HUMAN FERTILITY DATABASE DOCUMENTATION: AUSTRIA

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1 General information

This report documents Austrian data collected for the Human Fertility Database project, namely age- and birth order-specific data on births, data on total births by calendar month and year, and the data on exposure population (women by age and/or birth cohort and the number of live-born children). The Human Fertility Database (HFD) for Austria is based on the official data on birth counts published in vital statistics publications and individual birth records kindly provided by Statistik Austria, as well as on the official results of population censuses.

Time series on live births by age of mother and birth order cover the years 1984–2009: these data have been extracted from the database of individual birth records. Prior to 1984 only the birth order within the current marriage, and not the biological (true) order of woman's children, was recorded. Live births by age of mother (for all birth orders) are available since 1951. Monthly data on births are available for 1914–2009. Population data since 1947 have been processed and documented in the Human Mortality Database (HMD, www.mortality.org). Data for female population by parity are available from the population Censuses of 1981, 1991 and 2001.

In 2006 the population of Austria was 8.3 million, of whom 10.0% were of foreign nationality (Statistik Austria 2007) and 16.6% were born abroad (the latter figure pertains to 2004: Prskawetz et al. 2008). The three major groups of foreign residents are citizens of Turkey, Germany and the successor states of former Yugoslavia.

1.1 Territorial coverage

Austria, which was constituted as an independent Republic in 1918, has had unchanged borders since 1921. During the period of 1938–1945, Austria was annexed by Nazi Germany until the Republic of Austria was reestablished in 1945. Before 1918, the Austro-Hungarian Empire (or Austria-Hungary; until 1867 Austrian empire only) constituted a multinational state occupying a much larger territory covering much of central Europe and parts of south-eastern Europe.

Birth data refer to the resident population of Austria (permanent residents), irrespective of citizenship, and do not include births registered abroad. Migrants having stayed in Austria less than 3 months are not counted in the resident population.

1.2 Data collection and availability

All statistical data on births and population are collected by the central statistical office, which was established after WWI as *Bundesamt für Statistik* (Federal Statistical Office) in 1921 and renamed *Österreichisches Statistisches Zentralamt* (Austrian Central Statistical office) in 1945. In 2000 a new federal law for statistics transformed the Österreichisches Statistisches

Zentralamt into *Bundesanstalt Statistik Österreich* (short name: *Statistik Austria*). Before WWI, the statistical office had first been established in 1829 when it was called *Statistisches Bureau* (Statistical Bureau).

For the period from 1871 to 1921 and from 1938 to 1945 the officially published statistics on births have been recalculated for the area of present-day Austrian Republic.

The statistical office also prepares and conducts population censuses, processing and publishing census results. Three Censuses that took place between 1981 and 2001 are relevant for the Human Fertility Database, as they included a question on the number of children ever born to each woman aged 15+.

2 Birth count data

Birth count data included in the Human Fertility Database cover the period of 1951–2009. Data for 1951–1983 originate from the official vital statistics publications and demographic yearbooks (see the list of data sources below); data for 1984-2009 were computed from individual birth records provided by Statistics Austria.

In 1951–1983 only the birth order within the current marriage was recorded (also taking into account children who were 'legitimised' through marriage), and the true (biological) order was not registered. Therefore, only total live births by age and by birth cohort of mother are tabulated for this period (see section 4.2).[1] For the period since 1984 files on individual birth records were used to tabulate live births by Lexis triangles (for both age in completed years and birth cohort of mother), distinguishing birth orders up to 10+.

Totals of live births for the present-day territory have been computed for the period since 1871, totals by month of birth are available since 1914.

3 Population count data

The annual age structure of women in is available in the Human Mortality Database (www.mortality.org).

The distribution of women by the number of live-born children is available from the Census data in 1981 (May 12), 1991 (May 15), and 2001 (May 15) which were incorporated in the HFD. Women aged 16 and over were requested to report the number of all live-born children they have ever had.[2] In 1981, women were asked to write down the number of live-born children they ever had and, in addition, to state the birth date of their first four live-born children. In 1991 and 2001 women were asked to tick one of the pre-printed options (zero, 1, 2, …, up to 10+ in 1991

[1] A reconstruction of live births by age of mother and true birth order in 1951-1983 has been undertaken at the Vienna Institute of Demography in 2008 on the basis of retrospective birth histories in the 1981 Census and the data will become available in the Human Fertility Collection.

[2] The following question were asked:
1981: "Für Frauen über 16 Jehren: Wie viele Kinder haben Sie geboren? Gesamtzahl aller lebendgeborenen Kinder, auch wenn diese woanders wohnen oder bereits verstorben sind" ["For women above age 16: How many children have you given birth to? Total number of all live-born children, even when they live somewhere else or have died"].
1991, 2001: "Für Frauen ab 16 Jehren: Wie viele Kinder haben Sie geboren? (Bitte Gesamtzahl der lebend geborener Kinder ankreuzen, auch wenn diese heute woanders leben oder schon gestorben sind)" [For women aged 16 years and higher: How many children have you given birth to? (Please fill in the total number of all live-born children, even when they live somewhere else or have died"].

and 8+ in 2001). The data included in the HFD are tabulated by birth cohort of woman and number of live-born children they ever had, up to birth order 24 (for 1981), 6+ (1991), and 8+ (2001).

The distribution of women by the number of live-born children was recalculated from Census date to 1st January of given year using the exact numbers of live-born children by birth order, age of mother and day of birth between 1st January and Census date (for years 1991 and 2001 only).

3.1. Comparing data on parity distribution by age across censuses

Data from the 1991 and 2001 Censuses show a substantially lower proportion of childless women past reproductive age than the 1981 Census. For women born between 1900 and 1930, the 1991 Census suggests a childlessness rate that is lower by 2-6%. This could partly be attributed to the change in the questionnaire (see Footnote 2), whereas a slightly higher mortality of older childless women cannot account for such a large difference (see also Prskawetz et al. 2008: Fn. 7). These differences do not affect estimates of the exposure population of women in reproductive age by age and parity for 1984-2009.

4 Specific details

4.1 Definitions of live birth[3]

Different definitions of live birth applied in the period 1951–2009, but these changes in definition had no appreciable influence on the number and the proportion of live births in the vital statistics, and on their distribution by birth order.

Until 31.12.1976 the child was recognized as live birth if it showed signs of breathing.

Between 1.1.1977 und 31.12.1994 the child was recognized as live birth if it showed heartbeat or breathing or the pulsation of the umbilical cord.

Since 1.1.1995 the WHO definition of live birth is valid: Live birth refers to 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—e.g. beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles—whether or not the umbilical cord has been cut or the placenta is attached.

4.2 Age

The data are available by both mother's age in completed years (ACY) and mother's birth cohort, recalculated into age reached during the year (ARDY = year of birth minus birth cohort of mother).

The numbers of births for 1951–1983 were recalculated into Lexis triangles from data by ACY and ARDY, respectively. In the period 1954-1957 negligible adjustments had to be done because of the redistribution of births of unknown age (in the data by ARDY) across all known ages that resulted into negative values.

[3] This section has been derived from Statistik Austria (2007).

For the period since 1984 files on individual birth records were used to tabulate live births by Lexis triangles (for both age in completed years and birth cohort of mother).

4.3 Birth order

The live birth order is defined by the total number of live births a woman has previously given, without counting stillbirths (Statistik Austria 2007). In case of multiple deliveries, each child born is assigned a separate birth order.

4.4 Unknown cases

The numbers of live births by age of mother reached during the year in the period of 1951-1957 contain unknown cases of mother's age which were later re-distributed according to the distribution of the known cases. Therefore in the original official publications (see source [3]) the numbers of live births are tabulated without unknown cases, while some later sources (e.g., the Eurostat database) include them among the total of cases. The HFD input files use data from the official publications where unknown cases are listed separately. However, their number is quite low, amounting to 235 births in 1951; 28 in 1952; 91 in 1953; 54 in 1954; 45 in 1955; 0 in 1956 and 4 in 1957. The data by age of mother in completed years contain no unknown cases.

In the 1991 Census the number of women by parity was not published if the number in a given birth cohort and parity category was lower than 4. Therefore, some figures for birth cohorts 1975-1966 and for women at parities 2-6+ are substituted by the code for missing value ".".

4.5 Other details

In year 1957, one birth was moved from age 11 to age 12 (by vertical parallelograms), to conform to other sources (Observatoire démographique européen and Eurostat) and to correspond to numbers of births by Lexis squares.

In year 1963, two births were moved from age 12 to age 10 (by Lexis squares) to conform to other source (Die Natürliche Bevölkerungsbewegung im Jahre 1963, Österreichisches Statistisches Zentralamt, Wien 1964).

References

Prskawetz, A., T. Sobotka, I. Buber, H. Engelhardt, and R. Gisser. 2008. “Austria: Persistent low fertility since the mid-1980s.” In: *Childbearing trends and policies in Europe. Demographic Research, Special Collection* 7*,* Vol. 19, Article 12, pp. 293-360.

Statistik Austria 2004. Volkszählung 2001 Benutzerhandbuch, Statistik Austria, Wien.

Statistik Austria 2007. Demographisches Jahrbuch 2006, Statistik Austria, Wien.

Data sources

1. Die Natürliche Bevölkerungsbewegung im Jahre 1951 (…1974), Österreichisches Statistisches Zentralamt, Wien 1952…1975.
2. Demographisches Jahrbuch Österreichs 1975 (…1983), Österreichisches Statistisches Zentralamt, Wien 1976...1984.
3. Die Natürliche Bevölkerungsbewegung im Jahre 1971, Table 3.06, Österreichisches Statistisches Zentralamt, Wien 1972.
4. Demographisches Jahrbuch Österreichs 1983, Table 3.08, Österreichisches Statistisches Zentralamt, Wien 1985.
5. Demographische Indikatoren 1951-1995, Table 8., Österreichisches Statistisches Zentralamt, Wien.
6. Volkszählung 1981. Eheschliessungs- und Geburtenstatistik, Österreichisches Statistisches Zentralamt, Wien 1989.
7. Volkszählung 1991. Haushalte und Familien, Österreichisches Statistisches Zentralamt, Wien 1996.
8. Volkszählung 2001. Haushalte und Familien, Statistik Austria, Wien 2005.
9. Files on individual birth records 1984–2009, Statistik Austria.
10. Data provided by Observatoire démographique européen (ODE).

APPENDIX 1
DESCRIPTION OF DATA USED FOR LEXIS DATABASE

BIRTHS

Period	Type of data	Age range	Birth order	RefCode(s)
1951-1983	Annual number of live births by age of mother (Lexis squares)	12, 13, …, 48, 49+	–	5
1951-1983	Annual number of live births by mother's year of birth (Lexis vertical parallelograms)	10, 11, …,51, unknown	–	3, 4
1984-2009	Annual number of live births by age of mother, mother's year of birth and birth order (Lexis triangles)	11, 12,…, 66	1, 2,…, 9, 10+	9
1914-2009	Annual number of live births by month	–	–	1, 2, 9, 10

FEMALE POPULATION: Distribution by age and parity

Period	Type of data	Age range	Year of birth, range	Parity	RefCode	Notes
01.01.1991	Women by age, year of birth and parity	11, …, 60	1979, …, 1930	0, 1, …, 4+	7, 9	'**Golden census**' no unknown parity
01.01.2001	Women by age, year of birth and parity	11, …, 60	1989, …, 1940	0, 1, …, 4+	8, 9	no unknown parity

Note: The distribution of women by the number of live-born children was recalculated from Census date to 1st January of given year (1991 or 2001) using the exact numbers of live-born children by birth order, age of mother and day of birth between 1st January and Census date.

FEMALE POPULATION: Exposure by age and year of birth

Female exposure population by calendar year, age, and year of birth (Lexis triangles) is estimated using data on population size and deaths from the Human Mortality Database, which is available at http://www.mortality.org or http://www.humanmortality.de.