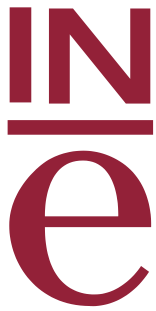


INSTITUTO NACIONAL DE ESTADISTICA



# Population Continuous Statistics

Methodology

February 2024

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## 1 Introduction

Starting with the publication of the 2021 Population and Housing Censuses<sup>1</sup>, there was a paradigm shift in the demographic statistics, since the methodology used in constructing this census was based for the first time entirely on exploiting official administrative registers.

This makes it possible to replicate each year the process to provide **annual censuses**. Thus, from 2023, the regular production of the population census is established, which will be published at the end of each year with a reference date of 1 January. It will be called the **Population Census**<sup>2</sup>, and it will be independent of the housing census, which will have a lower frequency<sup>3</sup>.

Traditionally, after the publication of each ten-year census, a statistical population series would start. Specifically, starting with the 2011 Population and Housing Censuses, and beginning with 1 January 2012, the Population Figures series was published, estimated by means of an accounting of demographic events (births, deaths, internal and external migrations and acquisitions of Spanish nationality by the foreign population).

Additionally, the publication of a new census every ten years entailed a correction of the population data series of the entire previous decade until the previous census (the traditionally called intercensal estimates). With the availability of annual censuses, it is envisaged that this system of intercensal corrections will no longer be necessary.

Moreover, the existing **duplication** of demographic information will be **eliminated**. Until 2023, two sets of population statistics were published each year: those derived from the exploitation of the Municipal Register and what we could call “statistics”, which were constructed based on the 2011 census. Specifically, two types of population stocks were published: the Population Figures (semi-annual, with reference dates 1 January and 1 July) and the **Continuous Register Statistics** (annual, with reference date 1 January).

With the new strategy, both operations will disappear from 2023, being replaced by the afore-mentioned annual population censuses, which will replace the Continuous Register Statistics, and the rollout of a new short-term population stock statistics, the Population Continuous Statistics (PCS), fully coherent with the annual population censuses. This set of statistics will replace the Population Figures from May 2023.

In this way, not only census information will be available on 1 January of each year with the maximum territorial detail, but also quarterly population estimates, with a very short lead time, fully consistent with census figures, although with less territorial detail. This responds to the demand by users, both outside and within the INE, to consolidate the population figures in a single consistent population series at all geographical levels, dispelling doubts about which batch of figures to use.

The resident population falls within the European legislative framework governed by Regulation 1260/2013 of the European Parliament and of the Council on European demographic statistics. However, a future regulation of the European Parliament and of

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<sup>1</sup> Publication of the Population Census and Housing, 30 November 2022.

<sup>2</sup> This first edition of the Population Census, which will be published for the first time in December 2023, will produce results retrospectively, so the censuses as of 1 January 2022 and 2023 will be published at the same time. From that point on, the census will be published in December as at 1 January of that year.

<sup>3</sup> A multi-year publication is envisaged, but one more frequent than the decennial version in operation until 2021.

the Council on European statistics on population and housing is already at an advanced stage of processing, which will replace this regulation and two others on demographic statistics<sup>4</sup>. This new European population regulation, predictably, will demand greater frequency and greater convenience in information on the population and associated demographic phenomena.

Furthermore, in this statistic the “population residing in family dwellings” and “number of homes” items, not previously included in the Population Figures operation, begin to be published.

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## 2 Objectives

The Population Continuous Statistics aim to provide, in each autonomous community and in each province<sup>5</sup>, quarterly and with reference dates 1 January, 1 April, 1 July and 1 October of each year, from the year 2021, a quantitative measurement of:

- the **population with habitual residence** in Spain
- the **population resident in family dwellings** (from among the population resident in Spain)
- the **number of households** in which the population resides in family dwellings

The population series will be disaggregated by sex, year of birth, age, country of nationality and country of birth. The series of households will be disaggregated by household size.

The resident population series will also cover from 1 January 2002 (some series since 1971) until 1 January 2021. It will coincide with the population censuses and will cover all their intercensal estimates<sup>6</sup>, on 1 January and 1 July of each year, previously included in the Population Figures operation<sup>7</sup>. The last intercensal correction made it possible to compile the statistics, since 1 July 2012, with whole numbers.

In addition, it will continue to comply (as did the Population Figures operation) with the European legislative framework governed by *Regulation 1260/2013 of the European Parliament and of the Council on European demographic statistics*, which governs the resident population, adapting in turn to the future regulation that will replace it.

On the other hand, this statistic offers additional information to explain, in part, the population change in each quarter. These are **external migratory movements** (abroad) for the main nationalities or countries of birth.

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<sup>4</sup> Regulation 1260/2013 on European demographic statistics, Regulation 862/2007 on Community statistics on migration and international protection, and Regulation 763/2008 on population and housing censuses.

<sup>5</sup> At least in the case of the resident population, data for islands will also be provided in the case of island provinces.

<sup>6</sup> The methodology of the intercensal estimates until 1 January 2021 can be viewed at: [https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica\\_C&cid=1254736177095&menu=metodologia&idp=1254735572981](https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177095&menu=metodologia&idp=1254735572981)

<sup>7</sup> The Population Figures operation, published for the last time in November 2022, did not include the intercensal correction between the 2011 and 2021 censuses, but will be incorporated into the new Population Continuous Statistics in its first publication.

They will be **initial starting-point movements**, since they consist only of a count of some types of upward and downward variations in the continuous Register. These results, as they are produced almost immediately, should be considered partial results, which will allow us to see the evolution of the flows of each quarter, rather than the absolute values. They will be provided from 2023, with the beginning of the statistics.

It should be noted that these counts of initial migratory movements are not intended to be provisional results of the migratory flows that will be provided at the end of the year in the Statistics on Migrations and Changes of Residence (MCRS), which will take into account, for obtaining both external and internal migrations, the differences between the two censuses. To obtain the MCRS of a period it will be necessary, therefore, to have the census on the end date of the period, which is not yet available at the time of generating the PCS.

That is why the national totals of these flows will not be given either, but only the data related to the main nationalities or countries of birth, in order to know if the migratory dynamics of certain groups are changing. These results will, for the same reason, be rounded to hundreds or tens, depending on the degree of geographical detail. Nor will it be appropriate to provide migratory balances of the different countries, since they will not only be partial migrations, but may be more or less consolidated according to the type of upward or downward variation and their different rates of arrival at the registry.

Although the flows given by the PCS have been called "migrations", when they will differ from those that will be obtained later in the MCRS and are not intended to be provisional data, the same name has been chosen for intuitive and simplicity.

A country's population figures are a basic pillar of official statistics. Not only are they important in themselves, but they also account for the denominator of all the fees that are calculated in many spheres. Specific uses include:

- **International organisations:** mainly Eurostat, but also the United Nations, OEEC, IMF, statistical institutes of other countries, etc.
- **National bodies:** The Ministry of Finance and Public Function (for Interterritorial Compensation Funds), other ministries, Statistical Offices of the Autonomous Communities, the Bank of Spain, CSIC and other research centres, universities, private organisations, etc.
- **For other statistics:** to calibrate household surveys, for calculations in other statistical operations such as National Accounts, Basic Demographic Indicators, etc.
- **Private users**

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### 3 Information sources

To calculate the data series contained in the Population Continuous Statistics, the following sources of information will be used:

- a) Official administrative data:
  - **Continuous register:** the recorded register variations are used to reflect the evolution of the population in each quarter.

## b) Statistics

- **Population Figures.** Until 1 January 2012, the resident population series matches that of the PCS: estimation of population data between each two censuses. The intercensal review between the 2011 and 2021 censuses will already be included in the new Population Continuous Statistics, although it started from the Population Figures between 2012 and 2021<sup>8</sup>.
- **Population and Housing Census** (until 2021): these are the definitive reference populations; to that date<sup>9</sup> they coincide with the Population Continuous Statistics. The census as at 1 January 2021 will be the starting point for the provisional PCS estimates, as long as there is no new one.
- **Population Census** (since 2022: available from December 2023): as a final reference point for estimating the final populations of the previous year, and as a starting point for subsequent provisional population estimates. Its first publication will be in December 2023.
- **Monthly Births Estimate** (MBE). For the provisional estimate of the PCS from 2022.
- **Weekly Deaths Estimate** (WDE) For the provisional estimate of the PCS from 2022.

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## 4 Concepts and definitions

**Resident population:** the resident population in a given geographical area is defined as those persons who, on the reference date, have established their habitual residence in it.

**Habitual residence**<sup>10</sup> is the registered place of residence.

**Sex:** refers to the biological sex of the person.

**Age:** age in years of age refers to the number of birth anniversaries on the reference date, i.e. the age on the last birthday.

**Year of birth:** the year in which the birth occurred.

**Nationality:** legal link between an individual and a State, acquired by birth or naturalisation if by declaration or acquired by choice, marriages or other terms according to national legislation. It refers to the nationality on the reference date, classified as Spanish provided that the individual has that nationality, and may also have others.

**Country of birth:** the country in which the birth occurred.

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<sup>8</sup> The methodology of the intercensal estimates until 1 January 2021 can be viewed at: [https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica\\_C&cid=1254736177095&menu=metodologia&idp=1254735572981](https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177095&menu=metodologia&idp=1254735572981)

<sup>9</sup> Until the 2011 Census, the reference date of the censuses was not 1 January, the necessary adjustments had to be made for this.

<sup>10</sup> Definition of habitual residence established in *Regulation 763/2008 of the European Parliament and of the Council on population and housing censuses and in Regulation 1260/2013 of the European Parliament and of the Council on European demographic statistics.*

**Foreign immigration:** action whereby a person establishes their habitual residence in Spain, having previously been habitual resident of a foreign country.

**Foreign emigration:** action whereby a person, who having previously been habitually resident in Spain, goes on to establish their habitual residence in a foreign country.

**Population residing in family dwellings:** resident population that on the reference date has established its habitual residence in a family dwelling.

**Family dwelling:** dwelling intended to be inhabited by one or more persons who do not constitute a group, regardless of the links between them.

**Collective dwelling:** dwelling intended to be inhabited by a collective, that is, by a group of people subject to a common authority or regime not based on family ties or living together. A collective dwelling may occupy only partially one building or, more frequently, the whole building.

**Household (according to residence criteria):** human group formed by one or more people who habitually reside in a family dwelling all year or most of it, not necessarily having family ties between the members of the group.

**Household size:** number of household members.

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## 5 Calculation method

The method of obtaining each of the demographic series contained in the Population Continuous Statistics is presented below.

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### 5.1 RESIDENT POPULATION

The methodology for calculating the series of population resident in Spain will be different for the final and provisional data:

- a) **Final data:** The populations on 1 January will coincide with those of the annual population censuses, and will be considered final. When a new census is published, the final quarterly populations of the previous year are calculated backwards between the last two censuses (1 April, 1 July and 1 October), which will correct the provisional populations previously published.

This calculation is based on the figures relating to the censuses at one January of each year, and on the register movements that occurred in each quarter for the intermediate dates of the year.

- b) **Provisional data:** The starting point will be the population published in the last population census, and from there, the evolution observed in the main source will be applied, which will be in the Continuous Register, as well as an estimate of births and deaths from the MNE and EDeS statistics, for a better adjustment of the data.

Each time a new quarter is published, the entire provisional series published since the last census will be updated, as more and more consolidated data are available. This will allow the corrections of the populations to be gradual, producing a smaller leap when they have to be corrected by a new census.

The Population Figures (PCS) differed methodologically from the new statistics in several aspects:

- The construction of **the PCS was based on flows** or forward (application of the demographic phenomena of a period to a starting population to obtain a population at the end of the period), both for provisional and definitive data. This left out of the population those variations of the Register not considerable as demographic flows.
- However, the new methodological approach to **PCS is based on stocks**: the best possible populations are obtained at a given date (censuses), and demographic flows between two censuses are adjusted a posteriori.
- **There was no annual baseline census at the PCS to correct them**; There was only one revision every 10 years, when we had the new census (the traditionally called intercensal estimates). Annual censuses are available in the PCS, so this ten-year review will not be necessary: the final data will be directly from the intercensal annual review.
- **Reference dates**: in the PCS there were only two per year (1 January and 1 July), while in the PCS there will be, from 2021, four reference dates (1 January, 1 April, 1 July and 1 October).
- **Provisional data**: in the PCS the first provisional data were given about 5 or 6 months after the reference date, while in the PCS they will be about 45 days later. However, the level of detail of the provisional data in the PCS was the same as that of the final data, whereas in the PCS they will have a lower level of detail.
- **The PCS only provided the resident population series**, whereas the PCS will also provide the resident population of family dwellings, and the number of households, as well as initial external migrations that can explain the population change in each quarter.

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## 5.2 POPULATION RESIDING IN FAMILY DWELLINGS AND NO. OF HOUSEHOLDS

The methodology for calculating the population residing in family dwellings and the number of households is based on applying a proportion of these groups observed in the housing censuses:

- **Definitive data** (for intermediate dates between two consecutive censuses, since for the census dates the census result is directly available): by means of an interpolation of the proportions observed in the two consecutive censuses.
- **Provisional data**: by extrapolating the proportions from the last housing census.

Each time a new quarter is published, the entire provisional series published since the last housing census will be updated, in a consistent manner with the resident population and its continual updating.

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## 5.3 EXTERNAL MIGRATION

The Municipal Register records various types of variations, upward and downward, which are, or may be associated, with a residential change with origin or source abroad and, therefore, with external migrations. A significant part of these variations are



recorded on the initiative of the person concerned and others are carried out ex officio by the municipal authority itself. In short, they are as follows<sup>11</sup>:

- **Registrations due to change of residence (ACRs):** They refer to entries in the Register that are the result of a change of municipality or country of residence. They are usually carried out by the individual, although they can also come from an ex officio registration if the municipality of previous registration is known. In the case of Spanish citizens who transfer their residence abroad, the Consular Registration Registers must be registered, from which the Register of Spaniards residing abroad (PERE) is formed.
- **Registrations due to omission (AOMs):** They occur when a habitual resident in a municipality requests registration in its Register, declaring that he or she does not know how to be registered in the Register of another municipality or in the Register of Spaniards residing abroad, or when the city council declares, ex officio, the registration in the Register of a person who habitually resides in the municipality and is not registered.
- **De-registrations due to change of residence (BCRs):** Those registered in a municipality who transfer their residence to another municipality or abroad will be removed from the register due to change of residence.

No registrations will be made for cancellation due to change of residence at the request of the interested parties, except in the case of foreigners who leave Spain. In all other cases, they must register in the Register of another municipality or in the Consular Registry of the country of destination (in the case of Spaniards). In these cases, the cancellation will occur instantaneously, being rare those of foreigners, since they have no obligation (nor can), like the Spaniards, to register in the relevant Consular Registry.

- **De-registrations due to expiry (BBCs):** These are de-registrations resulting from the application of the reform of the "Immigration Act"<sup>12</sup> of 2003, which establishes the obligation for non-EU foreigners without permanent residence permits to renew their registration every two years. If such renewal is not carried out, the Town and City Councils must declare the expiry of the registration.. Such de-registrations have been occurring since December 2005.
- **De-registrations due to Improper Registration (BII):** They are cancellations made ex officio by the town or city council to resolve duplicities in its Register or to cancel those registrations that do not meet the required requirement of habitual residence in the municipality.

For EU and non-EU foreign nationals with permanent residence permits, periodic checks are made on the continuity of residence of these citizens, who are not obliged to renew their registration every two years. These checks have been carried out since March 2009 and are conducted when there have been no movements in a period of five or two years, depending on whether they are registered in the Central Register

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<sup>11</sup> Resolution of 29 April 2020, Presidency of the National Institute of Statistics and the General Directorate of Autonomic and Local Cooperation, by which technical instructions are dictated to the City Councils on the management of the Municipal Register.

<sup>12</sup>Organic Law 14/2003, of 20 November, amending Organic Law 4/2000, of 11 January, on the rights and duties of foreign nationals in Spain and their social integration.

of Foreigners or not, and may result in the opening of a de-registration case (for improper inclusion) if the town or city council deems it appropriate.

The fact that registration in the Municipal Register is required as a necessary condition for the exercise of very basic rights, such as health coverage, schooling or for the future obtaining of legal residence permits, means that the Register ends up registering the vast majority of the flow of **immigration from abroad**.

On the other hand, if a foreign national registers in the Register of a municipality, but does not indicate the country of origin, the reason for the registration given in the Register is by Omission, when in reality it could be due to Change of Residence from abroad. In the case of Spaniards, the country of origin can be compared with the Register of residents abroad.

With regard to **emigration abroad**, the monthly comparison of the continuous Register with the consular registration records abroad allows the emigration of **Spaniards** to be recorded, provided that they register with the corresponding consulate. In the case of **foreign** citizens, there are few who order the de-registration in the Register of their municipality of residence at the time of their departure from Spain. However, the de-registration mechanism carried out ex officio by town and city councils in those cases of non-habitual residence in the municipality or the implementation of the process of expiry of the registrations of non-EU foreigners in the register without a permanent residence permit, guarantees that the emigration abroad of foreign nationals not declared by the interested party in their municipality of residence, end, to a large extent, as they will register in the municipal register, sooner or later. For both Spaniards and foreign nationals, in addition, there is a process of "natural cleaning" of the registry, which occurs when new residents in a dwelling are registered in the Register, indicating that former residents must be de-registered.

For the reasons stated above, the following variations of registration and deregistration in the Register are being considered in the Population Continuous Statistics to shape external migrations:

a) **External immigration:**

- **ACRs** from abroad
- **AOMs**: only those of foreign nationality are considered, as they are considered more likely to be associated with foreign immigration.

b) **External emigration:**

- **BCRs** with a foreign destination
- **BBCs**: note that they are only some foreign nationals.
- **Blls**: only those of **foreign nationality** are considered, as they are considered more likely to be associated with foreign immigration.

The only types of register variation in which the place of origin or destination is available are the RTAs and the BCRs. Therefore, the results that will be offered will be only by nationality or country of birth.

These results will not be subject to quarterly review, since their objective is not to provide results of provisional migratory flows of the EMCR, but to give a rapid and qualitative estimate that allows an analysis of the evolution of external migrations of the main

nationalities or countries of birth, which may differ quantitatively from the final external migrations given by the EMCR. Because it is a quick estimate, there may be some delay in the registration of the variations of the Register considered, especially in the case of the BCR of Spaniards, which have a longer loop than the others because they have to go through the consular registration records. In addition, as mentioned above, the final migratory movements considered by the EMCR will be those that are consistent between two consecutive censuses.

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## 6 Dissemination of results

The Population Continuous Statistics are published from 2023 on a quarterly basis, approximately 40 or 45 days after the last reference date, which is the final day of the estimate quarter (the most recent full calendar quarter) or, equivalently, the first day of the following quarter, that is: 1 January, 1 April, 1 July and 1 October. In the case of external migratory flows, instead of a reference date, reference period is considered, which coincides with the calendar quarter of estimation.

The resident population data in Spain until 1 January 2021 will be given by all population censuses until 2021 together with their intercensal population estimates for intermediate dates. This population series was framed, until the advent of the Population Continuous Statistics, in the Population Figures operation, which was last published in November 2022. As the 2021 census had not been published, it contained census data up to 1 January 2012, and thereafter the population series obtained with the Population Figures estimation method itself. The intercensal correction after the last Population and Housing Census 2021 that would have been collected in that operation in the supposed next publication (June 2023), will be reflected directly in the first publication of the ECP, taking advantage of the fact that a new methodology of estimates is initiated from the 2021 census.

These data until 2021 will contain only two reference dates per year, on 1 January and 1 July. From that moment, with the start of the PCS methodology itself, the quarterly data series will begin (both in periodicity of publications and in reference dates).

All publications will provide one more quarter of the population and household series, updating all previous provisional data since the last census published, using the latest information available at any given time. Only migrations will not be reviewed each time, being fixed in each quarter for better comparability, although the new quarter of estimation is added.

In short, in a generic year there will be four publications: in February, May, August and November, with reference dates until 1 January, 1 April, 1 July and 1 October respectively.

The February publication of each year will be special, because it will be the first after an annual population census has been published, at the end of the previous year. This will mean that the data up to that census date are already published as definitive, coinciding on 1 January with the census data. The provisional series will therefore begin one year later, from that new population census. This does not affect the series of external migrations, which will be fixed every quarter and is independent of the censuses.

Every CPS publication will have the following content:

a) Until the 2021 Census (semi-annual, to 1 January and 1 July):

It contains the resident population data in Spain from the censuses since 1 January 1971, together with the intercensal population estimates for intermediate dates, on 1 January and 1 July of each year.

The PFS covers all the information that the Population Figures operation, now extinct, would have contained. To explain the transfer of information from the Population Figures operation to the new statistics we can distinguish two sections:

- **Resident population as of 1 January 2012:** the same as what was contained in the Population Figures operation.
- **Resident population from 1 July 2012 to 1 January 2021:** intercensal revision consistent with the 2021 Population and Housing Census, with which it coincides as at 1 January 2021. If the Population Figures operation continues, the data for this period will be replaced, but they are published directly in the PCS, making the CP obsolete.

b) Since the 2021 Census (quarterly, start of the PCS proper):

If the PFs had continued, the series after the new census would have had to be corrected, shifting so that it started following the 2021 census. The same occurs with the PFS; capitalising on the availability of the annual censuses, the PF methodology is changed, giving rise to the PFS.

In addition, more data series are published, not just the resident population, as listed below:

- **Resident population**, with definitive data until the last published population census and provisional data starting on the 1 April following said census.
- **Population resident in family dwellings**, with definitive data until the last published housing census and provisional data starting on the 1 April following said census.
- **Number of homes**, with definitive data until the last published housing census and provisional data starting on the 1 April following said census.

The ECP was first published in May 2023, with data until the first quarter of 2023 or 1 April 2023.

The “resident population in family dwellings” and “number of homes” series were not included in the PFS until its third publication in November 2023, as they are based on the housing census, and the one corresponding to 2021 (2021 Population and Housing Census) was not published until June 2023.

In addition, the first publication of the annual population censuses was in December 2023, including the 2022 and 2023 population censuses at the same time (the 2022 one was delayed by a year with respect to any other one, as it was the first publication), as a result of which the 2021 resident population data had to be provisional for one year longer than usual.