

ABOUT MORTALITY DATA FOR SLOVENIA

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GENERAL

From the 14th century until 1918, the present territory of Slovenia (inhabited by the Slovene population and known as Carinthia, Carniola and Styria regions) was part of the Austro-Hungarian Empire. After the First World War and collapse of the Empire, Slovenia became part of the Kingdom of Slovenes, Croats and Serbs, which was reformed into the Kingdom of Yugoslavia in 1929. After the Second World War, Slovenia became part of the Socialist Federal Republic (SFR) of Yugoslavia. The Republic of Slovenia acquired independence as a result of the dissolution of Yugoslavia in 1991. Unlike other former republics of Yugoslavia such as Bosnia and Herzegovina or Croatia, Slovenia was not involved in large-scale war operations following the declaration of the independence in 1991. The country has been a member of the European Union since 1 May 2004.

Until the end of the First World War in 1918, the collection of statistical information within most of the present territory was under the responsibility of the statistical office of the Austro-Hungarian Empire located in Vienna (Statistical Office, 2004). After the collapse of the Austro-Hungarian Empire in 1918, the main authority responsible for statistics was the General National Statistics in Belgrade (the capital city of Yugoslavia). However, a special Statistical Department for Slovenia existed between 1919 and 1924. The statistical office of Slovenia was established by the Slovenian National Liberation Council in 1944 shortly after liberating the country from the Nazi occupants. This office became part of the federal statistical office from 1945 to 1990. An independent Statistical Office of the Republic of Slovenia was re-established in 1991 (Statistical Office, 2004).

The first population enumeration in the present territory of Slovenia was conducted in 1754. Under rule of the Austro-Hungarian empire, six population censuses were conducted: 31 October 1857, 31 December 1869, 31 December 1880, 31 December 1890, 31 December 1900, and 31 December 1910. Eight population censuses took place during the period when Slovenia was a member of the federal state of Yugoslavia: 31 January 1921, 31 March 1931, 15 March 1948, 31 March 1953, 31 March 1961, 31 March 1971, 31 March 1981, and 31 March 1991 (Statistical Office, 2001). The most recent census of population, households, and housing was conducted by the Statistical Office of the Republic of Slovenia on 31 March 2002.

A specific feature of the system of demographic statistics in Slovenia is an extensive use of population registers. The municipal registers were introduced in 1946, whereas the Central Population Register was established in 1983 (following the introduction of personal identification numbers in 1980 (Krizman, 1999). The registers have been used extensively to produce population statistics and to correct/update population estimates calculated according to the population census data and annual changes of births, deaths, and migration (Statistical Office, 2001).

Since 1983, demographic data exist both in published and electronic format. Detailed information on population and vital events can be downloaded from an online database (<http://www.stat.si/pxweb/Dialog/statfile1.asp>).

Sources of Data

For HMD calculations, we use population, death, and birth count data from published and unpublished electronic data provided by the Statistical Office of the Republic of Slovenia. The reference file for Slovenia provides detailed information about the sources of both the published and the unpublished data used in the Human Mortality Database (HMD).

Specific Episodes in the Demographic History of Slovenia

In June/July 1991, there was an armed conflict (a resistance against the Yugoslavia military invasion, also known as “Ten Days war”). When compared to other countries of the former Yugoslavia, the conflict resulted in relatively few civilian and military deaths (up to 100 casualties).

TERRITORIAL COVERAGE

There were no territorial changes in Slovenia during the period covered by the HMD (1983-2005). Prior to the mid-1950s, however, numerous changes in boundaries took place.

DEATH COUNT DATA

Coverage and completeness

The Statistical office defines death as “evidence of life permanently disappeared any time after he/she was live-born.” The definition of infant death is “a newborn whose evidence of life permanently disappeared any time after he/she was live-born and had not completed the first year of age (Statistical Office, 2007). The WHO definition of live birth and infant death has been used for the whole period covered by the HMD.

Since 1991, individual death records have been collected by the Central Population Register (Ministry of the Interior). From 1991 to 1999, the data on deaths were processed and published by the Statistical Office. Since 2000, the electronic database on death has been maintained by the Institute of Public Health. Before 1991, some data on deaths were processed by the Federal Statistical Office of Yugoslavia (Statistical Office, 2007).

Specific details

Data collection cover the resident population (i.e., those with permanent or temporary resident status) of Slovenia; deaths of residents that occur in foreign countries are included. The definition of a resident of Slovenia changed over time (see section on “Population count data” for more details).

POPULATION COUNT DATA

Coverage and completeness

For the period until 1980, the only published population estimates were produced by the Federal Statistical Office of Yugoslavia. These post-censal population estimates

were derived from census counts updated by subsequent annual births and deaths. International migration was not taken into account (Statistical Office, 2007). The usage of such data is problematic.

For the period 1982-1986, the Statistical Office of Slovenia produced their own post-censal population estimates accounting for annual natural increase, emigration, and corrections according to the Municipal register records.

The official population estimates covering the period 1987-1994 were calculated using mainly Central Population Register data. From 1995 onwards, the estimates were derived using Central Population Register and international migration register data. The official population covers all persons registered as the residents of Slovenia (for changes in definition of resident see the "Specific details" section).

Foreign citizens permanently residing in Slovenia were included in the official population statistics starting in 1995 (following a change in the concept of resident population) (Statistical Office, 2001). According to the available information, we assume that *de facto* refugees from the former Yugoslavia were excluded from the official population counts at least for the period 1991-1994. Since 1995, the statistics on migration of foreigners have been collected and provided by the Administrative Internal Affairs Directorate of the Ministry of Interior (Statistical Office, 2007).

It is important to note that population numbers derived from the censuses differ slightly from those based on municipal registers or Central Population Register (at the same time point). For example, the register-based population in 1991 was about 1.5% higher than population estimated according to the 1991 census (Statistical Office, 2001). The Statistical Office (2001) attribute such differences to "different methods of data collection and use of different definitions".

There are discontinuities in the series of population estimates produced using different methods and data sources (for more details, see the section "DATA QUALITY ISSUES"). In the current version of the data series for Slovenia, we have not made any adjustments for the aforementioned changes in the definitions and disruptions in the population statistics. We plan to work on possible solutions for these problems in the near future.

Specific details

Throughout the period 1983-2007, there were several changes in the official definition of *resident* population, which affected vital and population register data coverage:

- ❖ **1983 to 24 June 1991:** The official population included only those persons registered as permanent residents in the territory of Slovenia who were also citizens of the former SFR Yugoslavia (including the Socialist Republic of Slovenia and other republics of the former SFR Yugoslavia).
- ❖ **25 June 1991 to 1994:** The *resident* population included:
 - Citizens of the Republic of Slovenia with permanent residence in Slovenia;
 - Persons registered as a permanent resident of Slovenia who were citizens of the former SFR Yugoslavia prior to June 25, 1991, but had not yet acquired citizenship of the Republic of Slovenia or any other country.
- ❖ **1995 to 1998:** The official resident population counts include:

- Citizens of the Republic of Slovenia with permanent residence in Slovenia, excluding those who went abroad for more than three months and gave notice of their departure at the administrative unit of their permanent residence;
- Foreigners with issued permission for permanent residence in the Republic of Slovenia;
- Foreigners with issued permission for temporary residence in the Republic of Slovenia;
- Foreigners with a valid work permit or a business visa, who are registered as a temporary resident in Slovenia;
- Persons to whom the Republic of Slovenia granted asylum and refugee status according to the Asylum Act;
- Persons under temporary protection in the Republic of Slovenia.

Source: Statistical Office, 2007a.

❖ **From 1999 to present:** The official population counts include:

- Citizens of the Republic of Slovenia with permanent residence in Slovenia;
- Citizens of the Republic of Slovenia who went abroad for more than three months and gave notice of their departure at the administrative unit of their permanent residence;
- Foreigners with issued permission for permanent residence in the Republic of Slovenia;
- Foreigners with issued permission for temporary residence in the Republic of Slovenia;
- Foreigners with a valid work permit or a business visa, who are registered as a temporary resident in Slovenia;
- Persons to whom the Republic of Slovenia granted asylum and refugee status according to the Asylum Act;
- Persons under temporary protection in the Republic of Slovenia.

Source: Statistical Office, 2007a.

The Statistical Office (2007a) also warns about changes in how international migration was defined, which also affects the series of population estimates:

- ❖ **Prior to 1992:** Official data on international migration included only immigrations and emigrations of the citizens of the former Yugoslavia (including migrations between Slovenia and other republics of the former Yugoslavia). Thus, all migration of individuals covered by the Central Register was recorded during this period.
- ❖ **1992 to 1994:** The only international migration accounted for pertains to citizens of the Republic of Slovenia. Importantly, the ex-citizens of the SFR Yugoslavia who did not accept or fulfill conditions for acquiring citizenship of the Republic of Slovenia were considered foreigners and not included in migration statistics (although they were included in the Central Register if they had not yet acquired citizenship elsewhere).
- ❖ **1995 to 1997:** Since 1995, data on international migration also include foreign citizens. Data on emigration of foreigners are estimated according to the annual changes in both the numbers of records in the register and natural increase among foreign population. Citizens of Slovenia who migrated temporarily are not recorded.

- ❖ **1998 to present:** In addition to migration of foreign citizens, data on international migration also covers citizens of Slovenia who emigrate temporarily (for more than 3 months) or who return after temporarily residing abroad.

Source: Statistical Office, 2007b.

BIRTH COUNT DATA

Coverage and Completeness

The Statistical Office has used the WHO definition of live birth the entire period covered by the HMD. A live birth is “a child who immediately after birth showed signs of life (breathing, heartbeat, muscle twitch), even though only for a short period. Duration of pregnancy is not important” (Statistical Office, 2007). A stillbirth is defined as “a child who was born without signs of life (no breathing, no movement, no beating of the heart) and who at birth weighed at least 500 grams or pregnancy lasted less than 22 weeks or its body was at least 25 centimetres long. If in case of a multiple pregnancy (twins, triplets) one of the siblings was born alive, the sibling that was born dead is counted as a stillborn even if it weighed less than 500 grams” (Statistical Office, 2007).

Specific details

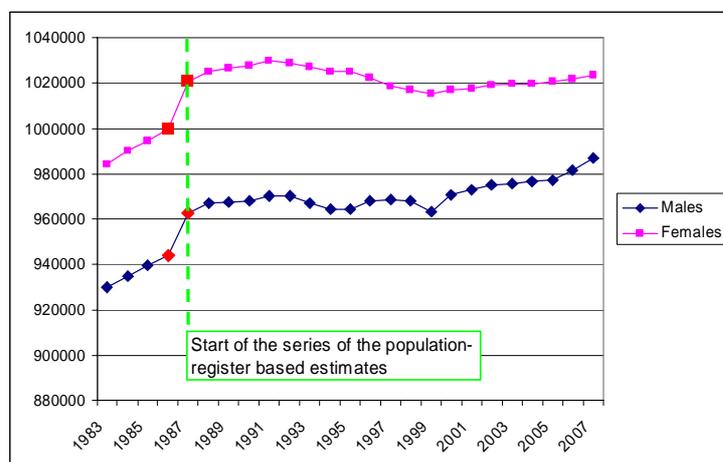
Data collection cover the resident population (i.e., those with permanent or temporary resident status) of Slovenia; births to residents that occur in a foreign country are included. The definition of resident of Slovenia changed over time (see section on “Population count data” for more details).

DATA QUALITY ISSUES

Problems with the official population estimates

As noted earlier, the official January 1st population estimates for the period 1983-1986 account for emigration, but not immigration. In addition, the change in the methodology for calculating of population estimates (i.e., transition from census-based to register-based data) resulted into a jump in population numbers between 1986 and 1987 (Figure 1). There were no such jumps observed in births and deaths (however, due to small numbers it is difficult to identify such changes).

Figure 1. Changes in the estimated total population in Slovenia, 1 January 1983 – 1 January 2007.



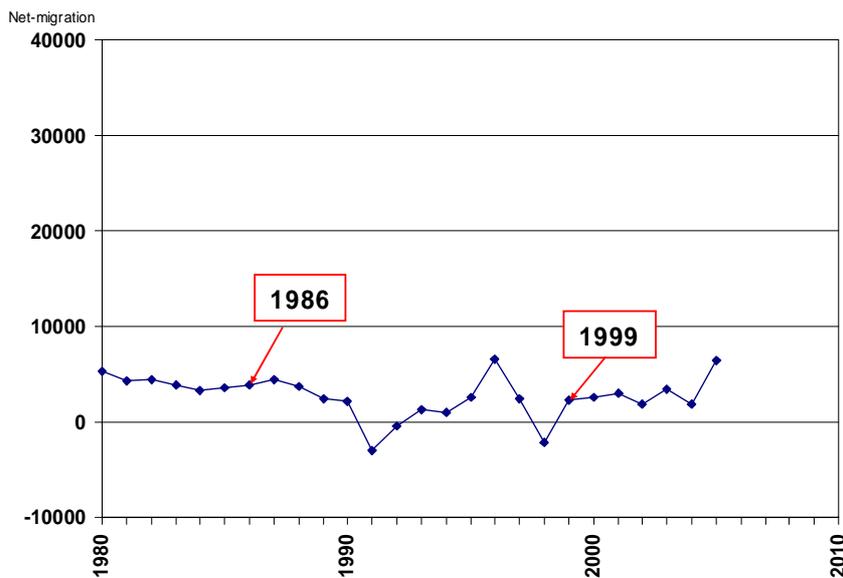
Source: HMD population estimates as of January 1.

The sudden increase in total population counts is solely attributable to an artificial peak in implied net-migration in 1986 (there was no increase in net-migration according to the official data) (Figures 2A and 2B). Such a big discrepancy can be attributed to the fact that the official January 1st population estimates for the period before 1987 did not account for immigration. Consequently, when the basis for population estimates shifted to the Central Population Register in 1987, all the residents who immigrated to the Republic of Slovenia after the 1981 census were suddenly added to the population estimate.

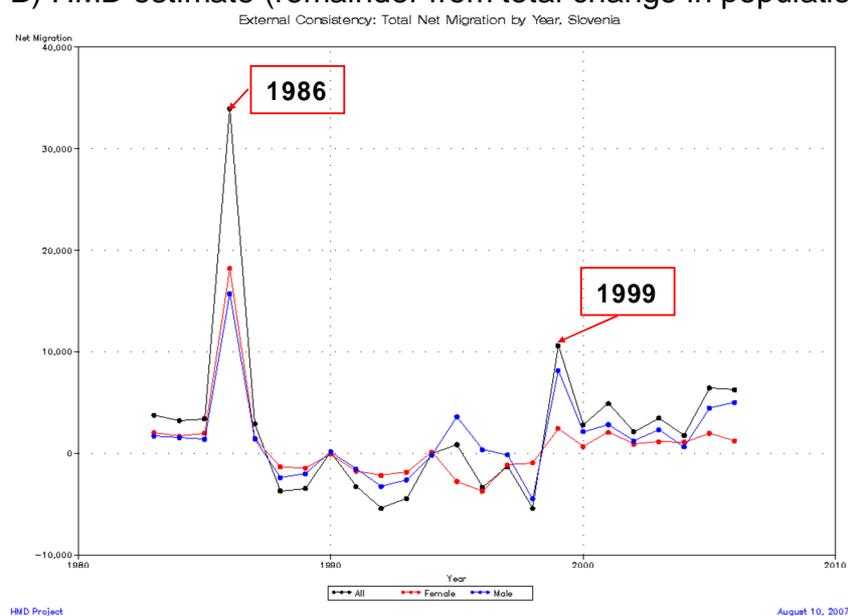
Although there is no similar disruption in total population numbers between 1999 and 2000, there is a notable peak in implied migration (estimated as the remainder from the total change in population and natural increase) for 1999 (Figure 2B). The official data on international migration do not show such a peak (Figure 2A). Perhaps this discontinuity is related to the changes in the official definition of international migration.

Figure 2. Changes in the official and estimated net-migration, 1983-2006.

A) Official data (based on official migration statistics)



B) HMD estimate (remainder from total change in population and natural increase)



Source: HMD data quality checks; Statistical Office, 2007b.

The Statistical Office of the Republic of Slovenia officially acknowledges such problems in comparability between different series of population estimates: “the use of various sources of data on the number, age and sex structure of the population causes disharmony of time series and leaps in years of transition from one source to another” (Statistical Office, 2001, p. 34).

It is important to stress that the net-migration implied by HMD estimates (including both peaks) corresponds closely with the adjusted migration figures for Slovenia published by EUROSTAT

(http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/&product=EU_MASTER_population&depth=2).

To date we have not attempted to introduce any adjustments to overcome the aforementioned disruptions or unusual fluctuations in the official data. We plan to work on possible solutions in the future.

REFERENCES

- Krizman, I. (1999). *The use of registers in population, households and housing censuses in Slovenia. The paper prepared for the Joint ECE/Eurostat Work Session on Registers and Administrative Records for Social and Demographic Statistics Geneva, 1 - 3 March 1999*. Ljubljana: Statistical Office.
- Statistical Office of the Republic of Slovenia. (2004). *60 years of national statistics in Slovenia*. Ljubljana: Statistical Office of the Republic of Slovenia.
- Statistical Office of the Republic of Slovenia. (2007). *Methodological explanations*. Retrieved 08 August 2007 (<http://www.stat.si/pxweb/Database/Demographics/Demographics.asp>).

- Statistical Office of the Republic of Slovenia. (2007a). Population. Methodological explanations. In: *Statistical yearbook of the Republic of Slovenia 2006*. Retrieved 08 August 2007 (http://www.stat.si/letopis/2006/MP/04-06_eng.pdf).
- Statistical Office of the Republic of Slovenia. (2007b). *International migration*. Retrieved 08 August 2007 (<http://www.stat.si/pxweb/Database/Demographics/Demographics.asp>).
- Statistical Office of the Republic of Slovenia. (2001). *Population of Slovenia 1999*. Retrieved 08 August 2007 (<http://www.stat.si/doc/pub/rr762-2001/metod-poj.pdf>).

APPENDIX 1: DESCRIPTION OF DATA USED FOR LEXIS DATABASE

DEATHS

Period	Type of Data	Age grouping	Comments	RefCode(s)
1983-2006	Annual number of deaths to resident population, by sex, single year of age, and birth cohort (Lexis triangles)	0, 1, 2 ... max		01, 02, 03

POPULATION

Period	Type of Data	Age grouping	Comments	RefCode(s)
1983-1986	Annual January 1 st population estimates by sex and single year of age. Resident population (old definition).	0, 1, ..., 99, 100+	Post-censal population estimates according to the census updated with annual births, deaths and emigrations from the Municipal Register. See also NoteCodes 002.	06
1987-1995	Annual January 1 st population estimates by sex and single year of age. Resident population (old definition).	0, 1, ..., 99, 100+	Data are based on the Central Population Register. See also NoteCodes 002 & 003.	07
1995-2006	Annual December 31 st population estimates by sex and single year of age. Resident population (new definition).	0, 1, ..., 99, 100+, unknown	Data are based on the Central Population Register. See also NoteCode 004.	08

BIRTHS

Period	Type of Data	Comments	RefCode(s)
1983-2006	Annual counts of live births by sex.		04 05