

INSTITUTO NACIONAL DE ESTADISTICA



Basic Demographic Indicators

Methodology

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Introduction

The Basic Demographic Indicators constitute a statistical operation that provides the retrospective time series of the indicators on birth, fertility, death, population growth and structure, marriage and migrations. Such indicators are calculated with the final and provisional results of the Vital Statistics¹ and the Migrations Statistics, as well as with the population figures provided by the Intercensal Population Estimates², up to the year 2011, and by the Population Figures, from the year 2012 onwards. The preview results refer to the most recent consecutive 12-month periods available.

The availability of Intercensal Population Estimates since 1970 and the methodological homogeneity of the Vital Statistics regarding the definition of the demographic events³ since 1975 enable the supply of such indicators since said year. Nonetheless, the unavailability of sufficient breakdowns in the reference population figures used presents some limitations, for example:

- The indicators referring to years prior to 1991, by province in which there are rates by age, are calculated based on specific rates by five-year age group (up to the open group aged 85 years old and over).
- The indicators referring to years prior to 1991, by Autonomous Community in which there are rates by age, are calculated based on specific rates by simple age, up to the open age group aged 85 years old and over, rather than up to 100 years old and over.
- The indicators prior to the year 2002 are not available in their breakdown by nationality.
- The population structure indicators prior to 1991, by province, are not available, except the Median Age of the Population, though calculated from population figures broken down by five-year age group (up to the open group aged 85 years old and over), and the Male Rate of the Population.
- The population structure indicators prior to 1991, for the autonomous cities of Ceuta and Melilla, are not available, except the Median Age of the Population and the Male Rate.
- The migrations indicators are only available as of 2008.

Lastly, it is important to clarify that the calculation of each indicator over a given geographical area is carried out by approximating, as necessary, the average population of the group considered resident in said area throughout the reference period, by the population stock resident halfway through the period.

¹ http://www.ine.es/inebmenu/mnu_mnp.htm

² <http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft20%2Fp263&file=inebase&L=>

³ Until 1975, live births of children who died in the first 24 hours of life were not included, in accordance with the legal definition of child born, established in Article 30 of the Civil Code, but not with the internationally recognised demographic concept.

1 Birth and fertility

1.1. Crude Birth Rate

This is defined as the total births to women resident in Spain during year t per 1,000 inhabitants. That is:

$$TBN^t = \frac{N^t}{P^t} \cdot 1000$$

Where:

N^t = Births to women resident in Spain during year t .

P^t = Average population resident in Spain throughout year t .

1.2. Crude Birth Rate, by Autonomous Community

This is defined as the total births to women resident in Autonomous Community i during year t per 1,000 inhabitants. That is:

$$TBN^t(i) = \frac{N^t(i)}{P^t(i)} \cdot 1000$$

Where:

$N^t(i)$ = Births to women resident in Autonomous Community i during year t .

$P^t(i)$ = Average population resident in Autonomous Community i throughout year t .

1.3. Crude Birth Rate, by province

This is defined as the total births to women resident in province j during year t per 1,000 inhabitants. That is:

$$TBN^t(j) = \frac{N^t(j)}{P^t(j)} \cdot 1000$$

Where:

$N^t(j)$ = Births to women resident in province j during year t .

$P^t(j)$ = Average population resident in province j throughout year t .

1.4. Birth Rate, according to the nationality (Spanish/foreign) of the mother

This is defined as the total births to women of nationality k resident in Spain in year t per 1,000 inhabitants. That is:

$$TN_k^t = \frac{N_k^t}{P_k^t} \cdot 1000$$

Where:

N_k^t = Births to women of nationality k resident in Spain during year t .

P_k^t = Average population resident in Spain of nationality k throughout year t .

1.5. Birth Rate, by Autonomous Community, according to the nationality (Spanish/foreign) of the mother

This is defined as the total births to women of nationality k resident in Autonomous Community i in year t per 1,000 inhabitants. That is:

$$TN_k^t(i) = \frac{N_k^t(i)}{P_k^t(i)} \cdot 1000$$

Where:

$N_k^t(i)$ = Births to women of nationality k resident in Autonomous Community i during year t .

$P_k^t(i)$ = Average population of nationality k resident in Autonomous Community i throughout year t .

1.6. Fertility rates, according to the nationality (Spanish/foreign) and age of the mother

This is defined as the total births to women of age⁴ x and nationality k resident in Spain throughout year t per thousand women with said age and nationality. This represents the fertile intensity, at each age, among women of nationality k resident in Spain. That is:

⁴ For the age of the mother "15 years of age", this includes births to women aged 15 years old or under. And for the age of the mother "49 years of age", this includes births to women aged 49 years old and over.

$$f_{x,k}^t = \frac{N_{x,k}^t}{M_{x,k}^t} \cdot 1000$$

Where:

$N_{x,k}^t$ = Births to women of age x and nationality k resident in Spain during year t .

$M_{x,k}^t$ = Average population of women of age x and nationality k resident in Spain throughout year t .

1.7. Fertility rates, according to the nationality (Spanish/foreign) and age of the mother, by Autonomous Community

This is defined as the total births to women of age⁵ x , nationality k and Autonomous Community of residence i throughout year t per thousand women with said age and said nationality resident in said Autonomous Community. This represents the fertile intensity, at each age, among women of nationality k resident in Autonomous Community i . That is:

$$f_{x,k}^t(i) = \frac{N_{x,k}^t(i)}{M_{x,k}^t(i)} \cdot 1000$$

Where:

$N_{x,k}^t(i)$ = Births occurring throughout year t to women of age x and nationality k resident in Autonomous Community i .

$M_{x,k}^t(i)$ = Average population of women of age x and nationality k resident in Autonomous Community i throughout year t .

1.8. Fertility rates, according to the age of the mother, by province

This is defined as the total births to women of age⁶ x resident in province j throughout year t per thousand women with said age resident in said province. This represents the fertile intensity, at each age, among the women resident in province j . That is:

⁵ For the age of the mother "15 years of age", this includes births to women aged 15 years old or under. And for the age of the mother "49 years of age", this includes births to women aged 49 years old and over.

⁶ For the age of the mother "15 years of age", this includes births to women aged 15 years old or under. And for the age of the mother "49 years of age", this includes births to women aged 49 years old and over.

$$f_x^t(j) = \frac{N_x^t(j)}{M_x^t(j)} \cdot 1000$$

Where:

$N_x^t(j)$ = Births occurring throughout year t to women of age x resident in province j .

$M_x^t(j)$ = Average population of Women of age x resident in province j throughout year t .

1.9. Total Fertility Rate, according to the nationality (Spanish/foreign) of the mother

This is defined as the average number of children that would be born to a woman of nationality k resident in Spain throughout her childbearing years, in the case of maintaining the same fertile intensity, by age, as that observed in year t in said population group. This is calculated as the sum of the fertility rates, by age and nationality, expressed as so much per one, extended to the range of fertile ages (15 to 49 years old). That is:

$$ICF_k^t = \sum_{x=15}^{49} f_{x,k}^t$$

Where:

$f_{x,k}^t$ = Fertility rates at age x with nationality k for Spain in year t expressed as so much per one.

1.10. Total Fertility Rate, by Autonomous Community, according to the nationality (Spanish/foreign) of the mother

This is defined as the average number of children that would be born to a woman of nationality k resident in Autonomous Community i throughout her childbearing years, in the case of maintaining the same fertile intensity, by age, as that observed in year t in said population group. This is calculated as the sum of the fertility rates, by age, nationality and Autonomous Community, expressed as so much per one, extended to the range of fertile ages (15 to 49 years old). That is:

$$ICF_k^t(i) = \sum_{x=15}^{49} f_{x,k}^t(i)$$

Where:

$f_{x,k}^t(i)$ = Fertility rates at age x with nationality k for Autonomous Community i in year t expressed as so much per one.

1.11. Total Fertility Rate, by province

This is defined as the average number of children that would be born to a woman resident in province j throughout her childbearing years, in the case of maintaining the same fertile intensity, by age, as that observed in year t in said population group. This is calculated as the sum of the fertility rates, by age and province, expressed as so much per one, extended to the range of fertile ages (15 to 49 years old). That is:

$$ICF^t(j) = \sum_{x=15}^{49} f_x^t(j)$$

Where:

$f_x^t(j)$ = Fertility rates at age x for province j in year t expressed as so much per one.

1.12. Mean Age at Childbearing, according to nationality (Spanish/foreign)

This is defined as the average age at which a woman of nationality k resident in Spain, would have her children in the case of maintaining the same fertile intensity, by age, as that observed in year t of said population group. It is calculated as the average of the ages at which women have their children, weighted by the fertility rates by nationality and age, expressed as so much per one. That is:

$$EMM_k^t = \frac{\sum_{x=15}^{49} (x + 0,5) \cdot f_{x,k}^t}{ICF_k^t}$$

Where:

$f_{x,k}^t$ = Fertility rates at age⁷ x and nationality k of Spain in year t expressed as so much per one.

ICF_k^t = Total Fertility Rate of women of nationality k resident in Spain in year t .

⁷ For the age of the mother "15 years of age", this includes births to women aged 15 years old or under. And for the age of the mother "49 years of age", this includes births to women aged 49 years old and over.

1.13. Mean Age at Childbearing, by Autonomous Community, according to nationality (Spanish/foreign)

This is defined as the average age at which a woman of nationality k resident in Autonomous Community i would have her children, in the case of maintaining the same fertile intensity, by age, as that observed in year t of said population group. It is calculated as the average of the ages at which women have their children, weighted by the fertility rates by nationality, age and Autonomous Community, expressed as so much per one. That is:

$$EMM_k^t(i) = \frac{\sum_{x=15}^{49} (x + 0,5) \cdot f_{x,k}^t(i)}{ICF_k^t(i)}$$

Where:

$f_{x,k}^t(i)$ = Fertility rates at age⁸ x and nationality k of Autonomous Community i in year t expressed as so much per one.

$ICF_k^t(i)$ = Total Fertility Rate of women of nationality k resident in Autonomous Community i of year t .

1.14. Mean Age at Childbearing, by province

This is defined as the average age at which a woman resident in province j would have her children, in the case of maintaining the same fertile intensity, by age, as that observed in year t of said population group. It is calculated as the average of the ages at which women have their children, weighted by the fertility rates by age and province, expressed as so much per one. That is:

$$EMM_k^t(j) = \frac{\sum_{x=15}^{49} (x + 0,5) \cdot f_{x,k}^t(j)}{ICF_k^t(j)}$$

Where:

$f_x^t(j)$ = Fertility rates at age⁹ x in province j in year t expressed as so much per one.

$ICF^t(j)$ = Total Fertility Rate of women resident in province j of year t .

⁸ For the age of the mother "15 years of age", this includes births to women aged 15 years old or under. And for the age of the mother "49 years of age", this includes births to women aged 49 years old and over.

⁹ For the age of the mother "15 years of age", this includes births to women aged 15 years old or under. And for the age of the mother "49 years of age", this includes births to women aged 49 years old and over.

1.15. Percentage of newborns, by order of birth, according to the nationality (Spanish/foreign) of the mother

This is defined as the percentage of births of order ¹⁰ r to women with nationality k resident in Spain, over the total births to women from said population group occurring in year t . That is:

$$P N_{r,k}^t = \frac{N_{r,k}^t}{N_k^t} \cdot 100$$

Where:

$N_{r,k}^t$ = Births of order r occurring during year t to women of nationality k resident in Spain.

N_k^t = Births occurring during year t to women of nationality k resident in Spain.

1.16. Percentage of newborns, by order of birth, according to the nationality (Spanish/foreign) of the mother, by Autonomous Community

This is defined as the percentage of births of order ¹¹ r to women with nationality k resident in Autonomous Community i over the total births to women from said population group occurring in year t . That is:

$$P N_{r,k}^t(i) = \frac{N_{r,k}^t(i)}{N_k^t(i)} \cdot 100$$

Where:

$N_{r,k}^t(i)$ = Births of order r occurring during year t to unmarried women with nationality k resident in Autonomous Community i .

$N_k^t(i)$ = Births occurring during year t to women of nationality k resident in Autonomous Community i .

1.17. Percentage of newborns, by order of birth, by province

This is defined as the percentage of births of order ¹² r to women resident in province j over the total births in said province, and is expressed as so much percent occurring in year t . That is:

¹⁰ Birth order 4 includes fourth-order and subsequent births.

¹¹ Birth order 4 includes fourth-order and subsequent births.

¹² Birth order 4 includes fourth-order and subsequent births.

$$P N_{r,k}^t(j) = \frac{N_{r,k}^t(j)}{N_k^t(j)} \cdot 100$$

Where:

$N_r^t(j)$ = Births of order r occurring during year t to women resident in province j .

$N^t(j)$ = Births occurring during year t to women resident in province j .

1.18 Percentage of births, by nationality (Spanish/foreign) of the mother, according to order of birth

This is defined as the percentage of births of order¹³ r to mother of nationality k resident in Spain, over the total births of that order occurring in year t . That is:

$$P N_{r,k}^t = \frac{N_{r,k}^t}{N_r^t} \cdot 100$$

Where:

$N_{r,k}^t$ = Births of order r occurring during year t to mothers of nationality k resident in Spain.

N_r^t = Births of order r occurring during year t .

1.19 Percentage of births, by nationality (Spanish/foreign) of the mother and Autonomous Community, according to order of birth

This is defined as the percentage of births of order¹⁴ r to mother of nationality k resident in Autonomous Community i , over the total births of that order occurring in year t . This is:

$$P N_{r,k}^t(i) = \frac{N_{r,k}^t(i)}{N_r^t(i)} \cdot 100$$

Where:

$N_{r,k}^t(i)$ = Births of order r occurring during year t to unmarried mothers of nationality k resident in Autonomous Community i .

$N_r^t(i)$ = Births of order r occurring during year t in Autonomous Community i .

¹³ Birth order 4 includes fourth-order and subsequent births.

¹⁴ Birth order 4 includes fourth-order and subsequent births.

1.20. Fertility rates, according to order of birth and nationality (Spanish/foreign) and age of the mother

This is defined as the total births of order¹⁵ r to women of nationality k and age x resident in Spain throughout year t per thousand women of said population group. This represents the fertile intensity, at each age, among women of nationality k according to birth order r . That is:

$$f_{r,x,k}^t = \frac{N_{r,x,k}^t}{M_{x,k}^t} \cdot 1000$$

Where:

$N_{r,x,k}^t$ = Births of order r occurring throughout year t to women of age x and nationality k .

$M_{x,k}^t$ = Average population of Women of age x and nationality k throughout year t .

1.21. Fertility Rates, by Autonomous Community, according to order of birth and nationality (Spanish/foreign) and age of the mother

This is defined as the total births of order¹⁶ r , to women of nationality k and age x resident in Autonomous Community i throughout year t per thousand women of said population group. This represents the fertile intensity, at each age, among the women resident in Autonomous Community i of nationality k according to birth order r . That is:

$$f_{r,x,k}^t(i) = \frac{N_{r,x,k}^t(i)}{M_{x,k}^t(i)} \cdot 1000$$

Where:

$N_{r,x,k}^t(i)$ = Births of order r occurring throughout year t to women of age x and nationality k resident in Autonomous Community i .

$M_{x,k}^t(i)$ = Average population of Women resident in Autonomous Community i , of age x and nationality k throughout year t .

¹⁵ Birth order 4 includes fourth-order and subsequent births.

¹⁶ Birth order 4 includes fourth-order and subsequent births.

1.22. Fertility Rates, by province, according to order of birth and age of the mother

This is defined as the total births of order r to women resident in province j of age x throughout year t per thousand women of said population group. This represents the fertile intensity, at each age, among the women resident in province j according to birth order r . That is:

$$f_{r,x,k}^t(j) = \frac{N_{r,x,k}^t(j)}{M_{x,k}^t(j)} \cdot 1000$$

Where:

$N_{r,x}^t(j)$ = Births of order r occurring throughout year t to women of age x resident in province j .

$M_x^t(j)$ = Average population of Women resident in province j of age x throughout year t .

1.23. Total Fertility Rate, according to order of birth and nationality (Spanish/foreign) of the mother

This is defined as the average number of children of birth order r that a women resident in Spain and of nationality k would have throughout her childbearing years, in the case of maintaining the same fertile intensity, by age, as that observed in year t in said population group. This is calculated as the sum of the fertility rates, by age, nationality and order of birth, expressed as so much per one, extended to the range of fertile ages (15 to 49 years old) ¹⁸. That is:

$$ICF_{r,k}^t = \sum_{x=15}^{49} f_{r,x,k}^t$$

Where:

$f_{x,k,r}^t$ = Birth rates with order of birth r at age x with nationality k of Spain in year t expressed as so much per one.

¹⁷ Birth order 4 includes fourth-order and subsequent births.

¹⁸ By construction, said indicator can have a value greater than one, despite being treated as a non-renewable phenomenon.

1.24 Total Fertility Rate, by Autonomous Community, according to order of birth and nationality (Spanish/foreign) of the mother

This is defined as the average number of children of birth order r that a woman resident in Autonomous Community i of nationality k would have throughout her childbearing years, in the case of maintaining the same fertile intensity, by age, as that observed in year t in said population group. This is calculated as the sum of the fertility rates, by age, nationality and order of birth, expressed as so much per one, extended to the range of fertile ages (15 to 49 years old) ¹⁹. That is:

$$ICF_{r,k}^t(i) = \sum_{x=15}^{49} f_{r,x,k}^t(i)$$

Where:

$f_{r,x,k}^t(i)$ = Birth rates with order of birth r , at age x , with nationality k and Autonomous Community of residence of the mother i in year t expressed as so much per one.

1.25. Total Fertility Rate, by province, according to order of birth

This is defined as the average number of children of birth order r that a woman resident in province j would have throughout her childbearing years, in the case of maintaining the same fertile intensity, by age, as that observed in year t in said population group. This is calculated as the sum of the fertility rates, by age, and order of birth, expressed as so much per one, extended to the range of fertile ages (15 to 49 years old)²⁰. That is:

$$ICF_{r,k}^t(j) = \sum_{x=15}^{49} f_{r,x,k}^t(j)$$

Where:

$f_{r,x,k}^t(j)$ = Birth rates with order of birth r , at age x and province of residence of the mother j in year t expressed as so much per one.

¹⁹ By construction, said indicator can have a value greater than one, despite being treated as a non-renewable phenomenon.

²⁰ By construction, said indicator can have a value greater than one, despite being treated as a non-renewable phenomenon.

1.26. Mean Age at Childbearing, by order of birth, according to the nationality (Spanish/foreign) of the mother

This is defined as the average age at which a woman resident in Spain, of nationality k would have a child of order r in the case of maintaining the same fertile intensity, by age, as that observed in year t in said population group. This is calculated as the average of the ages at which women have their child of order r weighted by the fertility rates of order r by age and nationality of the mother, expressed as so much per one. That is:

$$EMM_{r,k}^t = \frac{\sum_{x=15}^{49} (x + 0,5) \cdot f_{r,x,k}^t}{ICF_{r,k}^t}$$

Where:

$f_{r,x,k}^t$ = Birth rates with order of birth r , age x and nationality k of those resident in Spain during year t expressed as so much per one.

$ICF_{r,k}^t$ = Total Fertility Rate for order of birth r and nationality k of those resident in Spain during year t .

1.27. Mean Age at Childbearing, by order of birth and by Autonomous Community, according to the nationality (Spanish/foreign) of the mother

This is defined as the average age at which a woman resident in Autonomous Community i of nationality k would have a child of order r in the case of maintaining the same fertile intensity, by age, as that observed in year t of said population group. This is calculated as the average of the ages at which women have their children of order r weighted by the fertility rates, by order of birth, by age and nationality of the mother, expressed as so much per one. That is:

$$EMM_{r,k}^t(i) = \frac{\sum_{x=15}^{49} (x + 0,5) \cdot f_{r,x,k}^t(i)}{ICF_{r,k}^t(i)}$$

Where:

$f_{r,x,k}^t(i)$ = Birth rates with order of birth r of the mothers resident in Autonomous Community i of age x and nationality k in year t expressed as so much per one.

$ICF_{r,k}^t(i)$ = Total Fertility Rate for order of birth r to women of nationality k resident in Autonomous Community i in year t .

1.28. Mean Age at Childbearing, by order of birth, by province

This is defined as the average age at which a woman resident in province j would have a child of order r in the case of maintaining the same fertile intensity, by age, as that observed in year t of said population group. This is calculated as the average of the ages at which women have their child of order r weighted by the fertility rates of birth order r by age of the mother, expressed as so much per one. That is:

$$EMM_{r,k}^t(j) = \frac{\sum_{x=15}^{49} (x + 0,5) \cdot f_{r,x,k}^t(j)}{ICF_{r,k}^t(j)}$$

Where:

$f_{r,x}^t(j)$ = Birth rates with order of birth r to women resident in province j of age x in year t expressed as so much per one.

$ICF_r^t(j)$ = Total Fertility Rate for order of birth r to women resident in province j in year t .

1.29. Global Fertility Rate, according to the nationality (Spanish/foreign) of the mother

This is defined as the total births to women of nationality k per 1,000 women of childbearing age (15 to 49 years old) of said population group. That is:

$$TGF_k^t = \frac{N_k^t}{M_k^t} \cdot 1000$$

Where:

N_k^t = Births occurring during year t to women of nationality k aged 15 to 49 years old.

M_k^t = Average population of women of nationality k aged 15 to 49 years old, throughout year t .

1.30. Global Fertility Rate, by Autonomous Community, according to the nationality (Spanish/foreign) of the mother

This is defined as the total births to women of nationality k resident in Autonomous Community i per 1,000 women of childbearing age (15 to 49 years old) of said population group. That is:

$$TGF_k^t(i) = \frac{N_k^t(i)}{M_k^t(i)} \cdot 1000$$

Where:

$N_k^t(i)$ = Births occurring during year t to women of nationality k resident in Autonomous Community i aged 15 to 49 years old.

$M_k^t(i)$ = Average population of women of nationality k resident in Autonomous Community i aged 15 to 49 years old, throughout year t .

1.31. Global Fertility Rate, by province

This is defined as the total births to women resident in province j per 1,000 women of childbearing age (15 to 49 years old) of said population group. That is:

$$TGF^t(j) = \frac{N^t(j)}{M^t(j)} \cdot 1000$$

Where:

$N^t(j)$ = Births occurring during year t to women resident in province j aged 15 to 49 years old.

$M^t(j)$ = Average population of women resident in province j aged 15 to 49 years old, throughout year t .

1.32. Percentage of births to unmarried women, according to the nationality (Spanish/foreign) of the mother

This is defined as the total births to unmarried women (single, widowed or divorced) of nationality k resident in Spain, as compared with the total births to women of said population group, and expressed as so much percent. That is:

$$PNMNC_k^t = \frac{N_{mnc,k}^t}{N_k^t} \cdot 100$$

Where:

$N_{mnc,k}^t$ = Births occurring during year t to unmarried women with nationality k resident in Spain.

N_k^t = Total births occurring during year t to women of nationality k resident in Spain.

1.33. Percentage of births to unmarried women, according to nationality (Spanish/foreign), by Autonomous Community

This is defined as the total births to unmarried women (single, widowed or divorced) of nationality k resident in Autonomous Community i as compared with the total births to women of said population group, and expressed as so much percent. That is:

$$PNMNC_k^t(i) = \frac{N_{mnc,k}^t(i)}{N_k^t(i)} \cdot 100$$

Where:

$N_{mnc,k}^t(i)$ = Births occurring during year t to unmarried women with nationality k resident in Autonomous Community i .

$N_k^t(i)$ = Total births occurring during year t to women of nationality k resident in Autonomous Community i .

1.34. Percentage of births to unmarried women, by province

This is defined as the total births to unmarried women (single, widowed or divorced) resident in province j as compared with the total births for said province, expressed as so much percent. That is:

$$PNMNC_k^t(j) = \frac{N_{mnc,k}^t(j)}{N_k^t(j)} \cdot 100$$

Where:

$N_{mnc}^t(j)$ = Births occurring during year t to unmarried women resident in province j .

$N^t(j)$ = Total births occurring during year t to women resident in province j .

1.35. Male Rate at birth

This is defined as the total births of boys per 100 births of girls, to women resident in Spain throughout the year t . That is:

$$RMN^t = \frac{N_{varones}^t}{N_{mujeres}^t} \cdot 100$$

Where:

N_{varones}^t = Births of boys occurring during year t to women resident in Spain.

N_{mujeres}^t = Births of girls occurring during year t to women resident in Spain.

1.36. Male Rate at birth, by Autonomous Community

This is defined as the total births of boys per 100 births of girls, to women resident in Autonomous Community i throughout year t . That is:

$$RMN^t(i) = \frac{N_{\text{varones}}^t(i)}{N_{\text{mujeres}}^t(i)} \cdot 100$$

Where:

$N_{\text{varones}}^t(i)$ = Births of boys occurring during year t to women resident in Autonomous Community i .

$N_{\text{mujeres}}^t(i)$ = Births of girls occurring during year t to women resident in Autonomous Community i .

1.37. Male Rate at birth, by province

This is defined as the total births of boys per 100 births of girls, to women resident in province j throughout year t . That is:

$$RMN^t(j) = \frac{N_{\text{varones}}^t(j)}{N_{\text{mujeres}}^t(j)} \cdot 100$$

Where:

$N_{\text{varones}}^t(j)$ = Births of boys occurring during year t to women resident in province j .

$N_{\text{mujeres}}^t(j)$ = Births of girls occurring during year t to women resident in province j .

2. Mortality:

2.1. Crude Mortality Rate

This is defined as the total deaths of persons resident in Spain throughout the year t per 1,000 inhabitants. That is:

$$TBM^t = \frac{D^t}{P^t} \cdot 1000$$

Where:

D^t = Deaths of persons resident in Spain during year t .

P^t = Average population resident in Spain throughout year t .

2.2. Crude Mortality Rate, by Autonomous Community

This is defined as the total deaths of persons resident in Autonomous Community i throughout year t per 1,000 inhabitants. That is:

$$TBM^t(i) = \frac{D^t(i)}{P^t(i)} \cdot 1000$$

Where:

$D^t(i)$ = Deaths of persons resident in Autonomous Community i occurring during year t .

$P^t(i)$ = Average population resident in Autonomous Community i throughout year t .

2.3. Crude Mortality Rate, by province

This is defined as the total deaths of persons resident in province j throughout year t per 1,000 inhabitants. That is:

$$TBM^t(j) = \frac{D^t(j)}{P^t(j)} \cdot 1000$$

Where:

$D^t(j)$ = Deaths of persons resident in province j occurring during year t .

$P^t(j)$ = Average population resident in province j throughout year t .

2.4. Mortality Rate, according to sex

This is defined as the total deaths of persons resident in Spain, of sex s throughout year t per 1,000 inhabitants of said population group. That is:

$$TM_s^t = \frac{D_s^t}{P_s^t} \cdot 1000$$

Where:

D_s^t = Deaths of persons resident in Spain, of sex s occurring during year t .

P_s^t = Average population resident in Spain, of sex s throughout year t .

2.5. Mortality Rates, by Autonomous Community, according to sex

This is defined as the total deaths of persons resident in Autonomous Community i of sex s throughout year t per 1,000 inhabitants of said population group. That is:

$$TM_s^t(i) = \frac{D_s^t(i)}{P_s^t(i)} \cdot 1000$$

Where:

$D_s^t(i)$ = Deaths of persons resident in Autonomous Community i of sex s occurring during year t .

$P_s^t(i)$ = Average population resident in Autonomous Community i of sex s throughout year t .

2.6. Mortality Rates, by province, according to sex

This is defined as the total deaths of persons resident in province j of sex s throughout year t per 1,000 inhabitants of said population group. That is:

$$TM_s^t(j) = \frac{D_s^t(j)}{P_s^t(j)} \cdot 1000$$

Where:

$D_s^t(j)$ = Deaths of persons resident in province j of sex s occurring during year t .

$P_s^t(j)$ = Average population resident in province j of sex s throughout year t .

2.7. Mortality Rates, according to sex and age

This is defined as the total deaths of persons resident in Spain, of sex s and age x occurring throughout year t per 1,000 inhabitants of said population group. Its value is extracted from the results corresponding to said year, from the INE Mortality Tables, and therefore, responds to methodology¹ of the calculation thereof.

For years prior to 1991, and for preview results, it is calculated according to the following formula:

$$TM_{s,x}^t = \frac{D_{s,x}^t}{P_{s,x}^t} \cdot 1000$$

Where:

$D_{s,x}^t$ = Deaths of persons resident in Spain, of sex s and age x occurring during year t .

$P_{s,x}^t$ = Average population, of sex s and age x resident in Spain throughout year t .

2.8. Mortality Rates, by Autonomous Community, according to sex and age

This is defined as the total deaths of persons resident in Autonomous Community i , of sex s and age x occurring throughout year t per 1,000 inhabitants of said population group. That is:

$$TM_{s,x}^t(i) = \frac{D_{s,x}^t(i)}{P_{s,x}^t(i)} \cdot 1000$$

Where:

$D_{s,x}^t(i)$ = Deaths of persons resident in Autonomous Community i of sex s and age x occurring during year t .

$P_{s,x}^t$ = Average population, of sex s and age x resident in Autonomous Community i throughout year t .

2.9. Mortality Rates, by province, according to sex and age

This is defined as the total deaths of persons resident in province j , of sex s and age x occurring throughout year t per 1,000 inhabitants of said population group. That is:

$$TM_{s,x}^t(j) = \frac{D_{s,x}^t(j)}{P_{s,x}^t(j)} \cdot 1000$$

Where:

$D_{s,x}^t(j)$ = Deaths of persons resident in province j of sex s and age x occurring during year t .

$P_{s,x}^t(j)$ = Average population, of sex s and age x resident in province j throughout year t .

2.10. Infant Mortality Rate, according to sex

This is defined as the total deaths of babies under one year of age, resident in Spain, of sex s per 1,000 live births of said sex. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality during the first year of life. That is:

$$TMI_s^t = \frac{D_{0,s}^t}{NV_s^t} \cdot 1000$$

Where:

$D_{0,s}^t$ = Deaths of babies under one year of age, resident in Spain, of sex s occurring during year t .

NV_s^t = Total births to women resident in Spain, of sex s occurring during year t .

2.11. Infant Mortality Rate, by Autonomous Community, according to sex

This is defined as the total deaths of babies under one year of age, resident in Autonomous Community i of sex s per 1,000 live births of said sex in Autonomous Community i . Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality during the first year of life in the Autonomous Community considered. That is:

$$TMI_s^t(i) = \frac{D_{0,s}^t(i)}{NV_s^t(i)} \cdot 1000$$

Where:

$D_{0,s}^t(i)$ = Deaths of babies under one year of age, resident in Autonomous Community i of sex s occurring during year t .

$NV_s^t(i)$ = Total births to women resident in Autonomous Community i of sex s occurring during year t .

2.12. Infant Mortality Rate, by province, according to sex

This is defined as the total deaths of babies under one year of age, resident in province j of sex s per 1,000 live births of said sex and in said province. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality during the first year of life in the province considered. That is:

$$TMI_s^t(j) = \frac{D_{0,s}^t(j)}{NV_s^t(j)} \cdot 1000$$

Where:

$D_{0,s}^t(j)$ = Deaths of babies under one year of age, resident in province j of sex s occurring during year t .

$NV_s^t(j)$ = Total births to women resident in province j of sex s occurring during year t .

2.13. Neonatal Infant Mortality Rate, according to sex

This is defined as the total deaths of babies under 30 days of age, resident in Spain, of sex s per 1,000 live births of said sex. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality during the first month of life. That is:

$$TMIN_s^t = \frac{D_{<1mes,s}^t}{NV_s^t} \cdot 1000$$

Where:

$D_{<1mes,s}^t$ = Deaths of babies under 30 days of age, resident in Spain, of sex s occurring during year t .

NV_s^t = Total births to women resident in Spain, of sex s occurring during year t .

2.14. Neonatal Infant Mortality Rate, by Autonomous Community, according to sex

This is defined as the total deaths of babies under 30 days of age, resident in Autonomous Community i of sex s per 1,000 live births of said sex in Autonomous Community i . Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality during the first month of life in the Autonomous Community considered. That is:

$$TMIN_s^t(i) = \frac{D_{<1mes,s}^t(i)}{NV_s^t(i)} \cdot 1000$$

Where:

$D_{<1mes,s}^t(i)$ = Deaths of babies under 30 days of age, resident in Autonomous Community i of sex s occurring during year t .

$NV_s^t(i)$ = Total births to women resident in Autonomous Community i of sex s occurring during year t .

2.15. Neonatal Infant Mortality Rate, by province, according to sex

This is defined as the total deaths of babies under 30 days of age, resident in province j of sex s per 1,000 live births of said sex and in said province. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality during the first month of life in the province considered. That is:

$$TMIN_s^t(j) = \frac{D_{<1mes,s}^t(j)}{NV_s^t(j)} \cdot 1000$$

Where:

$D_{<1mes,s}^t(j)$ = Deaths of babies under 30 days of age, resident in province j of sex s occurring during year t .

$NV_s^t(j)$ = Total births to women resident in province j of sex s occurring during year t .

2.16. Early Neonatal Infant Mortality Rate, according to sex

This is defined as the total deaths of babies under seven days of age, resident in Spain, of sex s per 1,000 live births of said sex. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a

relative measurement of the intensity of mortality during the first week of life. That is:

$$\text{TMINtemp}_s^t = \frac{D_{<7\text{días},s}^t}{NV_s^t} \cdot 1000$$

Where:

$D_{<7\text{días},s}^t$ = Deaths of babies under seven days of age, resident in Spain, of sex s occurring during year t .

NV_s^t = Total births to women resident in Spain, of sex s occurring during year t .

2.17. Early Neonatal Infant Mortality Rate, by Autonomous Community, according to sex

This is defined as the total deaths of babies under seven days of age, resident in Autonomous Community i of sex s per 1,000 live births of said sex in Autonomous Community i . Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality during the first week of life in the Autonomous Community considered. That is:

$$\text{TMINtemp}_s^t(i) = \frac{D_{<7\text{días},s}^t(i)}{NV_s^t(i)} \cdot 1000$$

Where:

$D_{<7\text{días},s}^t(i)$ = Deaths of babies under seven days of age, resident in Autonomous Community i of sex s occurring during year t .

$NV_s^t(i)$ = Total births to women resident in Autonomous Community i of sex s occurring during year t .

2.18. Early Neonatal Infant Mortality Rate, by province, according to sex

This is defined as the total deaths of babies under seven days of age, resident in province j of sex s per 1,000 live births of said sex and in said province. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality during the first week of life in the province considered. That is:

$$\text{TMINtemp}_s^t(j) = \frac{D_{<7\text{días},s}^t(j)}{NV_s^t(j)} \cdot 1000$$

Where:

$D_{<7\text{días},s}^t(j)$ = Deaths of babies under seven days of age, resident in province j of sex s occurring during year t .

$NV_s^t(j)$ = Total births to women resident in province j of sex s occurring during year t .

2.19. Late Neonatal Infant Mortality Rate, according to sex

This is defined as the total deaths of persons seven days old or over, but under 30 days of age, resident in Spain, of sex s per 1,000 live births of said sex. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality between the eighth and thirtieth day of life. That is:

$$\text{TMINTard}_s^t = \frac{D_{7\text{días}-1\text{mes},s}^t}{NV_s^t} \cdot 1000$$

Where:

$D_{7\text{días}-1\text{mes},s}^t$ = This is defined as the total deaths of persons seven days old or over, but under 30 days of age, resident in Spain, of sex s occurring during year t .

NV_s^t = Total births to women resident in Spain, of sex s occurring during year t .

2.20. Late Neonatal Infant Mortality Rate, by Autonomous Community, according to sex

This is defined as the total deaths of persons seven days old or over, but under 30 days of age, resident in Autonomous Community i of sex s per 1,000 live births of said sex in Autonomous Community i . Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality between the eighth and thirtieth day of life in the Autonomous Community considered. That is:

$$\text{TMINTard}_s^t(i) = \frac{D_{7\text{días}-1\text{mes},s}^t(i)}{NV_s^t(i)} \cdot 1000$$

Where:

$D_{7\text{días}-1\text{mes},s}^t(i)$ = Deaths of persons seven days old or over, but under 30 days of age, resident in Autonomous Community i of sex s occurring during year t .

$NV_s^t(i)$ = Total births to women resident in Autonomous Community i of sex s occurring during year t .

2.21. Late Neonatal Infant Mortality Rate, by province, according to sex

This is defined as the total deaths of persons seven days old or over, but under 30 days of age, resident in province j of sex s per 1,000 live births of said sex and in said province. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality between the eighth and thirtieth day of life in the province considered. That is:

$$TMINTard_s^t(j) = \frac{D_{7\text{días-lmes},s}^t(j)}{NV_s^t(j)} \cdot 1000$$

Where:

$D_{7\text{días-lmes},s}^t(j)$ = Deaths of persons seven days old or over, but under 30 days of age, resident in province j of sex s occurring during year t .

$NV_s^t(j)$ = Total births to women resident in province j of sex s occurring during year t .

2.22. Post-neonatal Infant Mortality Rate, according to sex

This is defined as the total deaths of persons over 30 days old but under one year of age, resident in Spain, of sex s per 1,000 live births of said sex. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality between the second and twelfth month of life. That is:

$$TMIPN_s^t = \frac{D_{\text{lmes-lañó},s}^t}{NV_s^t} \cdot 1000$$

Where:

$D_{\text{lmes-lañó},s}^t$ = Deaths of persons over 30 days old but under one year of age, resident in Spain, of sex s occurring during year t .

NV_s^t = Total births to women resident in Spain, of sex s occurring during year t .

2.23. Post-neonatal Infant Mortality Rate, by Autonomous Community, according to sex

This is defined as the total deaths of persons over 30 days old but under one year of age, resident in Autonomous Community i of sex s per 1,000 live births of said sex in Autonomous Community i . Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality between the second and twelfth month of life in the Autonomous Community considered. That is:

$$TMIPN_s^t(i) = \frac{D_{\text{Imes-lañó},s}^t(i)}{NV_s^t(i)} \cdot 1000$$

Where:

$D_{\text{Imes-lañó},s}^t(i)$ = Deaths of persons over 30 days old but under one year of age, resident in Autonomous Community i of sex s occurring during year t .

$NV_s^t(i)$ = Total births to women resident in Autonomous Community i of sex s occurring during year t .

2.24. Post-neonatal Infant Mortality Rate, by province, according to sex

This is defined as the total deaths of persons over 30 days old but under one year of age, resident in province j of sex s per 1,000 live births of said sex and in said province. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of mortality between the second and twelfth month of life in the province considered. That is:

$$TMIPN_s^t(j) = \frac{D_{\text{Imes-lañó},s}^t(j)}{NV_s^t(j)} \cdot 1000$$

Where:

$D_{\text{Imes-lañó},s}^t(j)$ = Deaths of persons over 30 days old but under one year of age, resident in province j of sex s occurring during year t .

$NV_s^t(j)$ = Total births to women resident in province j of sex s occurring during year t .

2.25. Late Foetal Mortality Rate, according to sex

This is defined as the total late foetal deaths ²¹ of sex *s* to women resident in Spain, per 1,000 live births in said population group. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of late foetal mortality. That is:

$$TMFT_s^t = \frac{MFT_s^t}{NV_s^t} \cdot 1000$$

Where:

MFT_s^t = Late Foetal Deaths of sex *s* of women resident in Spain, occurring during year *t*.

NV_s^t = Total births to women resident in Spain, of sex *s* occurring during year *t*.

2.26. Late Foetal Mortality Rate, by Autonomous Community, according to sex

This is defined as the total late foetal deaths of sex *s* to women resident in Autonomous Community *i* per 1,000 live births in said population group. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of late foetal mortality in the Autonomous Community considered. That is:

$$TMFT_s^t(i) = \frac{MFT_s^t(i)}{NV_s^t(i)} \cdot 1000$$

Where:

$MFT_s^t(i)$ = Late Foetal Deaths of sex *s* to women resident in Autonomous Community *i* occurring during year *t*.

$NV_s^t(i)$ = Total births to women resident in Autonomous Community *i* of sex *s* occurring during year *t*.

2.27. Late Foetal Mortality Rate, by province, according to sex

This is defined as the total late foetal deaths of sex *s* to women resident in province *j* per 1,000 live births in said population group. Although this itself is not a rate, it adopts said definition in international demographic practice, and repre-

²¹ Foetus dead six months or more into the pregnancy.

sents a relative measurement of the intensity of late foetal mortality in the province considered. That is:

$$TMFT_s^t(j) = \frac{MFT_s^t(j)}{NV_s^t(j)} \cdot 1000$$

Where:

$MFT_s^t(j)$ = Late Foetal Deaths of sex s to women resident in province j occurring during year t .

$NV_s^t(j)$ = Total births to women resident in province j of sex s occurring during year t .

2.28. Perinatal Mortality Rate, according to sex

This is defined as the total late foetal deaths, plus the deaths of babies under seven days of age, of sex s to women resident in Spain, per 1,000 live births in said population group. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of perinatal mortality. That is:

$$TMP_s^t = \frac{MFT_s^t + D_{<7\text{días},s}^t}{NV_s^t} \cdot 1000$$

Where:

MFT_s^t = Late Foetal Deaths of sex s of women resident in Spain, occurring during year t .

$D_{<7\text{días},s}^t$ = Deaths of babies under seven days of age, of sex s of women resident in Spain, occurring during year t .

NV_s^t = Total births of sex s to women resident in Spain, occurring during year t .

2.29. Perinatal Mortality Rate, by Autonomous Community, according to sex

This is defined as the total late foetal deaths, plus the deaths of babies under seven days of age, of sex s to women resident in Autonomous Community i per 1,000 live births in said population group. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of perinatal mortality in the Autonomous Community considered. That is:

$$TMP_s^t(i) = \frac{MFT_s^t(i) + D_{<7\text{días},s}^t(i)}{NV_s^t(i)} \cdot 1000$$

Where:

$MFT_s^t(i)$ = Late Foetal Deaths of sex s to women resident in Autonomous Community i occurring during year t .

$D_{<7\text{días},s}^t(i)$ = Deaths of babies under seven days of age, of sex s to women resident in Autonomous Community i occurring during year t .

$NV_s^t(i)$ = Total births to women resident in Autonomous Community i of sex s occurring during year t .

2.30. Perinatal Mortality Rate, by province, according to sex

This is defined as the total late foetal deaths, plus the deaths of babies under seven days of age, of sex s to women resident in province j per 1,000 live births in said population group. Although this itself is not a rate, it adopts said definition in international demographic practice, and represents a relative measurement of the intensity of perinatal mortality in the province considered. That is:

$$TMP_s^t(j) = \frac{MFT_s^t(j) + D_{<7\text{días},s}^t(j)}{NV_s^t(j)} \cdot 1000$$

Where:

$MFT_s^t(j)$ = Late Foetal Deaths of sex s to women resident in province j occurring during year t .

$D_{<7\text{días},s}^t(j)$ = Deaths of babies under seven days of age, of sex s to women resident in province j occurring during year t .

$NV_s^t(j)$ = Total births to women resident in province j of sex s occurring during year t .

2.31. Percentage of deaths of babies under one year old, as compared with the total deaths, by sex

This is defined as the total deaths of babies under one year of age, resident in Spain, of sex s as compared with the total deaths of said population group, and expressed as so much percent. That is:

$$PDI_s^t = \frac{D_{<1a\tilde{n}o,s}^t}{D_s^t} \cdot 100$$

Where:

$D_{<1a\tilde{n}o,s}^t$ = Deaths of babies under one year of age, resident in Spain, of sex s occurring during year t .

D_s^t = Deaths of persons resident in Spain, of sex s occurring during year t .

2.32. Percentage of deaths of babies under one year of age, as compared with the total deaths, by Autonomous Community, according to sex

This is defined as the total deaths of babies under one year of age, resident in Autonomous Community i of sex s as compared with the total deaths of said population group, and expressed as so much percent. That is:

$$PDI_s^t(i) = \frac{D_{<1a\tilde{n}o,s}^t(i)}{D_s^t(i)} \cdot 100$$

Where:

$D_{<1a\tilde{n}o,s}^t(i)$ = Deaths of babies under one year of age, resident in Autonomous Community i of sex s occurring during year t .

$D_s^t(i)$ = Deaths of persons resident in Autonomous Community i of sex s occurring during year t .

2.33. Percentage of deaths of babies under one year of age, as compared with the total deaths, by province, according to sex

This is defined as the total deaths of babies under one year of age, resident in province j of sex s as compared with the total deaths of said population group, and expressed as so much percent. That is:

$$PDI_s^t(j) = \frac{D_{<1a\tilde{n}o,s}^t(j)}{D_s^t(j)} \cdot 100$$

Where:

$D_{<1a\tilde{n}o,s}^t(j)$ = Deaths of babies under one year of age, resident in province j of sex s occurring during year t .

$D_s^t(j)$ = Deaths of persons resident in province j of sex s occurring during year t .

2.34. Percentage of deaths of babies under one month old, as compared with the total deaths, by sex

This is defined as the total deaths of babies under 30 days of age, resident in Spain, of sex s as compared with the total deaths of said population group, and expressed as so much percent. That is:

$$PDIN_s^t = \frac{D_{<1mes,s}^t}{D_s^t} \cdot 100$$

Where:

$D_{<1mes,s}^t$ = Deaths of babies under 30 days of age, resident in Spain, of sex s occurring during year t .

D_s^t = Deaths of persons resident in Spain, of sex s occurring during year t .

2.35. Percentage of deaths of babies under one month old, as compared with the total deaths, by Autonomous Community, according to sex

This is defined as the total deaths of babies under one month of age, resident in Autonomous Community i of sex s as compared with the total deaths of said population group, and expressed as so much percent. That is:

$$PDIN_s^t(i) = \frac{D_{<1mes,s}^t(i)}{D_s^t(i)} \cdot 100$$

Where:

$D_{<1mes,s}^t(i)$ = Deaths of babies under 30 days of age, resident in Autonomous Community i of sex s occurring during year t .

$D_s^t(i)$ = Deaths of persons resident in Autonomous Community i of sex s occurring during year t .

2.36. Percentage of deaths of babies under one month old, as compared with the total deaths, by province, according to sex

This is defined as the total deaths of babies under one month of age, resident in province j of sex s as compared with the total deaths of said population group, and expressed as so much percent. That is:

$$PDIN_s^t(j) = \frac{D_{<1mes,s}^t(j)}{D_s^t(j)} \cdot 100$$

Where:

$D_{<1mes,s}^t(j)$ = Deaths of babies under 30 days of age, resident in province j of sex s occurring during year t .

$D_s^t(j)$ = Deaths of persons resident in province j of sex s occurring during year t .

2.37. Percentage of deaths of babies under one week of age, as compared with the total deaths, according to sex

This is defined as the total deaths of babies under seven days of age, resident in Spain, of sex s as compared with the total deaths of said population group, and expressed as so much percent. That is:

$$PDINT_s^t = \frac{D_{<1semana,s}^t}{D_s^t} \cdot 100$$

Where:

$D_{<1semana,s}^t$ = Deaths of babies under seven days of age, resident in Spain, of sex s occurring during year t .

D_s^t = Deaths of persons resident in Spain, of sex s occurring during year t .

2.38. Percentage of deaths of babies under one week old, as compared with the total deaths, by Autonomous Community, according to sex

This is defined as the total deaths of babies under seven days of age, resident in Autonomous Community i of sex s as compared with the total deaths of said population group, and expressed as so much percent. That is:

$$PDINT_s^t(i) = \frac{D_{<1semana,s}^t(i)}{D_s^t(i)} \cdot 100$$

Where:

$D_{<1semana,s}^t(i)$ = Deaths of babies under seven days of age, resident in Autonomous Community i of sex s occurring during year t .

$D_s^t(i)$ = Deaths of persons resident in Autonomous Community i of sex s occurring during year t .

2.39. Percentage of deaths of babies under one week old, as compared with the total deaths, by province, according to sex

This is defined as the total deaths of babies under seven days of age, resident in province j of sex s as compared with the total deaths of said population group, and expressed as so much percent. That is:

$$PDINT_s^t(j) = \frac{D_{<1semana,s}^t(j)}{D_s^t(j)} \cdot 100$$

Where:

$D_{<1semana,s}^t(j)$ = Deaths of persons resident in province j of sex s occurring during year t .

$D_s^t(j)$ = Deaths of persons resident in province j of sex s occurring during year t .

2.40. Percentage of deaths of babies under one month of age, as compared with the deaths of babies under one year of age, according to sex

This is defined as the total deaths of babies under 30 days of age, resident in Spain, of sex s as compared with the total deaths of babies under one year of age, of said population group, and expressed as so much percent. That is:

$$PDINA_s^t = \frac{D_{<1mes,s}^t}{D_{<1año,s}^t} \cdot 100$$

Where:

$D_{<1mes,s}^t$ = Deaths of babies under 30 days of age, resident in Spain, of sex s occurring during year t .

$D_{<1a\tilde{n}o,s}^t$ = Deaths of babies under one year of age, resident in Spain, of sex s occurring during year t .

2.41. Percentage of deaths of babies under one month of age, as compared with the deaths of babies under one year of age, by Autonomous Community, according to sex

This is defined as the total deaths of babies under 30 days of age, resident in Autonomous Community i of sex s as compared with the total deaths of babies under one year of age, of said population group, and expressed as so much percent. That is:

$$PDINA_s^t(i) = \frac{D_{<1mes,s}^t(i)}{D_{<1a\tilde{n}o,s}^t(i)} \cdot 100$$

Where:

$D_{<1mes,s}^t(i)$ = Deaths of babies under 30 days of age, resident in Autonomous Community i of sex s occurring during year t .

$D_{<1a\tilde{n}o,s}^t(i)$ = Deaths of babies under one year of age, resident in Autonomous Community i of sex s occurring during year t .

2.42. Percentage of deaths of babies under one month of age, as compared with the deaths of babies under one year of age, by province, according to sex

This is defined as the total deaths of babies under 30 days of age, resident in province j of sex s as compared with the total deaths of babies under one year of age, of said population group, and expressed as so much percent. That is:

$$PDINA_s^t(j) = \frac{D_{<1mes,s}^t(j)}{D_{<1a\tilde{n}o,s}^t(j)} \cdot 100$$

Where:

$D_{<1mes,s}^t(j)$ = Deaths of babies under 30 days of age, resident in province j of sex s occurring during year t .

$D_{<1a\tilde{n}o,s}^t(j)$ = Deaths of babies under one year of age, resident in province j of sex s occurring during year t .

2.43. Percentage of deaths of babies under one week of age, as compared with the deaths of babies under one year of age, according to sex

This is defined as the total deaths of babies under seven days of age, resident in Spain, of sex s as compared with the total deaths of babies under one year of age, of said population group, and expressed as so much percent. That is:

$$PDINTA_s^t = \frac{D_{<1semana,s}^t}{D_{<1año,s}^t} \cdot 100$$

Where:

$D_{<1semana,s}^t$ = Deaths of babies under seven days of age, resident in Spain, of sex s occurring during year t .

$D_{<1año,s}^t$ = Deaths of babies under one year of age, resident in Spain, of sex s occurring during year t .

2.44. Percentage of deaths of babies under one week of age, as compared with the deaths of babies under one year of age, by Autonomous Community, according to sex

This is defined as the total deaths of babies under seven days of age, resident in Autonomous Community i of sex s as compared with the total deaths of babies under one year of age, of said population group, and expressed as so much percent. That is:

$$PDINTA_s^t(i) = \frac{D_{<1semana,s}^t(i)}{D_{<1año,s}^t(i)} \cdot 100$$

Where:

$D_{<1semana,s}^t(i)$ = Deaths of babies under seven days of age, resident in Autonomous Community i of sex s occurring during year t .

$D_{<1año,s}^t(i)$ = Deaths of babies under one year of age, resident in Autonomous Community i of sex s occurring during year t .

2.45. Percentage of deaths of babies under one week of age, as compared with the deaths of babies under one year of age, by province, according to sex

This is defined as the total deaths of babies under seven days of age, resident in province j of sex s as compared with the total deaths of babies under one year of age, of said population group, and expressed as so much percent. That is:

$$PDINTA_s^t(j) = \frac{D_{<1semana,s}^t(j)}{D_{<1año,s}^t(j)} \cdot 100$$

Where:

$D_{<1semana,s}^t(j)$ = Deaths of babies under seven days of age, resident in province j of sex s occurring during year t .

$D_{<1año,s}^t(j)$ = Deaths of babies under one year of age, resident in province j of sex s occurring during year t .

2.46. Percentage of deaths of babies under one week of age, as compared with the deaths of babies under one month of age, according to sex

This is defined as the total deaths of babies under seven days of age, resident in Spain, of sex s as compared with the total deaths of babies under 30 days of age, of said population group, and expressed as so much percent. That is:

$$PDINTM_s^t = \frac{D_{<1semana,s}^t}{D_{<1mes,s}^t} \cdot 100$$

Where:

$D_{<1semana,s}^t$ = Deaths of babies under seven days of age, resident in Spain, of sex s occurring during year t .

$D_{<1mes,s}^t$ = Deaths of babies under 30 days of age, resident in Spain, of sex s occurring during year t .

2.47. Percentage of deaths of babies under one week of age, as compared with the deaths of babies under one month of age, by Autonomous Community, according to sex

This is defined as the total deaths of babies under seven days of age, resident in Autonomous Community i of sex s as compared with the total deaths of babies under 30 days of age, of said population group, and expressed as so much percent. That is:

$$PDINTM_s^t(i) = \frac{D_{<1semana,s}^t(i)}{D_{<1mes,s}^t(i)} \cdot 100$$

Where:

$D_{<1semana,s}^t(i)$ = Deaths of babies under seven days of age, resident in Autonomous Community i of sex s occurring during year t .

$D_{<1mes,s}^t(i)$ = Deaths of babies under 30 days of age, resident in Autonomous Community i of sex s occurring during year t .

2.48. Percentage of deaths of babies under one week of age, as compared with the deaths of babies under one month of age, by province, according to sex

This is defined as the total deaths of babies under seven days of age, resident in province j of sex s as compared with the total deaths of babies under 30 days of age, of said population group, and expressed as so much percent. That is:

$$PDINTM_s^t(j) = \frac{D_{<1semana,s}^t(j)}{D_{<1mes,s}^t(j)} \cdot 100$$

Where:

$D_{<1semana,s}^t(j)$ = Deaths of babies under seven days of age, resident in province j of sex s occurring during year t .

$D_{<1mes,s}^t(j)$ = Deaths of babies under 30 days of age, resident in province j of sex s occurring during year t .

2.49. Male rate at death

This is defined as the number of deaths of males resident in Spain per 100 deaths of females resident in Spain, occurring during year t . That is:

$$RMD^t = \frac{D_{varones}^t}{D_{mujeres}^t} \cdot 100$$

Where:

$D_{varones}^t$ = Deaths of males resident in Spain, occurring during year t .

$D_{mujeres}^t$ = Deaths of females resident in Spain, occurring during year t .

2.50. Male rate at death, by Autonomous Community

This is defined as the number of deaths of males resident in Autonomous Community i per 100 deaths of females resident in said Autonomous Community during year t . That is:

$$RMD^t(i) = \frac{D_{varones}^t(i)}{D_{mujeres}^t(i)} \cdot 100$$

Where:

$D_{varones}^t(i)$ = Deaths of males resident in Autonomous Community i occurring during year t .

$D_{mujeres}^t(i)$ = Deaths of females resident in Autonomous Community i occurring during year t .

2.51. Male rate at death, by province

This is defined as the number of deaths of males resident in province j per 100 deaths of females resident in said province during year t . That is:

$$RMD^t(j) = \frac{D_{varones}^t(j)}{D_{mujeres}^t(j)} \cdot 100$$

Where:

$D_{varones}^t(j)$ = Deaths of males resident in province j occurring during year t .

$D_{mujeres}^t(j)$ = Deaths of females resident in province j occurring during year t .

2.52. Life Expectancy at Birth, according to sex²²

Average number of years that the components of a generation of individuals, at each age, subject to the mortality pattern observed on those persons resident in Spain, would live, of sex s throughout year t . Its value is extracted from the results corresponding to said year, from the INE Mortality Tables, and therefore, responds to methodology¹ of the calculation thereof.

2.53. Life Expectancy at Birth, by Autonomous Community, according to sex

Average number of years that the components of a generation of individuals, at each age, subject to the mortality pattern observed on those persons resident in Autonomous Community i would live, of sex s throughout year t . Its value is extracted from the results corresponding to said year, from the INE Mortality Tables, and therefore, responds to methodology¹ of the calculation thereof.

2.54. Life Expectancy at Birth, by province, according to sex

Average number of years that the components of a generation of individuals, at each age, subject to the mortality pattern observed on those persons resident in province j of sex s throughout year t . Its value is extracted from the results corresponding to said year, from the INE Mortality Tables, and therefore, responds to methodology¹ of the calculation thereof.

2.55. Life Expectancy at 65 years of age, according to sex²³

Average number of years that the components of a generation of individuals, after turning 65 years of age, at each age, subject to the mortality pattern observed on those persons resident in Spain, would live, of sex s throughout year t . Its value is extracted from the results corresponding to said year, from the INE Mortality Tables, and therefore, responds to methodology¹ of the calculation thereof.

2.56. Life Expectancy at 65 years of age, by Autonomous Community, according to sex

Average number of years that the components of a generation of individuals, after turning 65 years of age, at each age, subject to the mortality pattern ob-

²² For preview results, see the annex.

²³ For preview results, see the annex.

served on those persons resident in Autonomous Community i would live, of sex s throughout year t . Its value is extracted from the results corresponding to said year, from the INE Mortality Tables by Autonomous Community, and therefore, responds to methodology¹ of the calculation thereof.

2.57. Life Expectancy at 65 years of age, by province, according to sex

Average number of years that the components of a generation of individuals, after turning 65 years of age, at each age, subject to the mortality pattern observed on those persons resident in province j would live, of sex s throughout year t . Its value is extracted from the results corresponding to said year, from the INE Mortality Tables by province, and therefore, responds to methodology¹ of the calculation thereof.

3. Population growth and structure indicators

3.1. Population growth per thousand inhabitants

This is defined as the increase in the number of residents in Spain throughout the year t per thousand inhabitants. And it is calculated as the sum of the natural growth and the social growth or migratory balance. That is:

$$CT^t = SV^t + SM^t$$

Where:

SV^t = natural increase of the year t .

SM^t = migratory balance of the year t .

3.2. Population growth per thousand inhabitants by Autonomous Community

This is defined as the increase in the number of residents in the Autonomous Community i throughout the year t per thousand inhabitants. And it is calculated as the sum of the natural growth and the social growth or migratory balance in the Autonomous Community i . That is:

$$CT^t(i) = SV^t(i) + SM^t(i)$$

Where:

$SV^t(i)$ = Natural increase of the Autonomous Community i for the year t .

$SM^t(i)$ = Migratory balance of the Autonomous Community i for the year t .

3.3. Population growth per thousand inhabitants by province

This is defined as the increase in the number of residents in the province j throughout the year t per thousand inhabitants. And it is calculated as the sum of the natural growth and the social growth or migratory balance in the province j . That is:

$$CT^t(j) = SV^t(j) + SM^t(j)$$

Where:

$SV^t(j)$ = Natural increase of the province j for the year t .

$SM^t(j)$ = Migratory balance of the province j for the year t .

3.4. Natural increase per 1,000 inhabitants

This is defined as the difference between the number of births and the number of deaths of those persons resident in Spain throughout year t , per 1,000 inhabitants. That is:

$$SV^t = \frac{(N^t - D^t)}{P^t} \cdot 1000$$

Where:

N^t = Births to women resident in Spain, occurring throughout year t .

D^t = Deaths of persons resident in Spain, occurring throughout year t .

P^t = Average population resident in Spain throughout year t .

3.5. Natural increase per 1,000 inhabitants, by Autonomous Community

This is defined as the difference between the number of births and the number of deaths of those persons resident in Autonomous Community i throughout year t , per 1,000 inhabitants. That is:

$$SV^t(i) = \frac{(N^t(i) - D^t(i))}{P^t(i)} \cdot 1000$$

Where:

$N^t(i)$ = Births to women resident in Autonomous Community i occurring throughout year t .

$D^t(i)$ = Deaths of persons resident in Autonomous Community i occurring throughout year t .

$P^t(i)$ = Average population resident in Autonomous Community i throughout year t .

3.6. Natural increase per 1,000 inhabitants, by province

This is defined as the difference between the number of births and the number of deaths of those persons resident in province j throughout year t , per 1,000 inhabitants. That is:

$$SV^t(j) = \frac{(N^t(j) - D^t(j))}{P^t(j)} \cdot 1000$$

Where:

$N^t(j)$ = Births to women resident in province j occurring throughout year t .

$D^t(j)$ = Deaths of persons resident in province j occurring throughout year t .

$P^t(j)$ = Average population resident in province j throughout year t .

3.7. Migratory balance per thousand inhabitants

This is defined as the difference between the number of immigrations coming from abroad and the number of emigrations abroad in Spain per thousand inhabitants throughout the year. ^t It is calculated as the difference between the gross rate of immigration from abroad and the gross rate of emigration abroad in Spain for the year ^t. That is:

$$TMB^t = TBI^t - TBE^t$$

Where:

TBI^t = Gross Rate of Immigration from abroad in Spain for the year ^t.

TBE^t = Gross Rate of Emigration abroad in Spain for the year ^t.

3.8. Migratory balance per thousand inhabitants by Autonomous Community

This is defined as the difference between the number of immigrations coming from abroad and the number of emigrations abroad in the Autonomous Community i per thousand inhabitants throughout the year. ^t It is calculated as the

difference between the gross rate of immigration from abroad and the gross rate of emigration abroad in the Autonomous Community i for the year t . That is:

$$TMB^t(i) = TBI^t(i) - TBE^t(i)$$

Where:

$TBI^t(i)$ = Gross rate of immigration from abroad in the Autonomous Community i for the year t .

$TBE^t(i)$ = Gross rate of emigration abroad in the Autonomous Community i for the year t .

3.9. Migratory balance per thousand inhabitants by province

This is defined as the difference between the number of immigrations coming from abroad and the number of emigrations abroad in the province j per thousand inhabitants throughout the year t . It is calculated as the difference between the gross rate of immigration coming from abroad and the gross rate of emigration abroad in the province j for the year t . That is:

$$TMB^t(j) = TBI^t(j) - TBE^t(j)$$

Where:

$TBI^t(j)$ = Gross Rate of Immigration coming from abroad in the province j for the year t .

$TBE^t(j)$ = Gross Rate of Emigration abroad in the province j for the year t .

3.10. Births per 1,000 deaths

This is defined as the number of births to women resident in Spain, per 1,000 deaths of persons resident in Spain, throughout year t . That is:

$$RND^t = \frac{N^t}{D^t} \cdot 1000$$

Where:

N^t = Births to women resident in Spain, occurring throughout year t .

D^t = Deaths of persons resident in Spain, occurring throughout year t .

3.11. Births per 1,000 deaths, by Autonomous Community

This is defined as the number of births to women resident in Autonomous Community i per 1,000 deaths of persons resident in said Autonomous Community, throughout year t . That is:

$$RND^t(i) = \frac{N^t(i)}{D^t(i)} \cdot 1000$$

Where:

$N^t(i)$ = Births to women resident in Autonomous Community i occurring throughout year t .

$D^t(i)$ = Deaths of persons resident in Autonomous Community i occurring throughout year t .

3.12. Births per 1,000 deaths, by province

This is defined as the number of births to women resident in province j per 1,000 deaths of persons resident in said province, throughout year t . That is:

$$RND^t(j) = \frac{N^t(j)}{D^t(j)} \cdot 1000$$

Where:

$N^t(j)$ = Births to women resident in province j occurring throughout year t .

$D^t(j)$ = Deaths of persons resident in province j occurring throughout year t .

3.13. Male Rate of the Population

This is defined as the number of males per 100 females resident in Spain, at 1 January of year t . That is:

$$RM^t = \frac{P_{\text{varones}}^t}{P_{\text{mujeres}}^t} \cdot 100$$

3.14. Male Rate of the Population, by Autonomous Community

This is defined as the number of males per 100 females resident in Autonomous Community i at 1 January of year t . That is:

$$RM^t(i) = \frac{P_{\text{varones}}^t(i)}{P_{\text{mujeres}}^t(i)} \cdot 100$$

3.15. Male Rate of the Population, by province

This is defined as the number of males per 100 females resident in province j at 1 January of year t . That is:

$$RM^t(j) = \frac{P_{\text{varones}}^t(j)}{P_{\text{mujeres}}^t(j)} \cdot 100$$

3.16. Mean Age of the Population, according to sex²⁴

This is defined as the average of the age of the population resident in Spain of sex s at 1 January of year t . It is calculated using the following expression:

$$EMedia_s^t = \frac{\sum_x (x + \frac{1}{2}) \cdot P_{s,x}}{\sum_x P_{s,x}}$$

Where:

x = Age at 1 January of year t .

$P_{s,x}$ = Population of sex s and age x resident in Spain at 1 January of year t .

3.17. Mean Age of the Population by Autonomous Community, according to sex¹

This is defined as the average of the age of the population resident in the Autonomous Community i of sex s at 1 January of year t . It is calculated using the following expression:

$$EMedia_s^t(i) = \frac{\sum_x (x + \frac{1}{2}) \cdot P_{s,x}(i)}{\sum_x P_{s,x}(i)}$$

Where:

x = Age at 1 January of year t .

²⁴ Until 2001, the population over 99 years is broken down into simple proportion to the average age of deaths of residents of each sex and province of the years t and $t-1$

$P_{s,x}(i)$ = Population of sex s and age x resident in the Autonomous Community i at 1 January of year t .

3.18. Mean Age of the Population by province, according to sex ¹

This is defined as the average of the age of the population resident in the province j of sex s at 1 January of year t . It is calculated using the following expression:

$$EMedia_s^t(j) = \frac{\sum_x (x + \frac{1}{2}) \cdot P_{s,x}(j)}{\sum_x P_{s,x}(j)}$$

Where:

x = Age at 1 January of year t .

$P_{s,x}(j)$ = Population of sex s and age x resident in the province j at 1 January of year t .

3.19. Median Age of the Population, according to sex

This is defined as the exact age which divides the distribution, by age, of the population of sex s resident in Spain at 1 January of year t into two numerically equal groups, in other words, half of the population of sex s has reached an age less than or equal to the median, and the other half has reached an age greater than or equal to the median. It is calculated using the following expression:

$$EMed_s^t = L_{med} + \left(\frac{\frac{n_s}{2} - F_{med-1}}{f_{med}} \right)$$

Where:

L_{med} = Age, in complete years, such that one half or more of the population resident in Spain at 1 January of year t is aged L_{med} years old or older, and one half or more of the population is L_{med} years old or under.

n_s = Population of sex s resident in Spain at 1 January of year t .

F_{med-1} = Number of individuals of sex s , resident in Spain at 1 January of year t , aged less than L_{med} complete years old.

f_{med} = Number of individuals of sex s , resident in Spain at 1 January of year t , aged equal to L_{med} complete years old.

3.20. Median age of the population, by Autonomous Community, according to sex

This is defined as the exact age which divides the distribution, by age, of the population of sex s resident in Autonomous Community i at 1 January of year t into two numerically equal groups, in other words, half of the population of sex s has reached an age less than or equal to the median, and the other half has reached an age greater than or equal to the median. It is calculated using the following expression:

$$EMed_s^t(i) = L_{med}(i) + \left(\frac{n_s(i) / 2 - F_{med-1}(i)}{f_{med}(i)} \right)$$

Where:

$L_{med}(i)$ = Age, in complete years, such that one half or more of the population resident in Autonomous Community i is aged $L_{med}(i)$ years old or older, and one half or more of the population is aged $L_{med}(i)$ years old or under.

$n_s(i)$ = Population of sex s resident in Autonomous Community i at 1 January of year t .

$F_{med-1}(i)$ = Number of individuals of sex s , resident in Autonomous Community i at 1 January of year t , having reached the age of less than $L_{med}(i)$ complete years old.

$f_{med}(i)$ = Number of individuals of sex s , resident in Autonomous Community i at 1 January of year t , having reached an age equal to $L_{med}(i)$ complete years old.

3. 21. Median Age of the Population, by province, according to sex

This is defined as the exact age which divides the distribution, by age, of the population of sex s resident in province j at 1 January of year t into two numerically equal groups, in other words, half of the population of sex s has reached an age less than or equal to the median, and the other half has reached an age greater than or equal to the median. It is calculated using the following expression:

$$EMed_s^t(j) = L_{med}(j) + \left(\frac{n_s(j)/2 - F_{med-1}(j)}{f_{med}(j)} \right)$$

Where:

$L_{med}(j)$ = Age, in complete years, such that one half or more of the population resident in province j is aged $L_{med}(j)$ years old or older, and one half or more of the population is aged $L_{med}(j)$ years old or under.

$n_s(j)$ = Population of sex s resident in province j at 1 January of year t .

$F_{med-1}(j)$ = Number of individuals of sex s , resident in province j at 1 January of year t , having reached the age of less than $L_{med}(j)$ complete years old.

$f_{med}(j)$ = Number of individuals of sex s , resident in province j at 1 January of year t , having reached an age equal to $L_{med}(j)$ complete years old.

3.22. Proportion of population born abroad by sex, age and nationality

This is defined as the percentage which represents the population of sex S , age X and nationality k , born abroad, over the total population resident in Spain on 1st January of the year t corresponding to said population group. In other words:

$$P \text{ nacido ext.}_{s,x,k}^t = \frac{P_{nacido \text{ ext. } s,x,k}^t}{P_{s,x,k}^t} \cdot 100$$

Where:

$P_{nacido \text{ ext. } s,x,k}^t$ = Population of sex S , age X , nationality k and born abroad resident in Spain on 1st January of the year t ,..

$P_{s,x,k}^t$ = Population of sex S , age X and nationality k resident in Spain on 1st January of the year t .

3.23. Proportion of population born abroad by Autonomous Community according to sex, age and nationality

This is defined as the percentage which represents the population resident in the Autonomous Community i of sex S , age X and nationality k born abroad, over

the total population resident in the Autonomous Community i on 1st January of the year t corresponding to said population group. That is:

$$P_{\text{nacido ext. } s,x,k}^t(i) = \frac{P_{\text{nacido ext. } s,x,k}^t(i)}{P_{s,x,k}^t(i)} \cdot 100$$

Where:

$P_{\text{nacido ext. } s,x,k}^t(i)$ = Population of sex S , age X and nationality k born abroad and resident in the Autonomous Community i on 1st January of the year t .

$P_{s,x,k}^t(i)$ = Population of sex S , age X and nationality k resident in the Autonomous Community i on 1st January of the year t .

3.24. Proportion of foreign population by sex and age

This is defined as the percentage which represents foreign population of sex S and age X , over the total population resident in Spain on 1st January of the year t corresponding to said population group. That is:

$$P_{\text{ext. } s,x}^t = \frac{P_{\text{ext. } s,x}^t}{P_{s,x}^t} \cdot 100$$

Where:

$P_{\text{ext. } s,x}^t$ = Population of sex S , age X and foreign nationality resident in Spain on 1st January of the year t .

$P_{s,x}^t$ = Population of sex S and age X resident in Spain on 1st January of the year t .

3.25. Proportion of foreign population by Autonomous Community according to sex and age

This is defined as the percentage which represents foreign population of sex S and age X resident in the Autonomous Community i over the total population resident in said Community on 1st January of the year t belonging to said population group. That is:

$$P_{\text{ext. } s,x}^t(i) = \frac{P_{\text{ext. } s,x}^t(i)}{P_{s,x}^t(i)} \cdot 100$$

Where:

$P_{\text{ext. s,x}}^t(i)$ = Population of sex S , age X and foreign nationality resident in the Autonomous Community i on 1st January of the year t .

$P_{\text{s,x}}^t(i)$ = Population of sex S and age X resident in the Autonomous Community i on 1st January of the year t .

3.26. Proportion of persons over 64 years of age

This is defined as the percentage represented by the population over 64 years of age, over the total population, at 1 January of year t . That is:

$$P_{65+}^t = \frac{P_{65+}^t}{P^t} \cdot 100$$

Where:

P_{65+}^t = Population resident in Spain at 1 January of year t over 64 years of age.

P^t = Total population resident in Spain at 1 January of year t .

3.27. Proportion of persons over 64 years of age, by Autonomous Community

This is defined as the percentage represented by the population over 64 years of age, resident in Autonomous Community i over the total population at 1 January of year t resident in said Autonomous Community. That is:

$$P_{65+}^t(i) = \frac{P_{65+}^t(i)}{P^t(i)} \cdot 100$$

Where:

$P_{65+}^t(i)$ = Population resident in Autonomous Community i at 1 January of year t over 64 years of age.

$P^t(i)$ = Total population resident in Autonomous Community i at 1 January of year t .

3.28. Proportion of persons over 64 years of age, by province

This is defined as the percentage represented by the population over 64 years of age, resident in province j over the total population at 1 January of year t resident in said province. That is:

$$P_{65+}^t(j) = \frac{P_{65+}^t(j)}{P^t(j)} \cdot 100$$

Where:

$P_{65+}^t(j)$ = Population resident in province j at 1 January of year t over 64 years of age.

$P^t(j)$ = Total population resident in province j at 1 January of year t .

3.29. Aging Index

This is defined as the percentage represented by the population over 64 years of age, over the population under 16 years of age, at 1 January of year t . That is:

$$Aging\ Index^t = \frac{P_{65+}^t}{P_{0-15}^t} \cdot 100$$

Where:

P_{65+}^t = Population resident in Spain at 1 January of year t over 64 years of age.

P_{0-15}^t = Population under 16 years of age resident in Spain at 1 January of year t .

3.30. Aging Index, by Autonomous Community

This is defined as the percentage represented by the population over 64 years of age, resident in Autonomous Community i over the population under 16 years of age, at 1 January of year t resident in said Autonomous Community. That is:

$$Aging\ Index^t(i) = \frac{P_{65+}^t(i)}{P_{0-15}^t(i)} \cdot 100$$

Where:

$P_{65+}^t(i)$ = Population resident in Autonomous Community i at 1 January of year t over 64 years of age.

$P_{0-15}^t(i)$ = Population under 16 years of age resident in Autonomous Community i at 1 January of year t .

3.31. Aging Index, by province

This is defined as the percentage represented by the population over 64 years of age, resident in province j over the population under 16 years of age, at 1 January of year t resident in said province. That is:

$$Aging\ Index^t(j) = \frac{P_{65+}^t(j)}{P_{0-15}^t(j)} \cdot 100$$

Where:

$P_{65+}^t(j)$ = Population resident in province j at 1 January of year t over 64 years of age.

$P_{0-15}^t(j)$ = Population under 16 years of age resident in province j at 1 January of year t .

3.32. Dependency Rate

This is defined as the quotient between the population resident in Spain at 1 January of year t under 16 years of age or over 64 years of age, over the population aged 16 to 64 years old, expressed as so much per hundred (percent). This indicator has a clear economic meaning, as it represents the relative measurement of the potentially (economically) inactive population over the (economically) active population. That is:

$$Dependency\ Rate^t = \frac{P_{0-15} + P_{65+}}{P_{16-64}} \cdot 100$$

Where:

P_{0-15} = Population resident in Spain at 1 January of year t under 16 years of age.

P_{16-64} = Population resident in Spain at 1 January of year t over 15 and under 65 years of age.

P_{65+} = Population resident in Spain at 1 January of year t over 64 years of age.

3.33. Dependency Rate of the population under 16 years of age

This is defined as the quotient between the population resident in Spain at 1 January of year t under 16 years of age, over the population aged 16 to 64 years old, expressed as so much per hundred (percent). That is:

$$Dependency\ Rate\ of\ Young\ Persons^t = \frac{P_{0-15}}{P_{16-64}} \cdot 100$$

Where:

P_{0-15} = Population resident in Spain at 1 January of year t under 16 years of age.

P_{16-64} = Population resident in Spain at 1 January of year t over 15 and under 65 years of age.

3.34. Dependency Rate of the population over 64 years of age

This is defined as the quotient between the population resident in Spain at 1 January of year t over 64 years of age, over the population aged 16 to 64 years old, expressed as so much per hundred (percent). That is:

$$\text{Dependency Rate of Elderly Persons}^t = \frac{P_{65+}}{P_{16-64}} \cdot 100$$

Where:

P_{16-64} = Population resident in Spain at 1 January of year t over 15 and under 65 years of age.

P_{65+} = Population resident in Spain at 1 January of year t over 64 years of age.

3.35. Dependency Rate, by Autonomous Community

This is defined as the quotient between the population resident in Autonomous Community i at 1 January of year t under 16 years of age or over 64 years of age, over the population aged 16 to 64 years old, resident in said Autonomous Community, expressed as so much per hundred (percent). This indicator has a clear economic meaning, as it represents the relative measurement of the potentially (economically) inactive population over the (economically) active population. That is:

$$\text{Dependency Rate}^t(i) = \frac{P_{0-15}(i) + P_{65+}(i)}{P_{16-64}(i)} \cdot 100$$

Where:

$P_{0-15}(i)$ = Population resident in Autonomous Community i at 1 January of year t under 16 years of age.

$P_{16-64}(i)$ = Population resident in Autonomous Community i at 1 January of year t over 15 and under 65 years of age.

$P_{65+}(i)$ = Population resident in Autonomous Community i at 1 January of year t over 64 years of age.

3.36. Dependency Rate of the population under 16 years of age, by Autonomous Community

This is defined as the quotient between the population resident in Autonomous Community i at 1 January of year t under 16 years of age, over the population aged 16 to 64 years old, resident in said Autonomous Community, expressed as so much per hundred (percent). That is:

$$\text{Dependency Rate of Young Persons}^t(i) = \frac{P_{0-15}(i)}{P_{16-64}(i)} \cdot 100$$

Where:

$P_{0-15}(i)$ = Population resident in Autonomous Community i at 1 January of year t under 16 years of age.

$P_{16-64}(i)$ = Population resident in Autonomous Community i at 1 January of year t over 15 and under 65 years of age.

3.37 Dependency Rate of the population over 64 years of age, by Autonomous Community

This is defined as the quotient between the population resident in Autonomous Community i at 1 January of year t over 64 years of age, over the population aged 16 to 64 years old, resident in said Autonomous Community, expressed as so much per hundred (percent). That is:

$$\text{Dependency Rate of Elderly Persons}^t(i) = \frac{P_{65+}(i)}{P_{16-64}(i)} \cdot 100$$

Where:

$P_{16-64}(i)$ = Population resident in Autonomous Community i at 1 January of year t over 15 and under 65 years of age.

$P_{65+}(i)$ = Population resident in Autonomous Community i at 1 January of year t over 64 years of age.

3.38. Dependency Rate, by province

This is defined as the quotient between the population resident in province j at 1 January of year t under 16 years of age or over 64 years of age, over the population aged 16 to 64 years old, resident in said province, expressed as so much per hundred (percent). This indicator has a clear economic meaning, as it represents the relative measurement of the potentially (economically) inactive population over the (economically) active population. That is:

$$Dependency\ Rate^t(j) = \frac{P_{0-15}(j) + P_{65+}(j)}{P_{16-64}(j)} \cdot 100$$

Where:

$P_{0-15}(j)$ =Population resident in province j at 1 January of year t under 16 years of age.

$P_{16-64}(j)$ =Population resident in province j at 1 January of year t over 15 and under 65 years of age.

$P_{65+}(j)$ =Population resident in province j at 1 January of year t over 64 years of age.

3.39. Dependency Rate of the population under 16 years of age, by province

This is defined as the quotient between the population resident in province j at 1 January of year t under 16 years of age, over the population aged 16 to 64 years old, resident in said province, expressed as so much per hundred (percent). That is:

$$Dependency\ Rate\ of\ Young\ Persons^t(j) = \frac{P_{0-15}(j)}{P_{16-64}(j)} \cdot 100$$

Where:

$P_{0-15}(j)$ =Population resident in province j at 1 January of year t under 16 years of age.

$P_{16-64}(j)$ =Population resident in province j at 1 January of year t over 15 and under 65 years of age.

3.40. Dependency Rate of the population over 64 years of age, by province

This is defined as the quotient between the population resident in province j at 1 January of year t over 64 years of age, over the population aged 16 to 64 years old, resident in said province, expressed as so much per hundred (percent). That is:

$$Dependency\ Rate\ of\ Elderly\ Persons^t(j) = \frac{P_{65+}(j)}{P_{16-64}(j)} \cdot 100$$

Where:

$P_{16-64}(j)$ = Population resident in province j at 1 January of year t over 15 and under 65 years of age.

$P_{65+}(j)$ = Population resident in province j at 1 January of year t over 64 years of age.

4. Marriage

4.1. Crude Marriage Rate

This is defined as the total marriages of couples who are going to reside in Spain, held throughout year t per 1,000 inhabitants. That is:

$$TBNup^t = \frac{M^t}{P^t} \cdot 1000$$

Where:

M^t = Marriages of couples who are going to reside in Spain, held during year t .

P^t = Average population resident in Spain, throughout year t .

4.2. Crude Marriage Rate, by Autonomous Community

This is defined as the total marriages of couples who are going to reside in Autonomous Community i held throughout year t per 1,000 inhabitants of said Autonomous Community. That is:

$$TBNup^t(i) = \frac{M^t(i)}{P^t(i)} \cdot 1000$$

Where:

$M^t(i)$ = Marriages of couples who are going to reside in Autonomous Community i held during year t .

$P^t(i)$ = Average population resident in Autonomous Community i throughout year t .

4.3. Crude Marriage Rate, by province

This is defined as the total marriages of couples who are going to reside in province j held throughout year t per 1,000 inhabitants of said province. That is:

$$TBNup^t(j) = \frac{M^t(j)}{P^t(j)} \cdot 1000$$

Where:

$M^t(j)$ = Marriages of couples who are going to reside in province j held during year t .

$P^t(j)$ = Average population resident in province j throughout year t .

4.4. Marriage Rates, according to sex and nationality (Spanish/foreign)

This is defined of the number of persons resident in Spain, of sex s and nationality k who get married throughout year t per 1,000 inhabitants of said population group. That is:

$$TNup_{s,k}^t = \frac{C_{s,k}^t}{P_{s,k}^t} \cdot 1000$$

Where:

$C_{s,k}^t$ = Number of persons resident in Spain, of sex s and nationality k who get married during year t .

$P_{s,k}^t$ = Average population of sex s and nationality k resident in Spain throughout year t .

4.5. Marriage Rates, by Autonomous Community, according to sex and nationality (Spanish/foreign)

This is defined as the number of persons resident in Autonomous Community i of sex s and nationality k who get married throughout year t per 1,000 inhabitants of said population group. That is:

$$TNup_{s,k}^t(i) = \frac{C_{s,k}^t(i)}{P_{s,k}^t(i)} \cdot 1000$$

Where:

$C_{s,k}^t(i)$ = Number of persons resident in Autonomous Community i of sex s and nationality k who get married during year t .

$P_{s,k}^t(i)$ = Average population of sex s and nationality k resident in Autonomous Community i throughout year t .

4.6. Marriage Rates, by province, according to sex

This is defined as the number of persons resident in province j of sex s who get married throughout year t per 1,000 inhabitants of said population group. That is:

$$TNup_s^t(j) = \frac{C_s^t(j)}{P_s^t(j)} \cdot 1000$$

Where:

$C_s^t(j)$ = Number of persons resident in province j of sex s who get married during year t .

$P_s^t(j)$ = Average population of sex s resident in province j throughout year t .

4.7. Marriage Rates, according to sex, age and nationality (Spanish/foreign)

This is defined as the number of persons resident in Spain, of sex s , age ²⁵ x and nationality k who get married throughout year t per 1,000 inhabitants of said population group. That is:

$$TNup_{s,x,k}^t = \frac{C_{s,x,k}^t}{P_{s,x,k}^t} \cdot 1000$$

Where:

$C_{s,x,k}^t$ = Number of persons resident in Spain, of sex s , age x and nationality k who get married during year t .

$P_{s,x,k}^t$ = Average population of sex s , age x and nationality k resident in Spain throughout year t .

4.8. Marriage Rates, by Autonomous Community, according to sex, age and nationality (Spanish/foreign)

This is defined as the number of persons resident in Autonomous Community i of sex s , age ²⁶ x and nationality k who get married throughout year t per 1,000 inhabitants of said population group. That is:

²⁵ For the spouses aged 14 years old, this includes those spouses 14 years old and under. For the spouses aged 60 years old, this includes those spouses aged 60 years old and over.

²⁶ For the spouses aged 14 years old, this includes those spouses 14 years old and under. For the spouses aged 60 years old, this includes those spouses aged 60 years old and over.

$$\text{TNup}_{s,x,k}^t(i) = \frac{C_{s,x,k}^t(i)}{P_{s,x,k}^t(i)} \cdot 1000$$

Where:

$C_{s,x,k}^t(i)$ = Number of persons resident in Autonomous Community i of sex s , age x and nationality k who get married during year t .

$P_{s,x,k}^t(i)$ = Average population of sex s , age x and nationality k resident in Autonomous Community i throughout year t .

4.9. Marriage Rates, by province, according to sex and age

This is defined as the number of persons resident in province j of sex s and age²⁷ x who get married throughout year t per 1,000 inhabitants of said population group. That is:

$$\text{TNup}_{s,x}^t(j) = \frac{C_{s,x}^t(j)}{P_{s,x}^t(j)} \cdot 1000$$

Where:

$C_{s,x}^t(j)$ = Number of persons resident in province j of sex s and age x who get married during year t .

$P_{s,x}^t(j)$ = Average population of sex s and age x resident in province j throughout year t .

4.10. Short-term Marriage Indicator, according to sex and nationality (Spanish/foreign)

This is defined as the average number of times that an individual resident in Spain, of nationality k and of sex s would get married throughout her/his life, in the case of maintaining the same marriage intensity as that observed in year t in said population group. This is calculated as the sum of the marriage rates, by age, sex and nationality, expressed as so much per one, extended to the range of ages from 14 to 60 years old. That is:

$$\text{ICNup}_{k,s}^t = \sum_{x=14}^{60} \text{TNup}_{x,k,s}^t$$

Where:

²⁷ For the spouses aged 14 years old, this includes those spouses 14 years old and under. For the spouses aged 60 years old, this includes those spouses aged 60 years old and over.

$TNup_{x,k,s}^t$ = Specific marriages rates of the persons resident in Spain, of age x , nationality k and sex s in year t expressed as so much per one.

4.11. Short-term Marriage Indicator, by Autonomous Community, according to sex and nationality (Spanish/foreign)

This is defined as the average number of times that an individual resident in Autonomous Community i of nationality k and sex s would get married throughout her/his life, in the case of maintaining the same marriage intensity as that observed in year t in said population group. This is calculated as the sum of the marriage rates, by age and nationality, expressed as so much per one, extended to the range of ages from 14 to 60 years old. That is:

$$ICNup_{k,s}^t(i) = \sum_{x=14}^{60} TNup_{x,k,s}^t(i)$$

Where:

$TNup_{x,k,s}^t(i)$ = Marriage rates of the persons resident in Autonomous Community i of age x , nationality k and sex s in year t , expressed as so much per one.

4.12. Short-term Marriage Indicator, by province, according to sex

This is defined as the average number of times that an individual resident in province j of sex s would get married throughout her/his life, in the case of maintaining the same marriage intensity as that observed in year t in said population group. This is calculated as the sum of the marriage rates, by age, expressed as so much per one, extended to the range of ages from 14 to 60 years old. That is:

$$ICNup_s^t(j) = \sum_{x=14}^{60} TNup_{x,s}^t(j)$$

Where:

$TNup_{x,s}^t(j)$ = Specific marriage rates of the persons resident in province j of age x and sex s in year t , expressed as so much per one.

4.13. Average Age at Marriage, according to sex and nationality (Spanish/foreign)

This is defined as the average age at which an individual resident in Spain, of nationality k and of sex s would get married, in the case of maintaining the marriage rates, by age, observed in year t in said population group. It is calcu-

lated as the average of the ages at which the persons resident in Spain, of sex s get married (14 to 60 years old), weighted by the marriage rates by age and nationality, expressed as so much per one. That is:

$$EMN_{k,s}^t = \frac{\sum_{x=14}^{60} (x + 0,5) \cdot TNup_{s,x,k}^t}{ICNup_{k,s}^t}$$

Where:

$TNup_{s,x,k}^t$ = Marriage rates of the persons resident in Spain, of sex s , age x and nationality k in year t , expressed as so much per one.

$ICNup_{k,s}^t$ = Short-term Marriage Indicator of the persons resident in Spain, of nationality k and of sex s of year t .

4.14. Average Age at Marriage, by Autonomous Community, according to sex and nationality (Spanish/foreign)

This is defined as the average age at which an individual resident in Autonomous Community i of nationality k and sex s would get married, in the case of maintaining the marriage rates, by age, observed in year t in said population group. It is calculated as the average of the ages at which the persons resident in Autonomous Community i get married (14 to 60 years old), weighted by the marriage rates, by age and nationality, expressed as so much per one. That is:

$$EMN_{k,s}^t(i) = \frac{\sum_{x=14}^{60} (x + 0,5) \cdot TNup_{s,x,k}^t(i)}{ICNup_{k,s}^t(i)}$$

Where:

$TNup_{s,x,k}^t(i)$ = Marriage rates of the persons resident in Autonomous Community i of sex s , age x and nationality k in year t , expressed as so much per one.

$ICNup_{k,s}^t(i)$ = Short-term Marriage Indicator of the persons resident in Autonomous Community i of nationality k and sex s of year t .

4.15. Average Age at Marriage, by province, according to sex

This is defined as the average age at which an individual resident in province j of sex s would get married, in the case of maintaining the marriage rates, by age, observed in year t in said population group. It is calculated as the average of the ages at which the persons resident in province j get married (14 to 60

years old), weighted by the marriage rates, by age, expressed as so much per one. That is:

$$EMN_s^t(j) = \frac{\sum_{x=14}^{60} (x+0,5) \cdot TNup_{x,s}^t(j)}{ICNup_s^t(j)}$$

Where:

$TNup_{x,s}^t(j)$ = Marriage rates of the persons resident in province j of age x and sex s in year t , expressed as so much per one.

$ICNup_s^t(j)$ = Short-term Marriage Indicator of the persons resident in province j of sex s of year t .

4.16. First-marriage Rates, according to sex and nationality (Spanish/foreign)

This is defined of the number of persons resident in Spain, of sex s and nationality k who get married for the first time, throughout year t per 1,000 inhabitants of said population group. That is:

$$TPNup_{s,k,solt}^t = \frac{C_{s,k,(r=1)}^t}{P_{s,k}^t} \cdot 1000$$

Where:

$C_{s,k,(r=1)}^t$ = Number of persons resident in Spain, of sex s and nationality k who get married for the first time, during year t .

$P_{s,k}^t$ = Average population of sex s and nationality k resident in Spain throughout year t .

4.17. First-marriage Rates, by Autonomous Community, according to sex and nationality (Spanish/foreign)

This is defined as the number of persons resident in Autonomous Community i of sex s and nationality k who get married for the first time, throughout year t per 1,000 inhabitants of said population group. That is:

$$TPNup_{s,k,solt}^t(i) = \frac{C_{s,k,(r=1)}^t(i)}{P_{s,k}^t(i)} \cdot 1000$$

Where:

$C_{s,k,(r=1)}^t(i)$ = Number of persons resident in Autonomous Community i of sex s and nationality k who get married for the first time, during year t .

$P_{s,k}^t(i)$ = Average population of sex s and nationality k resident in Autonomous Community i throughout year t .

4.18. First-marriage Rates, by province, according to sex

This is defined as the number of persons resident in province j of sex s who get married for the first time, throughout year t per 1,000 inhabitants of said population group. That is:

$$TPNup_{s,solt}^t(j) = \frac{C_{s(r=1)}^t(j)}{P_s^t(j)} \cdot 1000$$

Where:

$C_{s(r=1)}^t(j)$ = Number of persons resident in province j of sex s who get married for the first time, during year t .

$P_s^t(j)$ = Average population of sex s resident in province j throughout year t .

4.19. First-marriage Rates, according to sex, age and nationality (Spanish/foreign)

This is defined of the number of persons resident in Spain, of sex s , age ²⁸ x and nationality k who get married for the first time, throughout year t per 1,000 inhabitants of said population group. That is:

$$TPNup_{s,x,k,solt}^t = \frac{C_{s,x,k,(r=1)}^t}{P_{s,x,k}^t} \cdot 1000$$

Where:

$C_{s,x,k,(r=1)}^t$ = Number of persons resident in Spain, of sex s , age x and nationality k who get married for the first time, during year t .

$P_{s,x,k}^t$ = Average population of sex s , age x and nationality k resident in Spain throughout year t .

²⁸ For the spouses aged 14 years old, this includes those spouses 14 years old and under. For the spouses aged 60 years old, this includes those spouses aged 60 years old and over.

4.20. First-marriage Rates, by Autonomous Community, according to sex, age and nationality (Spanish/foreign)

This is defined as the number of persons resident in Autonomous Community i of sex s , age ²⁹ x and nationality k who get married for the first time, throughout year t per 1,000 inhabitants of said population group. That is:

$$\text{TPNup}_{s,x,k,\text{solt}}^t(i) = \frac{C_{s,x,k,(r=1)}^t(i)}{P_{s,x,k}^t(i)} \cdot 1000$$

Where:

$C_{s,x,k,(r=1)}^t(i)$ = Number of persons resident in Autonomous Community i of sex s , age x and nationality k who get married for the first time, during year t .

$P_{s,x,k}^t(i)$ = Average population of sex s , age x and nationality k resident in Autonomous Community i throughout year t .

4.21. First-marriage Rates, by province, according to sex and age

This is defined as the number of persons resident in province j of sex s and age ³⁰ x who get married for the first time, throughout year t per 1,000 inhabitants of said population group. That is:

$$\text{TPNup}_{s,x,\text{solt}}^t(j) = \frac{C_{s,x,(r=1)}^t(j)}{P_{s,x}^t(j)} \cdot 1000$$

Where:

$C_{s,x,(r=1)}^t(j)$ = Number of persons resident in province j of sex s and age x who get married for the first time, during year t .

$P_{s,x}^t(j)$ = Average population of sex s and age x resident in province j throughout year t .

4.22. Short-term First-marriage Indicator, according to sex and nationality (Spanish/foreign)

This is defined as the average number of times that an individual of nationality k and sex s resident in Spain gets married for the first time, in the case of main-

²⁹ For the spouses aged 14 years old, this includes those spouses 14 years old and under. For the spouses aged 60 years old, this includes those spouses aged 60 years old and over.

³⁰ For the spouses aged 14 years old, this includes those spouses 14 years old and under. For the spouses aged 60 years old, this includes those spouses aged 60 years old and over.

taining the same first-marriage intensity, by age, as that observed in year t in said population group. This is calculated as the sum of the first-marriage rates, by sex, age and nationality, expressed as so much per one, extended to the range of ages from 14 to 60 years old³¹. That is:

$$ICPNup_{s,k,solt}^t = \sum_{x=14}^{60} TPNup_{s,x,k,solt}^t$$

Where:

$TPNup_{s,x,k,solt}^t$ = First-marriage rates of the persons resident in Spain, of sex s , age x and nationality k in year t .

4.23. Short-term First-marriage Indicator, by Autonomous Community, according to sex and nationality (Spanish/foreign)

This is defined as the average number of times that an individual of sex s and nationality k resident in Autonomous Community i gets married for the first time, in the case of maintaining the same first-marriage intensity, by age, as that observed in year t in said population group. This is calculated as the sum of the first-marriage rates, by age and nationality, expressed as so much per one, extended to the range of ages from 14 to 60 years old³². That is:

$$ICPNup_{s,k,solt}^t(i) = \sum_{x=14}^{60} TPNup_{s,x,k,solt}^t(i)$$

Where:

$TPNup_{s,x,k,solt}^t(i)$ = First-marriage rates of the persons resident in Autonomous Community i of sex s , age x and nationality k in year t .

4.24. Short-term First-marriage Indicator, by province, according to sex

This is defined as the average number of times that an individual resident in province j of sex s gets married for the first time, in the case of maintaining the same first-marriage intensity, by age, as that observed in year t in said population group. This is calculated as the sum of the first-marriage rates, by age, expressed as so much per one, extended to the range of ages from 14 to 60 years old³³. That is:

³¹ By construction, said indicator can have a value greater than one, despite being treated as a non-renewable phenomenon.

³² By construction, said indicator can have a value greater than one, despite being treated as a non-renewable phenomenon.

³³ By construction, said indicator can have a value greater than one, despite being treated as a non-renewable phenomenon.

$$\text{ICPNup}_{s,\text{solt}}^t(j) = \sum_{x=14}^{60} \text{TPNup}_{s,x,\text{solt}}^t(j)$$

Where:

$\text{TPNup}_{s,x,\text{solt}}^t(j)$ = First-marriage rates of the persons resident in province j of sex s and age x in year t .

4.25. Average Age at First Marriage, according to sex and nationality (Spanish/foreign)

This is defined as the average age at which an individual resident in Spain, of sex s and nationality k would get married for the first time, in the case of maintaining the same first-marriage intensity, by age, as that observed in year t in said population group. It is calculated as the average of the ages at which the persons resident in Spain get married for the first time (at 14 to 60 years of age), weighted by the first-marriage rates, by nationality and age, expressed as so much per one. That is:

$$\text{EMPM}_{s,k}^t = \frac{\sum_{x=14}^{60} (x + 0,5) \cdot \text{TPNup}_{s,x,k,\text{solt}}^t}{\text{ICPNup}_{s,k,\text{solt}}^t}$$

Where:

$\text{TPNup}_{s,x,k,\text{solt}}^t$ = First-marriage rates of the persons resident in Spain, of sex s , age x and nationality k in year t .

$\text{ICPNup}_{s,k,\text{solt}}^t$ = Short-term First-marriage Indicator of the persons resident in Spain, of sex s and nationality k of year t .

4.26. Average Age at First Marriage, by Autonomous Community, according to sex and nationality (Spanish/foreign)

This is defined as the average age at which an individual resident in Autonomous Community i of sex s and nationality k would get married for the first time, in the case of maintaining the same first-marriage intensity, by age, as that observed in year t in said population group. It is calculated as the average of the ages at which the persons resident in Autonomous Community i get married for the first time (14 to 60 years old), weighted by the first-marriage rates, by nationality and age, expressed as so much per one. That is:

$$EMPM_{k,s}^t(i) = \frac{\sum_{x=14}^{60} (x + 0,5) \cdot TPNup_{s,x,k,solt}^t(i)}{ICPNup_{k,s,solt}^t(i)}$$

Where:

$TPNup_{s,x,k,solt}^t(i)$ = First-marriage rates of the persons resident in Autonomous Community i of sex s , age x and nationality k in year t .

$ICPNup_{k,s,solt}^t(i)$ = Short-term First-marriage Indicator of the persons resident in Autonomous Community i of sex s and nationality k of year t .

4.27. Average Age at First Marriage, by province, according to sex

This is defined as the average age at which an individual resident in province j of sex s would get married for the first time, in the case of maintaining the same first-marriage intensity, by age, as that observed in year t in said population group. It is calculated as the average of the ages at which the persons resident in province j get married for the first time (14 to 60 years old), weighted by the first-marriage rates, by nationality and age, expressed as so much per one. That is:

$$EMPM_s^t(j) = \frac{\sum_{x=14}^{60} (x + 0,5) \cdot TPNup_{s,x,solt}^t(j)}{ICPNup_{s,solt}^t(j)}$$

Where:

$TPNup_{s,x,solt}^t(j)$ = First-marriage rates of the persons resident in province j of sex s and age x in year t .

$ICPNup_{s,solt}^t(j)$ = Short-term Marriage Indicator of the persons resident in province j of sex s of year t .

The final results will encompass, in the June publication of year $t+1$, all those years from the 1975-($t-1$) period, in such a way that the results for year t will correspond to the preview results. The December $t+1$ publication will include the 1975- t period.

5. Foreign migration

5.1 Foreign immigration

5.1.1. Gross rate of immigration from abroad

This is defined as the total number of immigrations coming from abroad arriving in Spain throughout the year t per 1,000 inhabitants. That is:

$$TBI^t = \frac{I^t}{P^t} \cdot 1000$$

Where:

I^t = Immigrations coming from abroad arriving in Spain throughout the year t .

P^t = Average population resident in Spain throughout the year t .

5.1.2. Gross rate of immigration coming from abroad by Autonomous Community

This is defined as the total number of immigrations coming from abroad arriving in the Autonomous Community i throughout the year t per 1,000 inhabitants resident in said Autonomous Community. That is:

$$TBI^t(i) = \frac{I^t(i)}{P^t(i)} \cdot 1000$$

Where:

$I^t(i)$ = Immigrations coming from abroad arriving in the Autonomous Community i throughout the year t .

$P^t(i)$ = Average population resident in the Autonomous Community i throughout the year t .

5.1.3 Gross rate of immigration by province

This is defined as the total number of immigrations coming from abroad arriving in the province j throughout the year t per 1,000 inhabitants resident in said province. That is:

$$TBI^t(j) = \frac{I^t(j)}{P^t(j)} \cdot 1000$$

Where:

$I^t(j)$ = Immigrations coming from abroad arriving in the province j throughout the year t .

$P^t(j)$ = Average population resident in the province j throughout the year t .

5.1.4. Rate of immigration coming from abroad by sex, age and nationality (Spanish/foreign)

This is defined as the total immigrations coming from abroad of individuals of sex s , age x and nationality k , arriving in Spain throughout the year t per 1,000 inhabitants of said population group resident in Spain. That is:

$$TI_{s,x,k}^t = \frac{I_{s,x,k}^t}{P_{s,x,k}^t} \cdot 1000$$

Where:

$I_{s,x,k}^t$ = Immigrations coming from abroad of individuals of sex s , age x and nationality k , arriving in Spain throughout the year t .

$P_{s,x,k}^t$ = Average population of sex s , age x and nationality k resident in Spain throughout the year t .

5.1.5. Rate of immigration coming from abroad by Autonomous Community according to sex, age and nationality (Spanish/foreign)

This is defined as the total immigrations coming from abroad of individuals of sex s , age x and nationality k , arriving in the Autonomous Community i throughout the year t per 1,000 inhabitants of said population group resident in said Autonomous Community. That is:

$$TI_{s,x,k}^t(i) = \frac{I_{s,x,k}^t(i)}{P_{s,x,k}^t(i)} \cdot 1000$$

Where:

$I_{s,x,k}^t(i)$ = Immigrations coming from abroad of individuals of sex s , age x and nationality k , arriving in the Autonomous Community i throughout the year t .

$P^t(i)$ = Average population of sex s , age x and nationality k resident in the Autonomous Community i throughout the year t .

5.1.6 Rate of immigration coming from abroad by province according to sex and age

This is defined as the total immigrations coming from abroad of individuals of sex s , age x and nationality k , arriving in the province j throughout the year t per 1,000 inhabitants of said population group resident in said province. That is:

$$TI_{s,x}^t(j) = \frac{I_{s,x}^t(j)}{P_{s,x}^t(j)} \cdot 1000$$

Where:

$I_{s,x}^t(j)$ = Immigrations coming from abroad of individuals of sex s and age x arriving in the province j throughout the year t .

$P_{s,x}^t(j)$ = Average population of sex s and age x resident in the province j throughout the year t .

5.2 Foreign emigration

5.2.1. Gross rate of emigration abroad

This is defined as the total number of emigrations abroad leaving Spain per 1,000 inhabitants throughout the year t . That is:

$$TBE^t = \frac{E^t}{P^t} \cdot 1000$$

Where:

E^t = Emigrations abroad leaving Spain throughout the year t .

P^t = Average population resident in Spain throughout the year t .

5.2.2. Gross rate of emigration abroad by Autonomous Community

This is defined as the total number of emigrations abroad leaving the Autonomous Community i per 1,000 inhabitants throughout the year t . That is:

$$TBE^t(i) = \frac{E^t(i)}{P^t(i)} \cdot 1000$$

Where:

$E^t(i)$ = Emigrations abroad leaving the Autonomous Community i throughout the year t .

$P^t(i)$ = Average population resident in the Autonomous Community i throughout the year t .

5.2.3 Gross rate of emigration abroad by province

This is defined as the total number of emigrations abroad leaving the province j per 1,000 inhabitants throughout the year t . That is:

$$TBE^t(j) = \frac{E^t(j)}{P^t(j)} \cdot 1000$$

Where:

$E^t(j)$ = Emigrations abroad leaving the province j throughout the year t .

$P^t(j)$ = Average population resident in the province j throughout the year t .

5.2.4. Rate of emigration abroad by sex, age and nationality (Spanish/foreign)

This is defined as the total number of emigrations abroad of individuals of sex s , age x and nationality k , leaving Spain throughout the year t per 1,000 inhabitants of said population group resident in Spain. That is:

$$TE_{s,x,k}^t = \frac{E_{s,x,k}^t}{P_{s,x,k}^t} \cdot 1000$$

Where:

$E_{s,x,k}^t$ = Emigrations abroad of individuals of sex s , age x and nationality k , leaving Spain throughout the year t .

$P_{s,x,k}^t$ = Average population of sex s , age x and nationality k , resident in Spain throughout the year t .

5.2.5 Rate of emigration abroad by Autonomous Community according to sex, age and nationality (Spanish/foreign)

This is defined as the total number of emigrations abroad of individuals of sex s , age x and nationality k , leaving the Autonomous Community i throughout the year t per 1,000 inhabitants of said population group resident in said Autonomous Community. That is:

$$TE_{s,x,k}^t(i) = \frac{E_{s,x,k}^t(i)}{P_{s,x,k}^t(i)} \cdot 1000$$

Where:

$E_{s,x,k}^t(i)$ = Emigrations abroad of individuals of sex s , age x and nationality k , leaving the Autonomous Community i throughout the year t .

$P^t(i)$ = Average population of sex s , age x and nationality k resident in the Autonomous Community i throughout the year t .

5.2.6 Rate of emigration abroad by province according to sex and age

This is defined as the total number of emigrations abroad of individuals of sex s and age x , leaving the province j throughout the year t per 1,000 inhabitants of said population group resident in said province. That is:

$$TE_{s,x}^t(j) = \frac{E_{s,x}^t(j)}{P_{s,x}^t(j)} \cdot 1000$$

Where:

$E_{s,x,k}^t(j)$ = Emigrations abroad of individuals of sex s and age x , leaving the province j throughout the year t .

$P_{s,x,k}^t(j)$ = Average population of sex s and age x resident in the province j throughout the year t .

5.2.7. Short-term indicator of emigration abroad by sex and nationality (Spanish/foreign)

This is defined as the average number of times an individual resident in Spain of sex s and nationality k would emigrate abroad in his/her life if the same intensity in emigration by age as the one observed throughout the year remained t in that population group. It is calculated as the sum of the rates of emigration abroad by sex, age and nationality, expressed on a per unit basis, and extended to all ages from 0 to 90³⁴ years. That is:

³⁴For the age of 90 individuals of 90 years of age and over are included.

$$ICE_{s,k}^t = \sum_{x=0}^{90+} TE_{s,x,k}^t$$

Where:

$TE_{s,x,k}^t$ = Rate of emigration abroad for the year t of individuals of sex s , age x and nationality k .

5.2.8. Short-term indicator of emigration abroad by Autonomous Community according to sex and nationality (Spanish/foreign)

This is defined as the average number of times an individual resident in the Autonomous Community i of sex s and nationality k would emigrate abroad in his/her life if the same intensity in emigration by age as the one observed throughout the year remained t in said population group. It is calculated as the sum of the rates of emigration abroad by sex, age and nationality, expressed on a per unit basis, and extended to all ages from 0 to 90³⁵ years. That is:

$$ICE_{s,k}^t(i) = \sum_{x=0}^{90+} TE_{s,x,k}^t(i)$$

Where:

$TE_{s,x,k}^t(i)$ = Rate of emigration abroad in the Autonomous Community i for the year t of individuals of sex s , age x and nationality k .

5.2.9 Short-term indicator of emigration abroad by province according to sex

This is defined as the average number of times an individual resident in the province j of sex s would emigrate abroad in his/her life if the same intensity in emigration by age as the one observed throughout the year remained t in that population group. It is calculated as the sum of the rates of emigration abroad by sex and age expressed on a per unit basis, and extended to all ages from 0 to 90³⁶ years. That is:

³⁵ For the age of 90 individuals of 90 years of age and over are included.

³⁶ For the age of 90 individuals of 90 years of age and over are included.

$$ICE_s^t(j) = \sum_{x=0}^{90+} TE_{s,x}^t(j)$$

Where:

$TE_{s,x}^t(j)$ = Rate of emigration abroad in the Province j for the year t of individuals of sex s and age x .

5.3. Foreign migration

5.3.1. Rate of gross migration abroad

This is defined as the gross annual migration per thousand inhabitants resident in Spain. It is calculated as the sum of the gross rate of immigration coming from abroad and the gross rate of emigration abroad of residents in Spain throughout the year t . That is:

$$TMB^t = TBI^t + TBE^t$$

Where:

TBI^t = Gross Rate of Immigration from abroad in Spain for the year t .

TBE^t = Gross Rate of Emigration abroad in Spain for the year t .

5.3.2. Rate of gross migration abroad by Autonomous Community

This is defined as the gross annual migration per thousand inhabitants resident in the Autonomous Community i . It is calculated as the sum of the gross rate of immigration coming from abroad and the gross rate of emigration abroad of the Autonomous Community i for the year t . That is:

$$TMB^t(i) = TBI^t(i) + TBE^t(i)$$

Where:

$TBI^t(i)$ = Gross rate of immigration from abroad in the Autonomous Community i for the year t .

$TBE^t(i)$ = Gross rate of emigration abroad in the Autonomous Community i for the year t .

5.3.3. Rate of gross migration abroad by province

This is defined as the gross annual migration per thousand inhabitants resident in the province j . It is calculated as the sum of the gross rate of immigration coming from abroad and the gross rate of emigration abroad of the province j for the year t . That is:

$$TMB^t(j) = TBI^t(j) + TBE^t(j)$$

Where:

$TBI^t(j)$ = Gross rate of immigration coming from abroad in the province j for the year t .

$TBE^t(j)$ = Gross Rate of Emigration abroad in the province j for the year t .

5.3.4. Rate of net migration abroad

This is defined as the net annual migration per thousand inhabitants resident in Spain. It is calculated as the difference between the gross rate of immigration coming from abroad and the gross rate of emigration abroad of residents in Spain throughout the year t . That is:

$$TMB^t = TBI^t - TBE^t$$

Where:

TBI^t = Gross rate of immigration coming from abroad of the year t .

TBE^t = Gross rate of emigration abroad of the year t .

5.3.5. Rate of net migration abroad by Autonomous Community

This is defined as the net annual migration per thousand inhabitants resident in the Autonomous Community. ⁱ It is calculated as the difference between the gross rate of immigration coming from abroad and the gross rate of emigration abroad of residents in the Autonomous Community i throughout the year t . That is:

$$TMB^t(i) = TBI^t(i) - TBE^t(i)$$

Where:

$TBI^t(i)$ = Gross rate of immigration from abroad in the Autonomous Community i for the year t .

$TBE^t(i)$ = Gross rate of emigration abroad in the Autonomous Community i for the year t .

5.3.6. Rate of net migration abroad by province

This is defined as the net annual migration per thousand inhabitants resident in the province. It is calculated as the difference between the gross rate of immigration coming from abroad and the gross rate of emigration abroad of the residents in the province j throughout the year t . That is:

$$TMB^t(j) = TBI^t(j) - TBE^t(j)$$

Where:

$TBI^t(j)$ = Gross rate of immigration coming from abroad in the province j for the year t .

$TBE^t(j)$ = Gross Rate of Emigration abroad in the province j for the year t .

6 Plan for the Dissemination of the Results

The final results of the Basic Demographic Indicators refer to calendar years. The preview results of the Basic Demographic Indicators refer to periods of twelve consecutive months, which need not coincide with a calendar year, and are only offered on a national level, except the gross rates of the basic demographic phenomena (birth, mortality and marriage), which are also disseminated on Autonomous Community and provincial levels.

The results of the Basic Demographic Indicators are disseminated every six months, in June and December each year:

- In December of year t , the final results corresponding to year $t-1$ are published. Simultaneously, the preview results are disseminated of demographic indicators referring to the consecutive twelve-month periods from period February of year $t-1$ - January of year t , to period July of year $t-1$ - June of year t .
- In June of year t , the preview results are published of demographic indicators referring to the consecutive twelve-month periods from period February of year $t-1$ - January of year t , to period January - December of year t . This data entails a revision of the preview results already published in December of the previous year, referring to the consecutive twelve-month periods reaching up to June of year $t-1$.

Annex: preview results for life expectancy.

The preview results for life expectancy at birth and at 65 years of age, of the population resident in Spain during period t respond to the following simplified calculation formulas of a complete mortality table:

- Probability of death for each sex s and age x , $q_{s,x}$:

$$q_{s,x} = \frac{TM_{s,x}}{1 + (1 - a_{s,x}) \cdot TM_{s,x}}, x = 0, 1, \dots, 99, 100., \text{ for } x=1, 2, \dots, 99 .$$

Where:

$TM_{s,x}$ is the mortality rate at age x of the population of sex s resident in Spain throughout period t .

$a_{s,x}$ is the average number of years lived, during the year t , by people dead with age x and sex x :

$$a_{s,x} = 1/2, \text{ for } x=1, 2, \dots, 99$$

$$a_{s,x} = 1/TM_{s,x} \text{ for } x=100.$$

- Deaths of the table for each sex s and age x , $d_{s,x}$:

$$d_{s,x} = l_{s,x} \cdot q_{s,x}, \text{ for } x=0, 1, 2 \dots 99 \text{ and } 100 \text{ years old and over}$$

- Survivors of the table for each sex s and age x , $l_{s,x}$:

$$l_{0,s} = 100.000$$

$$l_{s,x} = l_{s,x-1} - d_{s,x-1}, \text{ for } x=0, 1, 2 \dots 99 \text{ and } 100 \text{ years old and over.}$$

- Time lived (in years) for each age, by those individuals of the fictitious generation of the table, $L_{s,x}$:

$$L_{s,x} = l_{s,x} + (d_{s,x} / 2), \text{ for } x=0, 1, 2, \dots, 99$$

$$L_{s,100+} = l_{s,100+} / m_{s,100+}$$

- Total time lived by the survivors of the table, with complete age reached x , $T_{s,x}$:

$$T_{s,100+} = L_{s,100+}$$

$$T_{s,x} = T_{s,x+1} + L_{s,x}, \text{ for } x=0, 1, \dots, 99$$

- Life expectancy of the population of sex s resident in Spain during period t at age x , $e_{s,x}$:
- $e_{s,x} = T_{s,x} / l_{s,x}$, for $x=0,1,\dots,99$ and 100 years old and over.