

Consumer Price Index. Base 2011

Methodology

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1. Introduction

The operation of the change in the Consumer Price Index (CPI) System mainly consists of revising and updating each of its components, and determining the best options for achieving a representative and precise indicator that adapts to economic trends.

Until the entry into force of base 2001, the CPI based its calculation on what is called a fixed-base system, whose main characteristic is that, both the composition of the shopping basket and its weightings are unaltered for the entire time that the base is used. The changes in the base were carried out every eight or nine years, because such was the periodicity of the Basic Household Budget Survey (BHBS), the source used for the preparation of the weightings and of the shopping basket. Due to this, the only way to collect the changes in consumer behaviour and for the CPI to adapt to these trends was to wait until the following change in base. Obviously, in some cases, the time period was excessively long.

As of 1997, the two household budget surveys that had coexisted (one continuous and quarterly, and another, carried out every eight or nine years) were substituted by a single, quarterly one, which provided information that was closer to the basic survey, as per the breakdown level. This survey, called the Household Budget Continuous Survey (HBCS), provided the information necessary for the updating of the weightings, as well as the renewal of the composition of the shopping basket in the base change of CPI 2001. In addition, it made possible the permanent updating of said weightings and the revision of the shopping basket, which was an improvement on the changes of the CPI System.

Thus, with the CPI, base 2001, a new Calculation system began, whose most important characteristics are its dynamism and its contemporary nature. It is a more current CPI, given that it permanently revises its methodological system, for the purpose of improving it. To this end, direct contact is established with the different academic forums and national and international producing bodies.

It is also, however, a more dynamic CPI than its predecessors in that it annually revises the weightings for certain functional breakdown levels, and includes, in the shortest time possible, any change detected in the market components, whether it is the appearance of new products, changes in the consumption structure or in the sample of municipalities or establishments. In addition, it establishes the base changes every five years, carrying out a complete revision of the methodology and the sample and the updating of weightings at all breakdown levels.

As a result of this new functioning scheme, in January 2012, the Consumer Price Index System entered into force, with reference base in the year 2011. This System substitutes the CPI, which with base 2006, was in force until December 2011.

The CPI, base 2011, maintains the main characteristics of the CPI, base 2006, and as with the earlier version, will annually revise the weightings for a certain functional breakdown level. To carry out this updating, it will use the information provided by the Household Budget Survey (HBS) base 2006.

In 1999, the CPI Working Group was created, at the heart of the High Council on Statistics, comprised of representatives from the Ministry of Economy and Tax, Bank of Spain, consumer associations, universities, trade unions, OECD and Chambers of Commerce, among others. The Group meets periodically for the purpose of the INE

informing on the most relevant aspects in the preparation of the new price systems and in the annual updates. The CPI, base 2011, counts with the assistance of the Working Group, which guarantees the ample support of the main economic agents.

In addition, the methodology of the new System was analysed by the High Council on Statistics, and was the object of study by the Permanent Commission of said Council until it was approved in the Plenary of the High Council on Statistics.

The main characteristics of the Consumer Price Index, base 2011, are presented in this methodology.

The INE would like to express its gratitude for the interest shown by all those bodies and professionals who have participated in the different working groups that were formed for the change in the CPI System, and likewise thank the cooperation of all those respondents who provided the data necessary to compile the CPI within the established terms.

2. Indicator definition

The Consumer Price Index, published monthly, has the objective of measuring the evolution of the price levels of consumer goods and services acquired by the households resident in Spain.

System Base 2011 uses the definition of consumption expenditure of the HBS: "*consumption expenditure is the monetary flow that the household and each of its members spend on the payment of certain goods and services, aimed at the household itself or to be transferred free of charge to other households or institutions*".

It has, therefore, eliminated from the CPI consumption field the consumption categories defined in the HBS such as the value of the goods received in kind, within the concept of self-consumption, self-supply, salary in kind, free or subsidised food and rent of the dwelling in which the household resides, when the household is the owner of the same or has it granted free of charge or at a low price by other households or institutions.

Also suppressed were some taxes not considered to be consumption from the point of view of the HBS, and other expenses such as those spent on lotteries and gambling. This definition of consumption expenditure is in agreement with the criteria used by the European System of Accounts (ESA-95).

The different consumption goods and services are classified in the HBS in accordance with the harmonised COICOP (*Classification of Individual Consumption by Purpose*).

The precision with which this short-term indicator measures the evolution of price level depends on two qualities that every CPI must have: representativeness and time comparability.

The degree of CPI representativeness is determined by the adaptation of this indicator to the economic reality of that time; thus, the variation rate calculated from the CPI will more closely approximate the evolution of the whole of the prices of the economy, the more the elements selected for measurement adapt to the behavioural trends of consumers. In order to achieve this, the articles selected to form part of the shopping basket must be the most frequently consumed by most of the population, the establishments from the sample must be the most visited, and the relative importance of each article in the shopping basket must answer to household consumption trends. The better the selection of these elements, the more representative the indicator will be.

Furthermore, the CPI is an indicator that only makes sense when comparisons in time are established; in fact, an index number barely has any meaning if a comparison is not established with indices from other periods, to obtain the corresponding variation rates (this could be one month, one year, or any other period of time). To this end, the other quality that may be attributed to a CPI is time comparability, that is, the need for the elements that define the CPI to remain stable over time, except, logically, the prices collected monthly. This makes it possible for any variation in the CPI to be due only to changes in the prices of the selected articles, and not to any change in the methodological content of this indicator.

The applications of the CPI are numerous and of great importance in the economic, legal and social areas. Worth noting among these is its use as a measurement of inflation. It is also applied in the revision of real estate rental contracts, as a reference in wage negotiation, in the establishment of pensions, in the updating of insurance premiums and other types of contract, and as a deflator in the National Accounts.

3. Indicator scope

3.1 Time scope

3.1.1 BASE PERIOD

The base period, or reference period, of the index is that for which all indices are made equal to 100. This is normally an annual period. In the new system, the arithmetic average of the twelve published monthly indices of the year 2011, in base 2006, is equal to 100. The period to which the index refers, therefore, is the year 2011, and it is usually called CPI base 2011. This means that all indices published will refer to this year.

3.1.2 REFERENCE PERIOD OF THE PRICES

This is the period with whose prices the current prices are compared, that is to say, the period chosen for the calculation of the basic indices.

With the calculation formula used for CPI base 2011 - linked Laspeyres - the reference period of the prices varies each year, and is the month of December of the year immediately prior to the year considered.

3.1.3 REFERENCE PERIOD OF THE WEIGHTINGS

The reference period of the weightings is that to which the weightings serving as the structure of the System refer.

For the year 2012, the calculation of the weightings was carried out based on the data from the HBS, which provides the basic information on the expenditure of families on consumption goods and services corresponding to the year 2010.

In addition, to correct the lag produced between this reference period of the weightings and the reference period of the prices (December of the year 2011), the weightings have been updated, using information on price and quantity evolution, from the CPI and other sources.

Thus, the reference period of the weightings is December 2011, during the year 2012. And in subsequent years it is the month of December prior to each year, given that the weightings will be updated annually, using the annual information of the HBS, and information from other sources, such as the evolution of private consumption from the National Accounts, the evolution of CPI prices and the information provided by sources on the supply of the different sectors.

This annual revision of weightings will be performed for certain geographical and functional breakdown levels, using the information available closest to the moment of the revision.

In addition, every five years, a base change will be carried out, in which the weightings will be updated for all functional and geographical breakdown levels.

3.2 Population scope

The population of the index or reference stratum is the population group whose consumption expenditure structure serves as the basis for the selection of representative articles and the calculation of their weightings.

In CPI base 2011, the reference stratum includes all the population that resides in family dwellings in Spain; excluding, therefore, the expenditure of the persons who reside in group dwellings or institutions (convents, nursing homes, prisons, etc.) and the expenditure of non-residents.

3.3 Geographical scope

The geographical scope of the research is comprised of the entire national territory.

3.4 Consumption field

It is the group of goods and services that the households of the reference stratum use for consumption; therefore, the expenditure on investment goods, imputed rentals and expenses subsidised by the public administrations are not considered. Also excluded from the consumption field are some taxes not considered to be consumption from the point of view of the HBS, and other expenses, such as those used for lotteries and gambling.

In the HBS, the goods and services have been classified according to the COICOP international consumption classification. Each consumption division of the HBS is represented by one or more articles in the CPI, in such a way that the evolution of the prices of these articles represents the evolution of all of the elements comprising said division.

3.4.1 SHOPPING BASKET

The group of goods and services selected in the CPI, whose price evolution represents the evolution of all those that comprise the COICOP division to which they belong.

The selection of articles comprising the shopping basket has been performed based on CPI base 2006, and data from HBS 2010. The criterion to determine which division must be included is still the same as for base 2006: in the CPI all the divisions over 0.3 per thousand of the total expense are considered.

Once the expenditure divisions to be represented in the index were determined, the articles comprising the base 2006 shopping basket were revised, increasing, decreasing or maintaining the articles from each division, depending on its weighting, and the variability of the prices of said articles.

Thus, the total number of articles comprising the shopping basket of CPI base 2011 is 489.

For each of the articles, a description or specification is prepared, for the purpose of facilitating its identification on the part of the surveyor, and permitting the correct collection of the prices. These specifications take into consideration the particularities of each region.

3.5 Functional breakdown of the indices

CPI base 2011 adapts completely to the COICOP international consumption classification. The articles in the shopping basket are aggregated into subclasses, these subclasses into classes, subsequently into subgroups, and finally, the subgroups into groups.

The functional structure of the CPI consists of 12 groups, 37 subgroups, 79 classes and 126 subclasses, the same as CPI base 2006. In addition, the 57 headings and 28 special groups are extended to 29.

The articles are distributed in the large groups from CPI 2011, in the following way:

Number of articles, CPI Base 2011	
Groups	Number of Articles
1 Food and non-alcoholic beverages	176
2 Alcoholic beverages and tobacco	12
3 Clothing and footwear	67
4 Housing	18
5 Furnishings, household equipment and routine maintenance of the house	60
6 Health	13
7 Transport	31
8 Communications	3
9 Recreation and culture	41
10 Education	7
11 Restaurants, cafés and hotels.	23
12 Miscellaneous goods and services	38
TOTAL	489

3.6 Geographical breakdown of the indices

CPI base 2011 publishes the indices for the different geographical and functional breakdown levels that were published in CPI base 2006.

The following table collects the breakdown for which data is published monthly.

INDEX	National	Autonomous Community	Province
General	X	X	X
Groups	X	X	X
Subgroups	X	X	X
Classes	X		
Subclasses	X		
Headings	X	X	
Special Groups	X	X	

4. Sample design

As is most European Union (EU) countries, the sample design of the prices that intervene in the calculation of the CPI is intentional, and therefore it is a non-probabilistic design, given the characteristics of the target population of the study.

To obtain significant indicators at all functional and geographical breakdown levels for which the CPI is published, a sample selection process has been structured in three large sections, each of which has the objective of selecting the different components of the same. These are as follows:

- Selection of municipalities.
- Selection of commercial areas and establishments.
- Selection of articles.

4.1 Selection of municipalities

The selection of the municipalities that are a part of the new CPI System has been carried out, taking into consideration not only demographic criteria but also geographical representativeness. The official population data that has been used to make the selection of municipalities is that obtained from the revision of the Municipal Register of Inhabitants at 01 January 2010.

Thus, the demographic criteria used in CPI base 2001 is maintained and some additional criteria is introduced, for the purpose of obtaining representative indicators for each geographical and functional breakdown level.

The geographical coverage criterion was mainly based on the population of the group of selected municipalities. In this way, the municipalities selected must cover 30% of the population of the province, and 50% of the population of the Autonomous Community. With this criterion, the municipalities were selected by size, until the requirement was fulfilled, without considering the geographical distribution of the same within the province.

For base 2006, this initial criterion was completed in the following way:

- **geographical representativeness:** it is important for the municipalities in the sample to be distributed throughout the entire province, avoiding a concentration in certain population centres.
- **population representativeness:** representativeness of small municipalities is emphasised; in previous bases, when the selection criterion was exclusively population, part of the population residing in smaller municipalities were excluded.
- **shopping basket representativeness:** all municipalities must have articles of all groups; for this reason, a reduced basket has been compiled from the total basket, in which basic consumption goods have been included. With this, the representativeness of the CPI has increased considerably.

Thus, the sample of municipalities obtained with the aforementioned criteria consists of 177 (the 52 provincial capitals and 125 non-capital municipalities).

In 97 of these 177 municipalities, prices were collected from the entire shopping basket of articles, in 44 of them, prices were collected in the *Food* shopping basket, and part of the rest of the shopping basket, and in the 36 remaining municipalities, prices were collected from a reduced part of the shopping basket (comprised of 48% of the articles).

It is important to highlight that, in practice, population percentages higher than those indicated are covered, granted that some establishments included in the sample, such as hypermarkets, shopping centres, repair workshops or furniture stores, are found outside of the municipalities or in bordering municipalities, due to which the real population represented in the index is larger than the theoretical population.

4.2 Selection of commercial areas and establishments

For the selection of the number of establishments, CPI base 2011 has used as its starting point the sample from CPI base 2006, and has studied the existing network of establishments available in each province, paying special attention to the different types and characteristics of said establishments. In addition, the representation of commercial reality and the evolution of the prices in all areas have been taken into account.

In this selection process of commercial areas and establishments, the participation of the personnel of INE provincial delegations is essential, due to the fact that they are the main experts in the commercial relations of their province.

As an overall criterion, the number of establishments that, on a monthly basis, inform on the prices of an article was calculated depending on the weighting of the article in the index, and on the variability of its prices: the more weighting and/or variability of prices, the more number of establishments shall be selected.

Likewise, for the calculation of the number of establishments, a minimum number was established for each article in each province, depending on the type of article and the type of collection of said article.

For the selection of the types of establishment, the distribution of sales percentages by type of establishment (hypermarkets, supermarkets, markets and specialised stores) were taken into consideration, depending on each article. To this end, we counted on information from several sources, among these being the Annual Trade Survey (INE) and the Ministry of Agriculture, Food and the Environment.

Special attention was paid to shopping centres, hypermarkets and supermarkets, given their importance in terms of sales volume. In many cases, the situation in said centres, as well as the presence of markets, conditions the creation of "commercial areas", which are explicitly defined, in each municipality of the sample, for perishable food articles (meat, fish, fresh fruits and vegetables), and implicitly so for the rest of the articles.

In the definition of the commercial areas, we begin with the hypothesis that the population that purchases in said commercial area has homogeneous behaviour and habits as regards consumption. These commercial areas have been delimited with the aid of the provincial delegations.

For the perishable food articles, three types of commercial areas were defined, based on the size of the municipality and the number of establishments susceptible of being selected for the different types of articles considered.

In addition, these articles were classified in two large groups, considering the variability of the prices that they present and the weight that they have in the shopping basket.

This classification determines the number of establishments in which prices are collected, according to the type of commercial area and the type of article in question.

For the rest of articles, even though a strict delimitation has not been carried out in commercial areas, the selection of establishments is carried out complying with the representativeness objective: the establishment sample must represent, with the evolution of the prices of the articles sold in them, all the establishments of the town.

Based on the aforementioned premises, the personnel of the provincial delegations of the INE have carried out the selection of the respondent establishments, so as to comply with the following basic norms:

- The sample must represent all of the commercial areas and the different types of existing establishments.
- The establishments must have the most frequent and massive flow of public in the town, and/or the greatest sales volume.
- The establishments must be representative of all types of articles for which information is collected.
- In each establishment, no more than one price may be collected for the same article on the same day.
- An establishment may not concentrate an important number of observations of prices of different articles. The objective of this price policy is to try to avoid one single establishment from conditioning the evolution of the index.
- Excluded from the sample are those establishments with access restricted to a sector of the population, such as cooperatives, company stores or similar establishments. Itinerant street vending and door-to-door sales are not considered either.

- The establishments selected must offer sufficient guarantees of continuity in the sale of articles for which prices are collected, given that this sample remains fixed over time, except in the case of closing, change of activity, loss of representativeness as regards consumption, or no longer selling the article for which prices were collected. In these cases, the establishment will be substituted by another that meets the necessary requirements to belong to the sample.

All of these criteria are dependent on other aspects, such as collection costs, willingness of the respondent to cooperate and reliability of the data supplied. However, Law 4/1990 establishes the obligation of providing the necessary data for the compilation of these Statistics.

In CPI base 2011, approximately 33,000 establishments with these characteristics have been selected, distributed throughout the national territory.

4.3 Selection of articles

To select the articles that are representative of the expenditure divisions of the HBS, different bodies, business associations, manufacturers, traders and establishments were consulted, which provided information on those articles that best represented the different divisions, in accordance with the following selection criteria:

- The evolution of the prices of the articles selected must be similar to that of the rest of the articles of the division that they represent.
- The articles must be habitually consumed by the population.
- They must have prices that are easily observable.
- They must offer reasonable guarantees of continuity on the market.

Thus, in CPI base 2011, the shopping basket is comprised of 489 articles. Articles whose consumption or representativeness had decreased were eliminated, such as recordable CDs or film rentals, and new articles such as portable hard drives, *notebooks and tablets* were incorporated. New aesthetics services, such as IPL hair removal or laser hair removal, and paramedical services, such as speech therapy were included.

4.3.1 SPECIFICATION OF ARTICLES

Once the articles are selected, it is necessary to determine the specifications that define them. The preparation of these specifications allows for comparison over time of equal or equivalent-quality articles, for the purpose of measuring real variations of prices and not those caused by a different quality of the articles. For this reason, the determining factors of the prices must be specified for each article, among which are: the unit of measure, type of packaging, size, composition, shape and dimensions.

For the articles from groups 1 and 2, we also determine the theoretical collection unit (litre, kilo, etc.), depending on the most generalised consumption unit for each type of article.

To determine the characteristics of each article and determine the specifications, information is obtained from many institutions, professional associations and companies; in this way, some general specifications are compiled which subsequently are adapted in each province, to the specific products selected in each establishment. Thus, when the information collection is carried out on the part of the agents, the articles are identified in a detailed manner.

The specifications of each article remain fixed over time, so long as they remain representative of the consumption of the area, and are therefore modified, when the article ceases to be sold, or ceases to be representative of the consumption of a town.

The times in which it is necessary to change a product, the provincial delegations must include a detailed specification of the new product selected as the substitute of the prior; this will allow the calculation of a linking coefficient that assures variations in the index exclusively caused by price variations and not but changes in the characteristics of the article.

4.4 Number of observations

As previously stated, the number of observations used for the calculation of the index depends on the type of article in question, as well as on the establishments that have been selected in each of the provinces.

Sections 6 and 7 on "Types of article" and "Price collection" indicate the frequency of price collection that ultimately determines the size of the sample of prices that are collected on a monthly basis.

The total number of prices processed each month amounts to approximately 220,000.

5. General calculation method

The formula used to calculate the indices of CPI base 2011, is the linked Laspeyres formula, which was first used in CPI base 2001.

The overall index corresponding to month m of year t is mathematically expressed as follows:

$${}_0 I_{LE}^t = \prod_{k=1}^t \frac{\sum_i p_i^k q_i^{k-1}}{\sum_i p_i^{k-1} q_i^{k-1}}$$

Similarly, it can be expressed as:

$${}_0 I_{LE}^t = \prod_{k=1}^t \frac{\sum_i \frac{p_i^k}{p_i^{k-1}} p_i^{k-1} q_i^{k-1}}{\sum_i p_i^{k-1} q_i^{k-1}} = \prod_{k=1}^t \sum_i I_i^k W_i^{k-1}$$

where:

$$I_i^k = \frac{p_i^k}{p_i^{k-1}} \quad \text{and} \quad W_i^{k-1} = \frac{p_i^{k-1} q_i^{k-1}}{\sum_i p_i^{k-1} q_i^{k-1}}$$

As may be observed, a linked index establishes comparisons between the current period (t) and the base period (0), but considering the intermediate situations (k).

In CPI base 2011, the intermediate situations considered correspond to the months of December of every year. Thus, the index in base 2011 for month m of year t , is obtained as the product of the indices as follows:

$$\begin{aligned} {}_{11} I_G^{mt} &= {}_{11} I_G^{dic(t-1)} \times \left(\frac{dic(t-1) I_G^{mt}}{100} \right) = \\ &= {}_{11} I_G^{dic11} \times \left(\frac{dic11 I_G^{dic12}}{100} \right) \times \dots \times \left(\frac{dic(t-2) I_G^{dic(t-1)}}{100} \right) \times \left(\frac{dic(t-1) I_G^{mt}}{100} \right) \end{aligned}$$

where:

${}_{11}I_G^{mt}$ is the overall index, in base 2011, of month m of year t .

${}_{dic(t-1)}I_G^{mt}$ is the overall index, referring to December of year $(t-1)$, of month m of year t .

The main inconvenience of linked indices is the lack of additivity. This makes it impossible to obtain the index of any aggregate as the weighted average of the indices of the aggregates that comprise it. Thus, for example, the overall index cannot be calculated as the weighted average of all of the indices of the twelve groups.

5.1 Basic indices

A basic aggregate is the consumption component with the lowest aggregation level for which indices are obtained, and in whose calculation weightings do not intervene; the indices of these aggregates are called basic indices. The Spanish CPI calculates a basic index for each article of the shopping basket in each of the provinces, and therefore, the basic aggregate is the article-province.

Basic aggregate index i is obtained as the quotient of the average price of said basic aggregate in the current period and the average price in the reference period of the prices, that is, December of the previous year:

$${}_{dic(t-1)}I_i^{mt} = \frac{\bar{P}_i^{mt}}{\bar{P}_i^{dic(t-1)}} \times 100$$

where:

${}_{dic(t-1)}I_i^{mt}$ is the index, referring to December of year $(t-1)$, of basic aggregate i , in month m of year t .

\bar{P}_i^{mt} is the average price of basic aggregate i , in month m of year t .

$\bar{P}_i^{dic(t-1)}$ is the average price of basic aggregate i , in December of year $(t-1)$.

At the same time, the average price of aggregate i , in period (m,t) , \bar{P}_i^{mt} , is the simple geometrical average of the prices collected in said period:

$$\bar{P}_i^{mt} = n_i^{mt} \sqrt[n_i^{mt}]{\prod_{j=1}^{n_i^{mt}} P_{i,j}^{mt}} \quad (1)$$

where:

$P_{i,j}^{mt}$ is the price of basic aggregate i collected in establishment j , in period (m,t) .

n_i^{mt} is the number of processed prices of basic aggregate i , in period (m,t) .

The geometric average grants the same importance to the variations of all prices, regardless of their level.

5.2 Weightings

The weightings that intervene in the calculation of the aggregate indices come from the HBS. This survey provides estimates of the expenditure on consumption products made by the households resident in family dwellings in Spain.

The consumption classification that the HBS (COICOP) uses consists of a series of expenditure divisions, most of which include goods and services included in the consumption field of the CPI.

For the calculation of the weightings of the articles comprising the shopping basket of CPI base 2011, the breakdown of these divisions has been necessary to obtain more detailed information. To this end, we have counted on the collaboration of different bodies, associations, manufacturers and traders.

The data used in the calculation of the weightings, used during the year 2012, are those corresponding to the year 2010.

In addition, to correct the lag produced between the reference period of the weightings and the reference period of the prices (December of the year 2011), the weightings have been updated, using information on price and quantity evolution, from the CPI and other sources. In this way, the reference period of the weightings, used during the year 2012, is December 2011.

The weightings for each article represent the relation between the expenditure on the divisions represented by said article and the total expenditure on all divisions covered by the index:

$$W_i = \frac{\text{gasto realizado en las parcelas representadas por el artículo } i}{\text{gasto total}}$$

These weightings are different in each of the geographical aggregations (provinces, Autonomous Communities, and the total national), and from them, the weightings of the different functional aggregations are obtained. Thus, the weighting of functional aggregate A is obtained as the sum of the weightings of the articles that comprise said aggregation:

$$W_A = \sum_{i \in A} W_i$$

The annual weightings updates, which will be carried out in CPI base 2011, will be done with the latest available information from the HBS.

5.3 Aggregate indices

As previously mentioned, the basic indices refer to December of the immediately previous year. In turn, the weightings used for the calculation of the aggregations also refer to December of the previous year, thereby maintaining coherence with the reference prices.

The calculation of the aggregate indices is described below.

Functional aggregations within a province

The index, referring to December of the previous year, of any functional aggregation A in a province p , is obtained as the aggregation of the basic indices of the articles belonging to said aggregation with the weightings applicable in year t .

Its mathematical expression is as follows:

$${}_{dic(t-1)}I_{A,p}^{mt} = \sum_{i \in A} {}_{dic(t-1)}I_{i,p}^{mt} \times {}_{dic(t-1)}W_{i,p}$$

where:

${}_{dic(t-1)}I_{i,p}^{mt}$ is the index, referring to December $t-1$, of article i in province p , in month m of year t ,

${}_{dic(t-1)}W_{i,p}$ is the weighting (so much per one), referring to December of year ($t-1$), of article i in province p , within Aggregation A , that is:

$${}_{dic(t-1)}W_{i,p} = \frac{\text{gasto realizado en el artículo } i \text{ dentro de la provincia } p}{\text{gasto realizado en la agregación funcional } A \text{ dentro de la provincia } p}$$

Once the aggregate indices are calculated as detailed above, it is necessary to link them. These indices are those which are finally disseminated and provide continuity for the series published in base 2011.

For any functional aggregation A , the index in base 2011 in province p is calculated as follows:

$${}_{11}I_{A,p}^{mt} = {}_{11}I_{A,p}^{dic(t-1)} \times \left(\frac{{}_{dic(t-1)}I_{A,p}^{mt}}{100} \right)$$

Geographical aggregations of a functional aggregation

In the same way as the previous case, the calculation of the index of a geographical aggregation R greater than the province, for a specific functional grouping A is calculated as follows:

$${}_{dic(t-1)}I_{A,R}^{mt} = \sum_{p \in R} {}_{dic(t-1)}I_{A,p}^{mt} \times {}_{dic(t-1)}W_{A,p}$$

where:

${}_{dic(t-1)}I_{A,p}^{mt}$ is the index, referring to December of year $(t-1)$, of the functional aggregation A in province p , in month m of year t .

${}_{dic(t-1)}W_{A,p}$ is the weighting (so much per one), referring to December of $(t-1)$, of functional grouping A in province p , that is,

$${}_{dic(t-1)}W_{Ap} = \frac{\text{gasto realizado en la agregación funcional } A \text{ dentro de la provincia } p}{\text{gasto realizado en la agregación funcional } A \text{ dentro de la agregación geográfica } R}$$

As with the functional aggregations, once the aggregate indices are calculated, it is necessary to link them.

For any functional aggregation A , the linked index, in base 2011, in region R , in month m of year t , is:

$${}_{11}I_{A,R}^{mt} = {}_{11}I_{A,R}^{dic(t-1)} \times \left(\frac{{}_{dic(t-1)}I_{A,R}^{mt}}{100} \right)$$

5.4 Calculation of variation rates

5.4.1 MONTHLY VARIATION RATE

The monthly variation rate of an index in period (m, t) is calculated as the quotient between the index from the current month m and the index from the previous month $(m-1)$, according to the following formula:

$$V^{mt/(m-1)t} = \left(\frac{{}_{11}I^{mt}}{{}_{11}I^{(m-1)t}} - 1 \right) \times 100 = \left(\frac{{}_{dic(t-1)}I^{mt}}{{}_{dic(t-1)}I^{(m-1)t}} - 1 \right) \times 100$$

where:

$V^{mt/(m-1)t}$ is the monthly variation rate, in month m of year t .

${}_{11}I^{mt}$ is the index, in base 2011, in month m of year t .

${}^{dic(t-1)}I^{mt}$ is the index, referring to December of the previous year, in month m of year t .

In other words, the monthly changes can be calculated with the published indices, in base 2011, or with the unlinked indices (referring to December of the previous year).

5.4.2 ACCUMULATED VARIATION RATES

The accumulated variation rate (year-to-date) is calculated as the quotient between the index from the current month and the index from December of the previous year:

$$V^{mt/dic(t-1)} = \left(\frac{{}_{11}I^{mt}}{{}_{11}I^{dic(t-1)}} - 1 \right) \times 100 = \left(\frac{{}^{dic(t-1)}I^{mt}}{{}^{dic(t-1)}I^{dic(t-1)}} - 1 \right) \times 100 = \left(\frac{{}^{dic(t-1)}I^{mt}}{100} - 1 \right) \times 100$$

where:

$V^{mt/dic(t-1)}$ is the accumulated variation rate, in month m of year t .

${}_{11}I^{mt}$ is the index, in base 2011, in month m of year t .

${}^{dic(t-1)}I^{mt}$ is the index, referring to December of the previous year, in month m of year t .

That is to say, the accumulated variation rates can be calculated with the published indices, in base 2011, or with the unlinked indices (referring to December of the previous year).

5.4.3 ANNUAL VARIATION RATE

The annual variation rate is calculated as the quotient between the indices published in the current month and from the same month of the previous year, both in base 2011:

$$V^{mt/m(t-1)} = \left(\frac{{}_{11}I^{mt}}{{}_{11}I^{m(t-1)}} - 1 \right) \times 100$$

where:

$V_{mt/m(t-1)}$ is the annual variation rate, in month m of year t

${}_{11}I^{mt}$ is the index, in base 2011, in month m of year t .

In the case of annual variations, these cannot be calculated with the indices referring to December of the previous year, as occurs with the monthly and accumulated variations.

5.5 Calculation of effects

5.5.1 MONTHLY EFFECTS

The effect of a monthly variation rate of an article or aggregate in the overall index is defined as the part of the monthly variation of the overall index that corresponds to said article or aggregate. Therefore, the sum of the monthly effects of all of the articles in the shopping basket is equal to the monthly variation rate of the overall index.

In other words, the effect that the monthly price variation of an article or aggregate has in the monthly variation of the overall index is the variation that this index would have experienced if all of the prices of the rest of the articles had remained stable that month.

The formula of the monthly effect of a specific article (or aggregate) i , in month m of year t , is as follows:

$$R_i^{mt/(m-1)t} = \frac{dic(t-1)I_i^{mt} - dic(t-1)I_i^{(m-1)t}}{dic(t-1)I_G^{(m-1)t}} \times dic(t-1)W_i \times 100$$

where:

$dic(t-1)I_i^{mt}$ is the index, referring to December of year $(t-1)$, of article i , in month m of year t

$dic(t-1)I_G^{(m-1)t}$ is the overall index, referring to December of year $(t-1)$, in month $(m-1)$ of year t .

$dic(t-1)W_i$ is the weighting, referring to December of year $(t-1)$, of article i , so much per one.

Developing the previous formula, we obtain an alternative way of calculating the effects through the variation rates:

$$\begin{aligned}
R_i^{mt/(m-1)t} &= \frac{dic(t-1) I_i^{mt} - dic(t-1) I_i^{(m-1)t}}{dic(t-1) I_G^{(m-1)t}} \times dic(t-1) W_i \times 100 = \\
&= \frac{dic(t-1) I_i^{mt} - dic(t-1) I_i^{(m-1)t}}{dic(t-1) I_G^{(m-1)t}} \times \frac{dic(t-1) I_i^{(m-1)t}}{dic(t-1) I_i^{(m-1)t}} \times dic(t-1) W_i \times 100 = \\
&= \frac{dic(t-1) I_i^{mt} - dic(t-1) I_i^{(m-1)t}}{dic(t-1) I_i^{(m-1)t}} \times 100 \times \frac{dic(t-1) I_i^{(m-1)t}}{dic(t-1) I_G^{(m-1)t}} \times W_i \\
&= V_i^{mt/(m-1)t} \times \frac{dic(t-1) I_i^{(m-1)t}}{dic(t-1) I_G^{(m-1)t}} \times W_i
\end{aligned}$$

Therefore, the monthly effect of a specific article i , is the product of its monthly variation rate ($V_i^{mt/(m-1)t}$) by its weighting ($dic(t-1) W_i$) and by the quotient between the index of the article and the overall index of the previous month ($\frac{dic(t-1) I_i^{(m-1)t}}{dic(t-1) I_G^{(m-1)t}}$).

As previously mentioned, the sum of the monthly effects of all of the articles that comprise the shopping basket of the CPI is equal to the monthly variation of the overall index. This is demonstrated as follows:

$$\begin{aligned}
\sum_i R_i^{mt/(m-1)t} &= \sum_i \frac{dic(t-1) I_i^{mt} - dic(t-1) I_i^{(m-1)t}}{dic(t-1) I_G^{(m-1)t}} \times dic(t-1) W_i \times 100 = \\
&= \frac{\left(\sum_i dic(t-1) I_i^{mt} \times dic(t-1) W_i - \sum_i dic(t-1) I_i^{(m-1)t} \times dic(t-1) W_i \right)}{dic(t-1) I_G^{(m-1)t}} \times 100 = \\
&= \frac{dic(t-1) I_G^{mt} - dic(t-1) I_G^{(m-1)t}}{dic(t-1) I_G^{(m-1)t}} \times 100 = V_G^{mt/(m-1)t}
\end{aligned}$$

5.5.2 ACCUMULATED EFFECTS

The effect of the variation for the year-to-date (or accumulated variation) of an article or aggregate in the overall index, represents the accumulated variation that the overall index would experience if the rest of the articles were not to experience any price variation for the year-to-date. In other words, it is the part of the accumulated variation due to said article or aggregate.

The formula of the accumulated effect of a specific article (or aggregate) i , in month m of year t , is as follows:

$$\begin{aligned} R_i^{mt/dic(t-1)} &= \frac{dic(t-1) I_i^{mt} - dic(t-1) I_i^{dic(t-1)}}{dic(t-1) I_G^{dic(t-1)}} \times dic(t-1) W_i \times 100 = \\ &= \frac{dic(t-1) I_i^{mt} - 100}{100} \times dic(t-1) W_i \times 100 = \left(dic(t-1) I_i^{mt} - 100 \right) \times dic(t-1) W_i \end{aligned}$$

where:

$dic(t-1) I_i^{mt}$ is the index, referring to December of year $(t-1)$, of article i , in month m of year t

$dic(t-1) W_i$ is the weighting, referring to December of year $(t-1)$, of article i , so much per one.

Using the alternative formula for calculating effects that was developed in the previous section, we obtain that the accumulated effect is equal to the product of the accumulated variation by the weighting:

$$\begin{aligned} R_i^{mt/dic(t-1)} &= \frac{dic(t-1) I_i^{mt} - dic(t-1) I_i^{dic(t-1)}}{dic(t-1) I_G^{dic(t-1)}} \times dic(t-1) W_i \times 100 = \\ &= V_i^{mt/dic(t-1)} \times dic(t-1) W_i \times \frac{dic(t-1) I_i^{dic(t-1)}}{dic(t-1) I_G^{dic(t-1)}} = \\ &= V_i^{mt/dic(t-1)} \times dic(t-1) W_i \times \frac{100}{100} = V_i^{mt/dic(t-1)} \times dic(t-1) W_i \end{aligned}$$

In the case of the accumulated effects, we also verify that their sum is equal to the accumulated variation rate, developing the same steps as in the previous section.

6. Types of article

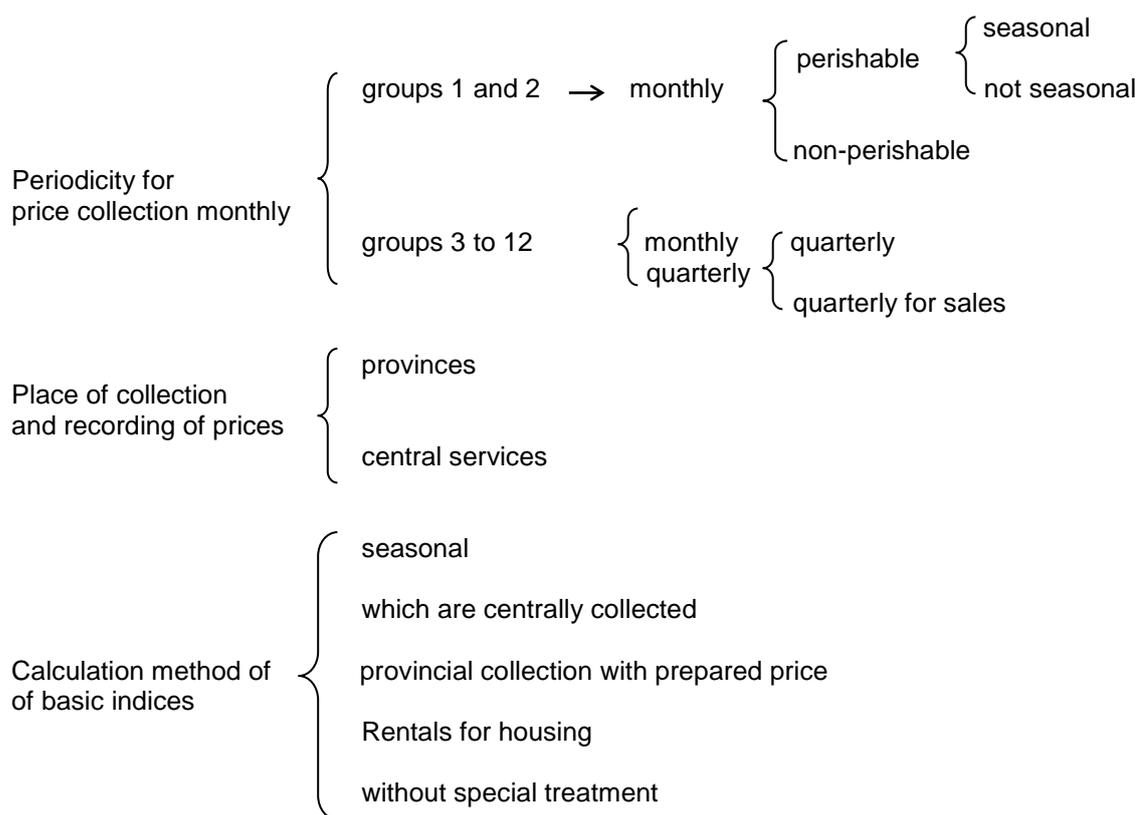
6.1 Criteria for the classification of articles

The operations included in the calculation process of the CPI, from the collection of prices to the calculation of the indices, are different, depending on the particularities of each article of the shopping basket.

Thus, the periodicity for price collection depends on the frequency with which they vary. The means of collecting them also differ, depending on the geographical homogeneity of the prices and on the availability of the same. Lastly, according to the characteristics of each article, the calculation method of the indices is different.

The following table shows the different types of article, according to the criteria used in their classification:

Criteria Types of article



Periodicity of price collection

According to the periodicity and frequency of the price collection, a first way of classifying the articles is established. Thus, two types of article are considered: monthly and quarterly articles.

Monthly collected articles

The prices of the monthly articles are observed every month in all of the establishments of the sample, via personal visit, in most of the cases.

In general, each establishment is visited once a month, except those in which the prices of perishable articles are collected, which, due to the higher frequency with which their prices vary, the interviewer visits twice or three times a month, depending on the municipality. Unprocessed fresh food products are included in this category, and suffer periodical fluctuations in their prices, as well as constant changes in quality. Included in these products are seasonal articles (some fresh fruits and vegetables), that are only sold specific months of the year; the prices of these articles are only collected in the months in which they are available.

Within the monthly collected articles, worth noting are the seasonal articles, which are those whose consumption takes place only some months of the year, since the rest of the year, they are not for sale. Moreover, these articles are characterised because, unlike fresh fruits and vegetables, all of those belonging to the same season have the same sale scheme in the market. In the CPI, clothing and footwear articles are considered to be seasonal, when they have two defined seasons (spring-summer and autumn-winter). Price collection for these articles is carried out once a month during the season in which they are sold; and the processing of the prices during the months in which the article ceases to be sold is the repetition of the last collected price, in such a way that there is no price variation when the article is not available.

Quarterly collected articles

Quarterly articles are those whose prices have a rather stable behaviour, that is to say, they usually do not experience many price variations over time (household appliances, furniture, repair services, etc.). Quarterly collection allows for increasing the number of prices collected with the same cost.

The processing of these prices consists of dividing the sample of selected establishments into three sub-samples, in such a way that, each month, the establishments of only one of them are visited, and the last price collected in the establishments of the other two sub-samples is repeated. This achieves that, every month, there are establishments that inform on the prices of these articles. In addition, in the case that more than half of the prices collected in a month vary, the following month, information will be requested in all of the establishments.

With the inclusion of discounted prices, beginning in January 2002, a new category of articles from within the quarterly articles was established: quarterly discounts. These are the articles that, despite fulfilling the requirement of price stability common to quarterly articles, show significant variations in typical sales periods (household appliances, furniture, bed linens, etc.). For this reason, the price collection during the sales months is carried out visiting all of the establishments in the sample, and not only those of the sub-sample corresponding to that month.

Place of price collection and recording

Bearing in mind the place where the prices are collected and recorded, we can distinguish between provincially and centrally collected articles.

The prices of the former are collected in each province, via personal visit, through telephone or fax, or through the official bulletins of the Autonomous Communities or provinces, and are recorded in the provincial delegations.

On the other hand, the monitoring of the prices of the centrally-collected articles is carried out from the Central Services of the INE. Included as part of this type of article are those goods and services that have one or several of the following characteristics:

- their prices are the same in a broad geographical area,
- their prices are subject to rates published in the BOE,
- there are few companies that sell the article,
- a perfectly defined directory of respondents is available,
- they are articles with regular changes in quality (such as technology articles), which involves difficulty to carry out quality adjustments; as they are collected in a centralised way, the processing of these adjustments are homogenised.

Calculation method of basic indices

Regarding the calculation method, there are certain groups of articles whose basic indices are obtained differently than the general formula described in section 5.1.

According to the general calculation formula, the basic index of any article of the shopping basket is obtained as the simple average of the prices collected, without considering any type of weighting. The exception to this general rule is constituted by the calculation formula of the centralised collected article and the articles with a prepared price; in both cases, the basic index is calculated taking into account a set of representative varieties or modalities of each article, weighted appropriately by the expenditure made on each one of them.

In CPI base 2011, the weighting of each modality is obtained from the expenditure made by consumers. In this way, we maintain coherence with the general weighting structure of the shopping basket.

Another group of articles which, due to their characteristics, receive special treatment are the seasonal articles. Because of the periodical oscillations in prices and quantities, the indices of fresh fruits and vegetables are calculated in a different manner, which considers the production and sales calendars of each one.

Finally, and due to the special characteristics of the market, housing rental also receives a different treatment from the general CPI formula.

The following sections describe these special calculation methods in detail:

6.2 Seasonal articles

6.2.1 DEFINITION

Seasonal articles are those that suffer periodical fluctuations, in both prices and quantities consumed over the year, even disappearing from the market during some period of time. Because of this, the weightings of these articles, as compared to the rest, vary monthly, being equal to zero for the months of the year in which they are not consumed or barely consumed.

Seasonal articles are included in the index of most countries. However, there are notable differences in the processing methods, as well as in the cataloguing criteria of certain articles as seasonal. The products that present, in all countries, a higher seasonal profile, are fresh fruits and vegetables, although some also include fresh fish, certain meats, soft drinks, ice cream, clothing and footwear articles, plants, flowers and sporting goods.

CPI base 2011, only considers seasonal articles to be those fresh fruits and vegetables that are not available for sale at a certain time of the year; therefore, some of the articles considered to be seasonal in base 2006 are not seasonal any more, and their processing is the same as any other article of the shopping basket.

6.2.2 METHODOLOGY

In base 2006, the calculation of the indices for the sub-classes of seasonal articles was carried out in three stages. In each one of these stages, an index was obtained: basic indices for each seasonal article; direct and mobile indices for each seasonal sub-class. In this way, priority was given to the estimation of the annual price trend as compared with the measurement of the monthly oscillations of this type of article.

With the entry into force of new CPI base 2011, the mobile average is eliminated but the calculation formula is still the same in terms of basic and direct indices.

1st Stage. Calculation of the Basic indices

Firstly, the **basic indices** are obtained for each of the seasonal articles that are a part of the CPI shopping basket in the month in progress, for each province. These indices are calculated as the quotient of the average price of the current month by the average price of the same month from the previous year, multiplied by 100. The average prices, as with the rest of the articles of the shopping basket, are obtained by applying the geometric average.

The basic index of seasonal article i in province p , in month m of year t is obtained as follows:

$$I_{i,p}^{mt} = \frac{\bar{P}_{i,p}^{mt}}{\bar{P}_{i,p}^{m(t-1)}} \times 100$$

where:

$\bar{P}_{i,p}^{mt}$ is the average price, of article i in province p , in month m of year t .

2nd Stage. Calculation of the Direct indices

From the basic indices by article, we obtain the **direct indices** of each group of seasonal articles. The means of obtaining them is via the weighted sum of the basic indices of the articles that comprise each group for the month in progress (with the weightings corresponding to that month).

The calculation of the direct index of the set of seasonal articles E in province p , in month m of year t is carried out as follows:

$$ID_{E,p}^{mt} = \sum_{i \in E} I_{i,p}^{mt} \times W_{i/E,p}^m$$

where:

$I_{i,p}^{m,t}$ is the average price, of article i in province p , in month m of year t .

$W_{i/E,p}^m$ is the weighting of article i regarding aggregate E , in month m .

As may be observed, in this stage, indices are calculated by seasonal group, and not by article. Moreover, we use weightings $W_{i/E,p}^m$ which represent the expenditure made on each article i , during month m of year $(t-1)$, as compared with the total expenditure made during the same period on all articles that comprise seasonal group E , so much per one. For each month, the sum of the weightings of the articles included in group E is equal to 1:

$$W_{i/E,p}^m = \frac{G_{i,p}^m}{\sum_{i \in E} G_{i,p}^m} \quad \text{with} \quad \sum_{i \in E} W_{i/E,p}^m = 1, \quad \text{where:}$$

$G_{i,p}^m$ is the expenditure made, on article i in province p during month m .

Weighting structure $\{W_{i/E,p}^m\}_{i \in E}$ is different for each month of the year and for each province.

6.2.3 CALCULATION OF INDICES

The calculation of indices is carried out following the two steps previously described. In the first step, to obtain the basic index of a seasonal article, its average price in the month in progress is divided by the average price in the same month of the previous year. In the second step, the indices of the articles that comprise the seasonal group in that month are aggregated, and the direct index is obtained.

The direct indices calculated in this way are not published, due to the fact that this would mean a break in the series each month. It is therefore necessary to link said indices.

Finally, in order to aggregate the index of the set of seasonal articles with the rest of articles in the shopping basket, the indices referring to December of the previous year must be calculated. The same thing happens for the calculation of the indices of Autonomous Communities of the total national.

That is, the same as for the rest of articles in the shopping basket, the indices referring to December of year $(t-1)$ are the ones used to obtain more aggregated indices, at a functional level as well as at geographical level.

Linked indices

For seasonal aggregate E in province p , the linked index, in base 2011, in month m of year t , is the same as the index published in month m of year $(t-1)$ by the non-linked index (direct index) of period (m,t) divided by 100:

$${}_{11}I_{E,p}^{mt} = {}_{11}I_{E,p}^{m(t-1)} \times \frac{ID_{E,p}^{mt}}{100}$$

where:

${}_{11}I_{E,p}^{mt}$ is the index in base 2011 of Seasonal aggregate E in province p , in month m of year t

$ID_{E,p}^{mt}$ is the direct index of Seasonal aggregate E in province p , in month m of year t

Indices referring to December of the previous year

The index referring to December of year $(t-1)$ of seasonal aggregate E in province p , in month m of year t , is equal to the quotient of the index in base 2011 in month m of year t divided by the index in base 2011 in December of year $(t-1)$, by 100.

$${}_{dic(t-1)}I_{E,p}^{mt} = \frac{{}_{11}I_{E,p}^{mt}}{{}_{11}I_{E,p}^{dic(t-1)}} \times 100$$

where:

${}_{dic(t-1)}I_{E,p}^{mt}$ is the index referring to December of $(t-1)$ of Seasonal aggregate S in province p , in month m of year t

${}_{11}I_{E,p}^{mt}$ is the index in base 2011 of Seasonal aggregate S in province p , in month m of year t

6.3 Provincially collected articles with a prepared price

The provincially collected articles with a prepared price are those whose prices are made up of different concepts (rates, quotas, consumption brackets, etc.), and likewise, information is available on both their prices and their weightings.

Provincially collected articles with a prepared price, among others are: water, waste collection services, city transport and education.

Calculation method

The final price of these articles is obtained as the average of the different concepts weighted depending on the expenditure made on each one of them. The weightings that intervene in the calculation of the final price of these articles are updated each year.

6.4 Rentals for housing

Unlike the rest of the articles, most respondents on housing rental prices are not always establishments which market the service (which, in this case would be the lessors of the dwelling), but actual consumers, in other words, the tenants.

The dwelling sample is geographically distributed, taking into account, within each province, the population thereof, the number of rental dwellings and expenditure by families on rent.

In order to establish the number of dwellings forming part of the sample, the results of the *Survey on housing rental of homes in Spain in 2006*, published on 27 June 2007 (module “housing rental” from the *Survey on tenancy and housing use of dwellings in Spain in 2006* carried out by the Ministry of Housing in the months of October and November 2006 by means of a household questionnaire) have been used.

Sample selection is proportional to the population of the province, taking into account the provincial representative percentages on the national total; moreover, a minimum number of dwellings by province and single-province Autonomous Communities have been fixed. The total CPI housing rental sample represents approximately 20% of the total Ministry of Housing sample.

The sources used to determine, locate and obtain respondents, among others, is the Framework survey on housing rental; which is carried out on the fourth quarter of the year, like an EAPS module.

In order to obtain the monthly information on rental prices, necessary for calculating the index, the selected sample is divided into three sub-samples, such that each dwelling provides information once per quarter, either by means of a personal visit or a telephone interview. In any case, the personal visit is made at least once per year, or when there has been a change of tenant in the dwelling.

The basic information which was collected in each interview is the net rent of each dwelling, including community expenses when these are to be paid by the tenant.

Calculation method

The rental price for housing in each province has been calculated in the same way as any other quarterly collected item, as a geometric average of rental prices for the housing from the sub-sample corresponding to the current month and the sub-samples of the two previous months:

$$\bar{P}_p^{m,t} = \sqrt[N]{\prod_{i=1}^{N_{m-2,t}} P_{i,p}^{m-2,t} * \prod_{i=1}^{N_{m-1,t}} P_{i,p}^{m-1,t} * \prod_{i=1}^{N_{m,t}} P_{i,p}^{m,t}}$$

where:

$\bar{P}_p^{m,t}$ the average geometric price of rent in province p , corresponding to month m in year t ,

$P_{i,p}^{m,t}$ the rental price for the i -th dwelling in province p of the sub-sample corresponding with month m of year t ($P_{i,p}^{m-1,t}$ and $P_{i,p}^{m-2,t}$ the prices collected in the previous months $m-1$ and $m-2$);

$N_{m,t}$ the number of dwellings in the sub-sample corresponding to month m of year t , and

$N = N_{m-2,t} + N_{m-1,t} + N_{m,t}$ the total number housing for rent of province p .

6.5 Centralised collection articles

Centralised collection articles not only have a special calculation method, but in addition, as mentioned previously, the type of collection is different from that of the rest of the articles in the shopping basket.

Information collection

The obtaining of information and monitoring of the centralised collection articles are carried out in the Central Services of the INE, unlike the rest of articles of the shopping basket which are collected in the provincial delegations.

For this type of articles, a provincial collection is not necessary because, in general, there are few companies that sell them and/or there is a perfectly defined directory of respondent companies, or the different rates are published in official gazettes.

In addition, for most of the articles, although the collection is centralised, if the prices differ between provinces, they are collected in all of them. On the other hand, when the companies that sell the articles are the same, it is convenient to request the information from them once, from the Central Services of the INE.

For each article, a sample of the most representative varieties (brands, models, consumption brackets, etc.) and of the respondent units is compiled.

The selection of the respondent units is made depending on their market quota, whereas the election of the representative varieties of the article is made depending on the expenditure on each one of them.

The information that is used for the calculation of the price of these articles is one of two types:

- Information regarding consumption: necessary for calculating the weightings of each company of the sample (market quota), as well as the weightings of each one of the modalities of the article. In order to keep the CPI updated, these weightings are revised once a year.
- Information regarding the prices or rates of each of the modalities and/or of each one of the concepts that are a part of the final price of the article. It is collected monthly.

Price variations are reflected in the month during which they have taken place, and in the case of rates that change from a specific day of the month, an average weighted price is calculated by the number of days during which the price has been in force.

Centralised collection articles are, among others, tobacco, electric energy, medications, vehicles, air and railway transport, fuels and lubricants, telephone services and package holidays.

Calculation method

All those concepts and modalities determining the price of these articles intervene in the calculation of said price.

Thus, in articles such as tobacco, vehicles and medications, the different brands are considered; in others such as electric energy and telephone services, the different consumption brackets, schedules and fixed quotas, etc. are considered. In all of them the final price is calculated as the weighted average of the prices of each of these concepts or varieties by its degree of importance. These weightings are calculated from the expenditure made on each one of the varieties.

7. Price collection

The price collection of the articles is carried out both in provinces and in Central Services, via personal visit of INE agents to the establishments on the corresponding dates, with the exception of some of them for which, due to their special characteristics, the information collection is carried out by telephone, tax, electronic mail, catalogue or Internet.

The collection is carried out via a questionnaire generated automatically for each establishment, in which the interviewer notes down the prices and incidences regarding the articles that appear in the same. Each establishment is visited by a single interviewer, except for hypermarkets and department stores.

The prices collected are effective sales prices to the public with cash payment.

CPI base 2011 does not collect prices corresponding to defective merchandise, liquidations or sales, the same as CPI base 2006. However, it does collect prices of discounted and clearance sales articles.

7.1 Calendar and collection frequency

In general, the price collection period approximately covers from day 1 to day 22 of each month, both inclusive. However, for centralised collection articles, this period is extended, whenever possible, to the end of the corresponding month.

The price collection of one single article in the different respondent establishments has been distributed throughout this period in order to collect the largest number possible of price fluctuations. The selected establishments are visited every month approximately on the same day; this way, the variation reflected by the index corresponds to a monthly variation.

As perishable articles are subject to important price fluctuations, their prices are collected three times over the month in each of the establishments selected in all provincial capitals, maintaining a distance of at least seven days between the three visits to the establishment. In the rest of the municipalities, the prices of these articles are collected twice in each one of the establishments that belong to the sample.

For the rest of the articles, each establishment is visited only once a month, with the exception of the quarterly articles, for which the price collection in each establishment is carried out once every three months.

7.2 Inclusion of discounted and sales prices

CPI base 2011 collects the prices that have suffered reductions due to reasons such as sales and promotions, as well as those whose discounts are due to official sales periods. This affects most of the divisions that comprise the CPI, although discounts due to sales are produced more drastically in the divisions of *Clothing and footwear and Furnishings, household equipment and routine maintenance of the house*, where they are more habitual.

7.2.1 CRITERIA AND TYPES OF DISCOUNTS CONSIDERED

The criteria followed in base 2011 for the collection of prices with a discount, are the following:

- that the discount is carried out on articles that are expected to be available again at their habitual prices, that is, not dealing with discounts due to liquidations or clearance sales;
- that the discount is carried out on articles that can be acquired by all consumers, and not by only a part of them (for example, discounts due to establishment loyalty cards or due to fulfilling certain conditions);
- and that these discounts are effective at the time of purchase (for example, they do not consider refunds after purchase).

Therefore, they collect discounts due to:

- Seasonal sales (official sales periods regulated by the *Retail Trade Planning Law*).
- Sales of any type (so long as they are not liquidations or clearance sales).

7.3 Organisation of fieldwork

Collection of most part of the information is carried out by the personnel assigned to the survey each month in each of the 52 provincial delegations of the INE: a team of interviewers-surveyors, interviewer inspectors, a survey inspector and, a provincial delegate who is in charge of the delegation, whose main responsibility is the collection of information in each province.

The technical responsibility corresponds to the survey inspector. S/he is in charge of organising and distributing the work, analysing the price series, planning the inspection visits and, in general, solving the problems that arise during the price collection. For this purpose, s/he has the help of the interviewer inspectors, who must accompany the new interviewers on their first visits, check the suitability and representativeness of the articles and establishments, advise them on the correct way of carrying out the price collection, and control and inspect the work done by the interviewers in their her/his charge.

Finally, the interviewer or surveyor has the objectives of collecting the prices, checking that they comply with the specifications of the articles selected, propose the substitution of the articles and establishments that are not considered suitable, and transmit to the interviewer inspector all the incidences that occur.

In order to control the quality of the information collected, there is a plan of inspection visits to respondent establishments.

In the delegations, the inspection works correspond to the interviewer inspector, and to the survey inspector. As a basic criterion, they should visit every establishment that is

providing information for the first time, as well as those that the interviewer has found to be unwilling to cooperate.

In the visits to establishments, the suitability and representativeness of the same are determined, whether the articles from which the prices are collected comply with the specifications, and whether those prices are correct. They also check the degree of cooperation of the respondents, and whether the visits of the interviewer are made in the adequate manner and on the established dates.

Likewise, there is another systematic inspection established by the Central Services of the INE, which requires the monthly inspection of a certain percentage of the establishments. The survey inspector must send a report regarding said inspection in which s/he indicates the establishments, articles and interviewers inspected, as well as the discrepancies observed.

Visits are also made to the delegations by the technicians of the Central Services, from the CPI Area, responsible for the control of the prices collected in the delegations, in which they check the suitability of the sample selected, the mechanism of the work carried out monthly. Likewise, during these visits, all of the issues raised by the working team of the delegation are resolved and all of the changes considered pertinent for improving the quality of the survey are proposed.

Finally, worth noting is that repeated interviews are carried out continuously via moving agents from the Central Services, to check the quality of the data obtained.

8. Data processing

8.1 Information reception

As previously mentioned, the direct collection of prices of the articles that comprise the shopping basket in the corresponding establishments is carried out via a questionnaire, in which the interviewer notes down the prices and incidences related to the articles that appear in the same.

Once the questionnaires are filtered by the interviewer, the data is recorded.

After each recording stage of questionnaires, computer applications are used to detect possible errors.

The interviewer inspector is responsible for checking the atypical prices before proceeding to the following stage of the process. This system allows for detecting any error in the data collection, and solving the problem without much time elapsing from the moment of the information collection.

The last stage, prior to sending the information to the Central Services, is the analysis of the price series by the survey inspector.

Having completed the previous stages, the monthly information is sent to the Central Services on the foreseen dates, in such a way that the preparation of the index is carried out in the shortest period of time possible, to allow for publishing the indicator on the established date.

At the Central Services, the data sent by the provinces and the prices prepared by said services are processed together.

The total number of prices processed monthly, which is approximately 220,000, is analysed in the Central Services, requiring, when necessary, confirmation by the delegations on atypical variations. Once the prices are filtered and analysed, the indices are obtained and their corresponding variation rates, which are published during the first fortnight of the month following that to which said data refer.

8.2 Price filtering

As mentioned in the previous section, in the Central Services of the INE, all of the prices collected monthly are received, filtered and analysed.

In general, all variations greater than 10% or lower than -10% are reviewed, for *Food* articles, and those variations greater than 5% and negative, for the rest of the articles.

In addition, the processing of the lack of price is also carried out, that is, the price is estimated for those articles that were not available at the time of the visit to the establishment.

The estimation method of the lack of price is the same as that used in base 2006, and consists of applying the average variation of the rest of the prices collected for the same article in the other establishments of the province.

This price estimation process is especially relevant in the case of perishable articles, in which the price of the article is collected, in the same establishment, several times throughout the month.

8.3 Changes in quality

The accuracy with which the CPI measures price evolution, depends, among other factors, on the stability of the characteristics that define the selected products. The objective is to monitor the prices of a shopping basket whose products remain unalterable throughout time, in such a way that measuring price variations does not depend on the changes in the characteristics of those products.

Obviously, the suitability in the stability of the products is not always fulfilled, and it is therefore necessary to turn to adjustments that correct the changes produced in the product sample and that allow estimating price variation without it being distorted by it. These adjustments are known as adjustments due to a change in quality.

Changes in quality are a problem that all countries must deal with, and that, in recent years, have been accentuated by the rapid technical progress that some articles have experienced. For this reason, it is one of the issues that Eurostat takes care of, with the highest priority, in the area of the harmonisation of the CPI in the EU countries.

In the preparation of the Spanish CPI, in the different bases, there have been various procedures used for the estimation of the changes in quality. The choice of these methods has been determined by the availability of information at any given moment, and by the type of article in question.

8.3.1 DEFINITION

As it has been previously mentioned, an adjustment due to a change in quality is necessary when an article (product, variety or modality), whose price is a part of the calculation of the CPI, is substituted by another, and at that moment it is necessary to determine which part of the price difference between the substitute article and the substituted article is due to a different quality between them.

The substitutions of the articles may be due to several reasons:

- the article ceases to be representative, and another more representative article appears in the market;
- the article disappears from the market;
- the establishment where the price of the article is collected ceases to be representative, closes or changes its economic activity.

Whenever an establishment of the sample ceases to be representative, it must be substituted by another. A good selection of establishments, with an important sales volume and/or flow of clients, implies that the articles that the establishment has are the most representative and that on being demanded by the customers, when they disappear, they will be substituted by others of a similar quality.

Changes in quality are produced when the specifications of the representative articles change, and this leads to a difference in utility for the consumer.

The specifications of each of the articles that comprise the shopping basket remain fixed over time, as they define the most representative variety of consumption for the area, but should be substituted when said variety ceases to be sold or is no longer representative in the establishment.

In overall terms, the substitute product must be of a similar quality to that of the substituted product, but when, for some reason, the quality between the two articles is different (different variety, different brand, etc.), the persons responsible for collection so report to the Central Services, indicating all of the characteristics of the new variety and its price in the current period, and if possible, in the previous period, as well as an adjustment coefficient that guarantees variations in the index motivated exclusively by price variations.

However, there is not always an overlap period between the articles, nor is the identity given between one model and that which substitutes for it. It is therefore necessary to estimate which part of this price difference is due to technical improvements, changes in material, etc. and which part is pure price change.

In order to carry out these estimations, we study the specifications of the substitute and substituted articles, analysing differences and analogies, and bearing in mind the opinions of the experts on the evolution of prices and costs, relating the changes in prices and qualities.

The ideal situation to estimate the changes in quality is that in which sufficient information is available on the characteristics that determine the price of an article on the market (brand, technical characteristics, place of purchase, etc.).

For many articles, it is very difficult to acquire the necessary information, and even if said information is available, its use can sometimes be complicated.

8.3.2 QUALITY ADJUSTMENT METHODS

The quality adjustment methods that are the most habitually used in CPI base 2011, are the following:

a) Total quality adjustment.

Part of the assumption that the difference between the price of the substituted article and that of the substitute article, is completely motivated by the difference in quality between the two, or that the articles are so different that they cannot be compared. It is believed, then, that the difference in price between both articles is solely due to their different quality, and therefore, the index will not reflect price changes. This adjustment assumes that, in the case that the substituted article was to continue to be for sale, its price would not have changed.

b) Adjustment due to identical quality.

This is based on the idea that the substitute article has the same quality as the substituted article, that is, that the existing price difference between the two is due to a real change in price. This adjustment assumes that, in the case that the substituted article was to continue to be for sale, its price would have been the same as that of the substitute article.

c) Other adjustments.

This section includes all those adjustments for which the value of the difference in quality between one article and its substitute is estimated. The most customary practices are:

- Prices of the options:

Discounted from the price of the substitute article is the sale price of the specific characteristics that the previous article did not have, but that could be acquired as an option.

- Production costs:

The producer supplies information regarding how much it costs to produce an extra characteristic and this is discounted from the price of the substitute article that possesses that extra characteristic.

- Imputation prices:

The change of the average price of an aggregate higher than that to which the article belongs is imputed.

- Information provided by experts:

Experts or specialists on the article are asked which amount of the difference between the prices of the articles (substitute and substituted) is due to the difference in quality between them.

- Overlap prices:

The value of the difference in quality between the substituted and substitute articles is the difference in price between them during the overlap period, that is, in the period in which both articles are for sale.

- Hedonic regression methods:

This method is based on the hypothesis that the price of an article can be expressed depending on a group of characteristics, through a regression model (linear or non-linear).

In the case of a linear model, the price of an article j , would be:

$$P_j = a_0 + \sum_{i=1}^N a_i \times x_{ij} + u_j$$

where,

$i = 1, 2, \dots, N$	the number of explicative variables,
a_0	the independent term,
x_i	the explicative variables (characteristics of the article)
a_i	the regression coefficients,
u_j	the distortions $\approx N(0, \sigma^2)$.

The estimation of the model provides the regression coefficients, and allows for determining which part of the change in the price of the article is due to the change in quality, and therefore, which part is a pure change in price.

There are several ways of calculating a hedonic price index according to the form of the function and the variables selected for the model.

In order to carry out the adjustment of the regression model, a large number of observations are necessary, including most of the specific characteristics of each observation. Likewise, a much specialised knowledge of the product is necessary.

From among all of the previously described methods, the Spanish CPI mainly uses the "price overlap", "information provided by experts" and "imputations prices" methods.

The following indicates more specifically the processing that changes in quality receive, depending on the type of article in question.

FOOD ARTICLES

The changes in quality in perishable articles (meats, fish, fruits, vegetables and eggs), are difficult to measure, given that the quality normally has an important subjective component.

Very important for these articles are the annotations that accompany the prices that the agents collect to determine whether or not there is a change in quality, as well as the evolution of the rest of the prices of the same article in other establishments in the municipality.

For non-perishable articles, an important aspect is the corrector coefficients due to changes in unit. The theoretical unit is that of habitual consumption and generalised in all of the commercial areas and in all of the provinces. In order to determine it, information from the manufacturers and traders is used. Thus, when a real unit from which prices are collected is different from the theoretical unit to which said prices must refer, an adjustments coefficient must be calculated:

$$k_U = \frac{\text{unidad teórica}}{\text{unidad real}}$$

In non-perishable articles, the most habitual changes in articles are caused by the change in brand (whether this occurs in the establishment itself or when changing the establishment) and the most habitual adjustment, in the absence of relevant information, is usually "imputation prices".

Centralised collection articles

Centralised collection articles present characteristics that are different from the rest of the CPI articles, which facilitates adjustments by changes in quality.

The prices of these articles are collected from the Central Services, and the final price is usually calculated via the design of representative samples by modalities, with overall information obtained from the different respondents. Therefore, normally, the necessary information is obtained directly from the companies that supply the service or the regulating body.

The problems with changes in quality of these articles are usually: the appearance of new modalities, new regulatory provisions, changes in prices due to slips in the hours of application of each price, etc.

The methods that are most used to solve the discontinuities in the evolution of the prices are based on the information provided by the experts, the overlap prices and the prices of the options.

The annual renewal of samples and internal modality weightings of these articles causes a reduction in the number of quality adjustments.

REST OF ARTICLES

Among the rest of the articles that comprise the shopping basket, the following adjustments are worth noting:

- For most of the articles from the *Clothing and footwear* group, the changes in quality are carried out periodically, twice a year, coinciding with the changes in season. Two situations may occur:
 - The article disappears and is substituted by another that already existed in the previous season. In this case, the adjustment is made by the price overlap method.
 - The article disappears and is substituted by a new article that did not exist the previous season. In this case, several methods are used:
 - experts are consulted;
 - we seek the change of other articles of the same type that already existed the previous season;
 - we impute the average change, from that season, the aggregation to which it belongs;
 - an adjustment due to identical quality is applied when the substitute article belongs to the same "quality bracket" as the substituted article.
- In the case of furniture, when the model for which the price is being collected disappears, it is substituted by another similar model. In this case, there is usually information available regarding the quality of the substitute and substituted articles; if they do not coincide it would be necessary to use the information provided by the experts.
- The substitution in articles such as household appliances or video and audio equipment is made when models appear in the market with new technological features that will substitute the former models, given that it is possible for these articles to begin to lower their prices. The moment at which the substitution is produced is of vital importance, and should be paid special attention, because otherwise, a delay in the substitution could lead to underestimating the evolution of the prices of these articles.
- For drug store articles, there is a constant modification of the formats that these products present. When this occurs, adjustments are carried out depending on the "utility" of the package (for example, "number of washing scoops").

- For catering articles, most of the changes in quality are due to the change in the establishment. In this situation, it is almost always possible to use the price overlap method.
- For some articles, hedonic regression models are applied:

8.3.3 HEDONIC REGRESSION MODELS

The use of hedonic regression models to carry out quality adjustments in the CPI started with CPI, base 2001. At first, there was a selection of the articles of the shopping basket for which, at first glance, their application seemed more appropriate: household appliances and audio-visual and information processing equipment, with the initial objective of assessing the convenience of their use in the processing of changes in quality.

Currently, hedonic regression models are used in order to carry out quality adjustments in two articles: washing machines and televisions.

In general terms, the steps followed in the compilation and application of the regression model are the following:

- A detailed analysis of the CPI sample which is the collection carried out by the provincial delegations, so that the information with which the the model is compiled is appropriate to estimate the changes in quality that may occur.
- Study and selection of the characteristics that may affect the price of the article.
- Collection of prices and values of the characteristics, via the Internet.
- Definition and estimation of the model.
- Validation of the model
- Analysis of the results.
- Test of the model.

Finally, the selected model is used for one year so as to carry out quality adjustments and once that time has elapsed, it is updated by collecting a new sample and estimating a new regression model. This allows for adapting to the changes that occur in the market and in consumer habits, as well as evaluating the stability of the model in force.

In the case o washing machines and televisions, the model has varied throughout time, incorporating new explanatory variables and eliminating others. The regression coefficients of the variables that have remained in the model have also been modified in the annual updating processes.

Both in washing machines and televisions, a semi-logarithmic model (Naperian logarithm of the price) is estimated, in which all are *Dummy* explanatory variables. Among the existent hedonic methods, the method used in the Spanish CPI is the hedonic re-pricing method, which is the most used by statistics offices.

The hedonic regression methods in force during the year 2012 had the following characteristics:

Washing machines

The regression model was compiled with a sample of more than 1000 observations and about 20 different characteristics. The estimated model had 20 parameters and adjusted R^2 of around 0.70. Among the explanatory variables were the brand, the revolutions per minute, the capacity and type of load and energetic efficiency.

Televisions

For the estimation of the model, a sample of approximately 600 observations and around 20 characteristics were collected. The final model had 14 parameters and an adjusted R^2 of around 0.90. Some of the explanatory variables of the model were the brand, the type of television (LCD, LED, other,) the inches, image frequency and 3D display.

The use of hedonic regression models in the processing of changes in quality of these two articles has allowed for:

- reducing the use of the total adjustment in quality method, and
- unifying the quality adjustment criteria among the different provincial delegations.

For this reason, the application of hedonic regression methods in the Spanish CPI will continue to be developed in the future, as the available resources and information so allow.

9. Series linking

Nonetheless, for new CPI base 2011, because it is a linked index, it has not been necessary to calculate any linking coefficient, since the calculation method of the linking allows for performing changes in weightings, sample and methodology every December, and linking the indices obtained with the new calculations, with the series that had been published, calculated with the old sample, weightings and methodology.

Thus, in CPI base 2011, the only change has been in the reference period of the indices or the base period, which went from the year 2006 to the year 2011. To this end, a re-scale coefficient has been calculated, and which has converted the indices published in base 2006, from January 2002 to December 2011, into indices in base 2011.

This coefficient is that which makes the simple arithmetic average of indices published in the year 2011, in base 2006, equal to 100:

$$\frac{1}{12} \sum_{m=1}^{12} {}_{06}I^{m11} \times C_{re-escala} = 100 \Rightarrow$$
$$\Rightarrow C_{re-escala} = \frac{100}{\frac{1}{12} \sum_{m=1}^{12} {}_{06}I^{m11}}$$

By multiplying the series published in base 2006 by this re-scale coefficient, we obtain a series of indices in base 2011, which preserves the variation rates published, and with which the new indices in base 2011 have been linked, calculated as of January 2012.

Annex I. Calculation of aggregated indices

With the calculation formula of CPI base 2011 (Laspeyres linked), the indices referring to December of year $(t-1)$ start with a value equal to 100 in December of said year. In order to grant continuity to the published CPI series, the "publishable" or linked indices must be calculated.

The index published in month m of year t , in base 2011, is obtained by multiplying the index from December of $(t-1)$, in base 2011, by the index from month m of year t referring to December of $(t-1)$, divided by 100:

$${}_{11}I^{mt} = {}_{11}I^{dic(t-1)} \times \frac{I^{mt}_{dic(t-1)}}{100}$$

These indices are not additive, that is, using published indices, we cannot calculate the indices of the functional or geographical aggregations. These aggregations are calculated using the indices referring to December of the previous year (unpublished), which are additive.

The following describes the steps to follow in order to obtain the index in base 2011 of an aggregate A, from the published indices, in base 2011, of its components A1 and A2:

1. Indices must be obtained referring to December of the previous year, for each component A1 and A2. This is carried out by dividing the index published from month m of year t , by the index published from December of the previous year:

$${}_{dic(t-1)}I_i^{mt} = \frac{{}_{11}I_i^{mt}}{{}_{11}I_i^{dic(t-1)}} \times 100 \quad i = 1, 2$$

2. The indices obtained in the previous step using the weightings in force during the reference period of the index (m,t) . With this, we obtain the index of the aggregate A, referring to December of $(t-1)$:

$${}_{dic(t-1)}I_A^{mt} = \frac{{}_{dic(t-1)}I_1^{mt} \times {}_{dic(t-1)}W_1 + {}_{dic(t-1)}I_2^{mt} \times {}_{dic(t-1)}W_2}{{}_{dic(t-1)}W_1 + {}_{dic(t-1)}W_2}$$

3. The index in base 2011 of aggregate A is calculated as the product of the index published in December of the previous year, and the quotient between the aggregate index obtained in step 2 and 100:

$${}_{11}I_A^{mt} = {}_{11}I_A^{dic(t-1)} \times \frac{I_A^{mt}_{dic(t-1)}}{100}$$

Annex II: Historical Evolution

The INE established the first Cost of Living Indices System in the year 1939. Before the year 1936, some series of simple indices and average prices were published, which later served to establish this first System. Beginning in July 1938, the National Statistics Service began to compile cost of living indices for some provincial capitals. With the gradual extension to all provincial capitals, the grouping of simple indices into five consumption groups, and a readjustment of the weightings, the Cost of Living Indices System was implemented in 1939, with base July 1936.

Since then, there have been nine systems, including the current system, of Consumer Price Indices, known as Cost of Living Indices until the implementation of Base 1976, whose base periods have been: July 1936, 1958, 1968, 1976, 1983, 1992, 2001, 2006 and 2011.

The following briefly summarises the main characteristics of these Systems:

Systems of Indices

Base	Time in force
1936 (July)	July 1939 – December 1960
1958	January 1961 – December 1968
1968	January 1969 – December 1976
1976	January 1977 – July 1985
1983	August 1985 – December 1992
1992	January 1993 – December 2001
2001	January 2002 – December 2006
2006	January 2007 – December 2011
2011	January 2012

Reference stratum

Base	Reference stratum
1936 (July)	- Middle-class families comprised of four or five persons with a monthly income of approximately 600 pesetas from 1939.
1958	- Households whose main breadwinner is economically active, with annual income less than 80,000 pesetas from March 1958.
1968	- Households with more than one member, whose main breadwinner is economically active, with annual income between 21,600 and 120,000 pesetas from 1968.
1976	- Households with more than one member, whose main breadwinner is economically active, with annual income between 81,000 and 720,000 pesetas from 1973-1974.
1983	- Households with more than one member (economically active and inactive), with income between 322,575 and 2,000,000 pesetas from 1980-1981.
1992	- All households resident in Spain.
2001	- All households resident in Spain.
2006	- All households resident in Spain.
2011	- All households resident in Spain.

Survey used to obtain the weightings

Base	Survey
1936 (July)	- The weightings were established from some studies on household accounts carried out in 1940.
1958	- Household Account Survey, referring to March 1958, aimed at 4,192 families belonging to the reference stratum.
1968	-- Household Budget Survey carried out from March 1964 to March 1965, interviewing 20,000 families. In order to study the evolution of the consumption structure until December 1968, the year taken as a base, a series of surveys were conducted with fewer than 4,800 households per year.
1976	- Household Budget Survey for the period from July 1973 and July 1974, aimed at 24,000 households.
1983	- Household Budget Survey for the period between 1 April 1980 and 31 March 1981, in which 24,000 households were interviewed.
1992	- Household Budget Survey, carried out from 1 April 1990 to 31 March 1991. Information was requested from 21,000 households.
2001	- Household Budget Continuous Survey, corresponding to the 8 quarters from the 2nd quarter of 1999 to the 1st quarter of 2001. 8,064 households were interviewed each quarter. For the annual updates, the latest data available from the survey was used each year.
2006	- Household Budget Continuous Survey, corresponding to the 8 quarters from the 1st quarter of 2004 to the 4th quarter of 2005. 8,064 households were interviewed each quarter. For the annual updates, the latest data available from the Household Budget Survey (in force since 2006) was used each year.
2011	- Household Budget Survey, base 2006, of year 2010. Approximately 24,000 households were interviewed each year. For the annual updates, the latest data available from this survey was used.

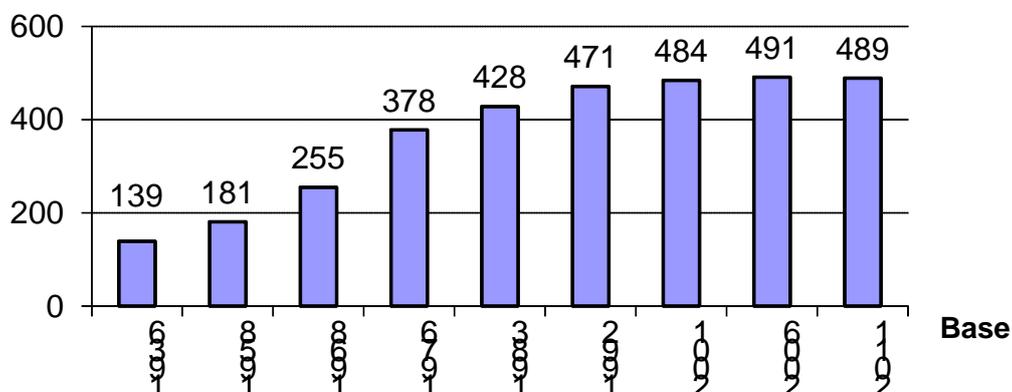
Geographical breakdown

Base	Indices
1936 (July)	- Indices were calculated for each provincial capital, as well as an index for the group of capitals.
1958	- Indices were calculated for each provincial capital, Ceuta, Melilla, the total national, the group of capitals, and the group of non-capital municipalities.
1968	- Indices were established for the following groups: each one of the provincial capitals, Ceuta and Melilla; the urban total national, formed by all the components of the previous section and the municipalities not included in it and which had more than 50,000 inhabitants; non-urban total national, including the remaining municipalities, and the total national.
1976	- Indices were compiled for the total national, urban and non-urban, provincial capitals, Ceuta, Melilla and regional groupings (beginnings in 1978, said groupings were the equivalent to the current Autonomous Communities and the group comprised of Ceuta and Melilla).
1983	- Indices were obtained for the total national, urban and non-urban, provincial capitals, Ceuta, Melilla, Autonomous Communities and the group comprised of Ceuta and Melilla.
1992	- Indices were calculated for the total national, provinces, Autonomous Communities and the group comprised of Ceuta and Melilla.
2001	- In this base, the same indices were prepared as in Base 1992.
2006	- Indices are obtained for the total national, the 17 Autonomous Communities, the 50 provinces Ceuta and Melilla.
2011	- In this base, the same indices were prepared as in Base 2006.

Shopping basket

Base	Number of articles
1936 (July)	Different in each provincial capital, varying between 95 and 139 articles.
1958	181 articles.
1968	255 articles.
1976	378 articles.
1983	428 articles.
1992	471 articles.
2001	484 articles.
2006	491 articles.
2011	489 articles.

No. articles



Calculation formula

In base July 1936, the Lowe formula was used for the calculation of the provincial capitals indices; the index of the group of capitals was obtained as the arithmetic average of the weighted indices by the population of each capital

In all of the following bases, the Laspeyres formula was used, with a fixed base, for the calculation of the indices.

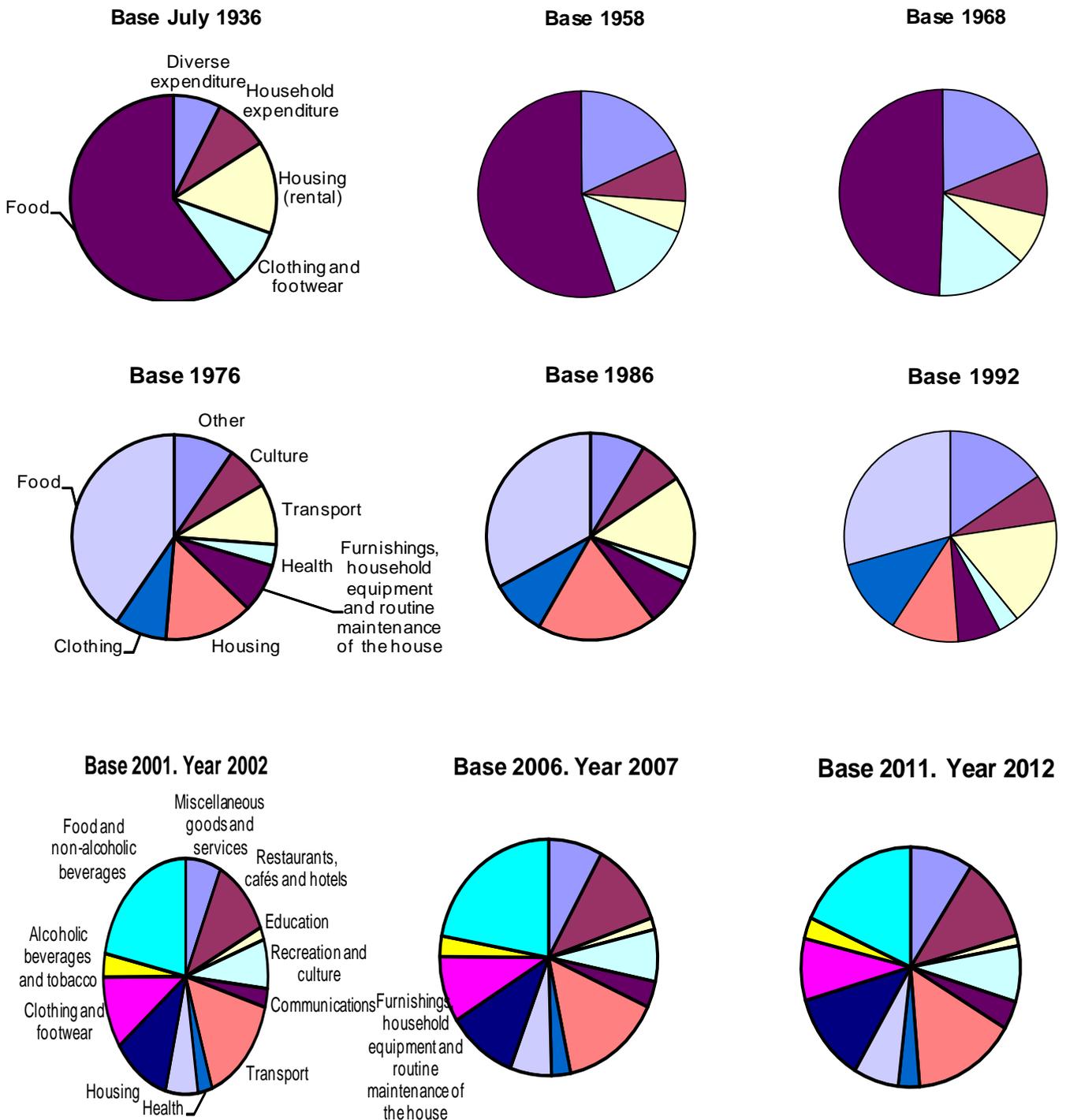
Beginning with base 2001, the linked Laspeyres formula was introduced for the calculation of the indices.

Consumption groups and weightings by group

Group	Weighting	Group	Weighting
Base July 1936		Base 1958	
Food products	601.0	Food products	553.0
Clothing and footwear	94.0	Clothing and footwear	136.0
Housing (rental)	146.0	Housing (rental)	49.6
Household expenses	85.0	Household expenses	82.1
Other expenses	74.0	Other expenses	179.3
TOTAL	1,000.0	TOTAL	1,000.0
Base 1968		Base 1976	
Food products	493.9	Food products	405.20
Clothing and footwear	139.4	Clothing	81.71
Housing (rental)	79.5	Housing	140.01
Household expenses	98.9	Furnishings, household equipment	77.51
Other expenses	188.3	Health	33.74
TOTAL	1,000.0	Transport	97.44
		Culture	69.44
		Other	94.95
		TOTAL	1,000.00
Base 1983		Base 1992	
Food products	330.27	Food products	293.61
Clothing	87.39	Clothing	114.79
Housing	185.65	Housing	102.80
Furnishings, household equipment	74.15	Furnishings, household equipment	66.84
Health	23.93	Health	31.26
Transport	143.81	Transport	165.42
Culture	69.60	Culture	72.67
Other	85.20	Other	152.61
TOTAL	1,000.00	TOTAL	1,000.00
Base 2001		Base 2006	
	Year 2002		Year 2007
Food and non-alcoholic beverages	218.630	Food and non-alcoholic beverages	220.556
Alcoholic beverages and tobacco	32.170	Alcoholic beverages and tobacco	28.229
Clothing and footwear	99.280	Clothing and footwear	90.280
Housing	110.260	Housing	103.607
Furnishings, household equipment	63.571	Furnishings, household equipment	61.520
Health	28.062	Health	28.259
Transport	155.760	Transport	148.879
Communication	25.729	Communication	35.845
Recreation and culture	67.263	Leisure and culture	71.089
Education	17.444	Education	16.027
Restaurants, cafés and hotels.	112.708	Restaurants, cafés and hotels.	115.477
Other goods and services	69.124	Other goods and services	80.230
TOTAL	1,000.000	TOTAL	1,000.000
Base 2011		Year 2012	
Food and non-alcoholic beverages	182.642	Food and non-alcoholic beverages	182.642
Alcoholic beverages and tobacco	28.872	Alcoholic beverages and tobacco	28.872
Clothing and footwear	83.437	Clothing and footwear	83.437
Housing	120.006	Housing	120.006
Furnishings, household equipment	66.750	Furnishings, household equipment	66.750
Health	31.398	Health	31.398
Transport	151.630	Transport	151.630
Communication	38.498	Communication	38.498
Recreation and culture	75.420	Recreation and culture	75.420
Education	14.175	Education	14.175
Restaurants, cafés and hotels.	114.608	Restaurants, cafés and hotels.	114.608
Other goods and services	92.563	Other goods and services	92.563
TOTAL	1,000.000	TOTAL	1,000.000

As may be observed, until the system with base 1976, five groups were considered which increased to eight beginning with said system. Although the number and denomination of the groups may be equal between two systems, the inclusion of certain articles in the different groups has varied over the different bases, which prevents us from making exact comparisons between the weightings structures corresponding to each one of them.

Nonetheless, the following graphs show the evolution of the weightings:



Annex III. Content of the CPI Subclasses, Base 2011

Group	01	FOOD AND NON-ALCOHOLIC BEVERAGES
Subgroup	011	Food
Class	Subclass	Description and content
0111		Bread and Cereals
	01111	Rice All types of rice, short or long grain; rice that has been polished or broken without any other transformation; precooked rice; rice prepared with meat, fish, seafood or vegetables.
	01112	Bread All types of wheat, rye, corn bread or any other cereal, rolled or not. Includes sliced bread, wholemeal breads and special breads, such as grilled or toasted breads, diet breads, bread sticks, etc.
	01113	Pasta products Fine noodles and other pastas for soup (letters, stars, shells, etc.); macaroni, spaghetti, noodles and the like. Fresh and frozen pasta to be stuffed; pasta containing meat, fish, seafood, cheese or vegetables: cannelloni, ravioli, tortellini etc.
	01114	Bakery and pastry-cook products María-type biscuits and other sweet or savoury biscuits, by weight or packaged. Cakes, madeleines, croissants, palmiers, tea biscuits, and other snack cake products. Cakes, tarts, egg yolks and other pastry products (except chocolates). Fried doughs such as churros and porras (loop or stick shaped fried dough); whole fresh and frozen pizzas.
	01115	Flours and cereal preparations Wheat flour, barley, oats, rye and other cereals. Cereals in the form grain; cereals preparations (oat flakes, corn flakes...) Doughs for preparing bakery and pastry products (puff pastry, pizza doughs, dough for turnovers, etc.).
0112		Meat
	01121	Bovine meat Meat from cows, young bulls, oxen, bulls, veal and yearling cattle; fresh, refrigerated or frozen.
	01122	Swine meat Swine and Suckling pig meat; fresh, refrigerated or frozen.
	01123	Sheep meat Meat from lambs, sheep, goats, suckling kids and yearling lambs; fresh, refrigerated or frozen
	01124	Poultry meat Meat from chickens, hens, turkeys, geese, ducks, capons, pigeons, partridges, etc.; fresh, refrigerated or frozen
	01125	Cold meat Serrano ham, chorizo sausage, salt-cured beef, cured pork loin, salami, "morcón" sausage and other cured cold meats. Bacon, black pudding, pig fat, glazed pork tenderloin and other cold meat products that require cooking. All types of sausages (except fresh); foie-gras and pâté (except those made of fish) Ham, turkey, chopped meat, bologna, head cheese, "lacón", chicken with truffles and other cold cuts.
	01126	Meat preparations Fresh sausages; cakes, pies, meat pasties; croquettes containing meat or ham; Chicken Villeroy. Meat concentrates, bouillons and aspics. Meat preserves, tinned or hermetically-sealed products based on meat, such as stewed quail or partridge, prepared tripe, etc. Prepared dishes based on meat packaged ingredients based on meat for the preparation of paellas, chickpea and meat stews, bean stews, etc.
	01127	Edible meat offal and other meat Hare, rabbit, venison, boar, pheasant and other fresh and frozen meats. Offal products; liver, sweetbread, kidney, brain, testicles, etc.; edible food waste: oxtails, snouts, heads, etc.

Class	Subclass	Description and content
0113	Fish and seafood	
	01131	Fresh Fish Sea or river fish, fresh or refrigerated: hake, whiting, tuna, anchovies, eel, young eels, young cod, cod, red bream, albacore tune, fresh anchovies, mackerel, conger eel, gilt-head bream, louvar, rooster fish, horse mackerel, sole, sea bass, grouper, Ray's bream, swordfish, monkfish, turbot, salmon, sama, sardines, trout, etc. It also includes fresh or refrigerated fish eggs.
	01132	Frozen fish Sea or river fish, fresh or refrigerated: hake, whiting, tuna, anchovies, eel, young eels, young cod, cod, red bream, albacore tune, fresh anchovies, mackerel, conger eel, gilt-head bream, louvar, roosterfish, horse mackerel, sole, sea bass, grouper, Ray's bream, swordfish, monkfish, turbot, salmon, sama, sardines, trout, etc. It also includes frozen fish eggs.
	01133	Seafood Calamari, baby squid, squid, flying fish, "choco", cuttlefish, octopus, baby clams, clams, oysters, cockles, scallops, mussels, spider crabs, crabs, prawns, crayfish, lobsters, red shrimp, clawed lobsters, common prawn, barnacles, etc., fresh, refrigerated or frozen.
	01134	Canned fish and fish preparations Cured or salted cod; other fish (salted tune, salmon, trout, anchovies, etc.) dried, salted, smoked or in brine. All types of tinned fish and seafood such as tuna, albacore, sardines, anchovies, mackerel, mussels, cockles, etc. Caviar, fish patés, cod liver, fish eggs, etc. Frozen fish preparations, by weight or packaged (battered squid rings, breaded hake fillets, etc.); floury product covering meat (pasties, croquettes, pies). Dishes prepared with a fish base and packaged ingredients for paellas.
0114	Milk, cheese and eggs	
	01141	Milk Fresh, pasteurized or sterilised milk; whole, semi-skimmed and skimmed. Powdered, sweetened condensed and evaporated milk. This excludes formula for babies, whether liquid or powdered.
	01142	Other milk-based products All types of yoghurt, (solid or liquid): with flavours, fruits, sugared, etc.; products based on fermented milk (curd, kefir, etc.). All types of milk-based desserts and drinks: custard, crème caramel, milk shakes etc.
	01143	Cheese Cured, semi-cured and milk cheese from any type of milk or mixtures of different types of milk. Fresh cheese, Burgos-style cheese, Villalón, etc. All types of cheese in portions and for spreading, small cheeses and slices. This includes cream cheese desserts, grated cheese and the like.
01144	Eggs Hens' eggs and eggs from other birds. Liquid, dried or frozen egg yolks; powder eggs for for food use and other egg substitutes. Prepared Spanish omelet.	
0115	Oils and fats	
	01151	Butter and margarine All types of butter and margarine (including those with added milk, chocolate, etc.), vegetable shortening and other pure or mixed vegetable fats for food.
	01152	Oils All types of oils for food use: olive, olive-pomace, sunflower, soy, corn, peanut, palm, almond, coconut, etc.

Class	Subclass	Description and content
0116		Fruit
	01161	Fresh fruit Oranges, tangerines, clementines, lemons, grapefruit and other citrus fruits; bananas; apples; pears; peaches, apricots, plums, Saturn peaches, avocados, cherries, picota cherries, persimmons and other fruit with a pit; strawberries, raspberries, blackberries, red currants, grapes, bilberries and other berries; melons, watermelons, kiwis, pineapples, coconuts, custard apples and other tropical fruits.
	01162	Canned and dried fruit Packages or by-weight olives, whole or pitted, filled or not. Almonds, peanuts, hazelnuts, raisins and prunes, dried apricots, sunflower seeds, dried figs, chestnuts, pine nuts and other non-candied fruits and nuts. Frozen and preserved fruits (natural or in syrup): pineapple, pear, apple, strawberry, plum, raspberry, peach, etc., whole or cut;fruit salad;fruit prepared in other ways. Excluding fruit jam, marmalade, compote and gelatine; and fruit-based baby products.
0117		Vegetables
	01171	Fresh vegetables All type of fresh vegetables: lettuce, escarole, endive, chard, turnip tops, scallions, celery, artichokes, Swiss chard, spinach, parsley, watercress, broccoli, cauliflower, cabbage, red cabbage, Brussels sprouts, green beans, peas, lima beans, cucumber, aubergine, courgette, onion, spring onions, carrots, beets, radishes, turnips, leeks, asparagus, and all types of wild mushroom, niscallo mushrooms, mushrooms, etc.
	01172	Dried vegetables Beans (dried beans, white beans, butter beans, etc.), chickpeas, lentils, dried peas, lupins, dried and powdered onion, capers, dried peppers and other dried, dehydrated, evaporated, ground or crushed vegetables.
	01173	Frozen and canned vegetables Frozen vegetables, whether cooked or not. Tomatoes, peppers, red cabbage, chickpeas, spinach, wild mushrooms, carrots, mushrooms, etc. all either natural or canned. Prepared dishes based on vegetables for direct consumption (potato salad, vegetable medley, etc.); pickles (aubergines, spring onions, gherkins, beetroot, etc. in vinegar). This excludes products for babies that are prepared solely with vegetables or legumes.
	01174	Fresh potatoes and potatoes preparations Fresh or little-processed potatoes (peeled and cut, precooked, frozen, canned, etc.). Tapioca, yam, sweet potato and other fresh, preserved, precooked, frozen, canned, etc. starchy roots. French fried potatoes, mashed potatoes, and products derived from potatoes.
0118		Sugar, chocolate and jam
	01181	Sugar Refined, brown, powdered sugar, etc. obtained from the cane or beet; artificial sugar substitutes.
	01182	Chocolate and jam Milk chocolate bars, hot chocolate, fondant, with oil or cereal; Chocolate bar substitutes; chocolate truffles and chocolates; filled and non-filled candy bars. Jams, marmalades, compotes, gelatins, table jellies, quince jam, honey, chocolate creams, syrups, etc. Boiled sweets, gum and other sweets. All types of ice cream, ice cream bars and ice cream cakes. Nougat candy, marzipan, shortbread, etc.; sugar and caramel-coated almonds, sugar-coated almonds and walnuts, sugar-coated fruit, etc.

Class	Subclass	Description and content
0119		Baby foods and other food products
	01191	Other food products Vinegar; salt; mayonnaise; fried tomato sauce, ketchup, mustard, tabasco and other sauces; garlic, pepper, cinnamon, paprika, saffron and other seasoning. All types of soups and creams prepared with meat, fish, vegetables, legumes, fine noodles, etc., with any type of presentation; broth. Preparations for desserts such as powders for custard and crème caramel.
	01192	Babyfoods All type of babyfoods: liquid or powdered formula for babies, cereals for babies, food for babies prepared with a meat, fish, fruit, vegetable or legume, etc. base, food for babies containing cocoa.
Subgroup	12	NON-ALCOHOLIC BEVERAGES
0121		Coffee, cocoa and infusions
	01211	Coffee, cocoa and infusions Natural, roasted/high roasted or mixed coffee; ground or not; normal or decaffeinated. Instant coffee, soluble coffee, coffee extracts, substitutes and essences. Sweetened or unsweetened cocoa and powdered chocolate. Tea, lime blossom, camomile, pennyroyal, peppermint, valerian and other infusions.
0122		Mineral waters, soft drinks and juices
	01221	Mineral waters, soft drinks and juices Still or sparkling mineral waters; soda water, unflavoured fizzy water and seltzer water. Lemonades, colas, flavoured fizzy waters, isotonic beverages, etc. Fruit juices, syrups and concentrates for the preparation of fruit-based beverages. This excludes beer, wine and non-alcoholic cider.
Group	02	ALCOHOLIC BEVERAGES AND TOBACCO
Subgroup	021	ALCOHOLIC BEVERAGES
0211		Spirits
	02111	Spirits Brandy, cognac, anise, rum, whisky, gin, vodka, local distilled spirit, vermouth and other spirits with or without alcohol.
0212		Wine
	02121	Wine All types of table wines: white, red, rose, etc. Liquor wines such as Sherry, wine from Malaga; dessert wines: port-wine, Madeira wine, etc. Cider, cava, champagne and other sparkling wines.
0213		Beer
	02131	Beer All types of beer, with or without alcohol.
Subgroup	022	TOBACCO
0221		Tobacco
	02211	Tobacco Cigarettes, cigars and small cigarettes, pipe tobacco, chewing tobacco and cigarette paper.

Class	Subclass	Description and content
Group	03	CLOTHING AND FOOTWEAR
Subgroup	031	Clothing
0311		Garments
	03111	Men outerwear Two or three-piece suits and suit jackets (jackets, blazers). Trousers and slacks. This includes jeans, bermudas and shorts. Jumpers and the like (waistcoat, jackets, pullovers, etc.). Dress shirts, t-shirts, polos, etc. Track suits, sweatpants and shirts, swimsuits, snow suits and other sporting garments.
	03112	Men underwear Briefs, boxer shorts, under shirts, socks, pyjamas, robes and other underwear and lounge wear.
	03113	Women outerwear Coats, three-quarter-length coats, jackets, anoraks, down jackets, raincoats and other coats and jackets. Cloth suits and jackets. Trousers, skirts and dresses. Jumpers and the like (waistcoat, jackets, pullovers, etc.). Dress shirts, t-shirts, blouses... Track suits: sports sweatpants, skirts and shirts; swimsuits, snow suits and other sporting garments.
	03114	Women underwear Bras, panties, bodysuits, suspenders, stockings, pantihose, socks, nightshirts, pyjamas, robes and other underwear and lounge wear.
	03115	Garments for children and babies All types of garments for babies (ski masks, bodysuits, t-shirts, cloth nappies, v-necks, panties, christening robes, jackets, bootees, pyjamas, etc.). Coats, jackets, anoraks, raincoats, etc. Dresses, skirts and trousers of all types (jeans, bermudas, leggings, etc.). Jumpers and the like (waistcoat, jackets, pullovers, etc.). All types of shirts, blouses, t-shirts, polo shirts, etc. T-shirts, briefs, boxer shorts, panties, bras, socks, tights and other underwear and lounge wear. Track suits; sweatpants and shirts; swimsuits, snow suits and other sporting garments.
0312		Clothing accessories and repair of clothing
	03121	Clothing accessories All types of fabrics (cotton, wool, silk, synthetic fabric, mixtures, etc.) for making garments within the household. Buttons, zippers, throat and other haberdashery articles. Handkerchiefs, scarves, shals, gloves, belts, aprons, smocks, bibs, hats, caps and other textile accessories.
	03122	Cleaning and repair of clothing All types of repair, cleaning and rental of garments and clothing.

Class	Subclass	Description and content
Subgroup	032	FOOTWEAR INCLUDING REPAIR
0321		Footwear
	03211	Footwear for men All types of footwear for men: boots, shoes, trainers, sandals, flip-flops, etc. of any material: leather, canvas, rubber, etc.
	03212	Footwear for women All types of footwear for women: boots, shoes, trainers, sandals, flip-flops, etc. of any material: leather, canvas, rubber, etc.
	03213	Footwear for children and babies Footwear for babies (except bootees and cloth shoes). All types of footwear for girls and boys: boots, shoes, trainers, sandals, flip-flops, etc. of any material: leather, canvas, rubber, etc.
0322		Repair of footwear
	03221	Repair of footwear Repair of male, female and children's footwear.
Group	04	HOUSING
Subgroup	041	RENTALS FOR HOUSING
0411		Rentals for housing
		Rentals for housing Payments made by the tenant for the use of the furnished or unfurnished dwelling. Storage room and garage rentals for the dwelling. Excluded from the rental, whenever possible, are the payments of cold and hot water, electrical energy, city gas, natural gas, telephone, collective heating, waste collection, sewage fees and other fees and contributions of the dwelling. Excluded from the rental are vacation homes (homes rented for less than 1 month).
Subgroup	042	MAINTENANCE AND REPAIR OF THE DWELLING
0421		Materials for the maintenance and repair of the dwelling
	04211	Materials for the maintenance and repair of the dwelling This includes the materials for the current maintenance and repair of the dwelling when the household itself performs the repair. The type of materials may be: - Paint, paper and textile wall coverings. - Small plumbing articles (pipes, etc.). - Floor coverings (parquet planks, tiles, slabs, etc.); tiles and slabs to cover chimneys and walls, etc. - Splinter or stained glass, etc.; gypsum, plaster lime, cement, mortar, concrete, filler; varnishes and glues. Doors, storm doors, iron gates and windows. This excludes materials for large alterations of the dwelling (investment).
0422		Services for the maintenance and repair of the dwelling
	04221	Services for the maintenance and repair of the dwelling Painting, paving, and floor and wall-covering services. Plumbing services (maintenance and repair of water and drain pipes, gas installations, heating installations, etc.). Glass, carpentry and glazing services; parquet floors smoothing and varnishing... Other services (brickwork for interior decorating, installation of blinds and sunshades, etc.). This excludes services for large alterations of the dwelling (investment).
Subgroup	043	MISCELLANEOUS SERVICES RELATING TO THE DWELLING
0431		Water distribution
	04311	Water distribution Expenditure on cold water consumption and distribution; water contract, water meter rental and reading.

Class	Subclass	Description and content
0432		Refuse collection, sewerage services and other services
	04321	Refuse collection Payments for the collection and destruction of refuse and fees for refuse collection.
	04322	Sewerage services Sewerage fees; waste water filtering and treatment; emptying and cleaning of septic tanks.
	04323	Other services relating to the dwelling Community expenses: doormen, gardening, stairwell and lighting cleaning, maintenance of lifts, insurance for risks in the communal area of the building, etc.
Subgroup	044	ELECTRICITY, GAS AND OTHER FUELS
0441		Electricity
	04411	Electricity Expenses on electrical energy; lighting contract, rental and meter reading, etc.
0442		Gas
	04421	Gas Expenses on city gas and natural gas; gas contract expenses; meter rental and reading, etc. Expenses on butane, propane, etc., as well as meter rental and reading, bottles and containers for these gases.
0443		Other fuels
	04431	Other fuels Diesel fuel, fuel-oil, pure petroleum and other liquid fuels, as well as the expenses on the contract, rental and reading of meters. Expenses on charcoal, coke, charcoal chipboard, wood, wood charcoal, peat and other solid fuels.
GROUP	05	FURNISHINGS, HOUSEHOLD EQUIPMENT AND ROUTINE MAINTENANCE OF THE HOUSE
Subgroup	051	FURNITURE AND FURNISHINGS
0511		FURNITURE AND FURNISHINGS
	05111	Furniture All types of tables and chairs, made of wood or other materials (for the living room, kitchen, terrace, garden, etc.). Three-seat sofas or not; armchairs, sofa-beds, etc. Bookcases of all types, sideboards, console tables, cocktail cabinets, desks, china cabinets and other furniture for the living room, dining room, sitting room, hall and office. Beds, trundle beds, bunk beds, mattress supports, etc. Wardrobes, chests of drawers, dressing tables, bedside tables and other furniture for the bedroom. Cribs, beds, play yards, high chairs, playpens and other special furniture for babies. Cabinets for bathrooms and the kitchen.
	05112	Other household equipment Lamps of all types (floor, hanging, table, wall, etc., halogen or not). Art objects and decoration. Rugs of all types and weaves, carpets, cork, parquet coverings, adhesive tiles, etc., as well as the placement of these materials.
Subgroup	052	Household textiles
0521		Household textiles
	05211	Household textiles Curtains, lace curtains, fabric shades, etc.; mattresses, pillows, cushions, etc.; bed linen (sheets, blankets, quilts, duvets, etc.); table linens, tablecloths and napkins; towels of all types and sizes, bath robes and other household textiles.

Class	Subclass	Description and content
Subgroup	053	HOUSEHOLD APPLIANCES INCLUDING REPAIR
0531		Household appliances including repairs
	05311	Refrigerators, washing machines and dishwashers Refrigerator with or without freezer; freezers; washing machines, washing machine with dryer and clothing dryers; all types of clothing irons and dishwashers. This includes the installation of the same.
	05312	Cookers and ovens All types of cookers, whether electric, gas, mixed, wood-burning and coal, and all types of gas, electric small ovens; gas, electric and mixed cook tops. This includes the installation of the same.
	05313	Air conditioners and heating appliances All types of appliances used to vary room temperature: such as braziers, heaters, cauldrons, radiators, solar panels, air conditioners, refrigerators, fixed fans, etc. Heaters and water thermos; humidifiers, smoke extractor fans and purifiers, etc., as well as the installation of the same.
	05314	Other household appliances Cleaning appliances for rugs, floors and walls. All types of sewing and knitting machines. Blenders, juicers, electric coffee makers, iron for clothing and other small appliances.
	05315	Repair of household appliances Repair and accessories of household appliances.
Subgroup	054	KITCHEN AND HOUSEHOLD UTENSILS
0541		Kitchen and household utensils
	05411	Glassware, tableware and cutlery Complete sets of tableware as well as individual pieces (plates, tureens, platters, etc.) of any material (glass, ceramic, porcelain, etc.). Complete sets of glassware, wine glasses, glasses, mugs, coffee sets and other objects in glass and crystal for utensils and decoration. Complete sets and individual pieces of cutlery in stainless steel, aluminium, nickel silver, silver and all types of metal.
	05412	Other kitchen and household utensils Pots and pans, pressure cookers, saucepans, casseroles, small saucepans, etc. in any material. All types of pans, non-electric coffee makers and other non-electric appliances for preparing and conditioning food.
Subgroup	055	TOOLS AND EQUIPMENT FOR HOUSE AND GARDEN
0551		Tools and equipment for house and garden
	05511	Tools and equipment for house and garden Tools with a motor (drill, lawn mower, etc.) or without a motor (hammer, screwdrivers, wrenches etc.) and non-electric accessories (locksmithing items, pieces for radiators, bars and rails for curtains, etc.) for housing and gardens. All types of light bulbs and fluorescent bulbs for lighting, switches, electrical cords, bells, outlets, electric batteries and other electrical material used in the home.
Subgroup	056	Goods and services for routine household maintenance
0561		Non-durable household goods
	05611	Cleaning products for household Clothing detergents and softeners for hand washing or washing machines. Soaps for mopping or for the kitchen. Dish-washing detergents or polishes for hand washing or dishwashers. Bleaches and liquids used for household cleaning (window cleaning fluids, oven cleaners, etc. Waxes and varnishes for the floor and the furniture, shoe polish and tints for footwear, insecticides, spot removers, ammonia, air fresheners, etc.

Class	Subclass	Description and content
	05612	Other non-durable household goods Household articles in paper and the like, such as tablecloths, napkins, plates and cups. Paper and cardboard for filters: Hoover bags; cellulose, aluminium or plastic kitchen paper/wraps; garbage bags, etc. Cleaning articles such as: brooms, dustpans, mops, brushes for the home (clothing, footwear), dish towels, dust cloths, etc.
0562		Domestic services and other household services
	05621	Domestic services and other household services Remuneration in cash (except payments to Social Security) of the persons employed in the household (cooks, cleaning personnel, babysitters, chauffeurs, gardeners, secretaries, etc.). Work clothing of domestic service personnel. Dry cleaning, laundromat, dry cleaner's and ironing of household articles (except garments).
Group	06	Health
Subgroup	061	MEDICAMENTS, OTHER PHARMACEUTICAL PRODUCTS AND THERAPEUTIC APPLIANCES AND EQUIPMENT
0611		MEDICAMENTS, OTHER PHARMACEUTICAL PRODUCTS AND THERAPEUTIC APPLIANCES AND EQUIPMENT
	06111	Medicaments and other pharmaceutical products Medicines and medicinal preparations, serums, vaccines, vitamins, and minerals, cod and halibut liver oil, oral contraceptives. Clinical thermometers, bandages, surgical tape, gauzes and the like; syringes, pharmacy first-aid kits and cabinets, hot water and ice bottles, medical hosiery products such as elastic stockings, knee and ankle support, whether knit or rubber. Alcohol, Mercurochrome, hydrogen peroxide, sheath contraceptives, diaphragms, etc.
	06112	Therapeutic appliances and equipment Prescription glasses and contact lenses, hearing aids, glass eyes, artificial limbs, orthopaedic braces, and other orthopaedic equipment; orthopaedic footwear, jock straps, surgical girdles, neck braces, machinery for medical massages, treatment lamps, wheel chairs with or without a motor, crutches, orthopaedic canes. This includes dental prostheses and false teeth, but not the cost of their placement, as well as the repair of appliances and therapeutic material..
Subgroup	062	OUT-PATIENT MEDICAL, DENTAL AND PARAMEDICAL SERVICES
0621		Out-patient medical and paramedical services
	06211	Out-patient medical and paramedical services General and special medical consultations, home visits, in the doctor's office, clinics, external consultations in the hospital, radiological, cardiology and sonography exams. X-rays, urography, mammograms and all types of laboratory analysis, as well as x-rays in x-ray centres. Services provided by physicians, doctors, nurses (testing blood pressure, etc.); midwives, podiatrists, acupuncturists, pedicure, physiotherapists, opticians, speech therapists, medically prescribed corrective exercise; expenses for the application of rehabilitation techniques; short wave therapy; video recording, thermal baths and thalassotherapy. Alternative medicine.

Class	Subclass	Description and content
0622		Dental services
	06221	Dental services Dental extractions, orthodontics, fillings, periodontics, endodontics, bridges, plates, crowns, placement of dental prostheses, dental hygiene and other services rendered by dentists specialised in dental hygiene and dental assistants.
Subgroup	063	Hospital services
0631		Hospital services
	06311	Hospital services Administration, accommodation, food and drink; supervision and care by non-specialist personnel (health assistants), first aid and resuscitation, supply of medicine and other pharmaceutical products, supply of appliances and therapeutic equipment. General or specialist medical services (dialysis, radiotherapy, chemotherapy, IUD implantation), surgeons and dentists, medical analyses, medical auxiliary services, such as nurses, midwives, pedicures, opticians, physiotherapists, speech therapists, chiropractors, etc. Transfusions, dialysis etc. Transport in hospital ambulances.
Group	07	Transport
Subgroup	071	PURCHAS OF VEHICLES
0711		Motor cars
	07111	Motor cars Motor cars, vans, all terrain vehicles, etc. used for the personal transport of the members of the household. This includes expenditure on acquisition, registration, VAT, etc. of these vehicles.
0712		Other Vehicles
	07121	Other Vehicles Expenditure on acquisition, registration, VAT, etc. for all types of motorcycles and motorbikes, mopeds, side-cars, snowmobiles, etc. All types of bicycles.
Subgroup	072	OPERATION OF PERSONAL TRANSPORT EQUIPMENT
0721		Spare parts and accessories for personal transport equipment
	07211	Spare parts and accessories for personal transport equipment New or used tyres, spark plugs, shocks, batteries, belts, filters and other spare parts for vehicles directly acquired by the household. Specific products for the cleaning and maintenance of the vehicles, such as paints, covers, mats, ashtrays, hubcaps, safety bars, etc. All type of pieces for bicycles.
0722		Fuels and lubricants for personal transport equipment
	07221	Fuels and lubricants for personal transport equipment All types of gasoline, diesel fuel, fuels and mixes, etc. for all types of vehicles Oils and lubricants (including additives), brake and transmission fluids, antifreeze, etc. acquired by the household.
0723		Maintenance and repair of personal transport equipment
	07231	Maintenance and repair of personal transport equipment Oil and filter change, wash, fine tuning, wheel alignment and other services relating to the maintenance and/or repair of the vehicles, carried out in car repair workshops or by mechanics. This includes the expenditure, both on materials and on labour. Towing service, Technical Vehicle Inspection and other revisions.

Class	Subclass	Description and content
0724		Other services in respect of personal transport equipment
	07241	Other services in respect of personal transport equipment Expenditure on parking, ORA card purchase, expenditure on parking meters and the like. Tolls on the freeway, in tunnels, bridges, etc. Driving school, fees for exams and those paid for the renewal of the driving licence and obtaining of the permit. Rental of garage when it is independent from the dwelling; rental of vehicles without a driver. Other expenses on services related to motor cars.
Subgroup	073	TRANSPORT SERVICES
0731		Passenger transport by rail
	07311	Passenger transport by rail Commuter and long distance trains: payments for tickets, luggage, sleeping car and bunk bed services; vehicle transport. Underground and tram tickets and passes, when they may only be used for these types of transport.
0732		Passenger transport by road:
	07321	Passenger transport by road: Tickets for collective city bus, microbus and trolley-bus and bus passes used solely in this type of transport. Expenditure on city taxis. All types of school transport, whether city or inter-city. Bus and inter/city taxi: transport of persons and luggage: rental of vehicles with a driver.
0733		Passenger transport by air
	07331	Passenger transport by air Air transport of passengers and luggage.
0734		Other transport services
	07341	Other transport services Transport of passengers, luggage, personal vehicles and accommodation services on boats, ferries, etc. Expenditure on other transport services, such as funicular, cable cars, gondola lifts, and left-luggage and luggage issuing. Expenditure on passes, when the tickets serve for more than one type of locomotion; metrobus.
Group	08	Communications
Subgroup	081	Communications
0811		Postal services
	08111	Postal services Payment for sending letters, postcards or packages, fees for money orders, PO boxes, etc.; purchase of unused stamps, prepaid postcards and air mail letters; sending mail and packages by private transport services, courier services.
0812		Telephone equipment and services
	08121	Telephone equipment Acquisition of telephones and mobile telephones, radio-telephones, faxes, answering machines and other accessories for telephones, as well as repairs.

Class	Subclass	Description and content
	08122	<p>Telephone services</p> <p>Telegram, telex, fax and similar services and rates for telegraph money orders.</p> <p>Expenditure on telephone calls in calling centres, telephone booths and other public telephones.</p> <p>Expenses on the use of private telephones: expenses on calls, rental or installation of the telephone, expenses on contracting, changing ownership or domicile, etc.</p> <p>Connection quotas and expenses generated by the use of mobile telephones.</p> <p>Connection quotas for the Internet or for other communications networks.</p> <p>Installation of the DSL kit.</p>
Group	09	RECREATION AND CULTURE
Subgroup	091	AUDIO-VISUAL, PHOTOGRAPHIC AND INFORMATION PROCESSING EQUIPMENT
0911		Equipment for the reception, recording and reproduction of sound and pictures
	09111	<p>Equipment for the reception, recording and reproduction of sound and pictures</p> <p>Radio transceivers, alarm radio, transistor, radiocassettes, walkman, receptor-transceiver appliances, radio hobbyist appliances etc.; record players, cassette players and recorders, CD players, hi-fi stereo and its components (tuners, amplifiers, speakers, etc.); microphones, earphones, etc.</p> <p>Televisions, television antennas and satellite dishes.</p> <p>Videos and video recorders.</p>
0912		Photographic and cinematographic equipment
	09121	<p>Photographic and cinematographic equipment</p> <p>Conventional cameras, flashes, tripods, lenses, filters, developing equipment and other photography accessories.</p> <p>Fixed and mobile cameras with sound registers, video cameras, film and slide projectors, screens, filters and light measures, viewers and other cinematographic accessories.</p>
0913		Information processing equipment
	09131	<p>Information processing equipment</p> <p>Personal computers, monitors, printers, scanners, modems, CD-ROMS and other computer accessories, software, calculators, typewriters and other machines for text processing.</p>
0914		Recording media
	09141	<p>Recording media</p> <p>Media for the recording of sound (vinyl records, CDs, cassettes, etc.) and pictures (video tapes, DVDs, etc.) both recorded and not.</p> <p>Diskettes and CDs for computers</p> <p>Plates and photo films without printing, cartridges and disks for photographic and cinematographic use, flash bulbs and photographic paper, chemical preparations for photographic use.</p>
Subgroup	092	RECREATIONAL AND SPORTING ITEMS AND EQUIPMENT; GARDENS AND PETS
0921		Recreational and sporting items and equipment
	09211	<p>Games and toys</p> <p>All types of toys: dolls, stuffed animals, cars, building blocks, puzzles, plasticine, costumes, practical joke items, Christmas items, etc.</p> <p>Card games, playing cards and board games; chess and the like.</p> <p>Electronic games, video games and computer games for the television.</p>
	09212	<p>Major durables for indoor and outdoor sporting</p> <p>Caravans, air planes, ultralight air planes, etc.</p> <p>Boats, non-inflatable boats, windsurf boards, canoes, etc.</p> <p>Scuba diving equipment, non-permanent swimming pools, etc.</p> <p>Gymnasium equipment and articles.</p> <p>Musical instruments and their accessories.</p>

Class	Subclass	Description and content
	09213	Other recreational and sporting items and equipment Equipment for sports, gymnastics and physical education, such as balls, rackets, sticks, skates, weights, football or ski boots, underwater masks, ammunition for hunting and sport, fishing poles and equipment; equipment for the beach and outdoor games; camping equipment, etc.
0922		Gardens and pets
	09221	Gardens, plants and flowers Natural or artificial plants, flowers, bushes, etc.; seeds, fertilisers, manure, pots, etc. Including the shipping costs of flowers and plants.
	09222	Pets and related products Purchasing of pets. Food; veterinarian, washing and beauty products for pets; collars, leashes, muzzles; doghouses, cages, aquariums and other articles related with pets. All types of services for pets: veterinarian, washing, hair grooming, accommodation, burial, etc.
Subgroup	093	RECREATIONAL, SPORTING AND CULTURAL SERVICES
0931		Recreational and sporting services
	09311	Recreational and sporting services Expenditure on sporting events (football stadiums, racetracks, racecourses, basketball or tennis courts, etc.), on amusement parks, fairs, guided visits, bowling alleys, recreational machines other than those for gaming, and chairlifts at ski slopes. Rental of equipment and accessories for sporting and free time. Group or individual classes of aerobics, dance, skiing, swimming, etc.
0932		Cultural Services
	09321	Cultural Services Expenditure on entry into the following events and/or places: - cinemas and theatres - operas, concerts, ballets, zarzuelas and other musical performances - circuses, light and sound performances, bullfights, etc. - museums, exhibitions, art galleries and monuments - national parks, zoos, botanical gardens, aquariums, natural reservations, etc. - libraries, newspaper archives, media libraries, etc. Television or radio quotas, in-house music, video club quotas, radio hobbyist licences and radio and television licences. Photographic services (developing, printing, enlargement, copying, photo portraits, etc.), musician and clown services for private entertainment. Rental of cultural goods, such as televisions, videos, computers, etc.
Subgroup	094	NEWSPAPERS, BOOKS AND STATIONERY
0941		Books
	09411	Non-text books Non-text books, atlases, dictionaries, encyclopaedias, colouring books, albums and bookbinding.
	09412	Text books Text books for infants, primary, secondary, upper secondary and university education, intermediate and higher degree professional training, etc. Text books for other teachings (including public exams).
0942		Newspapers and periodicals
	09421	Newspapers and periodicals All types of newspaper, magazine and other periodical publications.

Class	Subclass	Description and content
0943		Stationery materials
	09431	Stationery materials Posters, greeting cards and business cards, postcards, maps, calendars, etc. Notebooks, envelopes, organisers, ball point pens, liquid correctors, staplers and staples, paper clips, paper, drawing and painting materials, art and craft materials, etc.
Subgroup	095	Package holidays
0951		Package holidays
	09511	Package holidays Holidays including transport, accommodation, meals and tours, etc.; excursions and organised visits.
Group	10	Education
Subgroup	101	Education
1011		Pre-primary education
	10111	Pre-primary education Pre-primary and pre-school education.
1012		Primary and secondary education
	10121	Primary and lower-secondary education Primary and special equivalent education. Obligatory secondary and special equivalent education. This is comprised of 1st, 2nd, 3rd, 4th of ESO.
	10122	Upper-Secondary Education General secondary education. This is comprised of 1st and 2nd of Upper-secondary education. Professional training and secondary-level special equivalent education. This is comprised of intermediate training and specific professional training cycles. Secondary-level special regime education. This is comprised of plastic arts and design (intermediate level), music and dance education (intermediate level); voice, ceramics, intermediate level conservation and restoration (intermediate level); applied arts and other artistic professions; Official School of Languages.
1013		Tertiary education
	10131	Tertiary education University and equivalent education. Education received in any of the following levels: university diploma, technical engineering and architecture, university graduate qualification, upper engineering and architecture, upper military education, occupational therapy (health); tourism; commercial airline pilot; upper church studies and postgraduate and masters, imparted in public universities, doctorate studies, own university titles lasted three or more years that are not postgraduate studies (equivalent to official titles). Tertiary Professional Training. It comprises the following courses: experimental professional training plan (professional modules III), specific upper-level professional training (GLSES), civil aviation (commercial airline pilot). Tertiary special regime education. It comprises the following courses: plastic arts and design (advanced level), music and dance education (advanced level), drama (GLSES), voice (advanced level), conservation and restoration of cultural goods.
1014		Education not definable by level
	10141	Other education Education programs for adults, leading to degrees from the educational system and not requiring any particular previous instruction. Masters not taught by universities. Languages in academies or with private tutors. Computer science in academies or with private tutors. Regular payments, enrollment and/or registration of all students of education comprised in the educational system as aid for the education received, both in educational centres and in academies or with private tutors. Public exam fees and preparation for public exams; typing, etc.

Class	Subclass	Description and content
Group	11	Restaurants, cafés and hotels.
Subgroup	111	RESTAURANTS, CAFÉS AND THE LIKE AND CANTEENS
1111		Restaurants, cafés and the like and canteens
	11111	Restaurants, cafés and the like Lunch and dinner in restaurants. Food services provided by bars, cafés and the like. Consumption in discotheques. Sale of prepared food and catering services, prepared dishes to take away (paellas, pizzas, roast chicken, etc.); products ready be consumed supplied by automatic vending machines (sandwiches, coffees, ice cream, soft/drinks, etc.) products bought on a street market stand.
	11112	Canteens Catering service provided by companies and public offices for their employees, catering service for students at schools, primary schools, universities, etc.
Subgroup	112	Accommodation services
1121		Accommodation services
	11211	Accommodation services Accommodation services at hotels, motels, guest houses, inns, boarding houses, residences and hostels. Accommodation services on camp-sites. Rental of houses, flats and bungalows, so long as they are for less than one month per quarter. Holiday colonies, recreational centres and mountain services. Accommodation services in boarding schools, student residences, halls of residence, student hostels, etc.
Group	12	Miscellaneous goods and services
Subgroup	121	PERSONAL CARE
1211		Services for personal care
	12111	Services for personal care Hairdresser services (hair cut, wash, dye, permanent, highlights, etc.) and personal aesthetics (hair removal, manicure, pedicure, sauna, massage, tanning, etc.).
1212		Articles and products for personal care
	12121	Articles and products for personal care Appliances, articles and products for durable personal care (hair dryers, electrical shaving machines, electrical hair remover, etc.) as well as non-durable (bath foam, tooth paste, colognes, shampoos, cosmetics, lotions, paper handkerchiefs, nappies, toilet paper, etc.).
Subgroup	122	PERSONAL EFFECTS
1221		Jewellery, clocks and watches
	12211	Jewellery, clocks and watches Watches, earrings, necklaces, rings, wedding rings, bracelets, cufflinks and other jewellery and costume jewellery articles. This includes their repair.
1222		Other personal effects
	12221	Other personal effects Travel articles (suitcases, briefcases, travel bags, etc.), purses and personal use bags (handbags, portfolios, wallets, rucksacks, coin purses, shopping carts, etc.). All types of baby articles (except furniture): strollers, hanging seats, suspenders, car seats, baby carriers, pacifier, baby bottle heaters, sterilisers, etc. Articles for smokers (lighters, pipes, filters for mouthpieces, etc.) personal articles (sunglasses, canes, umbrellas, fans, key-chains, etc.); funeral articles (coffins, gravestones, etc.)

Class	Subclass	Description and content
Subgroup	123	Social protection services
1231		Social protection services
	12311	Social protection services Expenditure on retirement homes, shelters, homes for the disabled, rehabilitation centres, etc. Home aid for the elderly and the disabled. Services to families as counselling, psychological orientation and the adoption of children. Expenditure on daycare and nurseries.
Subgroup	124	Insurance
1241		Insurance connected with the dwelling
	12411	Insurance connected with the dwelling Payments of insurance for the dwelling, made both by owners and by tenants occupying the same, including fire, theft, water damage, etc.
1242		Insurance connected with health
	12421	Insurance connected with health Quotas paid on non-compulsory health insurance, paid directly to private health assistance bodies and all types of instalments or the like. School insurance.
1243		Insurance connected with transport
	12431	Insurance connected with transport Insurance related to personal transport on the vehicle and its occupants. This also includes travel and luggage insurance.
1244		Other insurance
	12441	Other insurance Burial insurance, civil responsibility insurance for damages caused to third parties or to their property, etc.
Subgroup	125	FINANCIAL SERVICES n.e.c.
1251		FINANCIAL SERVICES n.e.c.
	12511	FINANCIAL SERVICES n.e.c. Banking commissions, loan commissions, wealth management, brokerage expenses for the purchase of shares, payments for the use of credit cards, fees for consultancy or financial or tax advisers, etc.
Subgroup	126	OTHER SERVICES n.e.c.
1261		Other services n.e.c.
	12611	Other services n.e.c. Fees for legal services (barristers, solicitors, etc.), liberal profession services, expenditure on notary fees, agencies. Associations for parents of students. Expenses made in placement offices, photocopy expenses, issue of duplicates, validation of permits, funeral services, church and Court expenses, advertisements in newspapers, private detectives, marriage agencies, clothes vendor payments, parking attendants, payment to obtain documents, etc.