

TECHNICAL SUPPLEMENT CPI BASE 2013=100

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- The new Consumer Price Index (CPI) base year 2013=100 uses international standards and practices.

The principal methodological improvements of the new index affect

- three aspects: the construction of the weightings of expenditure, the formation of divisions, and the calculation of the index.

In February 2014, the Instituto Nacional de Estadísticas (INE) began publishing the Consumer Price Index (CPI) with base year 2013=100. The geographical coverage of the CPI includes the fifteen regional capitals of Chile and their conurbation zones.

In the change of the base year, which is undertaken every five years, INE has followed good international practices contained in the Methodological Manuals of the CPI. In addition, internal experience acquired over the years since the implementation of CPI base 2009=100 has guided the improvements to the current CPI base 2013. These factors have led to methodological innovations in the formation and calculation of the index, which improve the precision of monitoring the development of prices through time.

Principal changes and improvements

The principal methodological improvements carried out in the change of the base year can be grouped into three aspects:

a) Construction of the weightings of expenditure

Information from external sources is used to adjust the structure of expenditures from the Seventh Household Budget Survey (or EPF by its Spanish acronym). The following is a list of the sources:

- National Accounts are used to adjust expenditure in alcoholic beverages and tobacco, which were underreported.
- Administrative registers are consulted for those expenditures which used a criterion of gross expenditure and not net expenditure as used in the CPI. These expenditures include previously used automobiles, gambling, and insurance.

b) Incorporation of quality adjustments with hedonic models: The use of hedonic models has been introduced for the quality adjustments of the following products: television sets, photographic cameras, computers, and mobile phone devices.

c) Calculation of the index: The methodological changes in the calculation of the index include the following factors:

- All reassessments of regulated services are excluded from the calculation because they affect the income level of households and not the level of current rates. For the moment, reassessments only affect the product of Electricity.
- A calendar is defined ex ante for the period of seasonal products (spring-summer and autumn-winter) of division of Clothing and Footwear.
- A single criterion is defined for the comparability of varieties between changes of season for products of the division of Clothing and Footwear. The attributes that are compared include brand, material, and country of origin.
- In Tertiary education, the prices entered into the calculation are not recorded until March 1. In other months, the price variations of this service are imputed by the carry-forward method.

d) Formation of the divisions: Fees for parent/guardian centers have been moved from the Education division (in the subclasses Preschool and Elementary Education Services; and Secondary Education Services) in the 2009 CPI to the Miscellaneous Goods and Services division in the 2013 CPI.

(1) To avoid double counting of varieties, the new date of price collection will begin in March 2015.

Definition and Purpose of the Index

The Consumer Price Index base 2013=100 measures the variation of prices of a basket of products (goods and services) every month. The products are those acquired by urban households of the regional capitals and their conurbation zones within the borders of the country.

The basket of products remains fixed for the duration of the validity of the base year of the index. Each of the products has a weighting (relative weight) of the expenditure which is obtained from the structure of expenditures of the Seventh Household Budget Survey, carried out between November 2011 and October 2012.

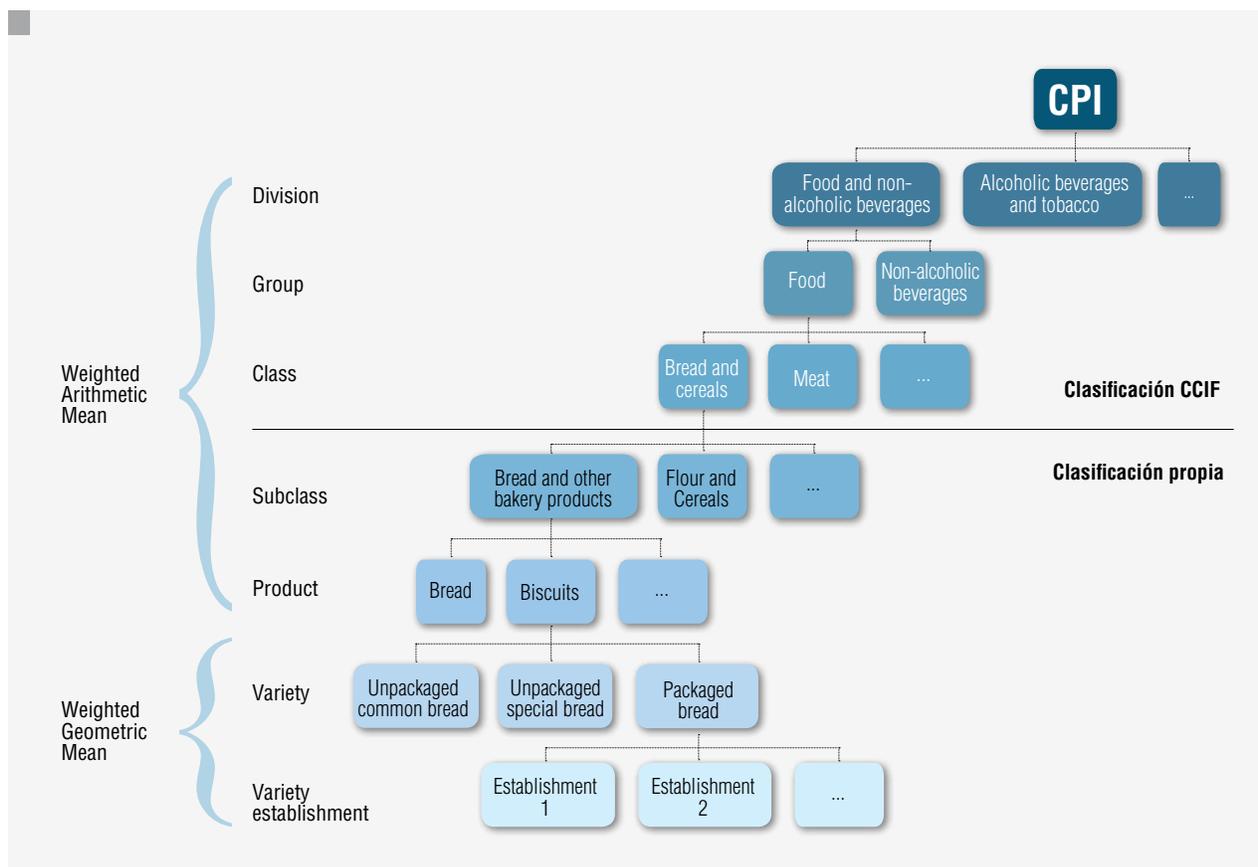
For the calculation of the index, the final price paid by households is registered regardless of whether the product has been partially or totally consumed in the period and independent of the form of payment. This price may or may not include shipping, but it should include all applicable indirect and excise taxes, non-discriminatory price reductions, and discounts available to any consumer.

The structure of the classification of the basket

The basket of the CPI base 2013=100 uses the Classification of Individual Consumption according to Purpose (COICOP). COICOP is a functional categorization of the System of National Accounts 1993, which imposes a strict separation of goods and services, thus easing international comparability.

Goods and services are ordered into 12 divisions (the highest level of aggregation), each of which is composed of groups. Groups are divided into classes, and classes are further divided into subclasses. Subclasses are formed of products which are further separated into varieties. Varieties are the elementary aggregate.

The indices of the higher levels of aggregation allow for international comparison. The elementary aggregates like product, variety, and variety-establishment are subject to definition by each country according to their characteristics. Schematically, this is represented in the figure below.



The components (in quantity) of the CPI base 2013=100

DIVISION	Group	Class	Subclass	Product
1. FOOD AND NON-ALCOHOLIC BEVERAGES	2	11	35	76
2. ALCOHOLIC BEVERAGES AND TOBACCO	2	4	4	8
3. CLOTHING AND FOOTWEAR	2	5	11	35
4. HOUSING AND BASIC SERVICES	4	9	11	16
5. HOUSEHOLD EQUIPMENT AND MAINTENANCE	6	10	13	41
6. HEALTH	3	7	8	22
7. TRANSPORT	3	10	14	24
8. COMMUNICATIONS	2	2	2	6
9. RECREATION AND CULTURE	5	16	22	38
10. EDUCATION	5	5	5	11
11. RESTAURANTS AND HOTELS	2	2	3	11
12. MISCELLANEOUS GOODS AND SERVICES	5	7	9	33
TOTAL	41	88	137	321

Weightings of products in the basket

The weightings of expenditure of the CPI base 2013=100 are based on the Seventh Household Budget Survey. Expenditures related to barter, production for self-consumption, investments, and transfers do not constitute consumer expenditure.

The weightings are adjusted for the products of previously used automobiles, gambling, and insurance because the Seventh Household Budget Survey uses the criterion of gross expenditure while the CPI uses net expenditure. Administrative registers are used to adjust the weightings, including the Structural survey of commerce 2011 (INE), Automobile registration of the Civil Registry, the Office of the Superintendent of Casinos and Games, and the Office of the Superintendent of Securities and Insurance. These administrative registers are used to obtain a net weighting consistent with the needs and methods of the CPI. The expenditure in Alcoholic beverages and Tobacco was also adjusted using information from National Accounts due to underreporting in the Household Budget Survey.

The weightings remain constant from the product to the division level. In lower levels (variety and variety-establishment), there is no weighting, therefore they are self-weighted. In the cases of special calculations, and when there is information on market participation of businesses where the price is taken,

a weighted geometric mean for market participation is used.

The weightings by division of the CPI base 2013=100 are listed in the figure below.

DIVISION	Weighting (%)
1. Food and non-alcoholic beverages	19.05855
2. Alcoholic beverages and tobacco	3.31194
3. Clothing and Footwear	4.48204
4. Housing and basic services	13.82810
5. Household equipment and maintenance	7.02041
6. Health	6.44131
7. Transport	14.47381
8. Communications	5.00064
9. Recreation and culture	6.76121
10. Education	8.08996
11. Restaurants and Hotels	4.37454
12. Miscellaneous goods and services	7.15749

Determination of products in the basket

The following are essential factors that determine the products in the CPI basket.

- a) the product has a minimum weighting of 0.020% in the total expenditure of the households
- b) the product is present in four of the five quintiles according to income per capita.
- c) the price of the product is feasibly collected monthly

Calculation of the index

The CPI is constructed in two steps.

First step. With information of prices of all variety-establishments, elementary aggregates are calculated.

The variations of each elementary aggregate are combined by geometric mean because there is a high degree of substitution among varieties. Due to the high variability, elementary aggregates are updated (usually on an annual basis) with the available information from the market.

Second step. The elementary indices are brought together to obtain indices of a higher level. The weighted arithmetic mean is used from the product level to the level of the CPI because at these levels there are pre-established weightings.

Finally, the successive aggregation of indices of higher levels allows for the calculation of the CPI in a period, constructed with a Laspeyres (Lowe) formula.

The methods of aggregation used in different levels are indicated in the figure below.

LEVEL OF AGGREGATION	Method of Aggregation	
From divisions to CPI,	ARITHMETIC MEAN	Weighted
From group to division,	ARITHMETIC MEAN	
From class to group	ARITHMETIC MEAN	
From subclass to class	ARITHMETIC MEAN	
From product to subclass	ARITHMETIC MEAN	
From variety to product	GEOMETRIC MEAN	Self-weighted
From type of establishment to variety	GEOMETRIC MEAN	

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