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Directorate C – Macro-economic statistics
C.4 – Price statistics. Purchasing power parities. Housing statistics

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HICP Compliance Monitoring Report – Greece

1. Introduction

In June 2023, Eurostat reviewed the compilation of the harmonised index of consumer prices (HICP) for Greece. 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 2023 inventory containing details of data sources, definitions and methods used in the HICP for Greece.
- The discussions at the compliance monitoring meeting with the Hellenic Statistical Authority (ELSTAT), which was held on 26 June 2023.
- The information note on the previous compliance monitoring exercise published in June 2013.

For all main methodological topics related to the HICP, this report briefly summarises ELSTAT compilation practices, 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 HICP for Greece.

2. Release policy

Currently, ELSTAT publishes both the CPI and the HICP within the first ten days of each month with a press release and direct communication to the main users. In addition, updates of the methodological note are published when a significant change in methodology is made.

The HICP is published at the 4-digit ECOICOP level. Since ECOICOP is harmonised at the 5-digit level, Eurostat encourages ELSTAT to publish at this level.

The flash estimates of the HICP are not published. ELSTAT explained that the flash is not published since the final estimate is published a few days later.

Recommendation

- Publish the HICP at 5-digit ECOICOP level.

3. Coverage and classification

The target universe of the Greek HICP follows the household final monetary consumption expenditure (HFMCE) concept as it is defined in Article 2(20) of Regulation (EU) 2016/792 (framework regulation) and in the Annex of Regulation (EU) 2020/1148 (implementing regulation).

In line with this concept, the HICP reflects consumption expenditure by all individuals. These definitions follow the concepts of the European System of Accounts (ESA 2010).

The HICP comprises all purchases by households within the economic territory of the country by resident and non-resident households (i.e. domestic concept). The HICP covers actual prices paid for goods and services in monetary transactions.

The product categories listed in Article 5(8) of the framework regulation 2016/792 as well as owner-occupied housing expenditures are excluded from coverage in the Greek HICP.

The HICP includes the entire area of Greece, covered by 50 regional offices and 27 cities selected for the price survey.

ELSTAT classifies products and calculates the HICP according to the European Classification of Individual Consumption according to Purpose (ECOICOP), since January 2016.

ELSTAT includes in the HICP all ECOICOP categories whose expenditure share lies above the one part per thousand threshold defined in Article 5(7) of the framework regulation.

Compliance

The coverage and classification in the Greek HICP are in line with the legal requirements.

4. Weights

The weights in the Greek HICP are updated annually. In recent years, the main source for the weights at ECOICOP 3-digit level are quarterly national accounts (NA) data referring to the three first quarters of the year t-1. The fourth quarter is estimated as follows: first the average of the second and third quarters of the years t-1 and t-2 are calculated. The rate of change between these two years is then multiplied by the value of the third quarter of the year t-1. The note 'Guidance on the compilation of HICP weights in case of large changes in consumer expenditures' recommends to include also the first quarter of both years in the calculation.

The breakdown to the ECOICOP 4-digit level is done by using the NA structure of year t-2. The Household Budget Survey (HBS) of the year t-2 is then used to further breakdown the expenditure shares to the ECOICOP 5-digit level.

The weights are price-updated to the previous year's December price level (price reference period).

The elementary price indices at the national level are obtained using the HBS at regional level of year t-2, that is further broken down to city level using population figures from the Census 2011. For the year 2024, data from the Census 2021 will be available for this exercise.

The HBS is an annual survey and it is currently using the ECOICOP classification. ELSTAT has started the preparatory works for the implementation of COICOP 2018 in 2026. ELSTAT has started the preparatory works with a view to implementing COICOP 2018 as of 2026.

Compliance

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

Recommendation

- Include the expenditure values of the first quarter of the years t-2 and t-1 in the estimation of the fourth quarter of the year t-1.

5. Sampling and representativity

Prices are collected in 27 cities covering all the regions.

The sample of outlets is updated each year. The sample size of outlets, in each price collection city, depends on the market size (population) of each area. The types of outlets included are department stores, specialized stores, supermarkets, open-air markets and services enterprises.

Shopping stalls, postal orders and internet purchases are not included in the sample. Since Greece has a number of popular online shops and consumers buy also on foreign shopping portals, ELSTAT should include internet purchases in the sample of outlets as a specific type of outlet.

Since December 2013, the sample of goods and services is updated annually using the HBS results from the year t-2 and other market research.

Each sub-index is broken down into more detailed categories of similar products, for which one or more individual products are selected whose price changes are representative for the price changes of all similar products in the category. The most sold products in terms of sales volume are selected.

The total number of consumer goods and services included in the sample for the HICP comes close to 800.

New or innovative products are introduced regularly. In January 2023, 7 items were introduced.

Media streaming platforms are covered in the sample.

Compliance

The sampling in the Greek HICP is in line with the legal requirements.

Recommendations

- ELSTAT should include representative national and international online shops, in the sample of outlets.

6. Price collection

ELSTAT obtains price data for the HICP in different ways, such as direct price collection, data received from enterprises, and administrative data. Most data are obtained by in-person price collection, but price collection is also done centrally from the internet.

Prices are collected in the first 25 calendar days of each reporting month. The prices of fresh products (fruit and vegetables, fresh fish) are collected every week, always on the same day (Tuesday or Thursday).

Price collection for products such as insurance premiums and banking services takes place one per year. It is recommended to increase this frequency to at least twice per year.

No electronic devices are used for price collection.

Efforts have been made in the past to obtain scanner data without success. ELSTAT is considering to setup a legal framework to facilitate the data acquisition process. The legal framework should be broad enough to cover all types of electronic data namely transaction data, web scraped data, APIs, administrative data, etc.

Data validation

Monthly checks for errors in the collected price information are carried out by the price collectors, the local staff and the central office staff. The definition of the threshold is not fixed. The procedure for the detection of extreme price changes is performed in 2 different stages. At the first stage the detection is performed visually and all prices are checked, taking into account firstly the evolution of inflation in the ongoing period and secondly the price variance of the relevant product. There is no indicated threshold down or up of 50%. At the second stage, further checks are performed automatically on the index level of the product offer, in order to identify outliers. The visual detection is time consuming and prone to human error. ELSTAT should include this process in the HICP compilation IT system.

Compliance

The treatment of prices in the Greek HICP is in line with the legal requirements.

Recommendations

- Increase the frequency of price collection for insurance premiums and banking services to at least twice per year.

- Review the outlier detection procedures.
- Include the automisation of the detection of extreme price changes in the HICP compilation IT system.

7. Replacement and quality adjustment

Treatment of missing prices

Missing prices are carried forward for two months before being replaced. Carry forward is not a recommended practice in particular in a context of high inflation since it assumes price stability for the missing items and consequently underestimates inflation. All missing prices should be estimated unless there is evidence to show the unobserved prices did not change as is the case for rents.

Replacements

Replacements happen when an individual product is unavailable for more than two months or becomes non-representative. The criterion to select the replacement is the most sold in terms of volume, provided that the new item has similar general characteristics as the previous one and that the outlet is from the same geographical area. The replacement is chosen by the price collector with the assistance of the outlet manager.

Quality adjustments

ELSTAT uses both explicit and implicit quality adjustment methods but with great focus on the bridged overlap method. The analysis of the Greek HICP data reveal a downward trend in many sub-indices, in particular on electronic goods where bridged overlap is the default quality adjustment method. This raises the question whether the most appropriate quality adjustment method is being used. To better answer this question an impact assessment of the use of bridged overlap should be made according to the guidance on the recommendations on bridge overlap ([1]).

Discounts

Currently, discounted prices are included in the index when they are available for all consumers. However, according to Article 6 (1) of Implementing Regulation (EU) 2020/1148 '*discounts that are available only to a restricted group of consumers*' should be reflected in the HICP.

Compliance

The treatment of discounts is not fully in line with Article 6 (1) of Implementing Regulation 2020/1148. ELSTAT should include all discounts that can be attributed to a specific product and are known in advance.

([1])   HICP recommendation on bridged overlap - June 2021 (europa.eu).

Recommendations

- Estimate missing prices.
- Include all discounts when those can be attributed to a specific product and are known in advance.
- Complete an impact assessment of the use of the bridged overlap method.

8. Treatment of seasonal products

ELSTAT uses the 'Class-confined seasonal weights' method for the treatment of seasonal products with a fixed seasonal calendar. As market dynamics on seasonal products is high, ELSTAT should use another methodology such as 'counter-seasonal estimation' or 'all-seasonal estimation' to avoid the use of the fixed calendar that may not always match the actual availability of the products in the market.

Clothing and footwear

The central office provides very broad product descriptions to the price collectors that select the individual product in the shop registering further characteristics. The office should provide more detailed product description to better guide the price collection when a replacement is needed, for example by detailing the brand, the material and the length.

Compliance

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

Recommendations

- Use other methodology such as 'counter-seasonal estimation' or 'all-seasonal estimation' to seasonal products.
- The office should provide more detailed product descriptions to price collectors to better guide the price collection selecting a replacement.

9. Index calculation

The HICP is a Laspeyres-type index.

The aggregation method is as follow:

- At the level of the city, the index of a product is calculated by aggregating the prices for the product-offers of each product with the Jevons index.
- At the level of the product, the national indices are calculated as weighted arithmetic mean of the indices of the cities where price collection is carried out. Population data are used as weights.
- The indices at the levels higher than 5-digit are calculated as weighted arithmetic mean of the indices of the products.

The compilation of HICP follows the chain linking method, having as base the December of the previous year.

The sub-indices are chain-linked via December and are expressed in the index reference period 2015=100.

Compliance

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

10. HICP at constant tax rates and administered prices

ELSTAT transmits the HICP at constant tax rates (HICP-CT) following the methodology defined by Eurostat. Tax changes in the HICP are generally included from the month when the tax comes into force. New tax rate changes introduced later than the first day of a given month are reflected in the HICP-CT of the following month.

The classification of administered prices (HICP-AP) is reviewed and updated annually. The list for the compilation of the HICP-AP is delivered to Eurostat in line with the established transmission practice.

Compliance

ELSTAT compiles and transmits regularly the HICP-CT, the HICP flash estimate, and provides information on administered prices in line with the legal requirements.

11. Special products

Rents

A sample of 5,200 dwellings is monitored for the rent survey. The sample is drawn from the Register of Rents of the Independent Authority for Public Revenue for year t-2 and covers the 14 regions of the country and 57 municipalities. The sample is stratified according to location, type of dwelling and size categories. A rolling sample approach is used to survey each dwelling once per year for which prices are compared with the same month of the previous year. The dwellings that do not reply in the current year are replaced in the following year, based on the characteristics of the initial one.

Replacements should be made in the month when a 'no-reply' happens. Quality adjustments should be made if the replacement dwelling has different characteristics from the initial one, based on the extra characteristics that are already being collected.

New and second-hand cars

The sample for cars is based on administrative data on car sales of the year t-2. Eurostat suggests using data from the fourth quarter of the year t-2 to the third quarter of year t-1.

Until 2022, the sample of new cars included petrol and diesel cars. Since 2023, hybrid cars are added. ELSTAT should investigate the representativeness of electric cars. Prices are collected from car dealerships. The index for new cars is derived as a weighted arithmetic mean of car indices by brand.

From 2022 onwards, the prices of second-hand cars are collected from a well-known website that is representative for the market, which is complemented with visits to a major outlet.

When replacements occur, in case of minor changes the direct comparison method is used, while in case of major changes, the method used is the bridged overlap.

Other explicit quality adjustment methods should be use for cars, both new and second-hand, for example option pricing. Hedonics can be used if comprehensive data is obtained either by web scraping or some form of data transmission from the site owner and /or the car dealers.

Package holidays

Resampling for package holidays is done yearly. Data to design the sample and price data are collected from travel agents. Prices are recorded in the month in which the service starts, in line with Regulation (EU) 2016/792.

No cruises are included in the sample because their expenditure is low.

Every month, out-of-season package holidays are replaced by in-season ones, using the bridged overlap method. According to article 14 of the implementing regulation (EU) 2020/1148 on seasonal products a seasonal imputation method should be used. Instead of making replacements ELSTAT should use one of the three seasonal imputation methods as described in article 2 (25, 26, 27) of the implementing regulation (EU) 2020/1148.

Health

Price data for medicinal and pharmaceutical products are provided by the Social Security Services and they refer to the final price charged to the consumer every month. The sample is drawn based on data from the National Medicines Agency (EMA).

Medical, dental, paramedical services, room fees in private hospitals and homes and prices of visits to doctors in public hospitals are monitored on a monthly basis. For nurses employed by private companies, the prices of services offered to hospital patients are monitored.

Bundled products

Bundled tickets for the use of public transport are not recorded as such because the weights are split in the ECOICOP 07312, 07321 and 0735. As a result, the same price change of bundled tickets is reflected on the three sub-indices.

ELSTAT should discontinue this practice and record bundled tickets fully in ECOICOP 0735.

Compliance

For seasonal package holidays a seasonal imputation method should be used as described in article 2 (25, 26, 27) of the implementing regulation (EU) 2020/1148.

Recommendations

- Investigate a methodology to make the replacements for rents closer to the period when a 'no-reply' occurs.
- Investigate the representativeness of electric cars.
- Use explicit quality adjustment methods for cars, both new and second-hand.
- Record bundled tickets fully in ECOICOP 0735.

12. Follow-up from the previous compliance report

The main findings from the previous compliance monitoring exercise were published in June 2013.

ELSTAT has since included diesel fuel cars and second-hand cars in the sample.

Further work on explicit quality adjustments is still needed especially, but not only, on electronic products, cars, and rents.

The index production process has been modernized but it still lacks some automation with regards to the validation process.

The methodology for the compilation of the telecom sub-indices has been improved. The profile approach is currently being used and bundles are included.

The price updating of the weights is now in-line with the HICP regulation.

Seasonal flights are not yet covered.

The outlet sample is updated every year and new and innovative products are introduced in the sample also every year.

The treatment of discounts is currently not fully in line with the HICP regulation. Actions are carried out in order to be fully in line by January 2024.

Insurances connected with the dwellings are not mandatory in Greece. The national accounts report zero expenditures for this item.

13. Overall Assessment

On the basis of the information listed in section 1 and further obtained during the compliance monitoring visit, Eurostat assesses that the Greek HICP is in line with most legal requirements. ELSTAT should improve compliance by implementing the requirements formulated in sections 7 and 11. Notwithstanding these issues, Eurostat assesses the HICP for Greece to be comparable to that of the other EU Member States. If ELSTAT follows up on the recommendations given, the comparability of the Greek HICP will improve further.