

HUMAN FERTILITY DATABASE DOCUMENTATION: BELGIUM

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1 General information

This report documents fertility data for Belgium, collected for the Human Fertility Database (HFD) project. The collected data include live births by age of the mother and live births by calendar month.

The time series of live births by age of the mother covers the years 1947–2022. Data on live births by age of the mother and birth order have been collected in Belgium since 1998 and are available in the HFD for the period 1998–2022. The data on live births by calendar month are available for the period 1900–2022. Data on the distribution of women by number of live-born children are available from 2001 census.

Population data, available starting from the year 1841, have been processed and documented in the Human Mortality Database (HMD, <https://www.mortality.org/>).

All the input data used for generating the HFD output data and indicators are specified in Appendix 1.

1.1 Data collection and availability

Statistics Belgium (Institut national de statistique; Nationaal Instituut voor Statistiek; Statistisches Landesamt; <https://statbel.fgov.be/>) is the official statistical agency for Belgium, responsible for collecting, processing, and disseminating statistics related to the Belgian population. Since 2002, it is part of the federal agency – the Federal Public Service Economy; <https://economie.fgov.be>.

For more information about the history of population statistics and the development of the statistical bureau in Belgium, see Gleit et al. (2023).

1.2 Territorial coverage

Age-specific birth counts are available only for the post-war period, and there have been no territorial changes since the end of World War II. However, the available series of monthly birth counts goes as far back as 1900 and their territorial coverage varies for the period before 1945. Under the territorial provisions of the Treaty of Versailles (28 June 1919), Belgium was enlarged along the German border to include the districts of Eupen and Malmédy (the now so-called “East Cantons” or “Cantons rédimés” in French). During World War II, these areas were temporarily re-annexed by the Germans. After 1944, however, the former territorial boundaries of Belgium were restored.

¹ Substantial parts of this documentation have been adopted from the Human Mortality Database country documentation for Belgium (Gleit et al. 2023).

The birth statistics covers all births to women legally resident in Belgium. Births to non-residents are not included in the national birth statistics. Starting in 2011, all asylum-seekers are included in the resident population, and population counts are thus published in compliance with this new definition.

Table 1 summarizes the territorial changes and provides area codes used in the input data file for monthly births (*BELmonthly.txt*). The area codes for Belgium have been adopted from the Human Mortality Database (see Gleit et al. 2023).

Note that in HMD data, the asylum seekers are included in the resident population already since 2010, while in the HFD data – only since 2011. Hence, the area codes for 2010 differ in the HMD and the HFD, and therefore also the population exposure for 2010 does not completely match with the coverage definition of births. However, the differences in 2010 female population exposures by the respective coverage definitions are very small and account for 0.2–0.5% of the population in ages 15–40.

Table 1 Territorial coverage of birth count data, Belgium

Period	Territory	Area Code
1900–1924	Includes the territory established in 1839 by the treaty of the XXIV articles, which settled territorial disputes between the Netherlands and Belgium.	10
1925–1939	The cantons of Eupen, Malmédy, and Saint-Vith (the “East Cantons”) along the German border were ceded to Belgium under the territorial provisions of the Treaty of Versailles (June 28, 1919), which took effect on January 10, 1920 (Vrielinck, 2000). This change was reflected in vital statistics counts as of January 1, 1925. The 1930 census counts include these districts.	20
1940–1943	Germany invaded Belgium on May 10, 1940, and the cantons of Eupen, Malmédy, and Saint-Vith were temporarily re-annexed by Germany as of June 1, 1940 (Vrielinck, 2000). During 1940 to 1943, the vital statistics counts excluded these territories.	10
1944–2010	On September 1, 1944, the former territorial boundaries of Belgium were restored (Vrielinck, 2000). The cantons of Eupen, Malmédy, and Saint-Vith have been included in vital statistics since 1944 and were included in the 1947 census.	20
2011–present	Starting January 1, 2011, the resident population includes asylum seekers. Deaths of asylum-seekers are also included in death counts. We account for this minor universe change using the same method as territorial adjustments.	30

Source: HMD Belgium country documentation (Gleit et al. 2023).

Note: Data for 2010 refer to Area 30 in HMD, but to Area 20 in HFD.

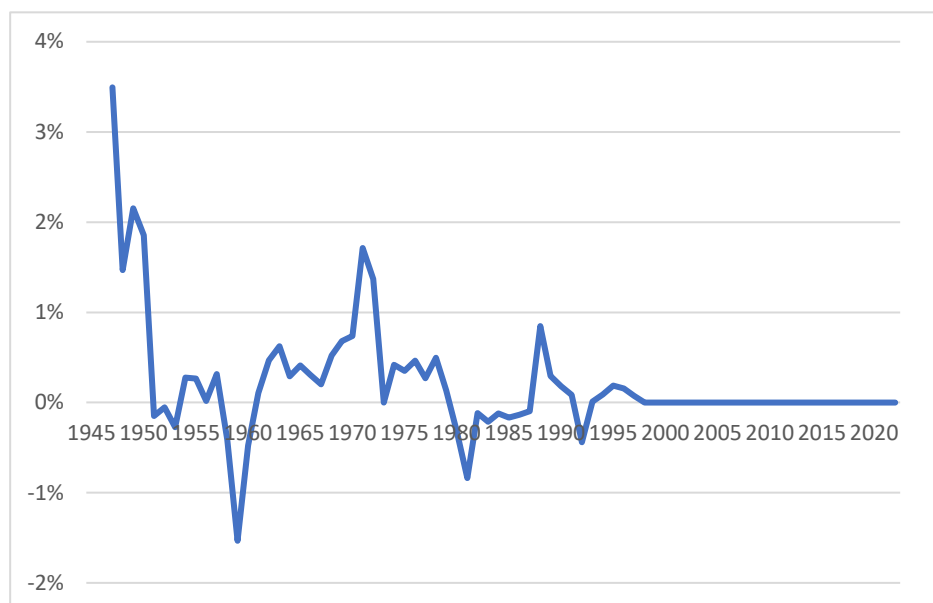
2 Birth count data

Birth and fertility statistics are combined from two administrative sources: the **statistical birth report** (Bulletins statistiques de l'état civil: Naissance d'un enfant né vivant – Modèle I); and the **National Register** (Registre national des personnes physiques – RNPP). The National Register is the base and official source, which provides the numbers of births more quickly but without detail, and it contains information only on births to the parents registered in the National Register. The statistical birth report includes more information about the new-born, the parents, and previous births of the mother. By combination of the two sources, the Statistics Belgium produces the detailed data on live births (Statistics Belgium 2023).

Until 1997, the total numbers reported by the two sources differed. The discrepancy was caused by the fact that in the statistical birth report, some women declared themselves as legal residents of

Belgium even when they were not (“false” resident births). On the other hand, the births to Belgium residents that took place abroad were included only to the National Register (Statistics Belgium 2023). Therefore, the birth statistics reported higher numbers of live births than the Register for most of the years (see Figure 1). The maximum difference was 5,248 (+3.5%) in 1947. The difference of more than +1% occurred also in 1948–1950, 1971–1972, and 1988. On the other hand, the birth statistics reported a significantly lower number of births than the National Register in 1959 (by -1.5%) and in 1988 (-0.8%). From 1998 onwards, both data sources report the same total numbers of live births, based on the National Register.

Figure 1 The difference between the total numbers of live births reported in the statistical birth report and in the National Register, 1947–2022 (%)



Birth counts for the years 1947–1967 come from the Observatoire démographique européen (ODE). Births for 1947–1960 are available only by age of the mother and primary source is unknown. Birth counts by age of the mother and mother’s year of birth for the years 1961–1997 were collected by the ODE from the official statistical publications of the Statistics Belgium. Birth counts by age of the mother and mother’s year of birth and by birth order for years 1998–2022 were provided by the Statistics Belgium.

Monthly births for 1900–1997 come from the birth count data collection of the ODE, originating from various sources. Monthly birth data for 1914–1918 are estimates produced by the ODE.

3 Population count data

3.1 Population count data by age

The HFD population exposure estimates are calculated using data on population size and deaths from the Human Mortality Database (HMD, www.mortality.org). Population data for Belgium, covering the years since 1841, are documented in the HMD Background and documentation file (Glei et al. 2023). For the years prior to 1991, HMD population estimates for Belgium are based on official census counts and are derived using the standard HMD methods (for further details, see Glei et al. 2023). For the years since 1991, the HMD uses official population estimates, based on data from the National Population Register, that are published by the Statistics Belgium.

3.2 Population count data by age/cohort and parity

The Belgian census 2001 was rather a general socioeconomic survey than a conventional census. It has reference date of 1.10.2001. The question on the number of live births was asked of all women aged 14+. Women were requested to report the year of birth of their children. The validity of the fertility indicators was tested by Neels and De Wachter (2010). The data are tabulated by woman's year of birth (single birth cohorts 1920–1986) and the number of live-born children (up to birth order 8+). There were no women of unknown parity.

4 Specific details

4.1 Definition of live birth

Before 1956, new-borns who died prior to the registration (i.e., in the first three days after the birth) were not recorded as live births, but rather as stillbirths. As a result, live births were undercounted. Nonetheless, these false stillbirths (présentés sans vie or PSV) comprise a very small proportion of all live births. In the HFD, the PSVs are included in the Belgian birth data since 1920.

Since 1956, Belgium uses the WHO definition of a live birth.

4.2 Age

Birth data for 1947–1960 are classified by age of the mother (Lexis squares). The birth data for 1961–1997 and 1998–2022 are classified by age of the mother and mother's year of birth (Lexis triangles).

In 1947–1960, the age of mother was unknown among around 1% of births (1000–1500 births). In 1961–1997, the number of unknown cases was very low (up to 40). In 1998–2022, the number of cases with unknown age was rather low (up to 600, or 0.5%) – see Figure 2.

Due to certain discrepancies that occurred for ages 45–50 in data for 1947–1960, were these ages grouped to open age group 45+, which is further split by the standard HFD methods.

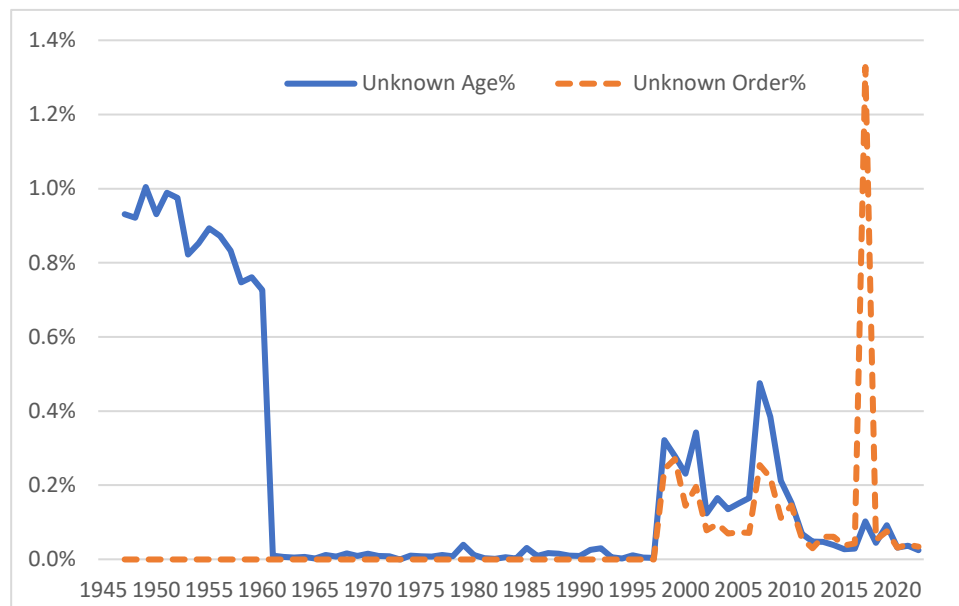
4.3 Birth order

Since 1998, the vital statistics system in Belgium switched from collecting data on births by birth order within marriage to collecting data on births by biological birth order.² The biological birth order means the birth order among all the live births to the mother.

During 1998–2022 the birth order was unknown for a low number of cases (up to or 0.3%), except in the year 2017 (1582, or 1.3% of births) – see Figure 2.

² The fertility rates by birth order for 1960–2000, published in the Human Fertility Collection (RefCode BEL_26), are research estimates based on census 2001: <https://www.fertilitydata.org/Country/Country?code=BEL>

Figure 2 Proportion of births with unknown age of the mother or unknown birth order, 1947–2022 (%)



4.4 Births by month

Totals of live births by month are available for the period 1900–2022. The data for 1900–1997 originate from various official sources; they were provided for the HFD by the ODE. It is noteworthy that monthly births for the years 1914–1918 are estimates produced by the ODE. For more details, see Gleijer et al (2023). Monthly births for the period since 1998 were downloaded from the online database of the Statistics Belgium.

For the year 1991, the sum of births by month is 125,924, whereas the sum of births by age of the mother is 125,518. The source of the difference (406 births) is unknown.

4.5 Revision history

Changes with the May 2024 revision:

New age-specific birth data for 1947–1960 were added. The data for 1998–2021 were replaced with birth order specific data from a new source. Monthly births for 1998–2009 were revised; all monthly data for the years 1998+ come now from the same source. Finally, HMD population estimates for 2007–2020 were revised.

Changes with the December 2024 revision:

New data for 2022 were added.

References

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- Patrick Lusyne, Statistics Belgium (FOD Economie – SPF Economie), provided data by birth order.

APPENDIX 1

INPUT DATA USED FOR HFD CALCULATIONS

BIRTHS

Period	Type of data	Age range	Birth order	RefCode
1947–1960	Annual number of live births by age of mother (Lexis squares)	–14, 15, ..., 44, 45+, unknown	–	1
1961–1997	Annual number of live births by age of mother and mother's year of birth (Lexis triangles)	–14, 15, ..., 54, 55+, unknown	–	2
1998–2022	Annual number of live births by age of mother and mother's year of birth (Lexis triangles)	–13, 14, ..., 49, 50+, unknown	1–5+, unknown	9
1900–2022	Annual number of live births by month	–	–	1, 7

FEMALE POPULATION: Distribution by age and parity

Period	Type of data	Age range	Year of birth, range	Parity	RefCode	Notes
01.10.2001	Number of women by birth cohort and parity	—	1920–1986	0 to 8+	10	'Golden census'

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 <https://www.mortality.org/> or <https://www.humanmortality.de/>.