INSTITUTO NACIONAL DE ESTADISTICA

Monthly Estimates of Births

Methodology

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1 Objective

Monthly birth estimates are intended to provide quick estimates of the total number of births that occur each month using the registrations in the computerized Civil Registries, along with comparing this information with already published historical data. This allows the data to be interpreted more accurately from a historical perspective, given the variability and gradual decrease in birth figures over recent years. Two types of data will thus coexist in the project:

– Definitive data (births to 2024).

– Estimated data (rest of data up to the last published month).

2 Background

Birth Statistics forms part of the group of Vital Statistics, which has a long tradition in Spain. This is an annual operation.

As is the case with deaths, the publication calendar is conditioned by the circuit through which the statistical bulletins are received: in this case, birth records. The Monthly Estimate of Births is based on a Childbirth Statistical Bulletin (CSB) that is normally filled out on paper (in 30% of cases it is filled out through a web application) and is delivered to the Civil Registry. Civil registries produce monthly lots, and at the beginning of month m+1 send the INE all the CSB received for deaths that occurred in month m to the corresponding provincial INE delegation. These paper certificates or bulletins are scanned in the INE delegations throughout month m+1, so that at the end of month m+1 or the beginning of the month m+2, the scanned information for births in month m will be available.

In practice, there are delays, and it is usually necessary to wait two more months for late bulletins to be received. In some cases, it may even be necessary to make a complaint.

In short, in the best of cases it is necessary to wait for the first of month m+4 to have solid information regarding month m, and this information will always be provisional. The definitive birth data for year t are published in December of year t+1.

However, at the end of 2020 researchers asked the INE for updated data that reflected the pandemic's effects (if any) on fertility. As with a few months earlier for the EoWD death estimate, the INE determined this new experimental MEB statistic based on the information recorded in Civil Registries.

A few years ago, the Ministry of Justice launched the INFOREG application to record various registry entries, including deaths and births. This application has been implemented in Civil Registries, and while not all civil registries use it (around 4% of births in Spain are still not recorded in automatized civil registries) it has reached a high degree of implementation and stability throughout the national territory.

Starting in October 2021, INFOREG was gradually replaced by a new application, DICIREG, which ideally will be implemented throughout Spain within a period of about three years. Once this is achieved, all births will be registered, meaning that it will no longer be necessary to carry out the total estimation procedure currently used to prepare these statistics, which is described later.

INFOREG (and its successor, DICIREG) offers a significant advantage in terms of its timeliness: in the case of births, the INE receives a monthly file, on the first working day of each month, which collects all the births recorded through the previous day. While there may be some delays, they rarely exceed two weeks. Analysing the INFOREG/DICIREG data during the recent years, we can observe that the file received on day 1 of month m, collects on average 75% of the births of month m-1 and almost 98% of those that occurred in month m-2, and over 99% for month m-3. This allows information for month m-2 and earlier to be published with a very small margin of error.

More than a year after the creation of the MEB - with a very specific purpose related the Covid-19 outbreak - we can confirm that the original source provides statistical information of proven quality and allows us to offer updated data on births even beyond the pandemic situation. As such, it has been decided that said statistic should drop the condition of "experimental" and join the catalogue of short-term statistics offered by the INE.

Since 2024, a highly provisional estimate of births occurring in year t is obtained only two months after the end of that year. That is, in February of year t+1, an approximation of births in year t will already be available. This estimate is provisional and is revised until the publication of the definitive data in November of year t+1.

3 Type of Operation

It is a mixed operation, fundamentally based on administrative records (births registered by the Civil Registries) but with an added component of estimating the total number of births to correct for a lack of coverage and delays in recording.

The information is offered in the form of tables with retrospective series since 2013.

4 Content

4.1 POPULATION UNDER STUDY

The births occurring in Spain in the period analysed.

4.2 GEOGRAPHICAL SCOPE

The data are estimated at the national, Autonomous Communities and provincial level.

Under-registration coefficients are calculated and applied according to the province of registration.

Until May 2024, the estimated data were published according to province of registration. However, as of this date, the estimated data are published according to province of residence in order to improve the comparability of the provisional data with the definitive data from previous years.

On occasions, the residence of the pregnant mother is not always well informed in INFOREG/DICIREG, so in these cases, the province of residence has been imputed according to the place where the registration was made.

4.3 REFERENCE PERIOD

Monthly data is offered from 2013 to the present.

4.4 CLASSIFICATION VARIABLES

In addition to the classification by provinces, the estimated data is also broken down by the mother's age group and the sex of the born.

5 Characteristics of the Project

5.1 OBSERVATION UNITS TO WHICH THE PRIMARY DATA REFER

The observation unit is the birth entry registered in the Civil Registry, which contains the registration data used for the statistic: particularly the sex of the born, the date of delivery, province of registry and the mother's birthdate.

5.2 DATA COLLECTION METHODOLOGY

The General Office of Legal Security and Public Faith sends files of births recorded in INFOREG/DICIREG to the INE monthly.

5.3 ESTIMATION METHOD

The births N_i^t collected in the Inforeg files for each month in each geographic area (AC, provinces) are multiplied by two expansion coefficients: one to correct the underreporting and the other for the delay.

$$\widehat{N}_i^t = N_i^t * f_i \, (* \, r_i^t \,)$$

Where $\widehat{N}_i^t$ is the estimated number of births for geographic entity i (Autonomous Community, province) and month t,

f_i are the sub-registry correction coefficients for the original Inforeg data. This an expansion factor that historically relates the recorded births registered in province i and the births that occurred relative to mothers residing therein. See the values in the annex 1.

r_i^t corrects the delay in the recording of data in Inforeg for geographic area i and month t. It applies only to the data of the last, second last and third last month that is estimated. In the rest of the months this coefficient is equal to 1. See the values in the annex 2.

6 Dissemination plan and periodicity

6.1 PLAN FOR TABLES

The following tables will be published:

1. Monthly births accumulated and interannual variation of the accumulate by sex of the born and mother's age group. Total, national and by Autonomous Community

2. Monthly births accumulated and interannual variation of the accumulate by sex of the born and mother's age group. Total, national and by province

3. Monthly births by sex of the born and mother's age group, accumulated and absolute interannual difference of the accumulate. Total, national and by Autonomous Community

4. Monthly births by sex of the born and mother's age group, accumulated and absolute interannual difference of the accumulate. Total, national and by province

6.2 Operation calendar and updating of provisional data

In principle, the MEB statistics are expected to be published monthly around the 15th of each month. In month m data will be published for month m-2.

As provisional data of birth statistics based on CSB documents becomes available, estimates will be replaced by this provisional data.

7 Cost and burden

As a statistic based on an administrative record, there is no additional burden to the Informants.

The estimate of the budget credit necessary to finance the Monthly Birth Statistics provided for in the 2024 Annual Program is 45.63 thousand euros.

Annex 1: Under-coverage correction coefficients for the original

Province	Under-coverage correction coefficients
02 Albacete	1.00608229
03 Alicante/Alacant	1.00367509
04 Almería	1.00412614
01 Araba/Álava	1.00000000
33 Asturias	1.00000000
05 Ávila	1.09851552
06 Badajoz	1.06011762
07 Balears, Illes	1.01931794
08 Barcelona	1.00000000
48 Bizkaia	1.00000000
09 Burgos	1.10773333
10 Cáceres	1.17217563
11 Cádiz	1.00123291
39 Cantabria	1.32076985
12 Castellón/Castelló	1.00271672
13 Ciudad Real	1.01211422
14 Córdoba	1.00000000
15 Coruña, A	1.00000000
16 Cuenca	1.08931699
20 Gipuzkoa	1.00000000
17 Girona	1.00149726
18 Granada	1.00337173
19 Guadalajara	1.03088042
21 Huelva	1.00375587
22 Huesca	1.31846019
23 Jaén	1.00000000
24 León	1.27047828
25 Lleida	1.00408548
27 Lugo	1.00000000
28 Madrid	1.01500000
29 Málaga	1.00291844
30 Murcia	1.01957466
31 Navarra	1.00000000
32 Ourense	1.00000000
34 Palencia	1.43373494
35 Palmas, Las	1.00711111
36 Pontevedra	1.00000000
26 Rioja, La	1.00000000
37 Salamanca	1.13928113
38 Santa Cruz de Tenerife	1.00173688
40 Segovia	1.14987406
41 Sevilla	1.00000000
42 Soria	1.06958250
43 Tarragona	1.00000000
44 Teruel	1.00000000
45 Toledo	1.02163904
46 Valencia/València	1.00103734
47 Valladolid	1.01926270
49 Zamora	1.12602291
50 Zaragoza	1.11760051
51 Ceuta	1.00000000
52 Melilla	1.00000000

Annex 2. Correction coefficients for the delay of original Inforeg data

Province	Delay last month estimated	Delay second last month estimated	Delay third last month estimated
02 Albacete	1.02710280	1.01414141	1.01011236
03 Alicante/Alacant	1.01419950	1.00867679	1.00683938
04 Almería	1.02381890	1.01157025	1.00862745
01 Araba/Álava	1.01420455	1.00609756	1.00256410
33 Asturias	1.00646766	1.00294985	1.00235988
05 Ávila	1.01851852	1.02325581	1.01500000
06 Badajoz	1.02977642	1.01755486	1.01297935
07 Balears, Illes	1.02414698	1.01026393	1.00719640
08 Barcelona	1.02003727	1.01363331	1.01097852
48 Bizkaia	1.01860000	1.00965795	1.00793651
09 Burgos	1.01216545	1.00653595	1.00487805
10 Cáceres	1.02687339	1.01374046	1.00434783
11 Cádiz	1.03792000	1.01824104	1.01158990
39 Cantabria	1.00732601	1.00641026	1.00317460
12 Castellón/Castelló	1.02414141	1.01791045	1.01549815
13 Ciudad Real	1.01511111	1.01038961	1.00913242
14 Córdoba	1.09723077	1.02923434	1.00884521
15 Coruña, A	1.00810811	1.00562771	1.00582960
16 Cuenca	1.01333333	1.00759494	1.00256410
20 Gipuzkoa	1.00931245	1.00668524	1.00215633
17 Girona	1.02297808	1.01712846	1.01131222
18 Granada	1.00955882	1.00595903	1.00461216
19 Guadalajara	1.01877023	1.01777778	1.00842105
21 Huelva	1.02852234	1.01543408	1.00986842
22 Huesca	1.01481481	1.01030928	1.00666667
23 Jaén	1.01926606	1.00833333	1.00592105
24 León	1.00648148	1.00526316	1.00333333
25 Lleida	1.04279476	1.03768116	1.02685185
27 Lugo	1.01512605	1.00740741	1.00165289
28 Madrid	1.01586534	1.01340432	1.01189764
29 Málaga	1.03550645	1.02141230	1.01856148
30 Murcia	1.01088011	1.00675944	1.00545852
31 Navarra	1.00940639	1.00440771	1.00213904
32 Ourense	1.01709402	1.02272727	1.01739130
34 Palencia	1.00465116	1.00571429	1.00476190
35 Palmas, Las	1.01290545	1.00726496	1.00454545
36 Pontevedra	1.00828780	1.00554156	1.00397022
26 Rioja, La	1.00796460	1.00317460	1.00000000
37 Salamanca	1.00947712	1.00860215	1.00508475
38 Santa Cruz de Tenerife	1.00660451	1.00502513	1.00380952
40 Segovia	1.03049645	1.00983607	1.00344828
41 Sevilla	1.04139785	1.03463687	1.03129921
42 Soria	1.00000000	1.00000000	1.00000000
43 Tarragona	1.02930490	1.01501211	1.01045455
44 Teruel	1.00000000	1.00000000	1.00000000
45 Toledo	1.03768614	1.02145110	1.01533546
46 Valencia/València	1.01255743	1.00904044	1.00703189
47 Valladolid	1.02163743	1.01306533	1.00808081
49 Zamora	1.00416667	1.00000000	1.00000000
50 Zaragoza	1.02377676	1.01763441	1.01215190
51 Ceuta	1.00930233	1.00666667	1.00425532
52 Melilla	1.00495495	1.00307692	1.00273973