main factor behind this radical change was the ‘Velvet Revolution’ in 1989, which ushered in a new political, economic, and social regime based on a free democratic society and free-market economy. Since the very beginning of the 1990s onwards, the deep-reaching transformation and globalisation of society (along with the milestones of the establishment of an independent Czech Republic, after separating from Slovakia in 1993, and joining NATO in 1999, the

European Union in 2004, and the Schengen area in 2007) has been accompanied by changing migration flows to this Central European country. Over time the Czech Republic has thus become first a transit country to Western Europe and then an immigration country (reversing the migration balance). A unique combination of pull factors, such as the speed of the economic and political transformation, particular migration policies (between 1993 and 2008), and a good economic performance and a demand for labour market, have drawn immigrants to this country. In 2018, the immigrants made up about 5.1% of the whole population. Ukrainians are the largest immigrant group, followed by Slovaks and Vietnamese. The paper presents this evolution through a review of the relevant literature.

Population and vital statistics of the Czech Republic: 2017, cohesion regions and regions

Cohesion region (NUTS 2), region (NUTS 3)	Population 1 July	Population 31 December	Mar- riages	Divorces	Live births	Abor- tions	Deaths			Increase (decrease)			Mar- riages	Divorces	Live births	Deaths	Total increase
							Total	Within 1 years	Within 28 days	Natural	Net migration	Total					
Česká republika	10 589 526	10 610 055	52 567	25 755	114 405	35 012	111 443	304	203	2 962	28 273	31 235	5,0	2,4	10,8	10,5	2,9
Praha	1 286 554	1 294 513	6 604	2 860	15 324	4 200	12 199	25	21	3 125	10 880	14 005	5,1	2,2	11,9	9,5	10,9
Střední Čechy	1 345 764	1 352 795	6 524	3 768	15 323	4 531	13 248	30	17	2 075	11 738	13 813	4,8	2,8	11,4	9,8	10,3
Jihozápad	1 218 408	1 221 012	6 002	2 854	12 946	4 123	12 994	37	25	-48	3 649	3 601	4,9	2,3	10,6	10,7	3,0
Severozápad	1 117 043	1 116 766	5 452	2 986	11 195	4 464	12 578	52	34	-1 383	23	-1 360	4,9	2,7	10,0	11,3	-1,2
Severovýchod	1 509 025	1 510 726	7 408	3 828	15 827	4 886	15 879	45	31	-52	2 251	2 199	4,9	2,5	10,5	10,5	1,5
Jihovýchod	1 689 141	1 692 123	8 594	3 967	18 949	4 944	17 563	39	26	1 386	2 973	4 359	5,1	2,3	11,2	10,4	2,6
Střední Morava	1 216 172	1 216 234	5 979	2 676	12 763	3 799	13 422	39	29	-659	-730	-1 389	4,9	2,2	10,5	11,0	-1,1
Moravskoslezsko	1 207 419	1 205 886	6 004	2 816	12 078	4 065	13 560	37	20	-1 482	-2 511	-3 993	5,0	2,3	10,0	11,2	-3,3
Hlavní město Praha	1 286 554	1 294 513	6 604	2 860	15 324	4 200	12 199	25	21	3 125	10 880	14 005	5,1	2,2	11,9	9,5	10,9
Středočeský kraj	1 345 764	1 352 795	6 524	3 768	15 323	4 531	13 248	30	17	2 075	11 738	13 813	4,8	2,8	11,4	9,8	10,3
Jihočeský kraj	639 180	640 196	3 145	1 498	6 880	2 131	6 752	16	10	128	1 286	1 414	4,9	2,3	10,8	10,6	2,2
Plzeňský kraj	579 228	580 816	2 857	1 356	6 066	1 992	6 242	21	15	-176	2 363	2 187	4,9	2,3	10,5	10,8	3,8
Karlovarský kraj	296 106	295 686	1 551	734	2 753	991	3 406	14	7	-653	-410	-1 063	5,2	2,5	9,3	11,5	-3,6
Ústecký kraj	820 937	821 080	3 901	2 252	8 442	3 473	9 172	38	27	-730	433	-297	4,8	2,7	10,3	11,2	-0,4
Liberecký kraj	440 934	441 300	2 289	1 158	4 753	1 629	4 707	18	13	46	618	664	5,2	2,6	10,8	10,7	1,5
Královéhradecký kraj	550 848	551 089	2 669	1 343	5 702	1 729	5 783	16	11	-81	366	285	4,8	2,4	10,4	10,5	0,5
Pardubický kraj	517 243	518 337	2 450	1 327	5 372	1 528	5 389	11	7	-17	1 267	1 250	4,7	2,6	10,4	10,4	2,4
Kraj Vysočina	508 664	508 916	2 554	1 100	5 440	1 460	5 288	8	6	152	-188	-36	5,0	2,2	10,7	10,4	-0,1
Jihomoravský kraj	1 180 477	1 183 207	6 040	2 867	13 509	3 484	12 275	31	20	1 234	3 161	4 395	5,1	2,4	11,4	10,4	3,7
Olomoucký kraj	633 133	633 178	3 039	1 430	6 679	2 018	7 033	19	15	-354	-393	-747	4,8	2,3	10,5	11,1	-1,2
Zlínský kraj	583 039	583 056	2 940	1 246	6 084	1 781	6 389	20	14	-305	-337	-642	5,0	2,1	10,4	11,0	-1,1
Moravskoslezský kraj	1 207 419	1 205 886	6 004	2 816	12 078	4 065	13 560	37	20	-1 482	-2 511	-3 993	5,0	2,3	10,0	11,2	-3,3

Radek Havel

Population and vital statistics of the Czech Republic in towns with population above 50 thousands: 2017

Town	Population 1 July	Population 31 December	Mar- riages	Divorces	Live births	Abor- tions	Deaths	Increase (decrease)			Mar- riages	Divorces	Live births	Deaths	Total increase
								Natural	Net migration	Total					
Praha	1 286 554	1 294 513	6 604	2 860	15 324	4 200	12 199	3 125	10 880	14 005	5,1	2,2	11,9	9,5	10,9
Brno	378 358	379 527	2 018	982	4 634	1 339	4 134	500	1 054	1 554	5,3	2,6	12,2	10,9	4,1
Ostrava	290 923	290 450	1 460	707	2 970	1 049	3 491	-521	-663	-1 184	5,0	2,4	10,2	12,0	-4,1
Plzeň	170 490	170 936	834	442	1 885	571	1 924	-39	427	388	4,9	2,6	11,1	11,3	2,3
Liberec	103 966	103 979	580	294	1 181	460	1 053	128	-2	126	5,6	2,8	11,4	10,1	1,2
Olomouc	100 271	100 494	491	269	1 226	359	1 092	134	-18	116	4,9	2,7	12,2	10,9	1,2
České Budějovice	93 593	93 863	479	227	1 024	326	1 042	-18	411	393	5,1	2,4	10,9	11,1	4,2
Ústí nad Labem	92 962	93 040	467	290	1 031	367	961	70	-14	56	5,0	3,1	11,1	10,3	0,6
Hradec Králové	92 921	92 917	474	222	994	286	993	1	-13	-12	5,1	2,4	10,7	10,7	-0,1
Pardubice	90 140	90 335	414	240	961	283	989	-28	319	291	4,6	2,7	10,7	11,0	3,2
Zlín	74 915	74 947	402	183	741	234	820	-79	-91	-170	5,4	2,4	9,9	10,9	-2,3
Havířov	72 796	72 382	364	246	662	250	916	-254	-638	-892	5,0	3,4	9,1	12,6	-12,3
Kladno	68 727	68 804	348	214	748	351	782	-34	178	144	5,1	3,1	10,9	11,4	2,1
Most	66 678	66 644	330	185	657	331	753	-96	-28	-124	4,9	2,8	9,9	11,3	-1,9
Opava	57 183	57 019	266	131	563	225	523	40	-408	-368	4,7	2,3	9,8	9,1	-6,4
Frydek-Místek	56 414	56 334	277	157	592	198	631	-39	-346	-385	4,9	2,8	10,5	11,2	-6,8
Karviná	54 015	53 522	227	111	495	180	692	-197	-694	-891	4,2	2,1	9,2	12,8	-16,5
Jihlava	50 647	50 724	260	113	569	168	488	81	84	165	5,1	2,2	11,2	9,6	3,3

Radek Havel

Abstracts of Articles Published in the Journal Demografie in 2018 (Nos. 1–3)

Magdaléna Baštecká – Roman Kurkin

ESTIMATION OF THE USUALLY RESIDENT POPULATION OF THE CZECH REPUBLIC IN THE INTERCENSAL PERIOD – PART I.

The Czech Statistical Office has carried out a feasibility study according to Regulation (EU) No. 1260/2013 on European demographic statistics that analyses possible ways of estimating the usually resident population by sex, age, and NUTS 3 region and detailed statistics of live births and deaths by usual residence. This is one of two papers based on this study. This first paper focuses mainly on analysing the components entered into the model for estimating the population by usual residence, but it also looks at the current legislative definition of the population of the Czech Republic and the available data sources.

Keywords: usual residence, population model, vital events, internal migration, international migration, illegal/undocumented migration, non-registered migration, estimation methods, estimation of unknown parameters

Demografie, 2018, 60: 5–20

Laco Toušek – Václav Walach – Petr Kupka – Ondřej Plachý – Kateřina Tvrdá – Ľubomír Lupták – Alica Brendzová

THE DEMOGRAPHICS OF SOCIALLY EXCLUDED LOCALITIES IN THE CZECH REPUBLIC

In the Czech Republic, the issues of marginalisation, social inequality, and poverty are predominantly discussed in relation to the 'socially excluded population' living in 'socially excluded localities' (SEL). However, comprehensive information on the composition of the population in these localities is not yet available. Based on a quantitative survey (N = 2 566) carried out in socially excluded localities in the Czech Republic, this paper presents the demographics of the population while highlighting its distinguishing characteristics.

Keywords: marginalisation, poverty, residential segregation, social exclusion, socially excluded localities, Czech Republic

Demografie, 2018, 60: 21–35

Zhaniya Karmenova

THE MARITAL AND FERTILITY BEHAVIOUR OF YOUNG WOMEN IN THE URBAN AREAS OF THE EAST KAZAKHSTAN REGION

This paper primarily addresses nuptiality and fertility patterns among youth in the East Kazakhstan region. The data are obtained from censuses, vital statistics, and the survey 'Marital and Reproductive

Behaviour of Young Women in Ust-Kamenogorsk' conducted in 2016. The aim of the paper is to study marital and reproductive behaviour in the East Kazakhstan region and in particular differentials by sex, age, nationality, place of residence, education, and living conditions.

Keywords: nuptiality, marriage, divorce, fertility, Kazakhstan, East Kazakhstan region, Ust-Kamenogorsk, youth

Demografie, 2018, **60**: 36–48

Ladislav Průša

A NEW PROJECTION OF THE NUMBER OF RECIPIENTS OF THE CARE ALLOWANCE TO THE YEAR 2030 IN THE CZECH REPUBLIC

The first projection of the number of recipients of the care allowance was recently calculated, but it is not now up to date. The conditions for assessing the level of dependence and the value of the care allowance have changed; therefore, the original data need to be updated. The consolidation of data in the information systems of the Ministry of Labour and Social Affairs allows us to draw on data on the structure of the recipients of the care allowance according to gender, age and dependence rates in 2010–2016. Two models were chosen for a new projection of the number of recipients of the care allowance – a static model and a dynamic one. Based on these models, it can be expected that by 2030 the number of recipients of the care allowance will increase from the current 350,000 to 469–489,000, and the most significant increases can be expected on the third and fourth levels of dependence. Society is not prepared for this increase in the number of recipients, so it is necessary to fundamentally change the system for financing social services and to strongly support the development of home care.

Keywords: expenditures on social services, population ageing, care allowance, projections of the number of recipients of the care allowance

Demografie, 2018, **60**: 49–60

Pavína Habartová

RECENT HOUSEHOLD TRENDS IN EUROPE: A CROSS-COUNTRY ANALYSIS

Over the past few decades, significant changes in family and household structure have been observed. Despite common trends, recent household distribution has been found to vary among countries and reflects the demographic behaviour, the effect of economic and social conditions, the quality of healthcare, cultural differences, and the overall lifestyle of each society. The most significant impact on the transformation of the current household distribution of the most developed countries is attributed to population ageing and new forms of living arrangements. The paper sets out to analyse recent household trends in Europe on the basis of harmonised 2011 census data and focuses both on new forms of families such as consensual unions and young adults living with their parents and on traditional families. Finally, in the second part of the paper European countries are classed into six groups according to shared household trends.

Keywords: Households, families, trends, Europe, Czech Republic, population ageing, census

Demografie, 2018, **60**: 98–110

Ondřej Nývlt

THE SOCIODEMOGRAPHIC DETERMINANTS OF ACADEMIC PERFORMANCE AND EARLY CAREER IN THE CZECH REPUBLIC

The analysis focuses on finding relevant predictors that influence school results of children in school, and their chances of studying at the secondary school and university of their choice. It also focuses on unemployment after graduation. The article is based on CHPS data and a special ad hoc module within the MML-TGI, in which respondents are asked retrospectively about the time in life when they were a student and about the first years after their graduation. Logistic regression analysis using the forward step-wise method was used. The method sequentially includes predictors according to whether or not they increase the explanatory power of the model. As a result, it shows which characteristics increase the chances of success or, on the other hand, failure to study and start working life. These characteristics take into account the demographic (age, gender, household type, household size) geographical (size category of residence, NUTS2 residence), or social (the level of highest education and unemployment of parents) aspects of individuals and households.

Keywords: logistic regression, school results, unemployment, human capital

Demografie, 2018, 60: 111–123

Jiří Nemeškal – Jana Jíchová

THE SPATIAL PATTERN OF CRIME IN THE CZECH REPUBLIC

The paper focuses on assessing the spatial distribution of crime in the Czech Republic and on identifying the deeper connection between crime structure and the characteristics of areas. The analyses work with police districts as a relatively detailed unit of analysis and draw on current data from 2013–2015. Before examining the influence of socio-economic, sociocultural, and demographic factors the spatial pattern of total crime distribution is described. Police districts are compared using Ward's Method of clustering on the basis of their crime structure. The results show, among others, a link between low-crime areas and cultural and migration stability. By contrast, a high level of crime is typical for structurally affected regions or the suburban hinterland of larger cities.

Keywords: crime, crime structure, Ward's Method, Czech Republic, regional disparities

Demografie, 2018, 60: 124–139

Ludmila Fialová – Branislav Šprocha

THE MARITAL AND FERTILITY BEHAVIOUR OF YOUNG WOMEN IN THE URBAN AREAS OF THE EAST KAZAKHSTAN REGION

During the interwar period the development of the population in Czechoslovakia reflected long-term reproductive trends (decreasing fertility and mortality) and the effects of contemporary political and economic developments. The populations of Czechia and Slovakia followed more or less similar paths of development, the difference being that fertility in Czechia tended to be lower than in Slovakia and the mortality conditions in Czechia were also better.

Keywords: Czechia, Slovakia, population development, population structure, 20th century

Demografie, 2018, 60: 161–183

Jitka Rychtaříková

DEMOGRAPHIC TRENDS AND PATTERNS IN CZECHIA AND SLOVAKIA DURING THE SOCIALIST ERA

During the socialist era, marriage was contracted early and became more frequent. Children were born to younger parents and at short intervals. The proportion of childless women was low, as was the percentage of extramarital births. A higher risk of death for adults and the elderly was observed particularly among men in the period 1965–1975. Slovak demographic patterns became more similar to Czech patterns.

Keywords: fertility, mortality, nuptiality, divorce rate, age structure, socialist period, Czechia, Slovakia

Demografie, 2018, **60**: 184–201

Tomáš Fiala – Jitka Langhamrová – Markéta Pechholdová – Pavol Ďurček – Branislav Šprocha

POPULATION DEVELOPMENT OF CZECHIA AND SLOVAKIA AFTER 1989

Population development in Czechia and Slovakia after 1989 has in many ways resulted in historically unique changes in the character of demographic reproduction. These are characterised by a dramatic decline in nuptiality, fertility and induced abortion, postponement of childbirth, and delayed entry into first marriage. At the same time, divorce rates and life expectancy have increased. There has been an upturn in foreign migration, which has become one of the most important factors of population growth. However, in contrast to a general convergence between Czechia and Slovakia achieved under a common state, the demographic trends after 1993 have diverged.

Keywords: population development, nuptiality, divorce, fertility, induced abortion, mortality, migration, Czechia, Slovakia

Demografie, 2018, **60**: 202–218

Branislav Bleha – Boris Burcin – Tomáš Kučera – Branislav Šprocha – Boris Vaňo

THE POPULATION PROSPECTS OF CZECHIA AND SLOVAKIA UNTIL 2060

The article compares the aggregated estimates and results of two current national population forecasts to the year 2060 that were produced in 2012 for Slovakia and in 2018 for Czechia. It comments in detail on the basic irregularities in the age-sex structure that have formed over the past one hundred years and their expected transformation in the next more than forty years and on the future development of the initial age-sex structure of the population. Special attention is devoted to the demographic ageing process, its probable future development, and its specific features and internal differentiation. The results of both forecasts point to considerable population inertia and age-structures with 'a long memory'. Nevertheless, a near quarter-century of low fertility, much lower in Slovakia than in Czechia, a less optimistic outlook for future fertility and migration development, and the somewhat higher mortality intensity among the population in Slovakia will very likely lead in the near future to depopulation and accelerated ageing of the population. The different revolutionary paths of the two countries, naturally the demographic ones, contribute to the differences in the pace and parameters of the culmination of the ageing process.

Keywords: population, forecast, ageing, Czechia, Slovakia

Demografie, 2018, **60**: 219–233

Branislav Šprocha – Pavol Ďurček

A DECOMPOSITION OF COHORT FERTILITY TRENDS IN CZECHIA AND SLOVAKIA ON THE BASIS OF CHANGES IN PARITY PROGRESSION RATIO

The long-term trend in cohort fertility in Czechia and Slovakia has led to a significant decrease to fewer than two children. Significant changes in the structure of the female population by parity are taking place in the background of this decline. This article seeks to analyze the development of completed cohort fertility in Czechia and Slovakia in the context of the parity transformation and to identify which parity has contributed most to the decline in fertility to such low levels.

Keywords: cohort fertility, decomposition, parity progression ratios, Czechia, Slovakia *Demografie*, 2018, **60: 234–247**

Luděk Šídlo – Jana Křestánová

WHO WILL CARE? ELDERLY CARE HOMES IN CZECHIA IN THE CONTEXT OF DEMOGRAPHIC AGEING

One important consequence of demographic ageing is the need to ensure adequate and quality care for the elderly. The aim of the article is to outline the main challenges concerning the current state of elderly care in Czechia, focusing on elderly care homes, since this form of social care is used most by the elderly population. The capacity of elderly care homes is already insufficient, and care providers are not planning to increase the number of places. In the last decade or so, the occupancy rate of elderly care homes has been at 100% and the number of applicants who are rejected is growing each year. There were on average 53 people aged 65+ and 11 people aged 80+ per one place in the elderly care homes, but this share is growing as is the gap between the number of beds available and the number of beds required. Model projections up to 2050 will be used to highlight what the potential consequences might be for society if elderly care homes do not increase their current capacity in the short to medium term. If the current ratio of care home capacity to size of the population aged 65 and over is to remain the same, the number of beds needs to increase by 26% to the year 2030 and by 59% to the year 2050.

Keywords: demographic ageing; elderly care homes; Czechia; model projections *Demografie*, 2018, **60: 248–265**

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- *Potrady*. 2005. Prague: Ústav zdravotnických informací a statistiky.

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For periodicals that use consecutive page numbering within a volume it is not necessary to indicate the issue number.

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Syrovátka, A. 1962b. 'Child Mortality from Automobile Accidents in the Czech Lands.' *Czech Medical Journal*, 101, pp. 1513–1517.

In-text references

(Srb, 2004); (Srb, 2004: pp. 36–37); (Syrovátka et al., 1984).

Table and figure headings

Table 1: Population and vital statistics, 1990–2010

Figure 1: Relative age distribution of foreigners and total population of CR, 31 Dec 2009

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