

ABOUT MORTALITY DATA FOR THE SLOVAK REPUBLIC

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GENERAL

The year 1715 marked the beginning of organized statistical surveys in the territory of Slovakia. At that time Slovakia was under the rule of the Hungarian Empire, and several population surveys enumerating taxable householders were carried out (for example, the enumeration of liegemen in 1767-71). The first enumeration of the whole population was conducted under the reign of Joseph II in 1785, followed later in 1805 and in 1828. Unfortunately, results of these enumerations were not preserved up to nowadays. In 1847 the Hungarian Central Statistical Office was established, which was also responsible for regular statistical services in the Slovak territory. This office did the first modern census in the year 1857.

An important phase in the history of Slovak population statistics was the establishment of Czechoslovakia as an independent state in 1918. After this date, the State Statistical Office became the main body collecting population data for the whole territory of Czechoslovakia. During World War II, when the Czech lands were annexed by the Nazi state, the State Statistical Office existed in the capital of Slovakia, Bratislava. After 1945, when the Czech and the Slovak lands were again reunited, the collection of population data fell to the responsibility of the State Statistical Office in Prague. This period was characterized by frequent changes in organizational structure of state statistics. In 1968, when Czechoslovakia was reorganized into a federal state, the Federal Statistical Office was created together with the autonomous Czech and Slovak statistical offices. Specific agreements were implemented to distribute rights and duties of autonomous institutions.

In 1993, with the establishment of the independent Slovak Republic, the Statistical Office of the Slovak Republic became the main body responsible for statistical services. The Statistical Office regularly publishes (on annual or semi-annual basis) the demographic abstracts on “State and Movement of the Population”, “Age Structure of the Population”, “Balance of Movement of the Population by Nationality and Marital Status”, and “Life Tables and Development of the Population” (Statistical Office, 2004).

Source of data

All official data for demographic statistics are collected and processed by the Statistical Office, except for primary data relating to abortions, which are obtained from the Ministry of Health of the Slovak Republic in Bratislava (data are collected by the Institute of Health Information and Statistics (ÚZIS) – see: www.uzis.sk), and further processed by the Statistical Office of the Slovak Republic.

Data on marriages, divorces, births, deaths can be obtained from statistical reports on population development. *Demographic data cover all inhabitants residing permanently in Slovakia regardless of their citizenship.* In collecting the data, the statistical

institutions closely collaborate with other governmental organizations (population registers, courts).

The current version of the Slovak data in the Human Mortality Database covers a time period from 1950 to 2006. Data on births, deaths, and population for 1980-2003 have been downloaded from the Slovak Popin website (www.infostat.sk/slovakpopin). Data for the earlier years (1950-1979) as well as the most recent data (2004-2007) have been received from the Statistical Office of the Slovak Republic in electronic format.

All demographic statistics are published by the Statistical Office of the Slovak Republic (SOSR; see section "Publications"), Some of which can be found on the web:

www.statistics.sk (Official web site of the SOSR)

www.infostat.sk/vdc (Official web site of the Demographic Research Centre in INFOSTAT Bratislava – which is a subsidiary institute of the SOSR)

www.infostat.sk/slovakpopin (Web site created on the basis of the POPIN project operated by the Demographic Research Centre by deputy of the SOSR).

TERRITORIAL COVERAGE

There were no territorial changes in the Slovak Republic during the period covered by the available data (1950-2006). The territory of Slovakia was formed after the establishment of Czechoslovakia on 28 October 1918. After the World War II, Slovakia returned part of its eastern territory (part of the Ruthenia region) to Ukraine and the area decreased to 49 thousand km². Administrative division of Slovakia has several levels according to the commonly used classification of territorial units for statistics – NUTS. The first level corresponds with the entire territory of Slovakia, the second level creates 4 territorial units, the third one 8 regions, and the fourth one 79 districts. Currently there are 2929 municipalities in Slovakia. (See: www.statistics.sk).

DEATH COUNT DATA

Coverage and completeness

Registration of deaths is considered complete and covers the whole territory of the Slovak Republic. Currently, the data on deaths refer to the permanent population of the Slovak Republic, regardless of their citizenship. The current definition of live birth and infant death is comparable to that proposed by the WHO. Definitions used before 1965 differ from those used by the WHO (for more details see the section on Births).

The currently used death certificate includes the following information: name, date of death, date of birth, personal identification number, sex, citizenship, ethnic group, place of permanent residence, marital status, identification number of person reporting death, primary cause of death (ICD-10 code), and autopsy record. Before publishing the data, all death certificates are checked for errors (e.g. ICD codes) at the Statistical Office.

Autopsies are conducted for the majority of deaths due to external causes and for deaths due to unclear reasons. In 2004, the autopsy rate was about 13%.

Table 1. ICD revisions used for coding of causes of death in the Slovak Republic

Years	ICD revision
1919 – 1930	3 rd
1931 – 1940	4 th
1941 – 1948	5 th
1949 – 1957	6 th
1958 – 1967	7 th
1968 – 1978	8 th
1979 – 1993	9 th
1994 –	10 th

Life tables

Starting in 1993, official complete period life tables for the Slovak Republic have been calculated by the Demographic Research Centre (INFOSTAT) and published by the Statistical Office of the Slovak Republic. These new life tables calculated by a uniform method have replaced previously used life tables calculated by the Federal Statistical Office of Czechoslovakia (1950-1992). Some measures from the new official life tables are available online (www.infostat.sk/slovakpopin).

POPULATION COUNT DATA

Coverage and completeness

Six population censuses (in 1950, 1961, 1970, 1980, 1991, and 2001) took place in the Slovak Republic during the period 1950-2007. The Federal Statistical Office Czechoslovakia and the Statistical Office of the Slovak Republic produced six series of the post-censal population estimates for the respective periods 1950-1961, 1962-1970, 1971-1980, 1981-1990, 1992-2000, and 2002-2007. The only exemptions are the census years of 1991 and 2001 when population estimates were recalculated backwards for the beginning of the census year (1991 and 2001).

The resident census population of the Slovak Republic refers to the people who are officially registered as permanent residents irrespective of whether or not they were at their place of residence at the census.

The present census population of the Slovak Republic refers to the people who are officially registered as permanent residents and are present in their place of residence at the moment of the census.

Specific details

In circumstances where migration statistics do not account for unregistered (possibly short-term) emigration, and only post-censal estimates are available, the official population data show discontinuities between the end point of the older series and the starting point of the newer series of population estimates. For more details about population count data, see the section "DATA QUALITY ISSUES".

The HMD population estimates for the period 1950-2000 are based on own inter-censal calculations.

BIRTH COUNT DATA

Coverage and completeness

The registration of births is considered complete and covers all the territory of the Slovak Republic. Vital statistics include births of permanent residents of the Slovak Republic.

Specific details

The definitions of live birth, stillbirth, and abortion have changed over time. The definition used in the Slovak Republic before 1965 was different from the international classification.

- ❖ Before 1948. A live-birth was registered if breathing or beating of the heart was shown by a fetus. Fetuses delivered after a gestation period lasting more than 28 weeks but showing no sign of life were considered stillbirths.
- ❖ 1949 – 1952. Newborns without any sign of life but weighting more than 400 g were registered as stillbirths. Those weighting less than 400 grams were considered spontaneous abortions.
- ❖ 1953 to 1964. A live-born child was registered if the fetus was: born after 28 weeks of gestation; longer than 35 cm; weighed at least 1000 grams, and showed signs of life (i.e., breathing). Newborns born after 28 weeks of gestation, with a body length of at least 35 cm, and weighing at least 1000 grams but showing no sign of life were registered as stillbirths. All fetuses which did not meet the criteria of live birth but survived at least 24 hours were also counted as live births; those surviving less than 24 hours were counted as spontaneous abortions.

In 1965, the former Czechoslovakia started using the internationally recommended definition of live birth. Such change in definition resulted in a sudden jump in infant mortality rates between 1964 and 1965 in both the Czech Republic and Slovak Republic (Rychtarikova, 2004).

- ❖ 1965-1987. A live birth was defined as the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as heartbeat, umbilical cord pulsation, or definite movement of voluntary muscles, whether the umbilical cord has been cut or the placenta is attached (Rychtarikova, 2004). Newborns born after 28 weeks of gestation (or the length of gestation unknown), with a body length of at least 35 cm, weighting at least 1000 grams but not showing any sign of life were registered as stillbirths.
- ❖ Since 1988, the Statistical Office of the Slovak Republic has used the following criteria to define a live birth:
 - A live-born child is a child showing at least one of the following signs of life at birth: breathing, beating of the heart, pulsation of the umbilical cord; active movement of muscles though the umbilical cord has not been cut or placenta has not been born. In addition, the newborn must weigh at least 500 grams or, if weighing less than 500g, must survive 24 hours after birth (Statistical Office, 2004).
 - If the fetus does not show any sign of life and weighs less than 1000g (or weight can not be measured), it is defined as a spontaneous abortion (i.e., miscarriage). Fetuses showing some signs of life and weighing less than 500g but not surviving more than 24 hours after birth are also assigned to the category of abortions.

Currently used definition of stillbirth:

- Infant completely expelled from mother's body.
- No signs of life (e.g., breathing, heartbeat) at birth.
- Weight at least 1000g.

DATA QUALITY ISSUES

As for many other countries, using post-censal population estimates produces various inconsistencies in the population trends. In the case of the Slovak Republic, population numbers tend to drop between the end point of the older series and the starting point of the newer series of population estimates (Figure 1). These inconsistencies are mainly due to unregistered emigration. For example, the 1991 census counts were used as the base for calculating official population estimates for the period 1992-2000. The latter data have not been recalculated backwards to correspond with the 2001 census. In circumstances where migration statistics do not account for unregistered (possibly short-term) emigration, and only post-censal estimates are available, these estimates show discontinuities at census years (Figure 1).

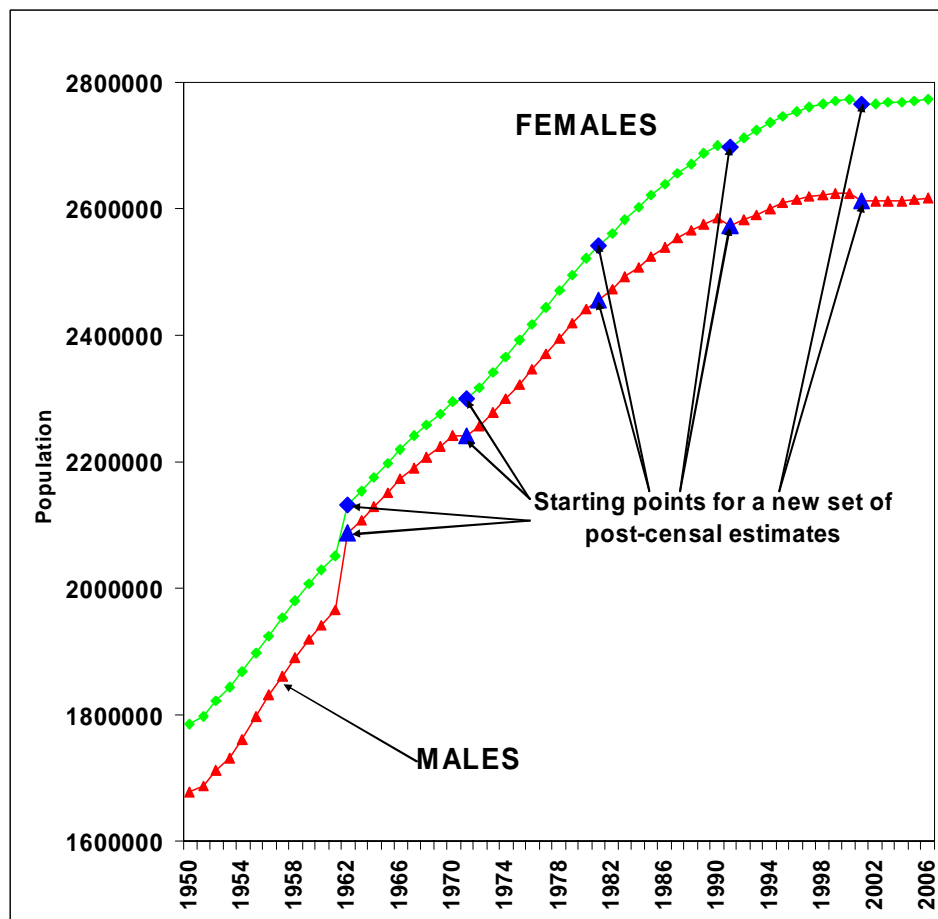
Figure 1 also shows a sudden increase in total population between 1961 and 1962. The main reason is that the 1950 census-based population estimates (1950-1961) covered only the “present” population (not including residents abroad and foreigners), whereas subsequent post-censal estimates were based on the “resident” population. Additionally,

in the 1950s, there was undercount of immigrants due to the fact that only the migration of Czechoslovak citizens was traced. Foreign citizens have been included in the migration statistics only since 1954 (Vano et al., 2001).

Taking into account all aforementioned problems, the HMD population estimates for the period 1950-2000 are based on own inter-censal calculations.

WARNING. Our own inter-censal population estimates for the period 1950-1962 should be used with caution due to very irregular migration (according to our methodology, we assume that migration was distributed uniformly throughout the whole inter-censal period).

Figure 1. Official population estimates as of January 1, 1980-2004.



REFERENCES FOR DEMOGRAPHIC DATA ON SLOVAKIA

Vital statistics publications

Annotation: The following references relate to population changes in the territory of Slovakia

- Pohyb obyvatelstva v republice Československé v roce 1950, Státní úřad statistický
Pohyb obyvatelstva v republice Československé v roce 1951, Státní úřad statistický
Pohyb obyvatelstva v republice Československé v roce 1952, Státní úřad statistický
Pohyb obyvatelstva v republice Československé v roce 1953, Státní úřad statistický
Pohyb obyvatelstva v republice Československé v roce 1954, Státní úřad statistický
Pohyb obyvatelstva v republice Československé v roce 1955, Státní úřad statistický
Pohyb obyvatelstva v republice Československé v roce 1956, Státní úřad statistický
Pohyb obyvatelstva v republice Československé v roce 1957, Státní úřad statistický
Pohyb obyvatelstva v republice Československé v roce 1958, Státní úřad statistický
Pohyb obyvatelstva v republice Československé v roce 1959, Státní úřad statistický
Pohyb obyvatelstva v Československé socialistické republice v roce 1960, Ústřední úřad státní kontroly a statistiky
Pohyb obyvatelstva v Československé socialistické republice v roce 1961, Ústřední úřad státní kontroly a statistiky
Pohyb obyvatelstva v Československé socialistické republice v roce 1962, Ústřední úřad státní kontroly a statistiky
Pohyb obyvatelstva v Československé socialistické republice v roce 1963, Ústřední úřad státní kontroly a statistiky
Pohyb obyvatelstva v Československé socialistické republice v roce 1964, Státní úřad statistický
Pohyb obyvatelstva v Československé socialistické republice v roce 1965, Státní úřad statistický
Pohyb obyvatelstva v Československé socialistické republice v roce 1966, Federální statistický úřad
Pohyb obyvatelstva v Československé socialistické republice v roce 1967, Federální statistický úřad
Pohyb obyvatelstva v Československé socialistické republice v roce 1968, Federální statistický úřad
Pohyb obyvatelstva v Československé socialistické republice v roce 1966, Federální statistický úřad
Pohyb obyvatelstva v Československé socialistické republice v roce 1970, Federální statistický úřad
Pohyb obyvatelstva v Československé socialistické republice v roce 1971, Federální statistický úřad
Pohyb obyvatelstva v Československé socialistické republice v roce 1972, Federální statistický úřad
Pohyb obyvatelstva v Československé socialistické republice v roce 1973, Federální statistický úřad
Pohyb obyvatelstva v SSR v roku 1974, Slovenský štatistický úrad
Pohyb obyvatelstva v SSR v roku 1975, Slovenský štatistický úrad
Pohyb obyvatelstva v SSR v roku 1976, Slovenský štatistický úrad

Pohyb obyvatel'stva v SSR v roku 1977, Slovenský štatistický úrad
Pohyb obyvatel'stva v SSR v roku 1978, Slovenský štatistický úrad
Pohyb obyvatel'stva v SSR v roku 1979, Slovenský štatistický úrad
Pohyb obyvatel'stva v SSR v roku 1980, Slovenský štatistický úrad
Pohyb obyvatel'stva v SSR v roku 1981, Slovenský štatistický úrad
Pohyb obyvatel'stva v SSR v roku 1982, Slovenský štatistický úrad
Pohyb obyvatel'stva v SSR v roku 1983, Slovenský štatistický úrad
Pohyb obyvatel'stva v SSR v roku 1984, Slovenský štatistický úrad
Pohyb obyvatel'stva v SSR v roku 1985, Slovenský štatistický úrad
Pohyb obyvatel'stva v ČSSR v roce 1986, část I, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1986, část II, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1987, část I, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1987, část II, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1988, část I, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1988, část II, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1989, část I, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1989, část II, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1990, část I, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1990, část II, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1991, část I, Federální statistický úřad
Pohyb obyvatel'stva v ČSSR v roce 1991, část II, Federální statistický úřad
Annotation: Population changes for the years 1992 – 1995 not published yet
Pohyb obyvatel'stva v Slovenskej republike v roku 1996, Štatistický úrad Slovenskej republiky
Pohyb obyvatel'stva v Slovenskej republike v roku 1997, Štatistický úrad Slovenskej republiky
Pohyb obyvatel'stva v Slovenskej republike v roku 1998, Štatistický úrad Slovenskej republiky
Pohyb obyvatel'stva v Slovenskej republike v roku 1999, Štatistický úrad Slovenskej republiky
Pohyb obyvatel'stva v Slovenskej republike v roku 2000, Štatistický úrad Slovenskej republiky
Pohyb obyvatel'stva v Slovenskej republike v roku 2001, Štatistický úrad Slovenskej republiky
Pohyb obyvatel'stva v Slovenskej republike v roku 2002, Štatistický úrad Slovenskej republiky

Annotation: Population changes for the years 2003 – 2005 has been prepared for publishing

Population age structures:

Věkové složení obyvatel'stva v letech 1920 -1937 a 1945 – 1979 (ČSSR, ČSR, SSR), Český statistický úřad
Věkové složení obyvatel'stva v roce 1961. Federální statistický úřad
Věkové složení obyvatel'stva v roce 1962. Federální statistický úřad
Věkové složení obyvatel'stva v roce 1963. Federální statistický úřad

Vekové zloženie obyvateľstva Slovenskej republiky v roku 2001, Štatistický úrad Slovenskej republiky

Vekové zloženie obyvateľstva Slovenskej republiky v roku 2002, Štatistický úrad Slovenskej republiky

Vekové zloženie obyvateľstva Slovenskej republiky v roku 2003, Štatistický úrad Slovenskej republiky

Vekové zloženie obyvateľstva Slovenskej republiky v roku 2004, Štatistický úrad Slovenskej republiky

Census publications:

Demografická príručka, Federalní statistický úřad

Rozvoj spoločnosti v Slovenskej socialistickej republike (1970) (podľa výsledkov sčítania ľudu, domov a bytov), Slovenský štatistický úrad

Sčítanie ľudu, domov a bytov 1980, Slovenský štatistický úrad

Sčítanie ľudu, domov a bytov 1991, Slovenský štatistický úrad

Sčítanie ľudu, domov a bytov 2001, Štatistický úrad Slovenskej republiky

REFERENCES

Council of Europe (2004). *Demographic Yearbook (2003 Edition)*. Retrieved 23 August 2005 (http://www.coe.int/t/e/social_cohesion/population/demographic_year_book/2002_Edition/RAPNAT2002%20%20Slovak%20Rep%20e.asp#TopOfPage)

Jurcova, D., Meszaros, J., Srb, V. Vano, B., Velicka, M., Zirko, M. (2001). *Population of Slovakia 1945-2000*. Bratislava: INFOSTAT.

Rychtarikova, J. (2004). *About mortality data for the Czech Republic*. Retrieved 03 May 2005 (<http://www.mortality.org>).

Statistical Office of the Slovak Republic. (2004). *Statistická Rocenka Slovenskej republiky 2004. Statistical Yearbook of the Slovak Republic*. VEDA, Bratislava, pp. 191-192

APPENDIX:

DESCRIPTION OF DATA USED FOR LEXIS DATABASE

DEATHS

Period	Type of Data	Age grouping	Comments	RefCode(s)
1950-2006	Annual number of death by sex and single year of age, and birth cohort (Lexis triangles, except for the open ended interval - rectangle).	0, 1, 2, ..., 99, 100+, UNK		02 05, 09

POPULATION

Period	Type of Data	Age grouping	Comments	RefCode(s)
1950	Population estimates as of July 1 st by sex and single year of age.	0,1,...,100+	Mid-year population estimate. Based on these data and the Methods protocol, we calculated the population estimate as of January 1, 1950 (pre-censal estimate). Such adjustment allowed us to produce our own inter-censal population estimates for the period 1950-1962.	07
1962 1971 1981 1991 2001	Population estimates as of January 1 st by sex and single year of age.	1991,2001: 0,1,...99+ 1962,1971, 1981: 0,1,...,100+	Official Population estimates for the census years 1991 and 2001 are re-calculated back to the beginning of year. Population estimates for 1962, 1971, and 1981 are post-censal estimates. Because the census data were not available to us, we used the official population estimates closest to the census dates to calculate our own (inter-censal) population estimates for the periods 1962-1971, 1971-1981, 1981-1991 and 1991-2001.	01 06
2002-2007	Annual population estimates as of January 1 st by sex and single year of age.	0, 1, ..., 100+	Post-censal population estimates	01 06

BIRTHS

Period	Type of Data	Comments	RefCode(s)
1950-2006	Annual counts of births by sex.		03 04, 08