

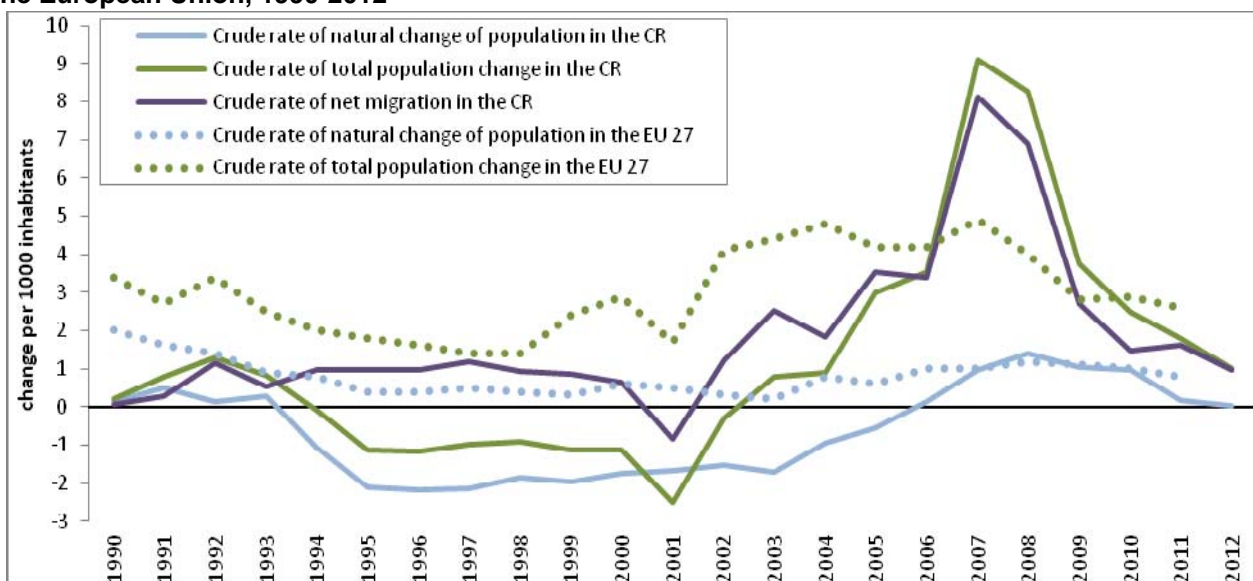
8. Demographic development in the CR in the European Context

Year 2012 continued in long-time trends for a number of demographic processes – again improved the mortality conditions, which was reflected in the lengthening of life expectancy at birth and drop of infant mortality, still occurs the postponement of parenthood and entry into marriage until later age, the intensity of marriage rate also falls and the share of children born outside marriage grows. With respect to the increasing life expectancy at birth and low fertility the age median further grows and thus continues the process of aging of population. As positive, even though these are for now rather short-term changes, can be perceived mild year-on-year increase of total fertility rate¹, near stagnation of aggregate abortion rate and also further fall of total divorce rate, which occurred already in year 2011. On the contrary, adverse is the continued increase of the economic dependency index, i.e. the number of persons at the economically inactive age (0-14 and 65 and more years) per population at the economically active age (15-64 years), which started in year 2009.

The population growth, sustained only due to migration, slows down

Overall number of the Czech Republic population has been increasing for several years, both thanks to the positive migration balance (since 1990 the negative migration balance occurred only in 2001) and the natural change of population, which progressed into positive numbers in 2006 (for the first time since 1993). This population growth however significantly slows down since 2008 and was kept in 2012 especially due to the positive migration balance, since the number of live births only mildly exceeded the number of deaths (by 387 persons). Fall of the natural increase was thus caused mainly by the increase of the number of deaths, which was not adequately compensated by live births, whose number year-on-year decreased.

Chart 94 Development of crude rate of the natural and population change in the Czech Republic and the European Union, 1990-2012



Source: CZSO, Eurostat

In period 2007-2010 crude rate of natural increase in the CR copies the development in the European Union, since 2011 it again fell below the European average

Since 2007 the value of crude rate of natural increase in the Czech Republic copies the average for states of the European Union, which fluctuates around 1 ‰, but in 2011 we experienced a more marked decrease to 0.2 ‰ from 1 ‰ in 2010. In 2011 experienced a similar rate of natural increase as in the Czech Republic also Poland and Austria. The highest values in the long-time achieve Ireland and Iceland, further then France, Netherlands or Norway, that is states with the highest level of fertility and the best mortality conditions. On the contrary, the lowest growth of the natural increase occurs in the post-soviet states and states of former eastern bloc, such as Bulgaria, Ukraine, Belarus and the Pobalt states, where the population decreases since the 90s of the

¹ Aggregate fertility represents a number of children, which would be live born to every woman throughout her whole reproduction period (for which is considered the age span 15-49 years), if during this reproduction period the rate of fertility of females did not change and remained on the level of the year, when is the aggregate fertility calculated.

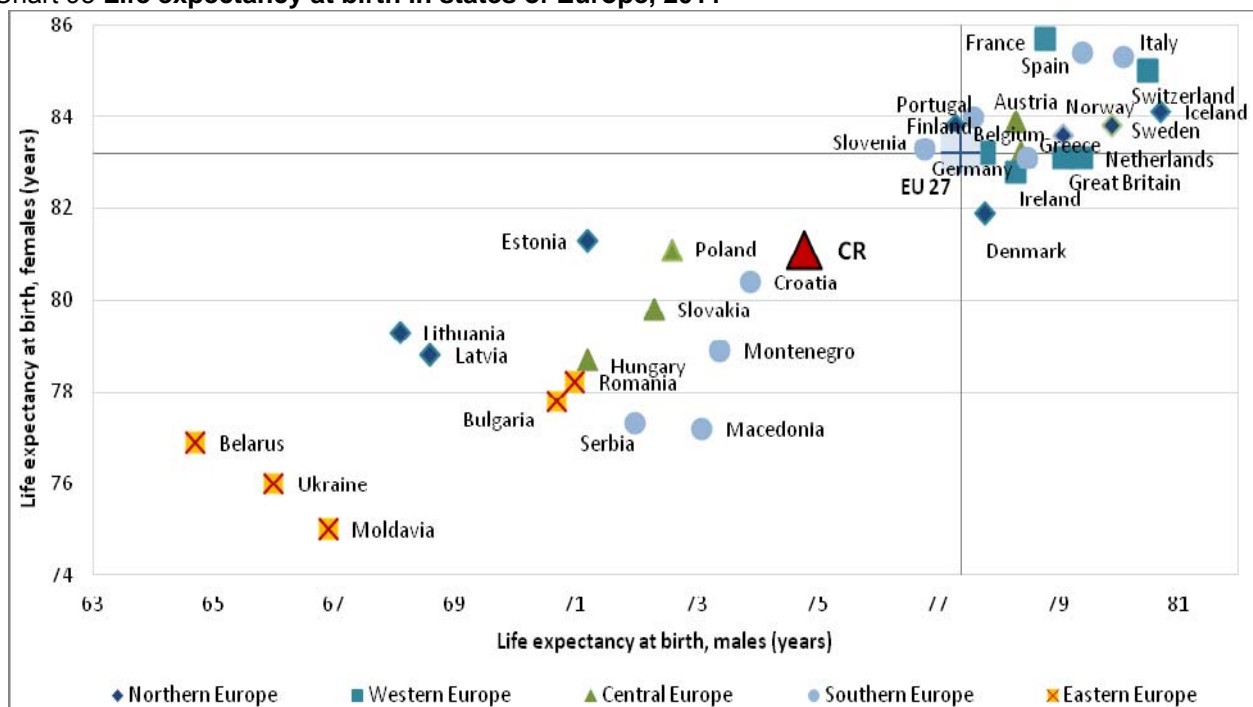
last century.

8.1. Life expectancy at birth and other characteristics of demographic reproduction

Life expectancy at birth in the Czechia grows, however still does not reach the average value for the EU

Life conditions, gauged by the life expectancy at birth in the Czech Republic improve in the long-time (between years 1990 and 2012 increased the life expectancy at birth from 68 years for males and 75 years for females to 75 and 81 years resp.), but even though the situation here is the second best immediately after Slovenia compared to other post-communistic states, we still lag behind the European Union average. The difference between the average life expectancy for the European twenty seven and the Czech Republic moves from year 2002 around 2.5 years for males and 2 years for females. Most probably, a move closer to the European average cannot be anticipated in the nearest future, since the difference in the life expectancy at birth has not changed significantly since 2008 and it has even started to slightly increase.

Chart 95 Life expectancy at birth in states of Europe, 2011



Source: Eurostat

The highest differences in life expectancy at birth between university graduates and males with primary education within Europe occur among Czech males

Eurostat data enable to analyze the life expectancy not only according to the age and sex, but also according to the educational attainment. Data are not however available for all European states² and further time periods (available only 2007–2010). Generally, it can be stated, that the differences in the life expectancy at birth between persons with primary and university educations are for males higher than for females. According to the available data education a significant factor for the length of life expectancy at 30 years is in the Czech republic – while males with university education shall have in 2010 before them on average 51 years, males with primary education only 34 years. This difference was the largest among the European countries, where the data were available. On the contrary, the lowest difference between these education categories was in Portugal (3 years). The highest differences in the life expectancy according to the male education are for states of former eastern bloc, such as Czech Republic, Hungary, Bulgaria or Estonia. These are also the

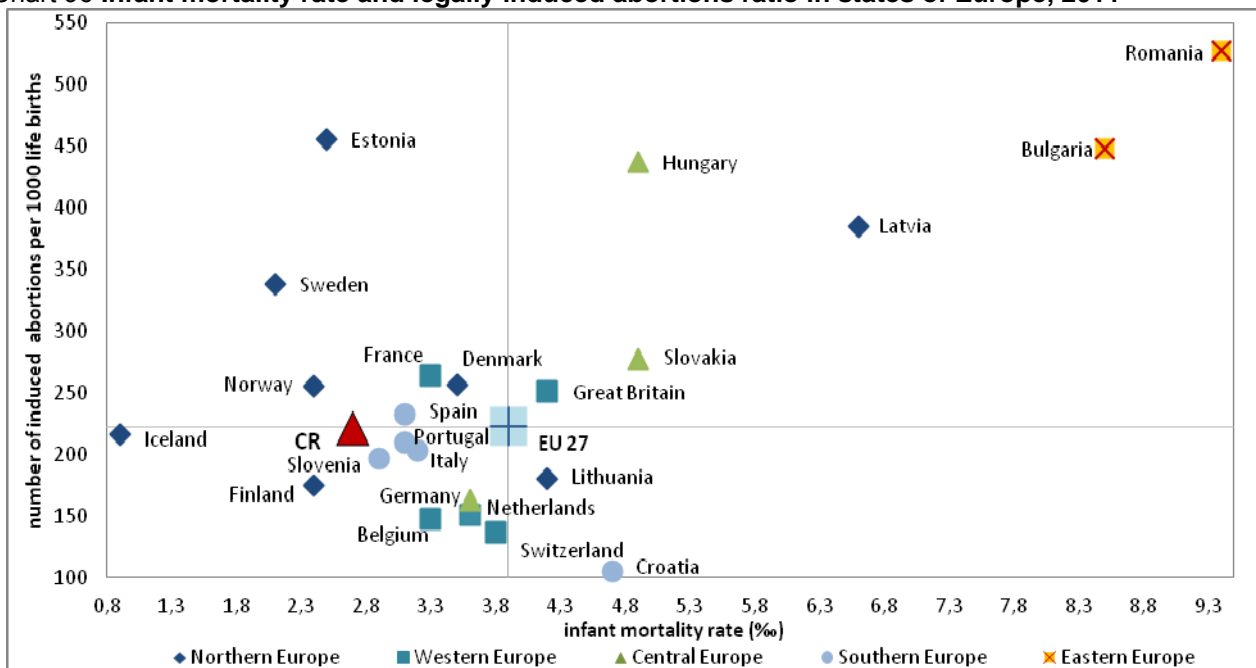
² Available for Bulgaria, CR, Denmark, Estonia, Croatia, Italy, Hungary, Malta, Poland, Portugal, Romania, Slovenia, Finland, Sweden, Norway, Macedonia.

states with a high proportion of people employed in industry ($r_s=0.829$)³, where can be expected a higher share of persons with a lower grade of completed education, and where also exist a physically demanding jobs with adverse working conditions. For females then were the highest differences in the life expectancy according to education in Estonia (8.5 years) and lowest again in Portugal (1 year), in the Czech Republic then the difference arrived at 4.6 years. For females however are not the differences between individual states as marked as for males.

On the contrary our infant mortality is in the long-time one of the lowest

On the other hand in the long-time we belong among states with the lowest birth mortality not only in Europe, but also in the world. As can be seen in chart 96 in 2011 we achieve similar values to developed countries of north Europe, such as Norway, Sweden or Finland and the European average was in comparison to us by 0.12 p.p. higher. In 2012 then we experienced further mild decrease down to the value of 2.6 ‰.

Chart 96 Infant mortality rate and legally induced abortions ratio in states of Europe, 2011



Source: Eurostat, WHO

The index of legally induced abortions decreases in most states of Europe ...

During the 90s occurred in the countries of former eastern bloc a marked fall of the index of legally induced abortions and approaching of the values of other European states, where there were never performed more legally induced abortions (LIA) over the number of births. Long-term highest index of legally induced abortions in the European Union occurs in Romania, where is currently approximately one LIA per two live born children, but in 1990 it was more than three LIAs per one live born child. In the CR, the number of LIAs never exceeded the number of live births, but on the break of 80s and 90s it was approaching this limit (in 1989 there were 87 LIAs per 100 live born). Since then however the index of legally induced abortions falls and since year 2002 its value fell below the level from year 1958, when it was for the first time permitted by law to perform the induced abortion even for other than health reasons and the abortion index achieved value of 34.6 LIAs per 100 live births. From year 2006 then the index of induced abortions stays below the EU average.

... and in our country reaches the historically lowest values since year 2002

Indicators depicted in chart 96 can also serve as indicators of the advancement level of individual states. The value of infant mortality rate signals the quality of health facilities and overall health care for the mother and newborn. Index of induced abortions can then also reflect the social and economic climate in the

³ Correlation between the share of persons employed in industry and the difference between the life expectancy of males with primary and university education.

society, which can considerably influence the ability and will of a female or couple to take care of the child in the given conditions.

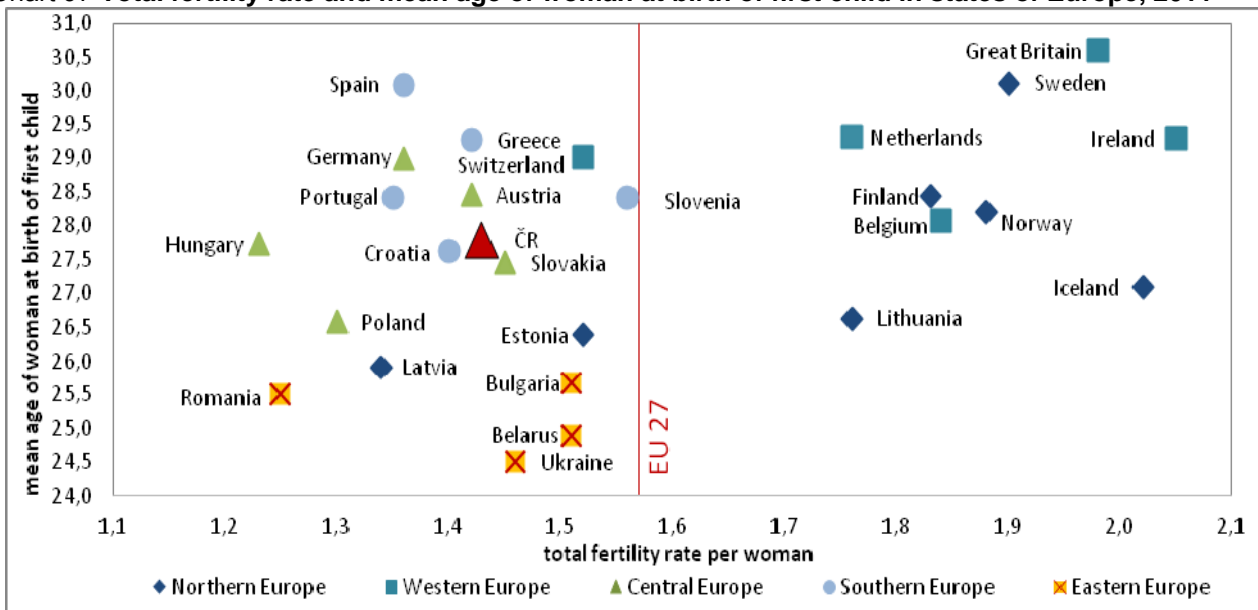
In the Czech Republic is the total fertility rate in the long-time below the average for the whole European Union

In 2008 the slight increase of the total fertility rate ceased to grow and in 2011 there was again recorded a negligible decrease of the average value for the whole European Union to 1.57 child per one woman from value 1.6 in 2010. Similar trend portrayed the development of fertility in most states of Europe. As can be seen from chart 97, the Czech Republic together with the states of south and central Europe belongs among countries with rather low fertility as opposed to the west and north Europe, where for instance Ireland, Iceland or France reach in the long-term the highest values of total fertility, which currently oscillates around two children per one woman. Based on the available data from Eurostat the Czech Republic had in the period between years 1999 and 2003, when the total fertility rate does not reach even the value 1.2 child per one woman, the lowest fertility in Europe. Situation started improving from year 2004, but still with the current value of 1.45 from year 2012 we do not reach the European average.

In the whole Europe the average age of mother at the birth of the first child increases...

In all states of Europe occurs the postponement of parenthood until a later age. Similarly also in the CR, where the average age of mother at the birth of the first child increased from 22,5 years in 1990 to 27.9 years in 2012. It is visible in chart 97, that the postponement of parenting however does not need to mean also a decrease of the fertility level. For example in Sweden or Great Britain, where there are on average two children per one women, the average age at the first birth reaches a value of more than 30 years.

Chart 97 Total fertility rate and mean age of woman at birth of first child in states of Europe, 2011



Note: value of mean age of mother relates in Great Britain to year 2010 and for Belgium to year 2009

Source: Eurostat

... and in the long-time occurs an increase of the share of children born outside marriage

Nearly in all states of Europe increases the share of children born outside marriage, which is a result of both the drop of intensity of nuptiality and the postponement of marriage until later age. In most states then, similarly to the Czech Republic, the mean age at first marriage for females exceeds the mean age at birth of first child (on the basis of UNECE⁴ data). Thus on average women have the first child, before they get married for the first time. In the Scandinavian countries is this gap even several years, it is the highest in Iceland, where it exceeds 5 years. The only state, when on the contrary the share of children born to unmarried women mildly falls in the long-term,

⁴ United Nations Economic Commission for Europe (UNECE): http://w3.unece.org/pxweb/database/STAT/30-GE/02-Families_households/?lang=1

specifically from year 2004, is Sweden. In 2011 the share of live born children outside marriage on average for the whole European Union reached the value of 39.5 %, which is by 2.3 percentage points less than for the CR, where until 2012 the proportion of born to unmarried women even increased to 43.4 %. The most children were in 2011 born outside marriage on the already mentioned Iceland (65 %), within the European Union then in Estonia (59.7 %) and more than half of children are born outside marriage also in Bulgaria, Belgium, France, Slovenia, Sweden or Norway. On the contrary, completely the least then in Greece (7.4 %), Macedonia (11.6 %) and Croatia (14 %).

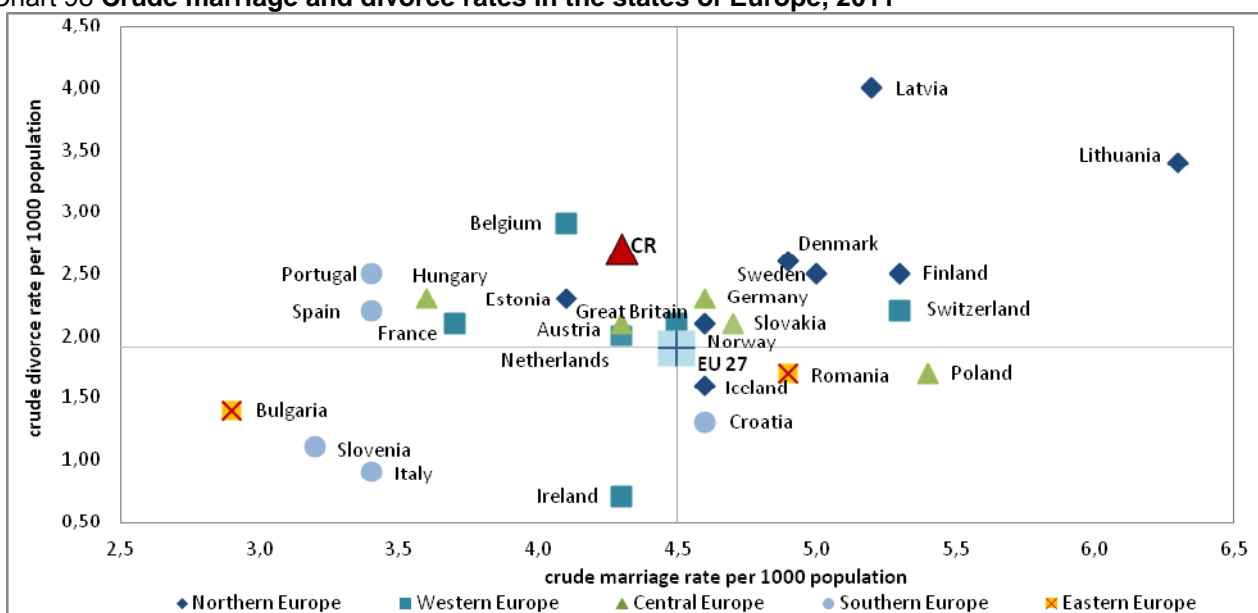
In most states of Europe less people are getting married and entry into marriage is postponed until later age, the same situation is also in the Czech Republic

As already stated, in Europe occurs in the long-term a shift in the nuptiality behaviour, only its timing differs in the individual states – while in the states of North and West Europe already since the 70s of the last century, in the Czech Republic only after year 1990. These changes lie mostly in the fall of the value of crude marriage rate and the growth of the mean age at time of first marriage, which in the most states of North and West Europe surpasses already 30 years even for females (in 2010 it was the highest in Sweden – 32.9 years for females and 35.5 years for males, in the Czech Republic then it reached the value of 29.4 years for females and 32.2 years for males). The size of average age when entering into first marriage is then according to data available for 31 European states connected with the intensity of nuptiality – correlation analysis show the medium strong statistically significant negative correlation between these two indicators of nuptiality ($r_s = -0.482$). It means, that the European states, where the first marriage is being postponed until later age, also report a lower value of the crude marriage rate.

The Czech Republic was among countries with rather higher nuptiality, in the last years however the level fell to the average for the whole EU

In comparison to year 1990 only in Sweden, Finland and Iceland occurred the increase of the crude nuptiality rate, otherwise in all other countries the intensity of nuptiality gauged by this indicator decreased, even despite the fact, that in some countries eventuated a mild growth from year 2005. The average value of crude rate of nuptiality for the European Union from year 1990 was continuously falling down to 4.4 of marriages per 1000 population. Apart from year 2003 the CR reached higher values compared to the EU average. The difference however started to gradually shrink and from year 2008 is the rate of crude nuptiality in the Czech Republic nearly similar to the European average (in 2012 was here entered into 4.3 marriages per 1000 inhabitants, the same as in the previous year).

Chart 98 Crude marriage and divorce rates in the states of Europe, 2011



Note: values for the European Union relate to year 2009

Source: Eurostat

Total first marriage rate in the CR reaches the historically lowest values

To assess the development of the intensity of the marriage rate would be useful to use also other more precise indicators, such as for example total first marriage rate gauging the share of persons, who enter into the first marriage until they reach age of 50 provided the unchangeable nuptiality, mortality and migration conditions of a given year. Such data are not available for most European states and so it is not possible to exercise the international comparison. Based on data on total first marriage rate would in the CR in the 80s until 50 years of age married around 90 % of males and 96 % of females. In the preceding decades this share was even higher. This situation changes substantially after year 1990, when the total first marriage rate started to decrease and according to the level of marriage rate from 2012 would then in their life under the current conditions remaining unchanged marry at least once only 53 % of males and 61 % of females.

In most countries of Europe the crude divorce rate grows

Most European countries experienced between years 1990 and 2011 an increase of crude divorce rate. For the whole period the Czech Republic reached higher crude divorce rates, compared to the average for the whole European Union and in 2009, when are available the latest data for the European average, exceeded the rate by 0.9 percentage points. Together with the northern states we belong to countries with the highest crude divorce rate in Europe. Crude rate is however not the most suitable indicator for the assessment of development. Unfortunately the latest data regarding the total divorce rate, which relate divorces to the original marriages are not available for most states and thus an up-to-date international comparison cannot be performed. Thanks to the PPD⁵ database, international data from year 1960 are available, however only until year 2003. For the whole of this period, the Czech Republic stays together with the states of northern Europe on the imaginary front place. For comparison – states with the lowest total divorce rate in 2003 achieved values around 20 % (Croatia – 17 %, Poland – 20 %, Romania – 21 %, Slovakia – 24 %) compared to 48 % in the Czech Republic. Total divorce rate in the Czechia in 1990 amounted to 38 % in 2010 it then reached its historical peak - 50 %. Until year 2012 nevertheless the value fell again to current 44.5 %.

Czechia has been and still is among countries with the highest total divorce rate

8.2. Immigration and illegal immigration

In most states of Europe occurs an increase in the number of immigrants

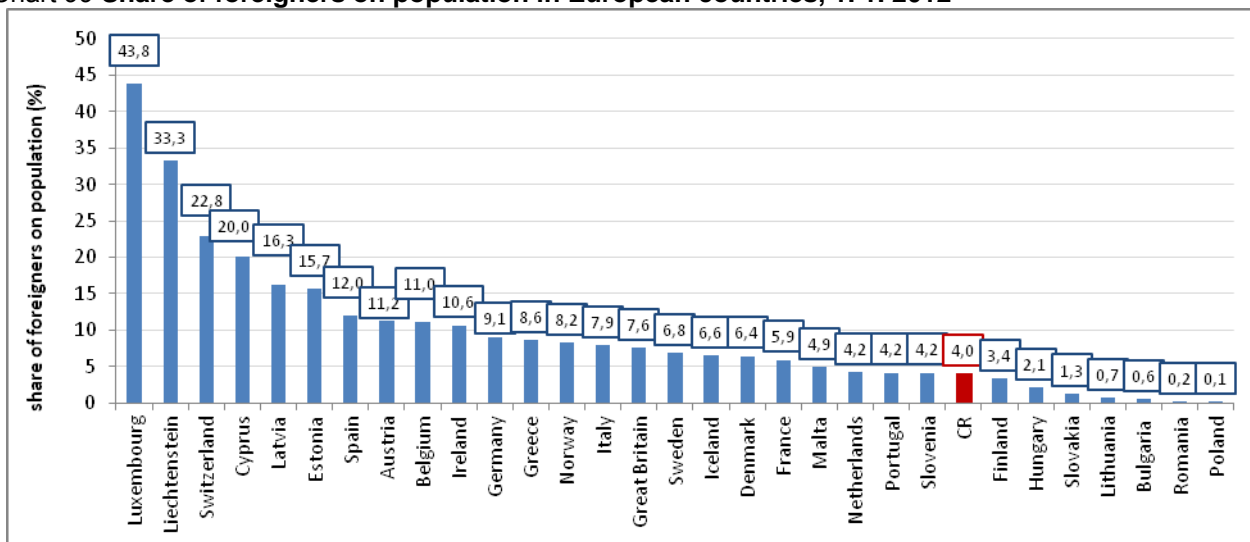
In most states of Europe occurs since the end of 90s the increase in the number of immigrants. A more substantial long-term decrease was recorded only in Germany, Portugal and Croatia (here the fall was the most significant – nearly by 84 %). However, starting in year 2007 the decrease of immigration experienced also Spain, Iceland and Italy. In 2011 most immigrants into countries, where the data are available, arrived from other European countries. Only in Spain immigrants from other continents constituted more than half of all immigrants (they represented more than 30 % of immigrants also in Italy, Sweden and Belgium).

The number of immigrants in the CR increased year-on-year, however the migration balance on the contrary fell

In 2012, there were 30 298 persons moving into the Czech Republic, which is by nearly 8 thousand more than in the previous year. At the same time nevertheless also more people moved out of Czechia and the net foreign migration thus between years 2011 and 2012 fell by more than 6 thousand. The highest positive net migration the Czech Republic recorded in year 2012 with Slovakia and Slovaks constituted 15.9 % of all immigrants from abroad. The highest share of all immigrants could be ascribed to citizens of Ukraine (19.5 %), however a high number of Ukrainians simultaneously left the CR and the net migration thus reached negative values. Russians represented the third most numerous groups of immigrants (10.6 %) with the second highest net migration. Back to homeland then returned in 2012 less Czech citizens compared to those moving abroad.

⁵ The Population and Policy Database (PPD): <http://www.demogr.mpg.de/cgi-bin/databases/PPD/index.pli>

Chart 99 Share of foreigners on population in European countries, 1. 1. 2012



Source: Eurostat, own calculations

The share of foreigners on total population also grows in Europe

In most countries of Europe since the end of 90s of the last century occurs a growth of share of foreigners on total population. The exception is Estonia and Latvia, where the share of foreigners falls in the long-term. The most increase between years 1998 and 2012 recorded Spain, where occurred nearly eightime increase of the share of foreigners per population despite the fact, that from year 2010 is here being recorded a slow decrease. In the long-time the most foreigners within the total population are in Luxembourg, where at the beginning of 2012 represented nearly 44 % of population, which is most likely caused by the number of international institutions, which has a headquarters here. A large share of foreigners records also Lichtenstein (33 %) or Switzerland (23 %). On the contrary, relatively fewer foreigners lived in Romania and Poland, where their share in population did not reach even 0.2 %. Correlation analysis⁶ confirmed a medium strong positive linear relationship between the size of GDP and the share of foreigners in the population ($r_s=0.43$). Thus it could be stated, that in Europe is to some extent valid – the more developed the state (measured by GDP), the higher share of foreigners on population.

In the Czech Republic grows both the share of foreigners on total population and the newborn foreigners

In the Czech Republic the share of foreigners from year 1998 nearly doubled to current 4 % of total population and this value place us among states with the lowest share of foreigners in Europe. The highest share of foreigners has been recorded since year 2000 to citizens of Ukraine (25.7 % from foreigners at the end of 2012), further then Slovakia (19.6 %) and the third most numbered group are the citizens of Vietnam (13.1 %). The share of live births with foreign citizenship also grows. In 1998 constituted foreigners 1 % of newborns and until year 2011 this share increased to 2.7 %. The most frequent nationality among the newborns were citizens of Vietnam (30.2 %), on the second place then Ukraine (24.7 %), whose share on foreigners born in the Czech Republic from year 1995 increased nearly fivefold and in 1998 then for the first time exceeded the share of Slovaks, which are the third most frequent citizenship for newborn foreigners with 14 % in 2011. The fastest increase of the share of newborn foreigners recorded citizens of Mongolia – in 1995 constituted only 0.1 %, but until 2011 this share increased 28times to current 4.1 % of live born.

⁶ Analysis performed for the European states, where the needed data were available, but with the exception of Luxembourg.

More than 400 thousand citizens of third countries were staying in the states of the European Union illegally

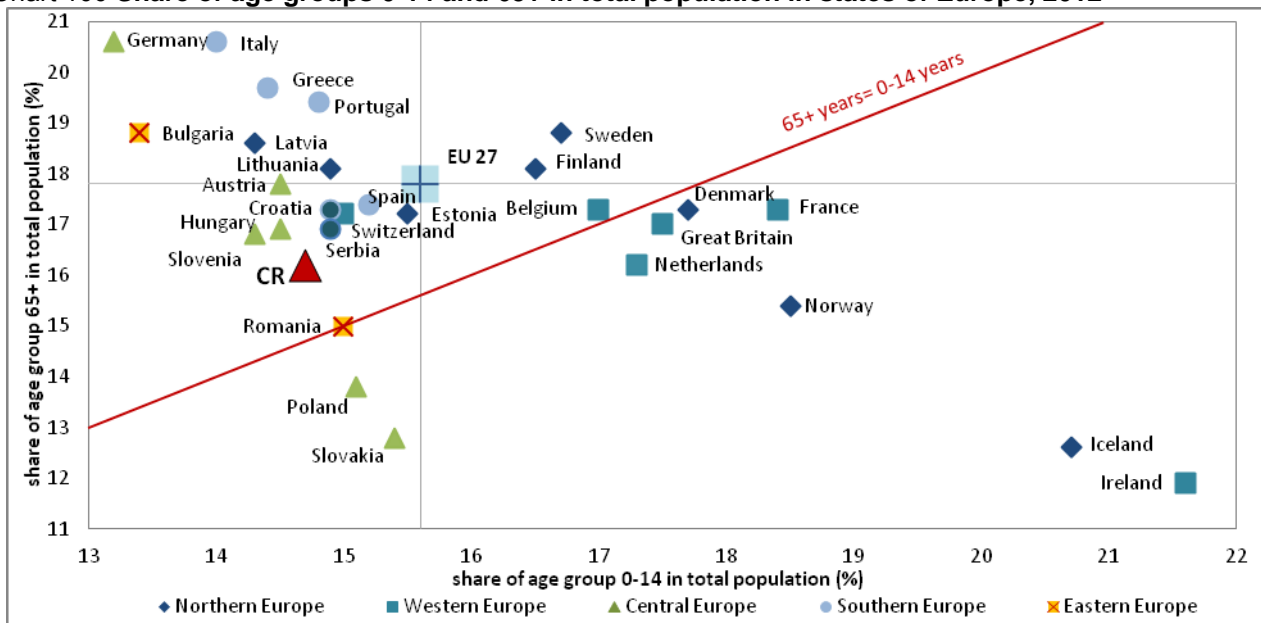
Eurostat publishes since year 2008 also the statistics of citizens of third countries on the territory of member states, when it was found that they are staying in the given state illegally. In absolute numbers, the most illegal immigrants were gauged in 2012 in Greece (72 thousand) and Germany (64 thousand). There were in total for all states of the European Union 427 195 persons staying illegally. If we however relate illegal immigrants to the total number of citizens of third countries in the given state, relative the highest number would be in Poland – per 1000 persons with citizenship outside the European Union would be 209 illegal immigrants (opposed to this, in Greece it was 88 and in Germany only 14). It was ascertained in the Czech Republic, that in 2012 were staying here illegally 3 315 of citizens of third countries and from year 2008 this number has not any significantly changed. The most illegal immigrants in our country in 2012 came from Ukraine (32.1 %), Russia (12.7 %) and Vietnam (11.5 %).

8.3. Population Aging ⁷

European population is aging...

As a consequence of low fertility and prolongation of the life duration changes also the age structure of the population. Population aging occurs in the long-time across the whole Europe. In the EU the age median between years 1990 and 2012 rose by 6.3 years to current 41.5 years. For the Czech Republic the age median was at the beginning of year 2012 lower – 40.1 years.

Chart 100 Share of age groups 0-14 and 65+ in total population in states of Europe, 2012



Source: Eurostat

...thanks to the drop of share of the child population...

Both in Europe and the Czech Republic in the long term increases the share of persons at the age of 65 years and more and on the contrary falls the share of child segment of the population (0-14 years), although in the several past years this fall halted and this share mildly increased as a result of increased natality. Currently the highest share of child population is found in Ireland and Iceland (21.6 % and 20.7 % resp.), that is states with the highest total fertility rate. On the contrary, the least number of children until the age of 14 years can be found in Germany and Bulgaria, in both countries around 13 %. The Czech Republic reaches in the long time lower values in comparison the average for the European Union, behind which lags with the current 14.7 % by 0.9 percentage points.

... and simultaneously increase in the share of

Share of persons older 65 years is then the highest in Germany and Italy, where it reached in 2012 value of similarly 20.6 % out of total population. On the contrary the lowest share is in Macedonia, Ireland and Iceland, around 12 %.

⁷ Analysis processed on the basis of Eurostat data, data always to 1/1 of the given year

persons older 65 years of age...

The fastest rate of increase of the share of this age category occurs in Lithuania, Latvia and Malta, where it increased since year 1990 roughly by 60 %. In the CR this share increased nearly by 30 % and with the value 16.2 % we still reach below average values when compared to the European Union, where in 2012 the persons older 65 years constituted on average 17.8 % of population.

... and this trend shall continue from now on according to projection

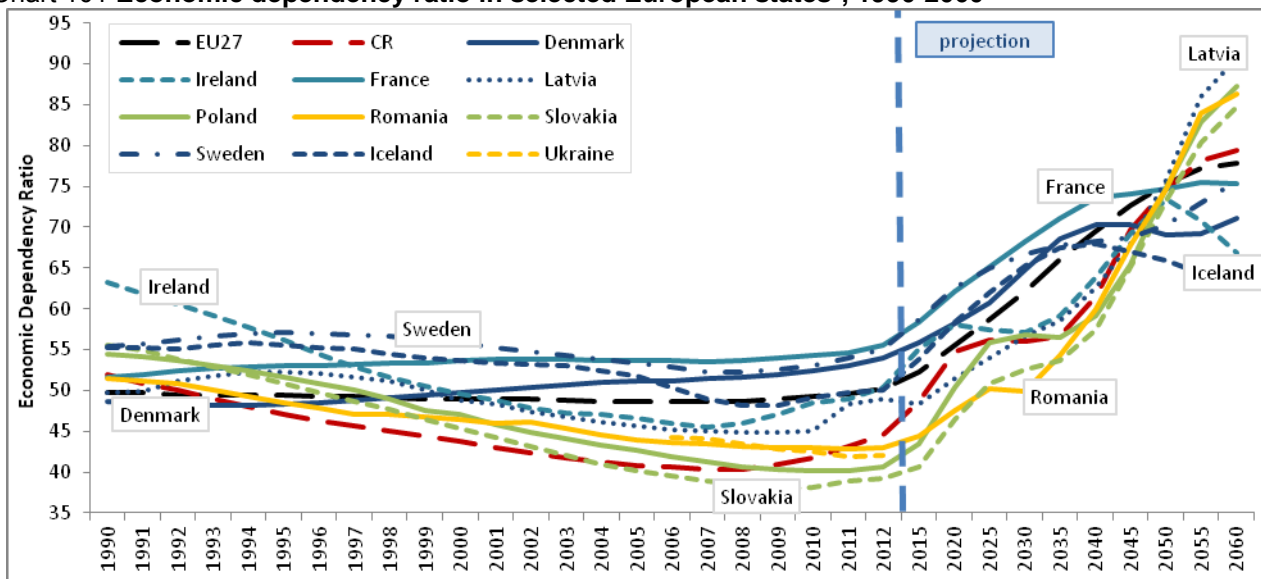
Population projection of Eurostat supposes the continuation of current trends, which is mild decrease of child population and relatively high growth of share of persons older 65 years. Until year 2060 should in the European Union children until 14 years of age on average constitute 14 % of total population and persons in the post productive age 30 %. Czech Republic should reach similar values to the European average. Within the segment of population at the economically inactive age should then occur the highest increase for persons older 85 years, which should be between years 2015 and 2060 for example in Slovakia and Romania nearly fivefold, in the Czech Republic nearly fourfold. On average this population group should in the European Union in year 2060 constitute 7 % of total population, in the Czech Republic then 6 %.

8.3.1. Economic dependency ratio

Economic dependency ratio for CR is in comparison to other states rather lower – 45 persons

Thanks to relatively low share of child and post productive segments of population the economic dependency index was in the CR in 2012 relatively low – there were per 100 persons at the economically active age (15-64) 45 persons at the economically inactive age (65 and more years and 0-14 years of age) and lower values are reached only in Romania, Slovakia, Poland and Ukraine. The question however remains, whether will the relatively favourable relation of population at the economically active age adequately reproduce in the future in given to the low fertility level.

Chart 101 Economic dependency ratio in selected European states⁸, 1990-2060



Source: Eurostat, own calculations

Since 2009 the economic dependency ratio in the CR has grown and based on projection, this trend will continue both at home and in other European countries

The decreasing trend of the economic dependency ratio, which lasted already since the 80s of the last century, was interrupted in 2009 and since this years its values on the contrary grow, as the economically active age starts to include less numerous generations from the second half of 90s and according to the projection, this trend will continue even from this point on. From chart 101 is then apparent, that other states, which in 2012 had a favourable value of the economic dependency index, will be in year 2060 on the contrary reaching very high values. Economic dependency index for the whole European Union in 2012

⁸ Three states were selected, which reached in 2012 and 2060 the highest and three states, which reached on the contrary the lowest values

attained 50 persons, but for example in France or Sweden value of 55 persons. Until year 2060 should in the European Union be allotted to 100 persons at the economically active age already 78 persons at the economically not active age and in the Czech Republic by one person more, that is 79 persons, so we would reach higher values compared to states with the least favourable economic dependency index in 2012, such as France, Sweden or Denmark.