



EUROPEAN COMMISSION  
EUROSTAT

Directorate C: Macro-economic statistics  
**Unit C-4: Price statistics. Purchasing Power Parities. Housing statistics**

# **HICP Compliance Monitoring Report**

## **Portugal**

**December 2019**

## **1. Introduction**

In June 2019 Eurostat reviewed the compilation of the harmonised index of consumer prices (HICP) for Portugal. The review was done against the existing legal framework, established HICP recommendations and other guidelines and good practices in the field of consumer price indices (CPI).

The current report is based on:

- The 2019 inventory containing details of data sources, definitions and methods used in the Portuguese HICP. This inventory was submitted to Eurostat in March 2019.
- The discussion at the compliance monitoring visit that took place at the National Statistical Institute of Portugal (INE) in Lisbon on June 25, 2019.
- The report on the previous compliance monitoring exercise published in September 2010.

For all main methodological topics related to the HICP this report briefly summarises the Portuguese practice followed by Eurostat's appraisal of compliance and, if applicable, recommendations for improvement. The report concludes with Eurostat's overall assessment of compliance of the Portuguese HICP.

## **2. Coverage and classification**

The coverage of the Portuguese HICP follows the Household Final Monetary Consumption Expenditure (HFMCE). It is derived from the national accounts (ESA 2010) and complemented by other relevant data sources. Consistent with the definition in the framework regulation (EU) No 2016/792, the economic territory comprises mainland Portugal, Madeira and Azores. Following the HFMCE concept, only monetary transactions are included. Non-monetary flows, like income-in kind and consumption of own production are not taken into account for the HICP. The expenditure incurred by all types of households are covered. The expenditure for institutional households is not explicitly estimated but it is implicitly covered through the exhaustiveness of the national accounts. In line with the domestic principle, the expenditure made by foreign tourists in Portugal is accounted for, whereas the expenditure made by resident households outside Portugal is excluded.

The Portuguese HICP uses as a classification the European classification of individual consumption by purpose (ECOICOP), which has been introduced in 2016. The product coverage as defined for the HICP is applied. Therefore, unlike in the national CPI, games of chance are excluded for the HICP.

### **Compliance**

The coverage of the HFMCE and the classification used for the Portuguese HICP are in line with the legal requirements.

### **3. Sampling and representativity**

The Portuguese HICP is stratified according to NUTS II level into 7 regions. Within each region, several towns are selected for price collection based on population figures. In total, there are 45 towns where local price collection is carried out.

The selection of outlets within each price collection town is done purposively, taking into account the experience and knowledge of the regional statistical offices and local price collectors. The outlet sample is monitored at the central level. INE does not use any outlet or outlet-type weights. The sample consists of around 12,500 outlets.

Below ECOICOP subclass level, products are selected mainly based on the Household Budget Survey (HBS). Over 1,200 products are included and their specifications are defined relatively tightly. The product sample is reviewed in depth every five years, when results of a new HBS become available. In total, the current sample consists of around 120,000 individual price quotes which are observed in each month.

In the five years between each HBS, newly significant products and obsolete products are identified based on feedback received from the price collectors. In certain categories (e.g. cars, pharmaceutical products, flights, rents) where more frequent and timely data are available, the sample is updated every year.

Based on a new data source provided by the fiscal authorities, the sample for rents consists of all rented dwellings which are included in the data set both in the comparison (current) period and in the price reference period (December t-1).

For flights and accommodation services, prices are exclusively collected from websites. In addition, prices available on some national websites are included for those products where the prices on the web are expected to be identical to those in the physical outlets.

For accommodation services, the sample is stratified by region and by accommodation type. Purposive sampling techniques were used to select individual hotels in each stratum, although the sample is checked against other sources for its representativeness. Larger sample sizes would become possible if appropriate tools are developed to further facilitate price collection on the internet.

As regards cars, the sample of car models is updated every year based on the number of car sales. Over 100 car models are included. For each model, a price is collected centrally (list price), and two additional prices are collected from car dealers. Prices directly collected at car dealers tend to be more volatile than list prices.

#### **Compliance**

The sampling and representativity in the Portuguese HICP are in line with the legal requirements.

## **Recommendations**

INE should follow a more systematic approach for the maintenance of the outlet sample so that outlet-types or outlets are appropriately represented. INE should explore data sources for the estimation of outlet-type or outlet weights with a view to construct balanced outlet samples or detailed outlet stratifications.

INE should monitor the importance of internet purchases with the aim of reflecting appropriately the internet as a part of the sample of outlets.

## **4. Weights**

Each year, INE estimates new sub-index weights. INE uses provisional national accounts data from t-2 as a starting point for weight derivation. These data are complemented with t-3 national accounts data in order to estimate and deduct non-monetary expenditure and to further break down expenditure for health. The resulting expenditure shares at the ECOICOP subclass level are price updated using the price change of the respective HICP sub-indices between t-2 and the price reference period (December of t-1) to obtain ECOICOP subclass weights.

All subclasses accounting for more than one part per thousand of the HFMCE are included. Subclasses which account for less than one part per thousand of the HFMCE are included if they are also covered in the national CPI like 01.1.1.5 (Pizza and quiche), 05.6.2.2 (Cleaning services), 09.1.1.3 (Portable sound and vision devices), 09.1.4.9 (Other recording media). The expenditures of other subclasses that account for less than one part per thousand are distributed to other subclasses within the same class.

The weights at ECOICOP subclass level are further broken down by region and by product. The elementary aggregate weights are mainly derived from the HBS. The last HBS was conducted in 2015/2016 and the results were integrated in the HICP weights in 2018. The HBS expenditure shares for a product in a given region are price updated every year to the price reference period (December of t-1). In order to obtain elementary aggregate weights, the resulting shares are used to break down the ECOICOP subclass weights. For certain product categories, the elementary aggregate weights are based on more recent data (than the HBS) and updated annually.

## **Compliance**

The compilation of weights in the Portuguese HICP is in line with the legal requirements.

## **5. Price collection**

The prices are collected every month by 146 price collectors who visit the outlets in the price collection towns. The work of the price collectors is controlled by 20 supervisors who are based in the regional offices, 12 regional coordinators, as well as 8 statisticians from the central office. Electronic devices are used to record the observed prices in the field. Price data are validated throughout the whole monthly production process. In addition to the field price collection, 13 % of the products are observed by the central office.

The prices are collected in the middle week of the month. For fish, vegetables and fruits, prices are usually collected once in each of the three first weeks of the month. For fuels, an average price for the entire month is calculated based on published daily prices.

For certain services (e.g. repair of the dwelling, some health services), the prices are collected only every three months. The sample of a particular service is divided into three blocks so that each month one third of the prices are actually observed. In the month when no price is collected, the previously observed price is carried forward. Services which fall under this rotating price collection scheme have together a weight of around 7%.

Prices for flights and hotels are collected in advance (three price quotes for each sampled flight and hotel) according to a fixed schedule. The prices enter the HICP in the month when the travel or the hotel stay commence, covering three different weekends in each month.

Prices for package holidays are collected from catalogues and websites of travel agencies.

For public health services, prices are net of reimbursements, whereas the full prices are used for health services offered by private providers. The full price is used for over-the counter medicines, whereas the standard reimbursement rate is deducted from the full prices for medicines sold solely against a prescription. An administrative data source is used to follow the prices of pharmaceutical products.

In the field of education and social protection, prices are net of reimbursements. For these type of products, the prices depend on the income of the household. Fixed weights are assigned to the different income categories for which prices are followed over time.

As regard insurance, premiums are collected for insurance contracts meeting specified conditions. This method allows to capture price changes only of new contracts. INE continues to investigate if data can be obtained from the regulator or insurance companies in order to take into account the prices of existing contracts.

The price index for market rents is derived from an administrative data source. INE investigates the possibility of also accessing data from providers and authorities in the field of social rents.

Scanner data is currently not used in the Portuguese HICP. INE is trying to obtain scanner data, which would be available in a regular and timely manner.

## **Compliance**

The price collection in the Portuguese HICP is in line with the legal requirements.

## **Recommendations**

INE should further increase the price collection frequency for those services that are only collected every three months or otherwise demonstrate that carrying forward a previous price is an appropriate estimate.

INE should examine the current treatment of income-dependent prices and verify that changes in prices resulting from changes in purchasers' incomes are shown as price changes.

INE should continue its efforts to get access to detailed data from providers, regulators and relevant authorities in order to further improve the compilation of price indices for social rents and insurances.

## **6. Discounts**

The price reductions are considered in the Portuguese HICP. Discounts available to all consumers with no special conditions attached (non-discriminatory) are taken into account. In practice, specific flags are used by the price collector for the identification of different types of discounts or sales prices.

### **Compliance**

The treatment of discounts in the Portuguese HICP is in line with the legal requirements.

## **7. Replacement and quality adjustment**

When a product-offer cannot be observed, a price is estimated at most for two months, after which a replacement product-offer is selected. A temporarily missing price is imputed using the average price change of the prices collected in other outlets in the same town for the same product.

INE uses mainly bridged overlap as a quality adjustment method for non-comparable replacements. In some circumstances, the prices of the old and the new product-offer are available in the same month, which makes it possible to apply overlap pricing. If the replacement product-offer is considered to be of the same quality, the prices are directly compared. Changes in package-sizes are taken into account for those products where the collected prices are transformed into a standard unit. For new cars, option pricing is applied on some occasions. Except for new cars, explicit quality adjustment methods, which estimate the quality difference based on the product characteristics, are generally not used. The current production system does not record the type of quality adjustment method that is applied in a given replacement situation.

Direct comparison is mostly used for clothing and footwear. It is also applied in the context of mobile phones which had led to an upward impact on the indices. To mitigate this effect, INE now restricts the selection of replacement mobile phones to more similar models. INE also applies direct comparison for cars when it is difficult to quantify small quality differences.

A downward bias may appear in the indices if replacements and quality adjustments are carried out for products which enter the sample at high prices and exit the sample at low prices.

### **Compliance**

The application of quality adjustment methods in the Portuguese HICP is in line with the legal requirements.

### **Recommendations**

INE should carry out research into methods and sources with a view to expand the use of explicit quality adjustments methods.

INE should further improve the monitoring of the quality adjustments that are applied at the regional and central levels.

INE should continue to improve the treatment of replacements and quality adjustments in the context of sales or prices observed at the end of a product's lifecycle in order to avoid possible biases in sub-indices.

## **8. Treatment of seasonal products**

In the Portuguese HICP, seasonal products are treated following a strict annual weights approach. Seasonal products include mainly in fish, fruits and vegetables, and clothing and footwear.

For fish, fruits and vegetables, prices are imputed during the out-of-season period using the all-seasonal estimation method. The first-out-of-season price is obtained by carrying forward the last observed in-season price.

For clothing and footwear, the counter-seasonal estimation method is used. The first-out-of-season price corresponds to the first in-season price.

### **Compliance**

The treatment of seasonal products in the Portuguese HICP is in line with the legal requirements.

### **Recommendation**

For fish, fruits and vegetables, INE should re-examine if the last in-season price is an appropriate estimate of the typical price to be used for the first-out-of-season month.

## **9. Index calculation**

The Portuguese HICP is an annually chained Laspeyres-type index which uses a Jevons price index (ratio of geometric means) at the first stage of aggregation.

For each product, a geometric mean is compiled from the observed prices collected in a town. The average prices for the towns of a region are combined into an average price for the region using the population of each town as weights. For each product and region, the average price in the current month is compared to the average price of the price reference period. The regional product indices are then aggregated to the subclass level for the whole country using the elementary aggregate weights. Finally, the subclass indices are aggregated to obtain the class, group, division and all-items indices using the sub-index weights.

The resulting indices are chain-linked using the December month as the overlap period. The index reference period of the chained indices corresponds to 2015. Sub-indices which were newly introduced in 2018 have been linked in December 2017 at the level of 100 index points.

### **Compliance**

The index calculation in the Portuguese HICP is in line with the legal requirements.

## **10. HICP at constant tax rates**

INE compiles the HICP at constant tax rates (HICP-CT) following the reference methodology established by Eurostat. The average price of a product at the region level is adjusted so as to take into account the tax rates that were applied in the price reference period.

### **Compliance**

Compilation and regular transmission of the Portuguese HICP-CT is in line with the legal requirements.

## **11. Follow-up from the previous compliance report**

The previous compliance monitoring report was published in [September 2010](#). Since then, the price collection frequency was increased for some of the products for which a rotating sample design was previously used. Although efforts have been made in the context of outlet sampling and the application of enhanced quality adjustments methods, these issues can be further improved, as discussed in this report.

## **12. Overall assessment**

On the basis of the information listed in section 1, Eurostat assesses that the Portuguese HICP is in line with legal requirements. If INE follows up on the recommendations given in sections 3, 5, 7 and 8 the comparability of the Portuguese HICP will improve further. Notwithstanding these issues, Eurostat assesses the Portuguese HICP to be comparable to that of the other EU Member States.