

POPULATION DEVELOPMENT OF CZECHIA AND SLOVAKIA AFTER 1989¹⁾

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Abstract

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

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INTRODUCTION

By the end of 1989, a rapid transition from a totalitarian to a democratic system occurred in former Czechoslovakia. The transition brought a series of social and economic changes. From a population perspective, social inequalities became more pronounced. Over the following years this also resulted in profound changes in the demographics of Czechia and Slovakia (Burcin *et al.*, 2010). Unexpected disruptions were observed in prevailing patterns of mortality and fertility. Life expectancy increased. Fertility rates fell steeply to below the replacement threshold, which led to important declines in natural

increase. A dramatic decline was also observed in nuptiality, while divorce rates continued to increase. A positive trend was recorded for abortion rates, which rapidly declined. Along with fertility postponement, a dramatic increase at age at marriage and extra-marital fertility was observed. Foreign in-migration rates started to increase, leading to a positive net-migration.

The present study aims to summarize major features of the core demographic changes in Czechia and Slovakia after 1989. The scope of this paper does not permit an in depth analysis of all the phenomena. Instead we have aimed to highlight the most pronounced and relevant changes

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in qualitative and quantitative aspects of specific demographic processes.

1. TRANSFORMATION OF MARRIAGE FORMATION AND DISSOLUTION

The specificities of the socialist environment (see *Sobotka, 2002*), conditioned by a wide range of contextual factors (such as education and labour structure, population policy, etc.) and combined with marriage and maternity being regarded as the norm, resulted in a highly specific family model: in the late 1980s, marriage rates in Czechia and Slovakia were characterized by high intensity and early timing (*Fialová and Kalibová, 2010, Pavlík, Kučera et al., 2002, Rychtaříková, 1995, Šprocha, 2016, Šprocha and Majo, 2016*). First-marriage decrement nuptiality tables show that only about a 10% of men and 5% of women would remain single (never-married) in Czechia by the age of 50 years. In Slovakia, it was approximately 15% of men and 10% of women (Figures 1 and 2). Almost universal marriage was accompanied by an early entry into the first marriage, with single men marrying in Czechia on average at the age of 24.5 years and women below 22 years of age (Figures 3 and 4). The average age at first marriage was only slightly higher in Slovakia where on the average men married at the age of 24.7 years and women first married at the age of 22.2 years. The first marriages, formed universally at a young age by the majority of the population, were also characterized by a progressively increasing risk of dissolution. The divorce rates increased in both countries. In Czechia it was however noticeably higher throughout the period from 1989 onwards: in 1989, approximately 37% of married couples divorced in Czechia, with only 22% in Slovakia (Figure 5). Since then rates have increased until recently. In both countries, however, a large proportion of divorcees remarried, the frequency of repeated marriages having been slightly lower for women (*Fialová and Kalibová, 2010, Šprocha and Majo, 2016*).

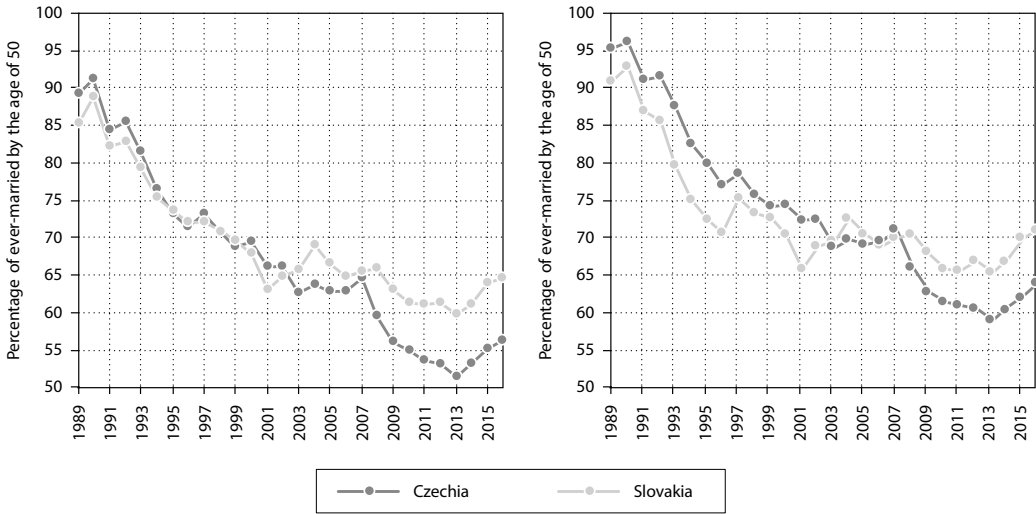
In both countries, the economic, political, social and cultural transformation starting from 1989 led to rapid and historically unique changes in the family formation dynamics. In 1990, the expectation that low-interest loans for newly-married would be abolished caused a year-on-year rise in marriage rates along

with a temporary decrease in the average age at first marriages in both Czechia and Slovakia. As of 1992, the trends were marked by a steady drop in marriage prevalence (expressed as a drop in nuptiality table numbers of remaining single by the age of 50) and a dynamic increase in the average age at marriage.

Thus, the model of early and universal marriage was not sustained under the new conditions and was quickly abandoned by the first half of the 1990s. Nuptiality table first-marriage rates (proportions of persons having ever married by the age of 50) declined in men in both Czechia and Slovakia from approximately 90% in 1989 to 65% around 2000 (Figure 1 and 2). Since then, the drop has been more pronounced in Czechia. In both countries, historical minimums of proportions of ever-married men were reached in 2013: 51% in Czechia and 60% in Slovakia. By 2016 proportions of ever-married men had increased again to 55% in Czechia and 65% in Slovakia. Among females, the trends were quite similar. Up until the start of the new millennium, ever-married women proportions were higher in Czechia than in Slovakia (95% versus 90%), followed by levelling-off at approximately 70% in both countries between 2000 and 2005 and a subsequent further decline to historical minimums of 59% (Czechia) and 66% (Slovakia) in 2013. As for men, the last period in both countries was marked by a rise in the rate of first-order marriages. If nuptiality rates remained fixed at those in 2016, approximately 57% of men and 65% of women would enter a marital union by the age of 50 in Czechia. In Slovakia, the situation is somewhat different, as the proportions of ever-married by the age of 50 reach almost 65% for men and even exceed 71% for women.

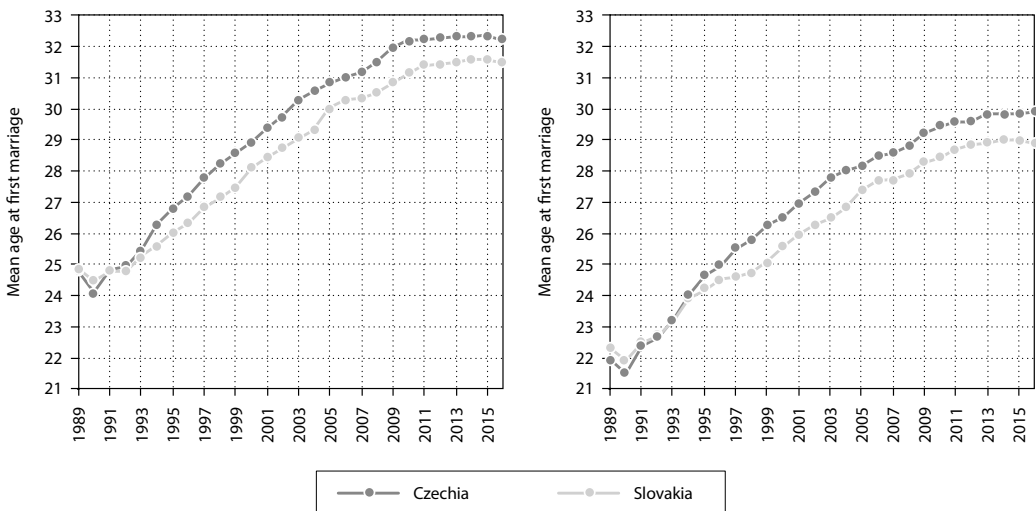
In both countries, the abandonment of the model of early and universal marriage was closely linked with postponement, and, perhaps, with marriage no longer being regarded as the assumed destination. The postponement process is well reflected in the long-term increase of the mean age at the first marriage of both sexes. While starting from similar positions in 1989, marriage postponement was more pronounced in Czechia, so its level is now slightly higher compared to Slovakia (Figure 3 and 4). In Czechia, the average age at the first marriage increased by 7.6 years for men and by 8.0 years for women, but in Slovakia the

Figure 1 and 2: Nuptiality table first-marriage rate* for males (left panel) and females (right panel) in Czechia and Slovakia, 1989–2016



Source: Czech Statistical Office (CZSO), Statistical Office of the Slovak Republic (SOSR).
* Percentage of ever-married by the age of 50.

Figure 3 and 4: Mean age at first marriage of men (left panel) and women (right panel) in Czechia and Slovakia, 1989–2016



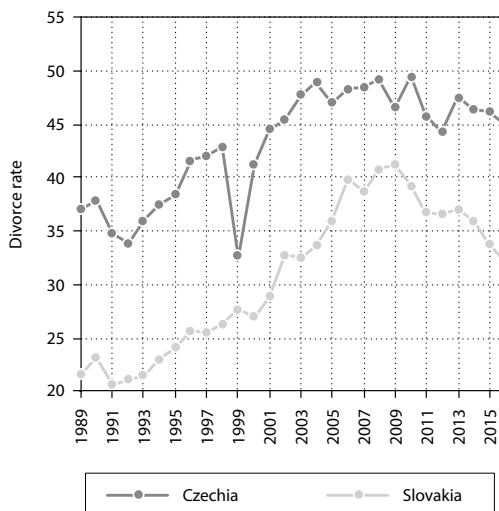
Source: CZSO, SOSR.

increase was only by 6.7 years for both sexes. However, the rate of age at first marriage increase has slowed down in recent years. In 2016, Czech men first married on average at the age of 32.2 years

and women at the age of 30. In Slovakia, the average age at the first marriage rose to 31.4 years for men and 29 years for women (see also Kurkin *et al.*, 2016, Křestianová *et al.*, 2017).

Another characteristic feature of the family behaviour in Czechia and Slovakia after 1989 was a sustained increase in rates of divorce. The total divorce rate (measured in relation to the time elapsed since marriage) has increased almost continuously throughout the 1990s and early 21st century. In Czechia, an exception to the general trend occurred in 1999 as a reaction to new legislative arrangements (see e.g. *Pavlík et al., 2002*). The divorce rates in Czechia peaked around 2005–2010, when it almost reached the 50% threshold. In Slovakia, the increase in divorce rates also peaked around period 2006–2010, reaching or even crossing 40%. Since 2010 however, both countries have experienced a decline in divorce rates. In Czechia, the levels dropped to 45% in 2016; in Slovakia the drop was even more profound, falling to 32% in 2016. Slovakia thus continues to experience lower divorce rates than Czechia, which is consistent with historical trends. We hypothesise that the more traditional family behaviour in Slovakia can be linked with higher levels of religiosity and lower urbanization, which go along with more conservative attitudes towards marital formation and dissolution. Additionally, the observed differences may also be influenced by differences in legislative environment (such as the unavailability of an agreed divorced in Slovakia).

Figure 5: Total divorce rate in Czechia and Slovakia, 1989–2016



Source: CZSO, SOSR.

2. CHANGES IN FERTILITY

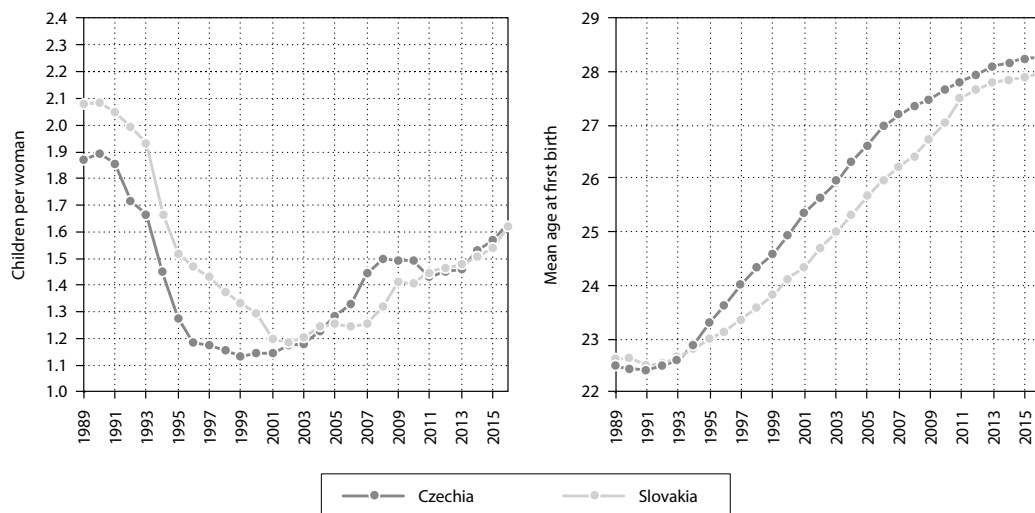
The period after 1989 brought radical changes in fertility in both Czechia and Slovakia. As seen for marriage, the change in economic and normative factors and discontinuity of living conditions resulted in the rejection of earlier reproductive patterns characterized by early motherhood, the concentration of completed fertility in the first half of the reproductive age, strong preference of the two-parent family model, and low childlessness. Another feature of the pre-1989 fertility that changed was frequent pre-marital conception, high intensity of induced abortions and use of abortions as a specific form of ex-post contraception (see *Sobotka et al., 2008, Potančoková et al., 2008*).

Fertility started to decline rapidly at the beginning of the 1990s in both countries. In Czechia, this drop was faster and steeper, with the total fertility rate (TFR) falling below the threshold of so-called lowest-low fertility (i.e. below 1.3 children per woman) in the mid-1990s (*Billari and Kohler, 2004*). In Slovakia, the fertility decline was also very rapid, but its starting position was somewhat higher, with a TFR of 2.1 in 1989 (compared to 1.9 in Czechia). At the dawn of the new millennium, however, Slovakia also ranked among the populations with extremely low fertility. Minimums were reached in 1999 in Czechia (TFR of 1.13 children per woman) and in 2002 in Slovakia (TFR of 1.19 children per woman). The decline in fertility stopped soon after the beginning of the 21st century in both countries.

Following these dramatic declines there was a slight recovery of fertility, although not to pre-1989 levels. This can be described as a recuperation phase, which was somewhat more intense in Czechia (e.g. *Šprocha, 2014, Šťastná et al., 2017*). By 2005–2010, the total fertility rate was for the first time in history higher in Czechia than in Slovakia. From 2011, the fertility levels in Czechia and Slovakia converged and since then a similar and steady increase was observed in both countries. In 2016, differences in total fertility rate in Czechia and Slovakia were negligible, being slightly above 1.6 child per woman (Figure 6).

These irregular trends in cross-sectional fertility indicators of the last two decades have been largely conditioned by changes in fertility timing (e.g. *Bongaarts and Feeney, 1998, Sobotka, 2003*).

Figure 6 and 7: Total fertility rate (left panel) and mean age at first birth (right panel) in Czechia and Slovakia, 1989–2016

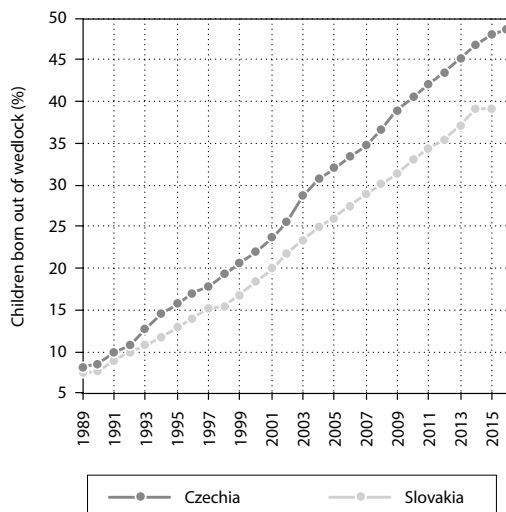


Source: CZSO, SOSR.

In fact, one of the dominant features of the fertility transformation was the abandonment of early motherhood and the postponement of the first births. This is demonstrated by the increase in the average age at the first birth (Figure 7). Around 1990, the average

age at first birth was almost identical in Czechia and Slovakia: 22.5 years. As of 1995, the age at first birth started to decline more rapidly in Czechia. Between 1989 and 2016 the average age increased by almost 6 years in Czechia and by more than 5 years in Slovakia. In 2016, women in Czechia first became mothers at the average age of 28.2 years and in Slovakia at the average age of 28 years. In recent years however, the increase in average age at first birth slowed down in both countries.

Figure 8: Share of children born out of wedlock in Czechia and Slovakia, 1989–2016



Source: CZSO, SOSR.

The strong historical link between marriage and fertility in Czechia and Slovakia is also reflected in the low proportion of children born out of wedlock up until the early 1990s. In both countries in 1989, only less than 6% of children were born to non-married women. The subsequent loosening of this relationship was associated with a liberalization of attitudes towards extramarital fertility and single motherhood, postponement and refusal of marriages and the spread of alternative (non-marital) forms of cohabitation. As a result, the proportions of children born out of wedlock started to increase substantially in the two countries (see also Němečková and Štátná, 2016, Šprocha, 2016). As Figure 8 shows, this process was more pronounced in Czechia. In 2016, almost half of all children were born out of wedlock in Czechia (49%)

and 40% in Slovakia. The reasons for these differences between the two countries include, in our opinion, higher rates of first marriage rates and lower rates of extramarital fertility in Slovakia. Again, cultural factors such as degree of religiosity or urbanization may – to an unknown extent – underlie some of these differences.

The absence of modern contraception under socialism meant that induced abortion became a widespread ex-post contraception tool (Kučera, 1994), giving rise to a specific abortion culture (Stloukal, 1999). The ongoing liberalization of abortion legislation, culminating in the abolition of interruption commissions in the second half of the 1980s, further contributed to increase of induced abortion rates in Czechia and Slovakia. Between 1989 and 1993, women in Czechia and Slovakia would still undergo on average at least one induced abortion in their lifetime. Since 1990 however, abortion rates began to decline, especially in Czechia where initial levels were considerably higher (Figure 9). Availability of high-quality, reliable contraceptives, increasing awareness on family planning and sex education after 1989 are considered major factors of the present decline in induced abortion rates in both countries. In 2016, Czech women underwent on average 0.3 induced

abortions throughout their reproductive period, while in Slovakia the corresponding rate is just 0.24 abortions per woman. The levels of induced abortions thus approached levels of spontaneous abortions and play now much smaller role in the overall levels of fertility.

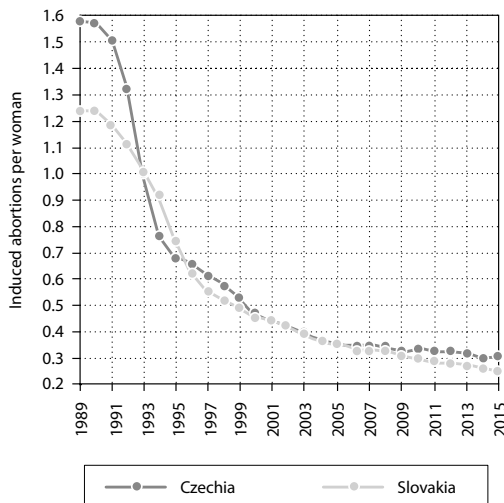
3. CHANGES IN MORTALITY

A decline in relatively high mortality rates was noted already in the late 1980s in both Czechia and Slovakia. The post-1989 mortality decline was further influenced by political changes and a rapid transition to an open market economy, resulting in better conditions for improvement in population health. Healthcare reform took place, private health care was developed, and the availability of effective drugs, especially for the treatment of circulatory diseases, greatly improved. Modern medical technology became available, mainly in the field of non-invasive cardiac surgery (Rychtaříková, 2004), contributing to a profound reduction in cardiovascular mortality. A structural change occurred with respect to educational and occupational status: the population shifted from physically demanding work to employment in tertiary sector services. Employers also became more concerned with the quality of work environment.

Mortality rates gradually declined across all ages (infant, middle age, old age), resulting in a steady increase in life expectancy in both countries, that was more pronounced in men (Burcin *et al.*, 2010, Langhamrová and Vaňo, 2014, Burcin, 2008) (Figures 10 and 11). In 1989, male life expectancy at birth was 68.1 years in Czechia and 66.9 years in Slovakia: a difference of 1.2 years. However, by 1998 this difference had increased to 2.5 years and remained at this level (with occasional variations) until 2016. Between 1989 and 2016, male life expectancy in Czechia increased by more than 8 years (to 76.2), while in Slovakia the corresponding increase was less than 7 years, reaching 73.7 years in 2016.

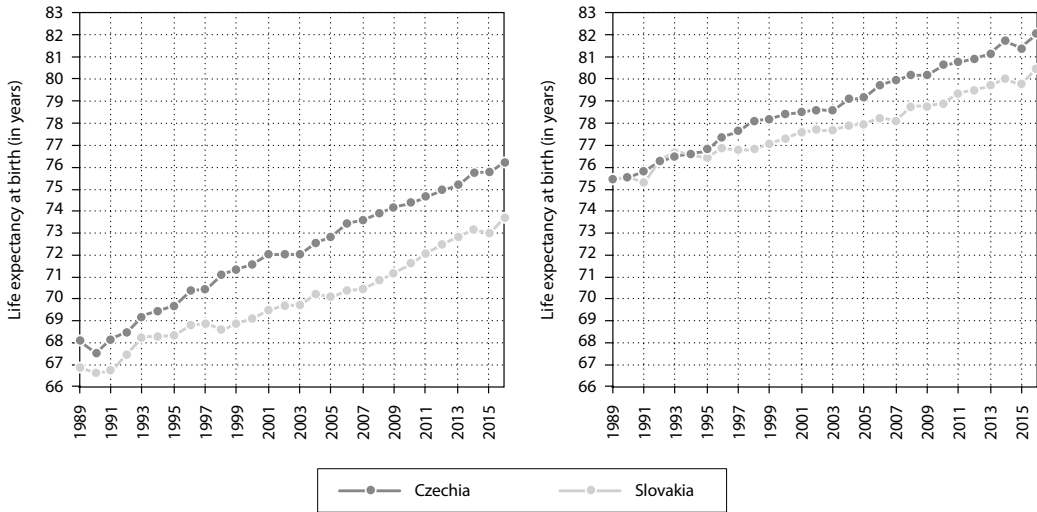
In the case of females, in 1989, life expectancy at birth was the same in both countries (75.4 years), and increased almost identically in Czechia and Slovakia until 1994. As with men, life expectancy at birth then increased faster in Czechia. By 1998 the

Figure 9: Total induced abortion rate in Czechia and Slovakia, 1989–2016



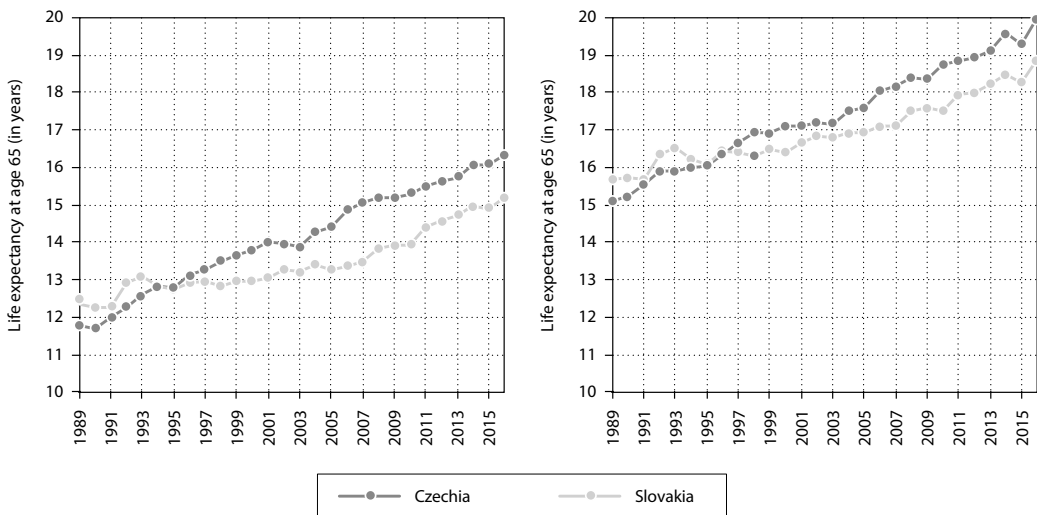
Source: CZSO, SOSR.

Figure 10 and 11: Life expectancy at birth for men (left panel) and women (right panel) in Czechia and Slovakia, 1989–2016



Source: CZSO, SOSR.

Figure 12 and 13: Life expectancy at age 65 for men (left panel) and women (right panel) in Czechia and Slovakia, 1989–2016



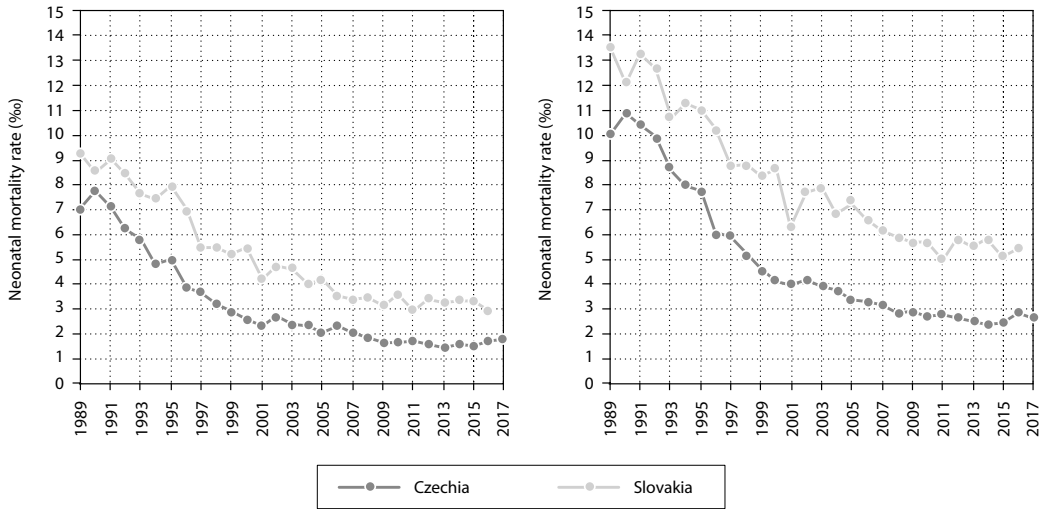
Source: CZSO, SOSR.

difference between countries was 1 year in favour of Czechia, increasing slowly to finally reach 1.7 years in 2016 (female life expectancy was 82.1 years in Czechia and only 80.4 years in Slovakia in 2016). Between 1989

and 2016, female life expectancy at birth thus increased by 6.7 years in Czechia, and about 5 years in Slovakia.

As male life expectancy increased slightly faster than that of females in both countries, the male-female

Figure 14 and 15: Neonatal (left panel) and infant (right panel) mortality rate in Czechia and Slovakia, 1989–2016



Source: CZSO, SOSR.

life expectancy gap decreased. In Czechia, it decreased by 1.4 years (from 7.3 years in 1989 to 5.9 years in 2016), in Slovakia the decrease was by 1.8 years (from 8.5 years in 1989 to 6.7 years in 2016). The life expectancy gender gap however remained higher in Slovakia throughout the period 1989–2016.

Regarding older age groups, in 1989 average life expectancy at age 65 (i.e. life expectancy conditional on survival to age 65) was about 0.6 years higher in Slovakia than Czechia for both sexes. This slight advantage of Slovakia lasted until 1995, when the situation reversed in favour of Czechia, where life expectancy at age 65 rose further at a higher pace. In recent years, life expectancy at age 65 has been about one year higher in Czechia. In both countries, women aged 65 can expect to live on average 3.5 years longer than men.

Neonatal and infant mortality (Figure 14 and 15) decreased steadily in both countries over the period of analysis. In 1989, infant mortality rate in Czechia was 10.0 per thousand live births compared to 13.5 per 1,000 in Slovakia (the corresponding figures for neonatal mortality were 6.9 deaths per 1,000 live births in Czechia and 9.2 in Slovakia). By 2016, infant mortality had decreased to 2.8 per thousand (neonatal to 1.7 per thousand) in Czechia and

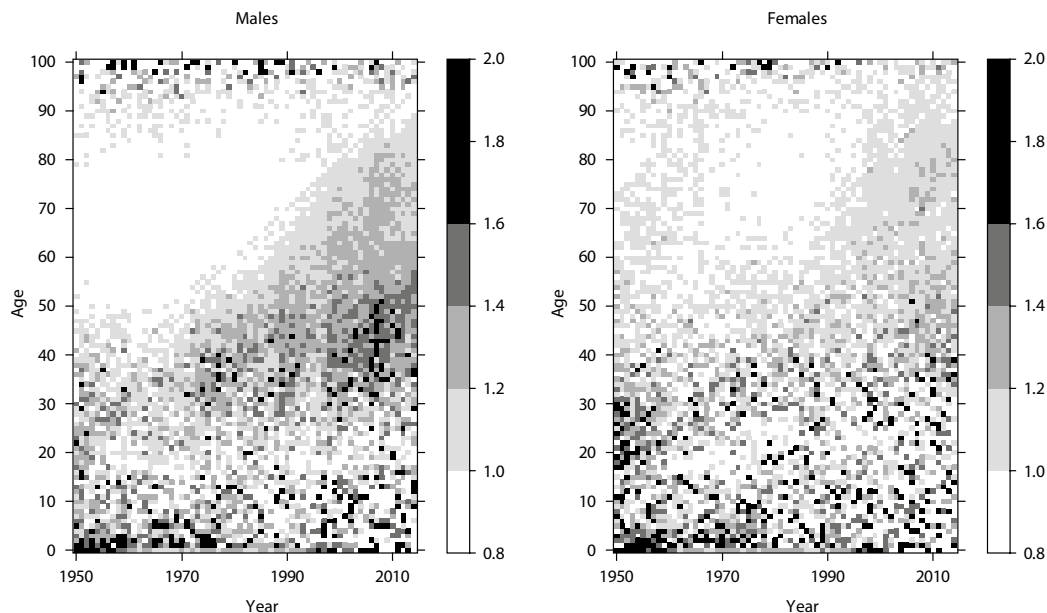
to 5.4 per thousand (2.9 per thousand for neonatal) in Slovakia. In Czechia, the relative infant mortality decrease was thus more pronounced than in Slovakia (a decline of 72% compared to 60% in Slovakia), resulting in an increase in relative advantage of Czechia between 1989 and 2016.

Different age groups thus played different roles in the emergence of the Slovak mortality disadvantage. Figures 16 and 17 display the ratios of the age-specific mortality rates in Czechia and Slovakia from 1950 across all ages. Each data square indicates the ratio of mortality in Slovakia relative to Czechia for a specific combination of individual year of age and calendar year. Thus levels above 1 mean mortality at the given age and year was higher in Slovakia.

This figure clearly shows that the origins of the current Slovak mortality disadvantage can be traced back to the 1970s; the period of 1989–2016 was however marked by an even greater increase in Czech-Slovak mortality differences across middle and older age groups in both sexes. In men, the differences in working age mortality have grown steeply after the break-up of Czechoslovakia.

A more detailed explanation of the increasing differences in mortality rates between Czechia and Slovakia can be found through analysis of causes

Figure 16 and 17: Age-specific mortality ratios in Czechia and Slovakia between 1950–2014 (values lower than 1 indicate lower mortality in Slovakia)



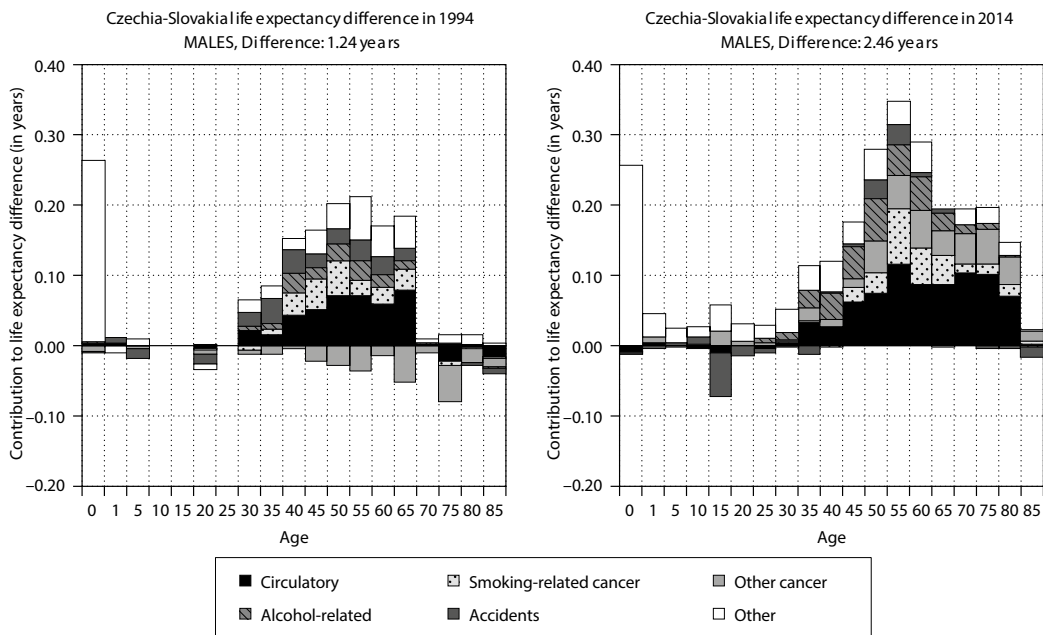
Source: Human Mortality Database.

of death. Data on the cause-specific mortality in both countries are available from the WHO Mortality Database for the entire period of the 10th revision of the International Classification of Causes of Death (ICD-10), i.e. since 1994. To explain the contribution of causes of death to the increase of life expectancy gap, six large groups of causes were defined as follows: 1) circulatory system diseases (I00–I99), 2) neoplasms with close link to smoking exposure, i.e. accepted as causally related to tobacco consumption: cancer of trachea, bronchus and lung, cancer of larynx, cancer of lip, oral cavity and pharynx (C00–C14, C32–C34), 3) other neoplasms (rest of C00–D48), 4) alcohol-related causes of death: alcoholism, alcohol cirrhosis, and alcohol poisoning (F10, K70, X45), 5) accidents (V01–Y98), and 6) other causes of death (rest of ICD-10 codes). The contributions of individual (five-year) age groups and the causes of deaths to life expectancy differences between Czechia and Slovakia in 1994 and 2014 were calculated using the decomposition algorithms of Andreev (Andreev, 1982). The results are shown in Figures 18 and 19: the stacked bars indicate

the contribution of given age groups and causes of death to the overall difference in life expectancy at birth. Positive values indicate mortality from the given age and cause of death was higher in Slovakia, negative values indicate higher mortality in Czechia.

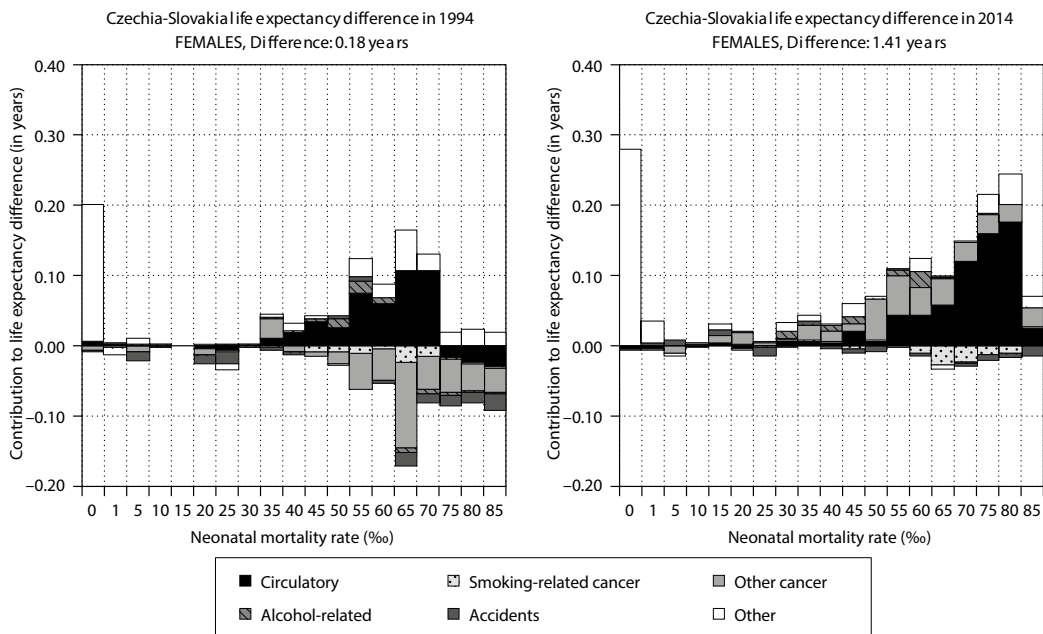
Overall, the difference in life expectancy increased significantly for both sexes between 1994 and 2014. For men, the gap almost doubled from 1.24 to 2.46 years, for women the difference increased even greater: from 0.18 to 1.41 years. As can be seen from Figures 18–21 an important contribution was due to a widening mortality gap at older ages. The cause-of-death decomposition shows that this increase was related to relative worsening of circulatory mortality at older age groups in Slovakia, and partially due to Slovakia losing its advantage in cancer mortality. In men, smoking and alcohol were important factors of both the life expectancy difference and its recent increase at middle ages. The higher infant mortality of Slovakia also contributed significantly to the difference in overall life expectancy in 1994 and 2014.

Figure 18 and 19: Decomposition of Czech-Slovak life expectancy difference in 1994 and 2014 by age and cause of death – males



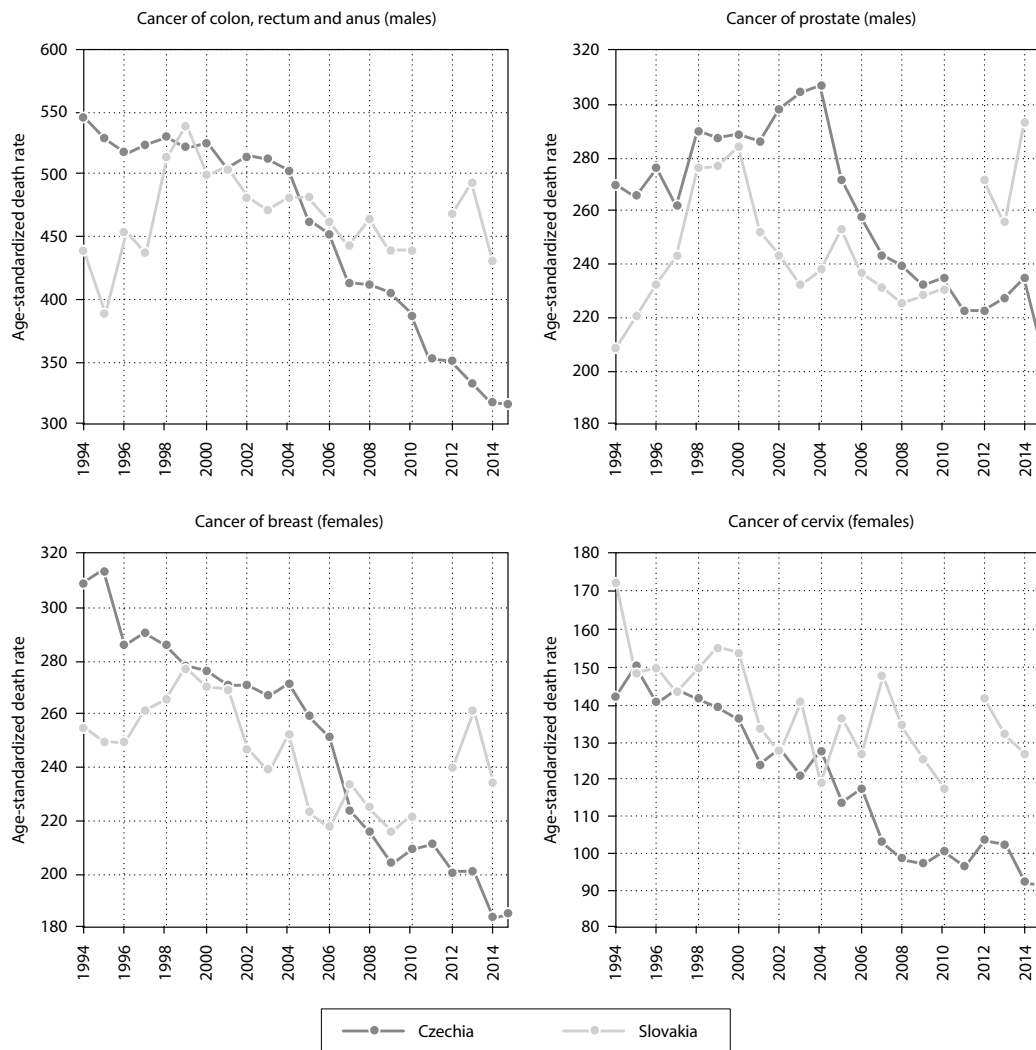
Source: WHO Mortality Database, Human Mortality Database.

Figure 20 and 21: Decomposition of Czech-Slovak life expectancy difference in 1994 and 2014 by age and cause of death – females



Source: WHO Mortality Database, Human Mortality Database.

Figure 22–25: Age-standardized death rate (per 1,000,000) for selected neoplasms, 1994–2015

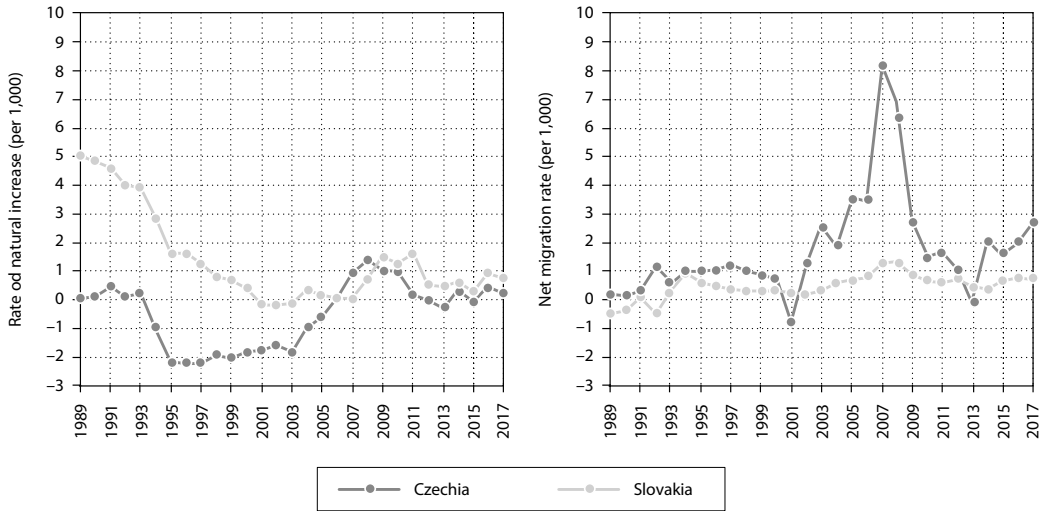


Source: WHO Mortality Database.

Diverging trends in cancer mortality were further inspected via time trends of age standardized mortality rates for individual neoplasms (using WHO European standard population) (Figure 22–25). Major divergence was found for colorectal cancer, malignant neoplasm of the prostate, malignant neoplasm of the breast, and cervical cancer. In all these types of neoplasms, there have been

significant improvements in Czechia in recent years contrasting to lack of progress or even worsening in Slovakia. Interestingly, these types of cancer are considered as either preventable by early detection or better treatable if appropriate and timely treatment is provided. Identifying divergence in these cancer trends thus points at possible reserves in Slovak health care system.

Figure 26 and 27: Rate of natural increase (left panel) and net migration rate (right panel) in Czechia and Slovakia, 1989–2017



Source: CZSO, SOSR.

4. POPULATION GROWTH

The rate of natural increase in the population (Figure 26) varied over the reporting period in both countries. In 1989, the rate of natural increase was considerably higher in Slovakia (5 per thousand compared to only 0.1 per thousand in Czechia) and was appreciably above zero. The rate of natural increase remained positive in Slovakia throughout the whole period with exception of years 2001 and 2003. In contrast in Czechia up until 2005 the rate of natural increase was negative. Since this point, however, rates have become very similar in the two countries, with however a persisting small advantage for Slovakia.

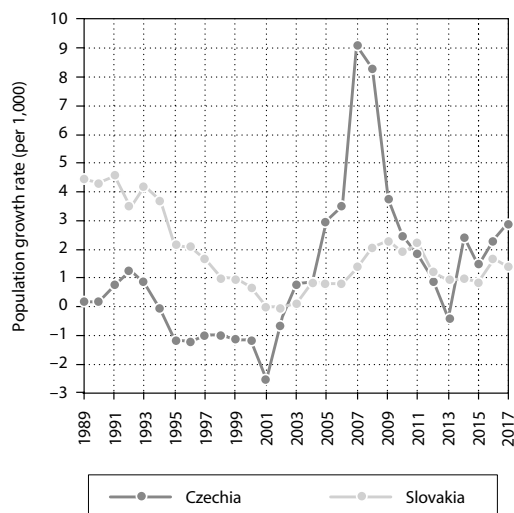
Trends in the rate of net migration were entirely different between the two countries (Figure 27). In the final decade of the last century, its values in both countries were relatively small. In Slovakia they were marginally negative in the period 1989–1992 possibly due to the anticipation of the breakup of Czechoslovakia. A significant increase in the net migration rate occurred after 2001 in Czechia. One of the reasons for this is the change in the methodology whereby long-term residents, not just permanent ones, started to be included in statistical counts of foreign migration. With only

a few exceptions, the net migration rate in Czechia was higher than in Slovakia, in some years being considerably greater. One of the main explanations for this may be the greater economic attractiveness and greater job opportunities for foreign workers in Czechia.

The rate of population growth (Figure 28) results from the sum of natural increase and net migration. Until 2000, when migration was lower, the population growth followed the trend in the natural increase. After 2000, however, especially in Czechia, the majority of population growth was due to positive net migration.

Between 1994 and 2002 the rate of population growth in Czechia was negative, meaning there was a decrease in population size. In Slovakia, during this period, the rate of population growth gradually declined, but still remained positive, although was at very low levels at the turn of the century. As of 2000, the population growth rate in both countries increased, especially in Czechia, where in-migration was the main source of the population growth, especially in peak years.

It should be noted in the end that the migration counts over time and across the two countries are not fully comparable due to different

Figure 28: Population growth rate in Czechia and Slovakia, 1989–2017

Source: CZSO, SOSR.

methodology of foreign migration registration. Migration statistics also do not cover unregistered migration whose volume is not entirely negligible, as is regularly reflected in the lower census population compared to balance-based estimates. This can partially affect the levels of population growth rates presented here (*Langhamrová and Vaňo, 2014*).

5. POPULATION SIZE AND STRUCTURE

The population of Czechia was about 10.3 million in 1991 (according to the Census). As a result of low fertility, it gradually declined to 10.2 million in 2001 Census. Since 2003, a positive growth rate was re-established, which from 2005 was very significant due to foreign in-migration. In 2007, the population exceeded the value of 1991, and a year later it was greater than 10.4 million, further increasing to more than 10.5 million in 2010 and reaching 10.6 million inhabitants in 2017. The population of Slovakia has grown steadily throughout the monitored period, the drops visible in the chart are due to the population under-registration between censuses (Figure 29). In the period 1991–2017, the population of Czechia increased

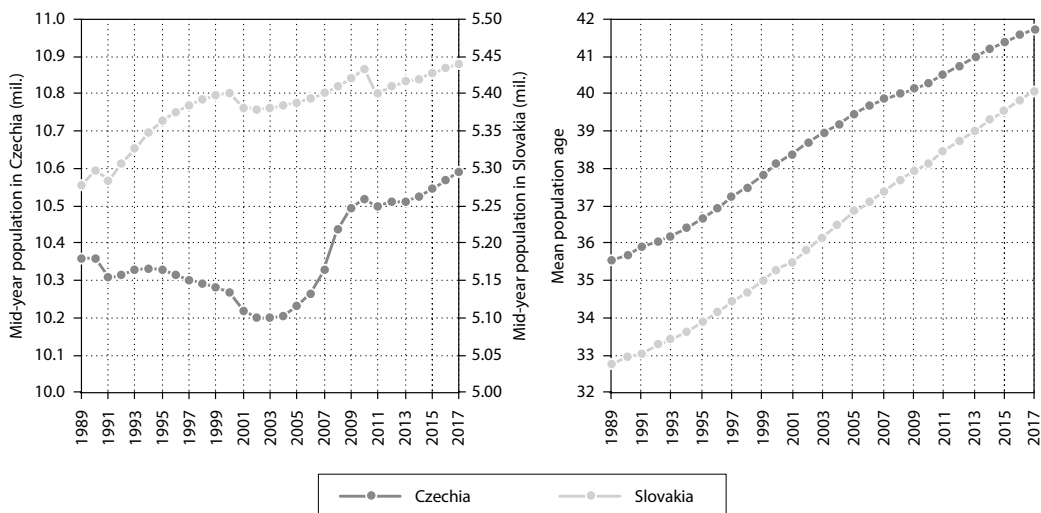
by 2.7 per thousand, the corresponding increase in Slovakia was slightly higher (2.9 per thousand).

The populations of Czechia and Slovakia differ not only in size but also in age structure. The average age of the population in both countries increased more or less steadily over the monitored period (Figure 30). In Czechia it increased from 35.6 years in 1989 to 41.6 years in 2016, i.e. by 6 years. The mean population age in Slovakia increased from 32.8 to 40.0 years in the same period, i.e. by 7.2 years. The cause of faster population ageing in Slovakia was a greater decline in fertility and a lower increase in foreign in-migration than in Czechia.

Another perspective on population ageing in both countries can be provided through inspection of age-structure indicators and their changes, such as of the proportional share across the main categories of economic activity: pre-productive (0–19 years), productive (20–64 years) and post-productive (65 years and older). The share of pre-productive population in both countries decreased as a result of fertility decline (Figure 31). In Czechia, the share of pre-productive population has been reduced from almost 30% to about 20%, decreasing thus by about one third. The decline in Slovakia was even faster: from 33.5% to less than 21%. The recent trends suggest that the proportions of pre-productive population in both countries will converge in the near future.

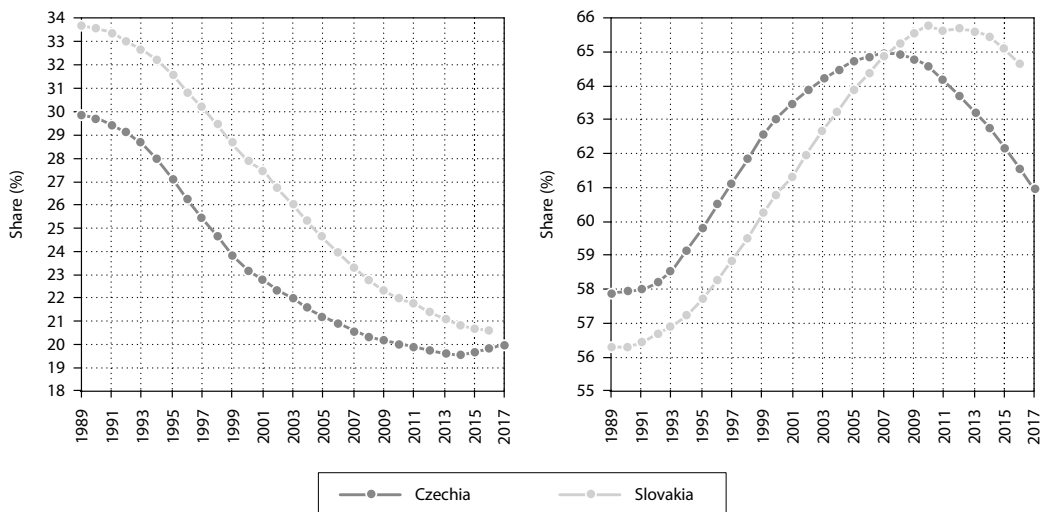
The share of working-age population in both countries was first growing and later decreasing (Figure 32). The main reason for this reversal lies in the irregularity of the age structures, common to both countries due to their shared historical experience: in the first part of the monitored period, the strong cohorts born in the 1970s have been entering working age, while later on, even stronger cohorts born after the Second World War have been reaching post-productive age. In figures, the share of working-age population in Czechia increased from 58% to 65% between 1989 and 2007, gradually declining to 61% in the last 10 years. In Slovakia, the share of working-age population was slightly lower than in Czechia in 1989 (only 56%), but there was an increase to almost 66% reached in period 2010–2013. In recent years, working age population constitutes 65% of Slovak population (Figure 33).

Figure 29 and 30: Mid-year population (left panel) and mean population age (right panel) in Czechia and Slovakia, 1989–2017



Source: CZSO, SOSR.

Figure 31 and 32: The share of pre-productive (left panel) and productive (right panel) population in Czechia and Slovakia, 1989–2017

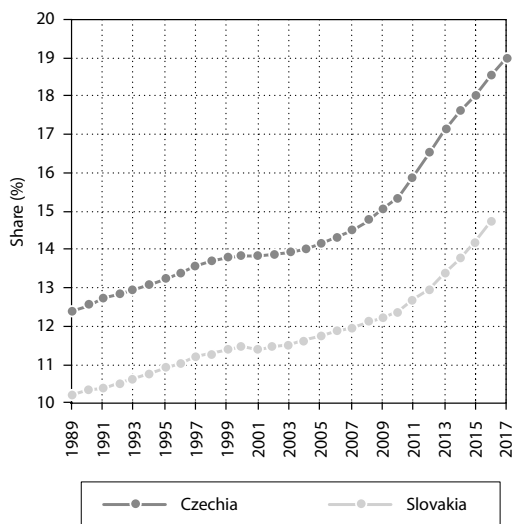


Source: CZSO, SOSR.

The proportion of people in post-productive age increased since 1989 in both countries. The increase even accelerated after 2010, as cohorts born after World War II have gradually entered retirement age. In Czechia, the proportion of post-productive population increased from 12% to 14%

between 1989 and 2004, then rose to 19% until 2016. In Slovakia, there was an increase from 10% to less than 12% between 1989 and 2007, to reach almost 15% at present. The proportion of elderly in Czechia therefore grew slightly faster than in Slovakia.

Figure 33: Share of post-productive population in Czechia and Slovakia, 1989–2017



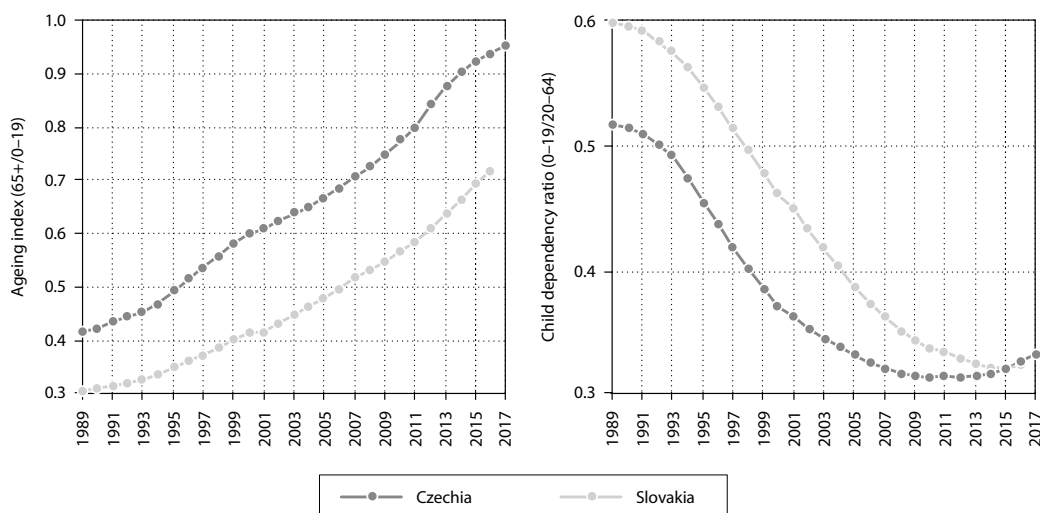
Source: CZSO, SOSR.

The ageing index (the ratio of numbers of age 65 years and older to those aged 0–19 years) is increasing

(Figure 34). Throughout the period, the level of this index in Czechia was higher than in Slovakia, in both countries more than doubling. The child dependency ratio (ratio between population aged 0–19 years and 20–64 years), on the other hand, decreased in both countries and its level for Czechia and Slovakia is virtually identical nowadays (Figure 35).

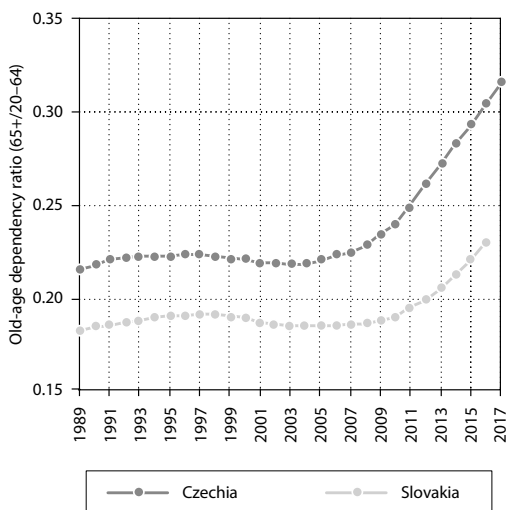
The old-age dependency ratio (the ratio of people in the post-productive and productive age) provides a rough indication on the financial burden of a pension system based on a pay-as-you-go scheme (i.e. unfunded). Interestingly, the values of this index in both countries virtually stagnated during the first two decades after 1989 (Figure 36). This was because the increase in the share of the older population was offset by an increase in the share of working-age population. In the past ten years the share of working-age population began to decline and the old-age dependency ratio increased rapidly. In Slovakia, it increased by about one quarter, in Czechia by almost a half. However, the burden on the pension system is not increasing so much because the retirement age in both countries has been shifted upwards since 1995.

Figure 34 and 35: Ageing index (ratio between 65+ and 0–19) (left panel) and child dependency ratio (0–19/20–64) (right panel) in Czechia and Slovakia, 1989–2017



Source: CZSO, SOSR.

Figure 36: Old-age dependency ratio (65+ / 20–64) in Czechia and Slovakia, 1989–2017



Source: CZSO, SOSR.

SUMMARY AND CONCLUSIONS

Historically, Czechia was characterized by demographic patterns of more of a Western type, while Slovakia, where the demographic transition occurred later, followed the more Eastern European pattern. The period of socialism and the common state led to the alleviation of historical differences and Slovakia rapidly approached Czechia in terms of both economic and demographic position. At the same time, however, the demographic trends in both countries started to diverge from democratic countries of Western, Northern and Southern Europe: fertility remained closely related to early and universal marriage and mortality declines slowed or even ceased completely

in the worst periods. After 1989, significant political changes have been followed by reversals and changes in the demographic trends of both countries, similar to those observed in the West earlier on. Compared to the West however, the intensity of these changes was unexpectedly fast. Even after the division of the common state, through common traditions, intensive contacts and ongoing process of European integration, similar demographic trends took place in the two countries. However, in contrast to the period of socialist Czechoslovakia marked by general convergence of demographic trends in Czechia and Slovakia, these trends started to lead to divergence after the 1993 breakup. Czechia has gone further in transformation of family formation behaviour and has now, compared to Slovakia, lower marriage rates, higher age at first marriage, higher age at first birth and higher share of children born out of wedlock. Divorce rates have remained higher in Czechia, and unlike for Slovakia, have not systematically decreased so far. Regarding the fertility quantum, both countries have recently reached similar numbers of children per woman (expressed as total fertility rate), following a sustained increase since 2011.

Divergence was observed also in mortality, with Czechia performing better than Slovakia from 1989 across virtually all age categories (infant mortality, working age, old age). The health gap increased for circulatory diseases and additionally, Slovakia performed worse in terms of neoplasms and alcohol-related mortality. According to structural indices, the population of Czechia is demographically older than the one of Slovakia. However, due to a faster decline in fertility and lower international in-migration, the process of population ageing has been going on more intensively in Slovakia than in Czechia

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