HUMAN FERTILITY DATABASE DOCUMENTATION: RUSSIA

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1 General information

The collection of vital statistics in Russia began at the end of the 19th century. The annual production of tables of birth numbers by age of the mother started in 1933. The production of tables of birth numbers by age of the mother and birth order started in 1944. From 1946 onwards, the quality of these data (in terms of completeness) is considered satisfactory. The territorial coverage is described in section 2 of this report.
Tables of the female population split by age and parity are available from the population censuses of 1979, 1989, 2002, and 2010.
The data proprietor is the state statistical system and its central agency, the Federal State Statistics Service (Rosstat), online at www.gks.ru.

1.1 Data sources

Rosstat has provided the HFD with a major portion of the Russian fertility data. Specifically, these are data on the following:

- births by age of the mother and birth order for the 1959-2018 period;
- monthly birth numbers for the 1956-2018 period;
- census data on the female population by parity and age according to the censuses of 1979, 1989, 2002, and 2010.

For the 1946-1958 period, data on births by age of the mother and birth order were collected in the Russian State Archive of the Economy. Due to the limited quality of the historical data, the HFD indicators were calculated only for the period beginning in 1959. However, these data are available in the input file for births (see the “Input Data” section on the country page for Russia).
The estimates of the female population exposure by age for the 1959-2018 period were obtained from the Human Mortality Database (HMD)[1].

[1] As the HMD team encountered serious data quality issues when examining the Russian population data for 2015-2018, the HMD population exposure estimates produced for these years are not yet publicly available. However, these data quality issues pertain to older ages only, and have no effect on the population estimates for females of reproductive ages.

2 Territorial coverage

The following territorial changes have taken place in Russia during the period covered by the data:

- The Karelo-Finnish Soviet Socialist Republic (from 1956 to 1992, the Karelian Autonomous Socialist Republic; and since 1992, the Republic of Karelia) was included in Russia on 16 July 1956. This territorial change caused a 0.6%[2] increase in the total population of Russia;
- The Crimea region was excluded from Russia and added to Ukraine on 19 February 1954. There is no estimation of the Crimean population in this period. After the termination of military operations and the deportation to Central Asia of the Crimean Tatars several other populations, Crimea became an underpopulated region. Mass migration to Crimea started in the early 1950s. Thus, on the basis of the 1959 census, it is estimated that this change produced a 1% decrease in the total population of Russia, and this figure should be considered an upper estimate. Since 2015, the official population statistics produced by the Rosstat have included the Republic of Crimea and the city of Sevastopol.
- The data for 1946-1955 and for the period starting in 2015 that are available in the HFD were adjusted for the territorial changes in such a way that the borders of Russia were retained over the whole period.

In addition, the population coverage of the birth statistics changed during the period even as the borders of Russia's territory remained fixed (see Table 1).

Table 1. Territorial coverage over time

Period	*Population coverage*	*Area Code*[*]
1946	Vital statistics cover the main part of Russia's population. Birth statistics by parity do not include births in Amur oblast, Kamchatka oblast, and Khabarovsk kray[**]. Official population estimates were absent.	13
1947-1958	Vital statistics cover the entire population of Russia. Official population estimates were absent.	1
1959-1992	Vital statistics and official population estimates cover the entire population of Russia.	1
1993-1994	Vital statistics do not cover the Chechen-Ingush Autonomous Republic. The HMD population denominator is adjusted correspondingly by excluding the region's population.	11
1995-2002	Vital statistics do not cover the Chechen Republic. The HMD population denominator is adjusted correspondingly by excluding the region's population.	12
2003***-2018****	Vital statistics and official population estimates cover the entire population of Russia.	1

[*]The area code is used in the Input Database to denote the geographic area covered by the data.
[**]Three regions accounted for about 2% of births in Russia in 1946.
[***]For 2003, only the total number of births is known for the Chechen Republic.
[****] Since 2015, the Rosstat has also collected and published data for the Republic of Crimea and the city of Sevastopol. In order to ensure the temporal consistency of the HFD fertility data series for Russia and their comparability with fertility estimates produced by international agencies (in particular, the United Nations Population Division), these territories are not covered in the data published in the HFD.

Under the law on civil registration of 1997, the birth order field was excluded from Russian civil registration birth records from 1999 onwards. Correspondingly, tabulations of births by birth order were excluded from the set of obligatory statistical tables. Nonetheless, the majority of Russian regions have continued to produce tables of births by birth order since 1999. In these regions, the personnel of ZAGS (Registration of the Acts of Civil Status)

[2] Estimation based on 1959 census data.

offices asked the parents about the birth order when issuing civil birth certificates, and then transmitted this information to the regional offices of the Russian State Statistics Service.

At the end of 2011, a new form of the medical birth certificate was introduced in Russia that includes the question about the birth order. The ZAGS offices started to transmit the medical birth certificates to the Russian State Statistics Service. Therefore, the Statistics Service currently collects birth order data, as this information is specified in the medical birth certificates. However, in 2011 and 2012, these data were still not being collected by some regions.

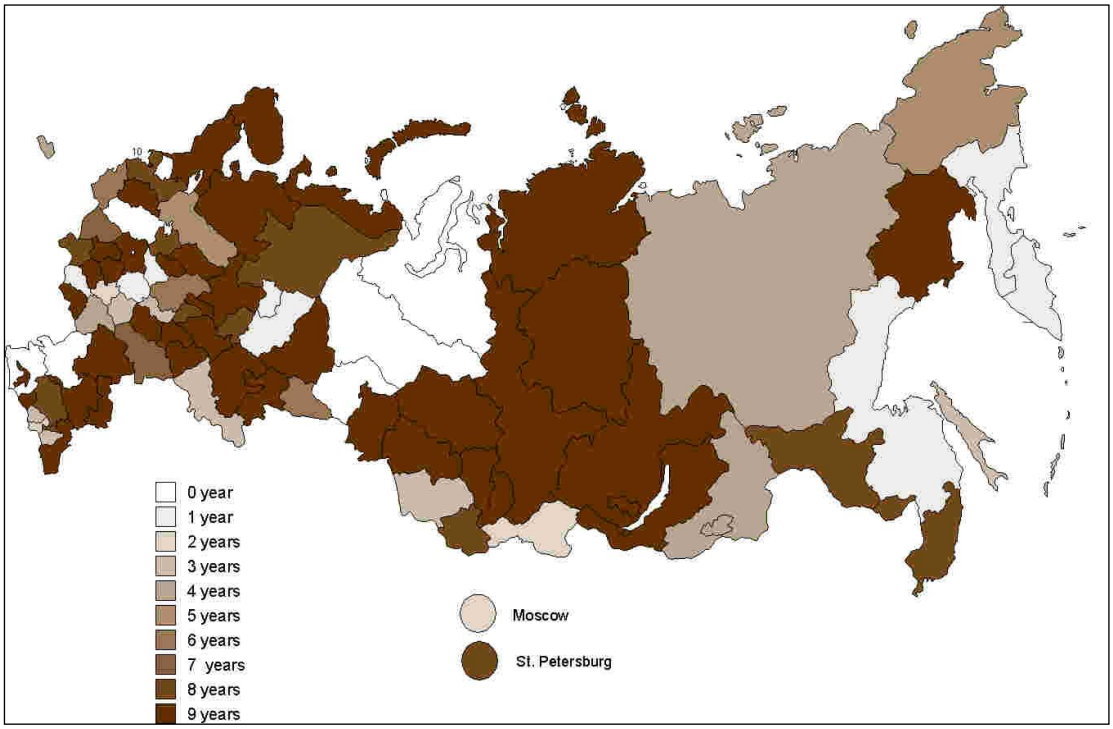
Thus, the list of regions that generate birth order statistics has varied over time (Table 2). A total of 29 regions produced these statistics over the whole 1999-2012 period, while one region (Tver oblast) completely abandoned the practice, and 50 regions produced between two and 13 annual tables of births by birth order (Figure 1). Since 2013, all regions except for the Chechen Republic have been producing birth counts by birth order. The Chechen Republic has been providing data on birth counts by biological birth order since 2018. Therefore, currently, these data are available for the whole territory of Russia.

Table 2. Coverage of Russia's regions by data on births by birth order in 1999-2012

Year	*Total number of regions with birth order statistics*	*Percentage of regions*[*]	*Percentage of population*	*Percentage of births*
1999	64	81.0	74.9	76.0
2000	50	63.3	64.7	66.2
2001	62	78.5	71.6	72.8
2002	55	69.6	65.0	66.3
2003	53	66.3	65.4	66.0
2004	55	68.8	66.0	66.3
2005	59	73.8	68.7	68.8
2006	56	70.0	66.5	66.6
2007	58	72.5	72.9	71.1
2008	56	70.0	73.3	72.6
2009	58	72.5	70.8	69.9
2010	61	76.3	76.9	76.4
2011	72	90.0	86.3	86.0
2012	75	93.8	88.7	89.1

[*] Total number of oblast-level regions in the Russian Federation was 79 in 1999-2002 and was 80 in 2003-2012.

Figure 1. Number of years covered by birth order statistics in regions of Russia, 1999-2007



Analyses done using data for 1999-2007 showed that regions with and without birth order-specific data did not differ significantly according to principal birth indicators such as the TFR and the mean age of the mother at birth (see Appendix 2 for more details). The differences between the groups of regions with and without birth order data were 0.045 in terms of the TFR, and 0.117 years in terms of the mean age of the mother at birth. In addition, we observed that in 1998 (the last year of 100% territorial coverage by birth order registration), there were only small differences in the order-specific TFRs and the mean age of the mother at birth among all 79 regions of Russia and the sub-set of regions that continued the birth order registration beyond 1999 (see Appendix 2). In light of these findings, we decided to distribute the age-specific births for the whole of Russia in 1999 and in the later years of 2000-2012 by birth order according to the birth order distributions in the regions covered by birth order registration.

In 2007, the Social Insurance Fund (SIF) of the Russian Federation started publishing data on live births by age of the mother and birth order based on prenatal and delivery care certificates[3] (Zakharov, 2011). Our analysis showed, however, that these data cannot be used for HFD purposes. For more details regarding these data, see Appendix 2.

3 Data included in the HFD

3.1 Birth count data

The Soviet-Russian system of civil registration of births was established after the socialist revolution of 1917. At that time, the registration of vital events was transferred from the church to specially established civil registration units, which were later were named ZAGS (Registration of the Acts of Civil Status) offices. In Russia, the civil registration of vital events is governed by the Act of Civil Status, issued by the Ministry of Justice. During the post-war period, the

[3] In Russian, this certificate is called “родовой сертификат” (more details can be found in Appendix 2).

content of these laws was revised several times.

Although Russia tabulated the numbers of births by age of the mother from 1933 onwards, before 1946 – and especially in the 1941-1944 period – these data were incomplete, and did not cover significant parts of Russia's territory. There was some under-reporting during this time, and even after 1945. But according to Andreev, Darskii, and Kharkova (1998), the completeness of these data improved rapidly over the 1946-1958 period.

Table 3. Percentage of unregistered births in Russia

Year	*%*	*Year*	*%*
1946	6.7	1953	3.7
1947	4.8	1954	3.3
1948	4.3	1955	2.6
1949	4.2	1956	2.0
1950	4.0	1957	1.7
1951	3.9	1958	1.5
1952	3.7		

These estimates did not take into account problems related to the definition of *live birth*. Up to today, the definition used in Russia has diverged from conventional Western practices and WHO recommendations. According to the Soviet definition of live birth (promulgated before the Second World War), a live birth was to be officially registered by the statistical system if the gestation period was 28 weeks or longer, the body mass at birth was 1000 g or higher, the body length was 35 cm or longer, and the new-born was able to breathe. The use of this restrictive definition led to the underestimation of births, and of the population at age 0. Moreover, it resulted in the underestimation of neonatal mortality by about 50%, and of infant mortality by about 25% (Anderson and Silver, 1986, Blum and Monnier, 1989, Velkoff and Miller, 1995). The definition was modified somewhat in 1992, and this change may have led to a marginal reduction in the underestimation of infant mortality (Andreev, 1995). In 2012, Russia adopted a new definition of *live birth* that is much closer to the recommended WHO definition. However, there are still some differences between the definition used in Russia and the WHO standard that may result in some degree of understatement of live births (Kvasha, 2014). From the perspective of fertility analysis, the understatement of births is relatively unimportant.

In the Russian statistical system, the processing of individual birth records starts in the local ZAGS offices. From these records, the regional statistical offices construct annual tables. The annual number of births by age of the mother was presented in "forma 2" before 1988, and in "file P211" since 1988. Births by age of the mother and birth order were given in "forma 2a" before 1988, and in "file P241" in 1988-1998. After 1998, information on birth order was no longer available for the whole territory of Russia. Thus, "file P241" no longer contained information on birth order. Instead, "file P241a" was introduced to provide this information for a set of regions that were continuing to collect data on birth order (see the "Territorial coverage" section). In 2011, a new table, "file P242", was introduced. This table contains birth numbers by age of the mother at birth, the mother's year of birth, and birth order.

For the total (non-order-specific) birth numbers, data by single-year age group are available for all years since 1946 except 1955-1958 (see Appendix 1 for more details). For the order-specific birth numbers, only abridged (five-year age group) data are available for the 1955-1958 period, and for the long 1959-1977 period.

The birth data that are currently used for HFD calculations cover the period since 1959, as the population denominator has been known with a greater degree of precision from that point onwards (due to the first post-war Soviet census of 1959).

We were not able to find a rational explanation for the relatively large number of births observed in the last open age interval in the years preceding 1960. In 1959, for example,

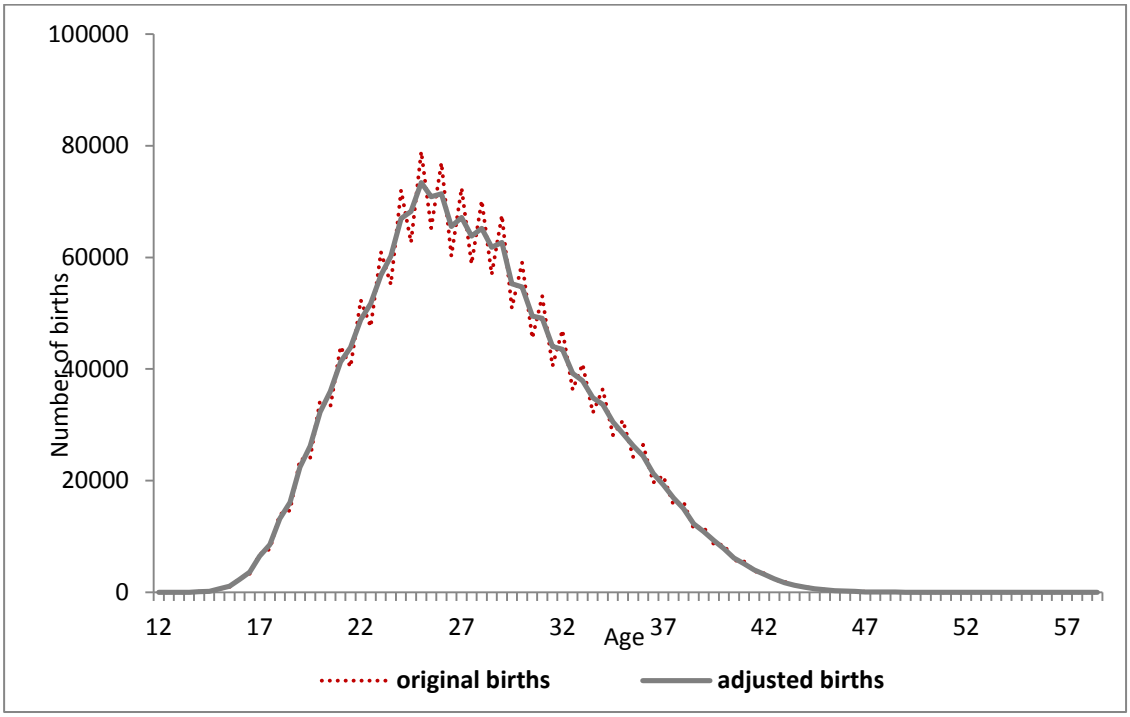
there were 521 births registered to women belonging to the age category of 55 years and older (55 births in urban areas and 466 births in rural areas). Out of this total, 17 births were registered as first births, which looks very unlikely. During the 1960s, the numbers of such births dropped from about 500 to about 50. Fortunately, these problems do not have any significant effects on the fertility indicators or the fertility tables.

Another problem that is worth mentioning was discovered while calculating the cohort fertility tables: namely, that the level of childlessness in the 1949 birth cohort appear to be unrealistically low (about 3%). The cumulated numbers of first births in this cohort are about 30% higher on average than in the neighbouring cohorts of 1947, 1948, 1950, and 1951. A detailed analysis showed that the most likely reason for the implausibly high fertility rates found for this cohort is that the size of the 1949 birth cohort of women was underestimated in the 1959 census. The total number of births was 2,960 thousand in in 1949, compared with 2,407 thousand in 1948 and 2,746 thousand in 1950. The size of the 1949 cohort was underestimated in the 1959 census (due to significant age heaping at age 10 in the 1948 cohort), and this underestimation influenced corresponding population exposures over a sequence of later years.

Finally, it is notable that we did not find signs of age heaping in the age of the mother at birth, or evidence of systematic age misreporting.

Since 2011, the Rosstat has been producing data on births by the mother's age at birth and the year of birth (Lexis triangles). Some irregularities were detected in the distribution of the original birth data by Lexis triangles for the years 2012-2014, which appear to be related to the way the mother's age at birth had been processed (Figure 2). The most likely explanation for these irregularities is that the mother's age was calculated using only the month and the year of birth, while failing to include the day of birth. This calculation increased the age by one for about 1/24 of all births. To adjust for these irregularities, the original birth counts by Lexis triangles were converted into Lexis vertical parallelograms. For the years 2012 and 2013, the Lexis vertical parallelograms were subsequently split back into Lexis triangles using the proportions of the corresponding Lexis triangles estimated from a supplementary data source: "Anonymous micro data on all births registered in Russia from 01.01.2012 to 31.12.2013". The distribution of births before and after the adjustments is illustrated in the figure below.

Figure 2. Distribution of official and adjusted birth counts by Lexis triangles in Russia in 2012



For the year 2014, the microdata on births were insufficient to produce Lexis triangles, as was done for the data for 2012-2013. Therefore, the birth counts by Lexis vertical parallelograms were used as the input data in the further HFD computations for this year.

3.2 Population count data

In our analysis, we rely on HMD population estimates from 1959 onwards. However, for the computation of parity-specific fertility tables, which form the second HFD output data block "Fertility Tables" (for a detailed description of the HFD output data, see the HFD Methods Protocol), we have chosen to use population estimates and birth data from 1970 onwards only. We made this decision because the Russian population estimates before the 1970s are less reliable (Shkolnikov and Jdanov 2006), and are thus not of sufficiently high quality for the computation of parity-specific fertility tables.
While population estimates for the 2015-2018 period have been produced by the HMD team, they have not yet been released on the HMD website due to the problems with the population estimates at older ages. Since these problems do not affect the female population of reproductive ages, the data still could be used for the Human Fertility Database purposes.

The questionnaires of the four Russian censuses of 1979, 1989, 2002, and 2010 contain a question concerning the number of children ever born. In the first three censuses, this question was posed only to the 25% population sample that was generalised by the census organisers to the whole population.

4 Specific details

4.1 Data quality issues

Due to problems with the quality of the population estimates, the data prior to 1970 should be used with extra caution.

For the calculations of the period and cohort fertility tables in the HFD, the only the data on births by birth order from 1970 onwards are used.

4.2 Revision history

Changes with the June 2016 revision:

The current release includes new data for 2011-2014. Compared to the data released on 13 April 2012, the revision includes some changes in the birth estimates as well as in the fertility rates for the 2003-2010 period. These changes are due to the use of the revised population estimates for the last intercensal period (2003-2010). In addition, there are some changes in the female population exposure estimates for the 2000-2008 period that are caused by the more detailed death count data used to generate them.

Changes with the October 2020 revision:

The current release includes new data for 2015-2018.

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APPENDIX 1:
DESCRIPTION OF DATA USED FOR LEXIS DATABASE

BIRTHS

Period	Type of data	Age range	Birth order	RefCode(s)
1959-1977	Annual number of live births by age of mother (Lexis squares)	≤15, 16, 17,…, 50-54, 55+, unknown	–	3
1959-1977	Annual number of live births by age of mother and birth order (Lexis squares)	≤15, 16-19, 20-24, …, 50-54, 55+, unknown	1-11+, unknown	3
1978-1988	Annual number of live births by age of mother and birth order (Lexis squares)	≤15, 16,…, 54, 55+, unknown	1-11+, unknown	4
1989-1995	Annual number of live births by age of mother and birth order (Lexis squares)	≤15, 16,…, 54, 55+, unknown	1-7+, unknown	5
1996-1998	Annual number of live births by age of mother and birth order (Lexis squares)	≤15, 16,…, 54, 55+, unknown	1-5+, unknown	5
1999-2008	Annual number of live births by age of mother and birth order (Lexis squares)	≤15, 16,…, 54, 55+,unknown	1-5+, unknown	6
2004-2008	Annual number of live births by age of mother (Lexis squares)	≤12, 13,…, 54, 55+, unknown	–	6
2009-2010	Annual number of live births by age of mother (Lexis squares)	≤12, 13,…, 54, 55+, unknown	–	11
2009-2010	Annual number of live births by age of mother and birth order (Lexis squares)	≤15, 16,…, 54, 55+, unknown	1-5+, unknown	11
2011-2013	Annual number of live births by age of mother, mother's year of birth (cohort) and birth order (Lexis triangles)	12, 13, …, 57/58/59+, unknown	1-5+, unknown	15
2014	Annual number of live births by age of mother and birth order (vertical parallelograms)	11, 12, …, 58, 59+, unknown	1-5+, unknown	15
2015-2018	Annual number of live births by age and cohort of mother and birth order (Lexis triangles)	11, 12, …, 59, 60+, unknown	1-5+, unknown	18
1956-2018	Annual number of live births by month	–	–	7, 12, 14, 16, 17

Notes:
1. For the calculations of the period and cohort fertility tables, only data on births by birth order from 1970 onwards are used.
2. Age-specific births for the whole of Russia in 1999-2012 have been distributed across the birth orders according to the birth order distributions in regions with birth order registration (see Section 2 and Appendix 2).
3. For 2003, only the total number of births is known for the Chechen Republic.

FEMALE POPULATION: Distribution by age and parity

Period	Type of Data	Age range	Year of birth, range	Parity	RefCode(s)	Notes
17.01.1979[1]	Number of women by age and parity	15,…,54, 55+, unknown	–	0, 1, …9, 10+, unknown	8	Unknown parity to be redistributed proportionally
12.01.1989[1]	Number of women by age and parity	15,…,54, 55+, unknown	–	0, 1, …,5, 6+, unknown	8	'Golden' census. Unknown parity to be redistributed proportionally
9.10.2002[1]	Number of women by age and parity	15,…99, 100+	–	0, 1,…,6, 7+, unknown	13	Unknown parity to be redistributed proportionally
14.10.2010	Number of women by age and parity	15,…69, 70+, unknown	–	0,1,…,9, 10+, unknown	13	Unknown parity to be redistributed proportionally

[1] The question about the number of children ever born was asked of a 25% sample of households in the census. The weights were applied to the whole population of women.

FEMALE POPULATION: Exposure by age and year of birth

The 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. Please note that the HMD has not yet released the population estimates for the 2015-2018 period for public use (for details, see section 3.2).

APPENDIX 2:
CALCULATION OF AGE-ORDER-SPECIFIC BIRTH NUMBERS FOR RUSSIA AFTER 1998

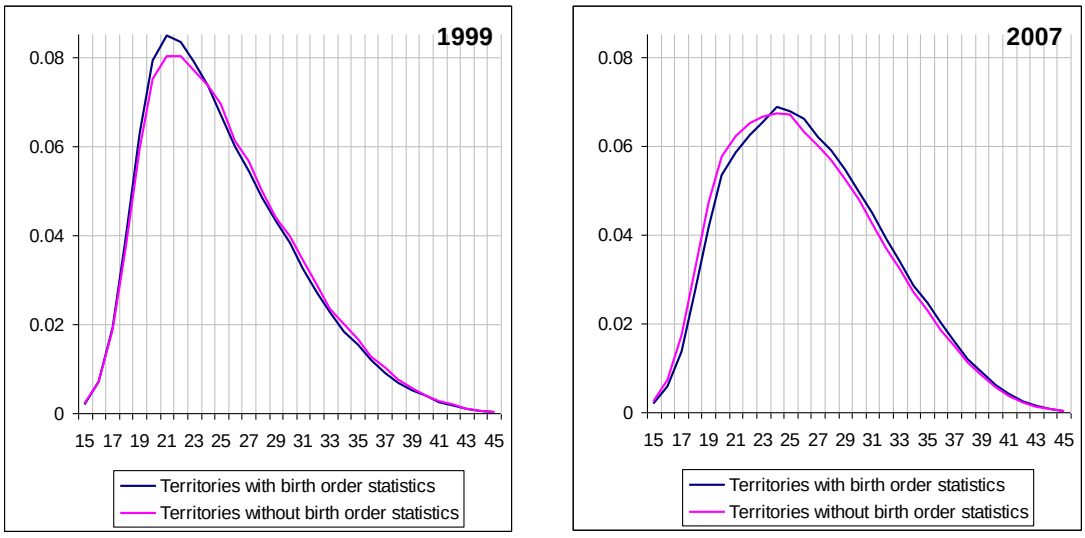
Starting in 1999, the statistical offices in some regions of Russia stopped producing tables of births by birth order. The number of regions generating such tables was around 50-60 in the 1999-2010 period, and had increased to 75 by 2012. Since 2013, all regions apart from the Chechen Republic have been producing birth counts by birth order. The analysis presented below focuses on the years when less than 90% of all Russian regions were producing the order-specific data (1999-2010).

Over the 1999-2007 period, the regions with and without birth order statistics did not differ significantly by the main birth indicators (Table 2.1). However, for some years, the age patterns of fertility in the two groups differed slightly (Figure 2.1).

Table 2.1. Total fertility rate and mean age of the mother in regions with and without birth order statistics

	TFR			Mean age at childbearing		
Year	All territories	Territories with birth order statistics	Territories without birth order statistics	All territories	Territories with birth order statistics	Territories without birth order statistics
1999	1.157	1.171	1.112	25.57	25.52	25.73
2000	1.195	1.213	1.162	25.76	25.84	25.62
2001	1.223	1.240	1.179	25.93	25.93	25.94
2002	1.286	1.310	1.243	26.12	26.14	26.09
2003	1.307	1.323	1.279	26.27	26.26	26.28
2004	1.340	1.344	1.332	26.41	26.43	26.39
2005	1.287	1.286	1.289	26.56	26.54	26.60
2006	1.296	1.297	1.293	26.64	26.59	26.73
2007	1.406	1.377	1.482	26.99	27.09	26.76

Figure 2.1. Age-specific fertility pattern[4] in 1999 and 2007 in regions with and without birth order statistics



Is it possible to use the distribution of births by birth order from the regions to draw

[4] Age-specific fertility rate divided by the TFR.

conclusions about the birth order distributions across the whole country? If we assume that the territories with birth order statistics are a random sample from all regions, then the answer is clearly yes. The data provided in Table 2.1 also suggest that the differences in fertility between these two groups are not significant.

For the estimation of the age-order-specific numbers of births, we assumed that the distributions of births by birth order at each age in the two groups of regions are the same. This means that we applied the same algorithm that is usually applied to redistribute births of an unknown birth order into order-specific categories. It should be noted that we first distributed the births for which the age of the mother was unknown into age-specific categories for all birth orders combined, and for births by birth order in regions with birth order statistics.

The results of our calculations and derived measures look rather plausible (Figure 2.2-2.3). No unexplainable fluctuations were observed.

Figure 2.2. Total fertility rate for birth orders 1 - 5+

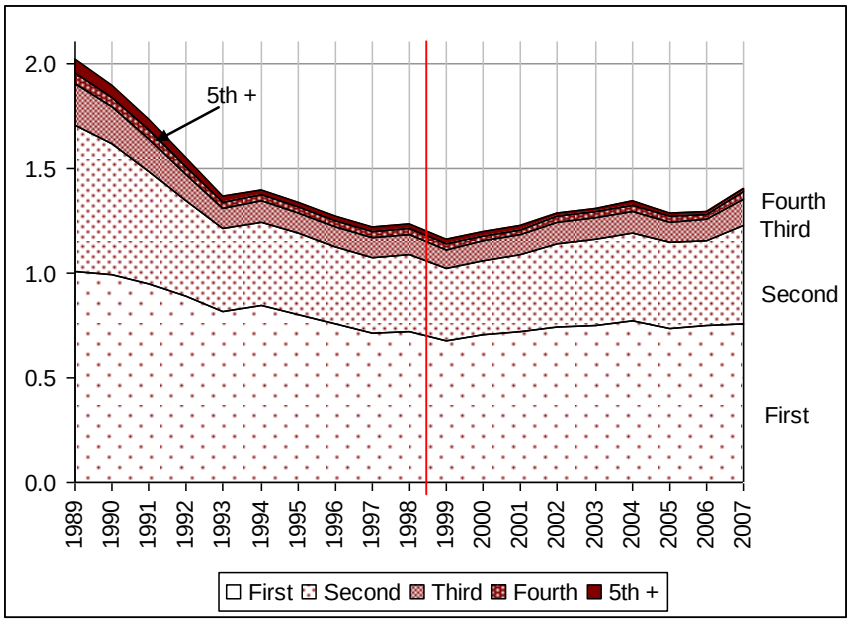
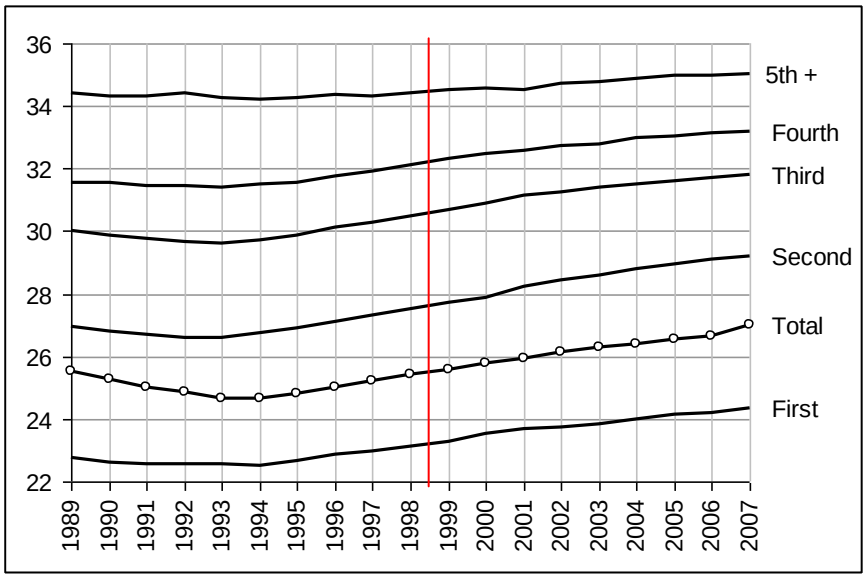


Figure 2.3. Mean age at childbearing for birth orders 1 - 5+



We attempted to estimate the quality of the distribution of births into order-specific categories using 1998 data. For this purpose, we calculated a hypothetical distribution of births by birth order and by age based on the assumption that we had complete information for only some parts of the regions, and compared the results with real data. We carried out this calculation with the lists of territories for the 1999-2003 period. The results of this experiment had an acceptable level of errors (Table 2.2).

Table 2.2. Results of the experiment: Differences in birth order-specific TFRs and mean ages at birth in 1998 calculated based on the data for all 79 regions and estimation based on various sub-groups of regions

Lists of regions with birth order data in	TFR			Mean ages at birth		
	First	Second	Third and more	First	Second	Third and more
The actual data						
1998	0.7176	0.3707	0.1432	23.121	27.534	31.368
Difference between results of the experiment and the actual data						
1999	-0.0074	0.0007	0.0067	-0.054	-0.052	-0.005
2000	-0.0075	0.0008	0.0066	-0.023	-0.085	-0.071
2001	-0.0093	0.0004	0.0088	-0.053	-0.085	-0.035
2002	-0.0081	0.0004	0.0077	-0.050	-0.073	-0.016
2003	-0.0018	-0.0016	0.0034	-0.030	-0.009	0.027

It is useful to remember that the lists of regions with birth order statistics for the 1999-2003 period are very similar. A total of 40 regions presented these data for the entire period, while nine regions did not. Thus, the similarity of the results for the 1999-2002 period was predictable, but the big gap between the calculations for 2002 and 2003 was quite unexpected: the difference between the 2002 and 2003 lists is 10 regions, with six regions exiting and four new regions entering.

It is clear that the errors are greater in the age-order-specific groups. But if we consider only the age-order-specific groups with 1000 births or more, then the relative errors will be in the interval of ±7 per cent. Unfortunately, this result cannot be considered definitive proof of the accuracy of our calculations, because the situations in some regions, and the list of regions itself, are very unstable.

Since 2007, the Social Insurance Fund (SIF) of the Russian Federation has been publishing data on numbers of live births by age of the mother and birth order based on the coupons No 2 of individual prenatal and delivery care certificates (Zakharov, 2011). The SIF data are available online[5]. We have analysed these data in order to find out whether it is possible and practical to use them in the HFD. The SIF data cover more than 90% of births (Table 2.3), which is a significantly higher level of coverage than that of the Rosstat (see Table 2).

Table 2.3. Number of births according to Rosstat and SIF data

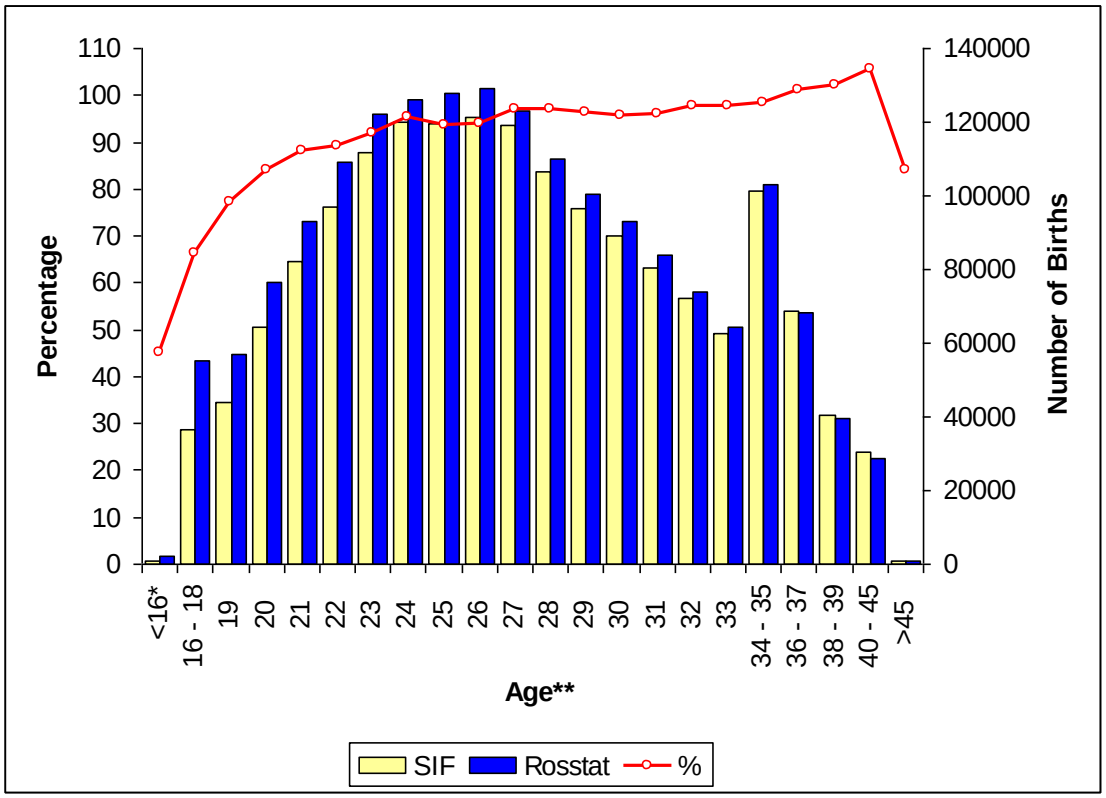
Year	Rosstat	SIF	Percentage of births included in SIF reports
2007	1610122	1458700	90.6
2008	1713947	1591439	92.9
2009	1761687	1640195	93.1
2010	1789016	1669036	93.3

5

http://fz122.fss.ru/index.php?PHPSESSID=d8b14q4g0b40letpbssmq3lis2&service=52§ion=f.fh&nl=1&unit=1&split=0&dtFrom=01.01.2010&dtTo=19.12.2010&sp=15&B1.x=42&B1.y=11

However, the pattern of coverage by age (Figure 2.4) looks odd. The share of births to women under age 20 is about 70%; the share of births to women in the 20-24 age group is more

Figure 2.4. Number of births according to SIF and Rosstat birth data, and the percentage of births covered by SIF statistics in 2010



* The SIF data also include the category "age unknown".
** Age structure is adjusted according to the SIF documentation.

The coverage varies considerably by region, from 72% in St. Petersburg to 102% in Stavropol kray. While obtaining a prenatal and delivery care certificate is complicated for foreigners, the share of foreigners in the population would by no means explain the degree of variation.

It is possible to compare the SIF and Rosstat data in 2010 by taking from the SIF data collection only the regions covered by state order-specific birth statistics. Comparisons show that the percentage of first births in the SIF data is higher than in the Rosstat data (53% vs. 51%). Again, compared to the Rosstat data, the percentage of second and third births is lower (34% vs. 36% and 9% vs. 10%, respectively), and the percentage of fourth and higher order births is about the same (4%).

There are some clear limitations in the SIF data that could explain why they are not representative. The prenatal and delivery care certificate is issued only to women who have been under the continuous supervision of a prenatal medical facility for no less than 12 weeks. Women are required to have the state compulsory medical insurance and the state mandatory pension medical insurance (all Russian citizens are supposed to have these forms of insurance). A foreign citizen can obtain this certificate only if she has a permanent residence permit. We did not find information on whether a foreigner needs to have the Russian state medical insurance in order to get the certificate.

After taking all of these peculiarities into account, we do not consider the SIF data suitable to be used for HFD purposes at the present time.

APPENDIX 3: REGIONS OF RUSSIA COVERED WITH BIRTH ORDER STATISTICS, 1999-2012
(1 = "Yes", 0 = "No")

	Total number of years	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Altai kray	4	1	1	1	0	0	0	0	0	0	0	0	0	0	1
Amur oblast	13	1	1	1	0	1	1	1	1	1	1	1	1	1	1
Arkhangelsk oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Astrakhan oblast	13	1	1	1	1	1	1	1	1	1	0	1	1	1	1
Belgorod oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bryansk oblast	13	1	1	1	1	1	1	1	0	1	1	1	1	1	1
Chechen Republic	6					0	1	1	1	0	1	1	1	0	0
Chelyabinsk oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chukotka autonomous district	10	1	1	1	0	0	0	1	0	1	1	1	1	1	1
Chuvashi Republic	13	1	0	1	1	1	1	1	1	1	1	1	1	1	1
Irkutsk oblast	12	1	1	1	1	1	1	1	1	1	1	0	0	1	1
Ivanovo oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Jewish autonomous oblast	13	1	1	1	1	0	1	1	1	1	1	1	1	1	1
Kabardino-Balkarian Republic	8	0	1	1	0	0	1	0	0	0	1	1	1	1	1
Kaliningrad oblast	8	1	0	1	0	0	0	1	0	1	0	1	1	1	1
Kaluga oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kamchatka kray	4	1	0	0	0	0	0	0	0	0	0	0	1	1	1
Karachaevo-Chercessian Republic	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kemerovo oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Khabarovsk kray	6	0	0	0	0	0	0	0	0	1	1	1	1	1	1
Kirov oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kostroma oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Krasnodar kray	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Krasnoyarsk kray	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kurgan oblast	10	1	0	1	1	0	1	0	1	1	1	0	1	1	1
Kursk oblast	6	0	0	0	0	0	0	0	0	1	1	1	1	1	1
Leningrad oblast	13	1	0	1	1	1	1	1	1	1	1	1	1	1	1
Lipetzk oblast	4	1	0	0	0	0	0	0	1	0	0	1	1	0	0
Magadan oblast	13	1	1	1	1	1	1	1	1	1	1	1	0	1	1
Moscow oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Murmansk oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nizhni Novgorod oblast	11	0	0	1	0	1	1	1	1	1	1	1	1	1	1
Novgorod oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Novosibirsk oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Omsk oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Orenburg oblast	6	1	1	0	1	0	0	0	0	0	0	0	1	1	1
Oryol oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Penza oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Perm kray	3	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Primorsky kray	13	1	0	1	1	1	1	1	1	1	1	1	1	1	1
Pskov oblast	11	0	0	0	1	1	1	1	1	1	1	1	1	1	1
Republic of Adygeya	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Republic of Altai	9	1	1	1	1	1	1	1	1	0	0	0	0	0	1
Republic of Bashkortostan	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Republic of Buryatia	11	1	1	1	1	1	1	1	1	1	0	0	0	1	1
Republic of Dagestan	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Republic of Ingushetia	10	1	1	1	1	1	1	1	0	1	0	1	1	0	0
Republic of Kalmykia	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1

APPENDIX 3 continued:
REGIONS OF RUSSIA COVERED WITH BIRTH ORDER STATISTICS, 1999-2012
(1 = "Yes", 0 = "No")

Republic of Karelia	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Republic of Khakasia	13	1	1	1	1	1	1	1	1	1	0	1	1	1	1
Republic of Komi	13	1	0	1	1	1	1	1	1	1	1	1	1	1	1
Republic of Marij El	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Republic of Mordovia	8	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Republic of North Ossetia – Alania	4	0	0	1	1	0	0	0	0	0	0	0	0	1	1
Republic of Sakha (Yakutia)	9	1	1	1	0	0	0	0	0	1	1	1	1	1	1
Republic of Tatarstan	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Republic of Tuva	5	0	0	1	1	0	0	0	0	0	1	0	0	1	1
Rostov oblast	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Ryazan oblast	3	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Sakhalin oblast	6	0	0	0	0	0	0	1	1	1	0	1	0	1	1
Samara oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Saratov oblast	9	1	1	1	1	1	1	1	0	0	0	0	0	1	1
Smolensk oblast	9	1	0	1	1	1	1	1	1	0	0	0	0	1	1
Stavropol kray	13	1	1	1	1	1	1	1	1	0	1	1	1	1	1
Sverdlovsk oblast	13	1	1	1	1	1	1	1	1	1	1	0	1	1	1
Tambov oblast	5	1	0	1	0	1	0	0	0	0	0	0	0	1	1
The City of Moscow	5	0	1	0	0	0	0	0	0	1	1	1	1	0	0
The City of Sankt-Petersburg	13	1	0	1	1	1	1	1	1	1	1	1	1	1	1
Tomsk oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tula oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tver oblast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tyumen oblast	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Udmurtian Republic	13	0	1	1	1	1	1	1	1	1	1	1	1	1	1
Ulyanovsk oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vladimir oblast	3	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Volgograd oblast	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Vologda oblast	6	1	0	1	0	1	0	1	1	0	0	0	0	0	1
Voronezh oblast	9	1	0	0	0	0	0	1	1	1	1	1	1	1	1
Yaroslavl oblast	13	1	0	1	1	1	1	1	1	1	1	1	1	1	1
Zabaikalsk kray	7	1	1	1	1	0	0	0	0	0	0	0	1	1	1