METHODOLOGICAL NOTES

Since 1 May 2004, all data refer to citizens of the Czech Republic and foreigners with permanent residence in the Czech Republic, third-country nationals with temporary residence in the territory of the Czech Republic based on a long-term visa (over 90 days) or a long-term residence permit, nationals of the EU Member States, Norway, Switzerland, Iceland, Liechtenstein and their family members with notified temporary residence in the territory of the Czech Republic and foreigners granted international protection in the Czech Republic. Since 2022, the population has also included persons granted temporary protection in the Czech Republic with usual residence in the Czech Republic. For more detailed information see the website Population – Methodology[1].

Before 2001, data referred only to the population with permanent residence in the Czech Republic (irrespective of their citizenship). Since 2001, following the 2001 Population and Housing Census, the data have newly also included foreigners with a visa for stay over 90 days and foreigners with asylum status.

The data also include reported events (marriages, births and deaths) of Czech citizens with the permanent residence in the Czech Republic that occurred abroad and were registered in the Czech Republic within a period that allows their inclusion into the statistics.

All regional breakdowns refer to the territories valid as at 1 January of the given year.

Age (in years, months, weeks or days) means completed age.

Population, vital and migration statistics of the CR in 1919–2024

The retrospective overview of population, vital and migration statistics relates to the territory of the Czech Republic valid as at the beginning of the most recent year. Data on demographic events are always based on legislation effective in given year. The definition of events changed over time.

The number of marriages includes both the civil and religious marriages (before 1950 and since 1 July 1992). The number of divorces before 1950 comprises only marriage separations ('rozluka'), which correspond to the divorce in current sense of the word.

In 1949, 1953, 1965, 1988 (as of 1 March) and 2012 (as of 1 April) the definition of new-borns (live births, stillbirths) changed.

By 1929, the number of deaths under 1 month of age had been measured instead of the number of deaths under 28 days of age.

Since 1950 the migration between the Czech a Slovak Republic has been included into international migration. Since 1 July 1954, international migration has related to all inhabitants of the CR (including foreigners) with permanent residence in the CR (not only to the Czechoslovaks).

A. Population, vital and migration statistics

Towns are municipalities with the status of town as of 1 January 2024 (a total of 610, incl. Prague).

B. Marriages

Since 2024, the source of data on the marriages of two Czech citizens has been the Basic Population Register and its editing Agenda Information System of Population Records (also referred to as AISEO) through the Census Information System administrated by CZSO. Data on the marriages where at least one of the fiancés is a foreigner continue to be based on Reports on marriage entry provided to the CZSO by registry offices.

[1] *More details on https://www.csu.gov.cz/population-methodology or see Statistics – People – Population – Population estimates, structure, and projection – Methodology – Population on the website www.csu.gov.cz/home.*

Except table B.02, all tables are territorially classified by residence of the groom. Educational attainment of the fiancés, if not taken from Report on marriage entry, was newly obtained from the Census Information System (if available).

C. Divorces

Data on divorces are provided to the Czech Statistical Office by the Ministry of Justice of the Czech Republic. Divorces are territorially classified according to the last common residence of the married couple. Data on divorces broken down by petitioner (who filed the petition) reflect the (final) outcome of the divorce proceedings.

D. Births

The definitions of live born and stillborn child along with all cases of abortions are stated in the guidelines for filling in the 'Death certificate (Report on examination of the deceased person)' (in the Decree No 297/2012 Sb, on the Death certificate (Report on examination of the deceased person) as subsequently amended), namely for the needs of filling in of the Death certificate. To differentiate between live born and stillborn children, the Czech Statistical Office relies on what is indicated in the appropriate check box on the Report of birth; meeting the definition is assumed (as in case of other demographic statistical reports).

The birth order is collected only for live births and of live births (in compliance with the Regulation (EU) No 1260/2013 on European demographic statistics). Educational attainment of mother, or father, if not taken from Report on birth, was newly obtained from the Census Information System (if available).

E.

Until 2023, the Chapter E contained data on abortions which were provided to the Czech Statistical Office by the Institute of Health Information and Statistics of the Czech Republic (IHIS CR). From 2024, the CZSO no longer collects data on abortions. To maintain continuity with previous Demographic Yearbooks, the chapter headings remained unchanged and Chapter E was left blank.

F. Deaths

Since 2024, the source of data on the deaths of Czech citizens has been the Basic Population Register and its editing Agenda Information Systems, namely the Information System of Population Records (also referred to as AISEO) and the Foreigners Information System (also referred to as AISC), through the Census Information System administrated by CZSO. Data on the deaths of foreigners continue to be based on Report on death provided to the CZSO by registry offices.

The part A of the Report on examination of the deceased person (defined in the regulation No 297/2012 Sb, as subsequently amended) is the primary source of data for filling the statistical Report on death by registry office. The classifications of the marital status and education attainment are taken from the Report on examination of the deceased person to the Report on death without change. Educational attainment of deceased person, if not taken from Report on death, was newly obtained from the Census Information System (if available).

G. Deaths by cause

The causes of death are classified according to the 10th decennial revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) with valid updates issued by the World Health Organization (WHO). The underlying cause of death is selected by the IRIS software.

The number of deaths in XIX chapter is equal to the number of deaths in XX chapter, as it is different classification of deaths by external causes. In XIX chapter deaths are classified by the underlying cause (table G.05), while in chapter XX (table G.06) by the mechanism of death.

H. Migration
Migration for a higher territorial unit is defined as the sum of the volume for lower territorial units plus migration between lower territorial units. Gross migration is the sum of immigration and emigration within a given territorial unit. Internal migration does not include cases of migration between city-planning districts of Prague.

I. Population balance and analytic indicators
For calculation of indicators broken down by rural/urban area, sex and age-specific mid-year population as an average of start-year and end-year number of people given sex and age was used.

INDICATORS

All indicators included in this publication refer to one calendar year. The calculation of indicators is based on demographic events or population, which refer to the same calendar year. Mid-year population is used for calculation of rates, defined as population as at July of a given year obtained by the population balance from the beginning of the year to the end of June.

Stillbirth rate
The ratio of the number of stillbirths to the number of total births (here per 1,000 births).

Infant mortality rate
The ratio of the number of deaths of infants under one year of age to the number of live births in the same period (here per 1,000 live births).

Neonatal mortality rate
The ratio of the number of deaths of infants under 28 days of age to the number of live births in the same period (here per 1,000 live births).

Perinatal mortality rate
The ratio of the number of stillbirths and deaths under 7 days of age to the number of total births (here per 1,000 births).

Age-specific fertility rate (f_x)
The number of live births of women at given age (age group) per 1,000 mid-year population of women at given age (age group). ***Mean age of females at childbirth*** *is based on age-specific fertility rates distribution.*

Total fertility rate (TFR) *(the sum of age-specific fertility rates)*
The average number of children that would be born alive to a woman provided that age-specific fertility rates of a given year remain unchanged during her childbearing age (15–49 years).

$$\mathrm{TFR} = \sum_{15}^{49} f_x = \sum_{15}^{49} \frac{N_x^v}{P_x^f}$$

Gross reproduction rate (GRR)
The average number of daughters that would be born alive to a woman provided that age-specific fertility rates of a given year remain unchanged during her childbearing age (15–49 years).

$$\mathrm{GRR} = \sum_{15}^{49} f_x^f = \sum_{15}^{49} \frac{N_x^{v,f}}{P_x^f}$$

Net reproduction rate (NRR)

The average number of daughters that would be born alive to a woman and will survive until the age of her mother at the time of delivery provided that age-specific fertility and mortality rates of a given year remain unchanged during her childbearing age (15–49 years).

$$\mathrm{NRR} = \sum_{15}^{49} \left(f_x^f \cdot \frac{L_x^f}{100000} \right)$$

Mortality rate by sex and age

The number of deaths of given sex and at given age (age group) per 1,000 mid-year population of given sex and at given age (age group).

$$\mathrm{m_x} = \frac{D_x}{P_x}$$

NUPTIALITY LIFE TABLES INDICATORS

One decrement nuptiality life tables are based on the numbers of single people (P^s) by age and sex (s – single) as at 1 January of a year and the numbers of marriages (S^s), deaths (D^s) and migrants (E^s, I^s) of single population by age, sex and year of birth (z) during an analysed year. The age (x) means the age at the beginning of the year. The nuptiality life tables are calculated from the second main group of demographic events, separately for single males and females. Only events for ages 15 to 49 are considered.

The input characteristic of the tables is ***the first-marriage probability (q_x^m)*** *by sex and age which measures the risk of entering into a first marriage during a year:*

$$\mathrm{q_x^m} = \frac{{}^{z}S^{s}}{P_x^s - 0{,}5 \cdot {}^{z}D^{s} - 0{,}5 \cdot {}^{z}E^{s} + 0{,}5 \cdot {}^{z}I^{s}}$$

Table number of single (l_x^m) *– the hypothetical number of single individuals at a given age and sex; the table radix (l_{15}) is 100,000.*

$$\mathrm{l_{x+1}^m} = l_x^m - d_x^m \qquad\qquad \mathrm{l_{50'}^m} = l_{49}^m - 0{,}5 \cdot d_{49}^m$$

Table number of marriages (d_x^m) *– the hypothetical number of marriages of single people at a given age and sex during a year.*

$$\mathrm{d_x^m} = l_x^m \cdot q_x^m$$

The output characteristic of tables is the table number of single at exact age of 50 ($l_{50'}$), respectively the share of people (from the table radix) who would enter the first marriage before the day of their 50th birthday provided the unchangeable first-marriage probabilities of a given year.

Total first marriage rate: $\mathrm{TFMR^s} = 1 - \frac{l_{50'}}{l_{15}}$

Mean age at first marriage is derived from age distribution of a table function d_x^m:

$$\overline{\mathrm{x^s}} = \frac{\sum_{15}^{49}(x+1) \cdot d_x^m}{\sum_{15}^{49} d_x^m}$$

COMPLETE LIFE TABLES INDICATORS

The complete mortality life tables are calculated from the third main group of demographic events. Input death probabilities are computed indirectly, it means they are derived from observed age-specific mortality rates. The life tables are calculated by single year of age with an open age interval for 105+. They are computed separately for males and females.

Life tables indicators

*The **number of deaths (D_x)** states the absolute number of deaths by age during the reference period.*

*The **number of inhabitants (P_x)** states the mid-year population by age (x).*

*The **death probability (q_x)** expresses the probability that an individual at the exact age of x years will die in a given period, i.e. before reaching the exact age of x+1 years*:

$$\mathrm{q_x} = \frac{m_x}{1 + (1 - a_x) \cdot m_x}$$

where m_x is the mortality rate at given age x and the parameter a_x is the average number of years lived within the age interval [x, x+1) for people dying at age x.

*The **table number of survivors (l_x)** is a hypothetical number of individuals alive at the exact age of x years out of 100,000 live births (table radix l_0 = 100,000), given the mortality conditions of the reference period:*

$$\mathrm{l_{x+1}} = l_x \cdot (1 - q_x).$$

*The **table number of deaths (d_x)** is a hypothetical number of individuals who die at the complete age of x years; it is computed as the difference between two subsequent table numbers of survivors:*

$$\mathrm{d_x} = l_x - l_{x+1} \quad .$$

*The **table number of person-years (L_x)** is a hypothetical number of person-years lived by the life-table population in the age interval [x, x+1):*

$$\mathrm{L_x} = l_x - (1 - a_x) \cdot d_x \quad .$$

*The **auxiliary indicator (T_x)** expresses the number of years of life to be lived by the life-table population (not by an individual) at the given age x. It is the cumulation of L_x from the age of x to the highest age of the table.*

$$\mathrm{T_x} = \sum_{x}^{105+} L_x$$

*The **life expectancy (e_x)** shows the average number of years that the x-year-old individual can expect to live, given the mortality conditions at all ages of the given year. It is a synthetic indicator reflecting mortality conditions in all age groups in the given year.*

$$\mathrm{e_x} = \frac{T_x}{l_x}$$