

## Single Integrated Metadata Structure (SIMS)

**Country:** Greece

**Compiling agency:** ELSTAT

**Domain name:** Consumer Price Index (CPI)

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1. Contact	<a href="#">Top</a>
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<b>2. Introduction</b> <a href="#">Top</a>	
<b>1.1 Introduction</b>	The Consumer Price Index (CPI) is a monthly price index compiled since 1959 and it aims at measuring the general level of prices of products purchased by the average household to meet its consumption needs.

<b>3. Metadata update</b> <a href="#">Top</a>	
<b>3.1 Metadata last certified</b>	20/3/2017
<b>3.2 Metadata last posted</b>	20/3/2017
<b>3.3 Metadata last update</b>	20/3/2017

<b>4. Statistical presentation</b> <a href="#">Top</a>	
<b>4.1 Data description</b>	
<p>The Consumer Price Index (CPI) measures the impact of the retail price changes on the expenditure for the purchase of goods and services, which compose the “household basket”. For this reason, prices are collected in 27 cities of the country, on a sample of enterprises for about 800 types of goods-services, which are classified into 12 main groups. The compilation of the CPI is based on the Household Budget Survey (HBS), which is conducted by ELSTAT and aims to collect data on consumption patterns of the households in the country in the context of the upper “household basket”, but also on other administrative data sources (eg PPC, EYDAP etc.).</p> <p>The compilation of a national price index is necessary for the country for a number of reasons, the most important being the need to identify the changes in the value of money.</p> <p>Following the Treaty establishing the European Union (EU) and the Treaty on Economic Monetary Union (EMU), the CPI has being used for assessing one of the EMU convergence criteria, i.e. price stability. To this end, EU Member States compile the Harmonized Indices of Consumer Prices, aiming at providing comparable data for international comparisons of inflation.</p> <p>There is no geographical separation for the data. The data are monthly data when collected and are presented as indices and rates of change.</p> <p>The CPI is compiled on a monthly basis and it is released as follows:</p> <ul style="list-style-type: none"> <li>-monthly rates of change,</li> <li>-annual rates of change.</li> </ul>	
<b>4.2 Classification system</b>	
<p>The classification of products (goods and services) included in the CPI is based on the international classification COICOP (Classification of Individual Consumption by Purpose), and more specifically, on the EU classification <i>COICOP5/HICP</i>, which was established to meet the needs of the Harmonized Indices of Consumer Prices (HICP) of EU Member States.</p> <p>The structure of the classification has five levels:</p>	

- Level 1: All items index – Overall index
- Level 2: 12 Divisions – 2-digit codes
- Level 3: 47 Groups – 3-digit codes
- Level 4: 117 Classes – 4-digit codes
- Level 5: 303 Sub-classes – 5-digit codes

The new classification is fully matched with the previous followed classification COICOP/HICP rev. Dec 99 at 4-digit level.

#### 4.3 Sector coverage

The core variable of the index are the prices for a specific, as concerns quantity and quality, set of goods and services, purchased by households, aiming at measuring changes in the general level of prices of goods and services purchased by households to meet their consumption needs.

#### 4.4 Statistical concepts and definitions

The core variable of the index are the prices for a specific, as concerns quantity and quality, set of goods and services, purchased by households, aiming at measuring changes in the general level of prices of goods and services purchased by households to meet their consumption needs.

#### 4.5 Statistical unit

The Consumer Price Index refers to the “average consumption expenditure” covered only by private households in the country.

#### 4.6 Statistical population

The Consumer Price Index is based on the results of the Household Budget Survey, which is conducted by ELSTAT on a sample of households from all over the country.

The Household Budget Survey aims at collecting information on the consumption habits of the households throughout the country. More specifically, the HBS data refer to all private households (Greek and foreign) permanent residents, irrespective of their size, composition and the financial or social situation of the head of the household. It does not cover either collective households (hospitals, homes for the elderly,, boarding schools, etc.) or non-resident households in the country (tourists). The compiled tables present household spending on individual goods and services, as monthly averages of all households in each group, whether all households in a group have declared expenditure on the respective goods and services or not.

The HBS is being conducted since 1957. Until 2008, it was conducted on a periodical basis (usually every 5 years) but from 2008 onwards it is conducted on an annual basis. The HBS data are collected throughout the year in order to obtain the best estimate of the average monthly household expenditure.

#### 4.7 Reference area

The national CPI, refers to the whole of the country, being fully in line with the national CPI of the other EU Member States, as well as with the Greek HICP.

The sample of geographical areas, which are covered by the CPI, is designed in order to cover representatively all the Regions (NUTS 2) of the country, as regards price collection.

One or two price collection cities are selected from each Region, depending on both the size and particularities of their markets and the implied cost, with the exception of the Region of Kentriki Makedonia, where 3 cities are selected.

More specifically, prices are collected in 27 cities of the country: the markets of these cities are considered to be representative centres of wider geographic areas. These cities by Region are shown, below:

Region (NUTS 2)	Price collection cities
1. Anatoliki Makedonia, Thraki	Kavala, Komotini
2. Kentriki Makedonia	Thessaloniki, Serres, Edessa
3. Dytiki Makedonia	Kozani, Grevena
4. Ipeiros	Ioannina, Igoumenitsa
5. Thessalia	Larisa, Volos
6. Ionioi Nisoi	Kerkyra, Lefkada
7. Dytiki Ellas	Patra, Mesolongi
8. Sterea Ellas	Lamia, Amfissa
9. Attiki	Greater Athens area
10. Peloponnisos	Kalamata, Tripoli
11. Nisoi Voreiou Aigaiou	Mytilini, Chios
12. Nisoi Notiou Aigaiou	Rodos, Ermoupolis
13. Kriti	Irakleio, Agios Nikolaos, Chania

#### 4.8 Time coverage

From January 1959 onwards, the time series of the Consumer Price Index, with base year 2009=100.0, are released on a monthly basis.

#### 4.9 Base period

The base of the index is December of the previous year. The reference year of the index is 2009 (2009 = 100.0).

### 5. Unit of measure

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Indices, rates of change (%).

### 6. Reference period

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The reference period is one month.

### 7. Institutional mandate

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#### 7.1 Legal acts and other agreements

- The legal framework concerning the organization and operation of ELSTAT is as follows:
- **Law 3832/2010** (Government Gazette No 38, Issue A): "*Hellenic Statistical System Establishment of the Hellenic Statistical Authority (ELSTAT) as an Independent Authority*", as amended and in force
- **Regulation on the Operation and Administration of the Hellenic Statistical Authority (ELSTAT)**, 2012, (Government Gazette No 2390, Issue B, 28-8-2012)
- **Regulation (EC) No 223/2009 of the European Parliament and of the Council**, on the European statistics (Official Journal of the European Union L 87/164).
- **Article 14 of the Law 3470/2006** (Government Gazette No 132, Issue A): "*National Export Council, tax regulations and other provisions*".

- **Article 3, paragraph 1c, of the Law 3448/2006** (Government Gazette No 57, Issue A): *“For the further use of information coming from the public sector and the settlement of matters falling within the responsibility of the Ministry of Interior, Public Administration and Decentralization”*.
- **European Statistics Code of Practice**, adopted by the Statistical Programme Committee on 24 February 2005 and promulgated in the Commission Recommendation of 25 May 2005 on the independence, integrity and accountability of the national and Community statistical Authorities, after its revision, which was adopted on 28 September 2011 by the European Statistical System Committee.
- **Presidential Decree 226/2000** (Government Gazette No 195, Issue A): *“Organization of the General Secretariat of the National Statistical Service of Greece”*.
- **Articles 4, 12, 13, 14, 15 and 16 of the Law 2392/1996** (Government Gazette No 60, Issue A): *“Access of the General Secretariat of the National Statistical Service of Greece to administrative sources and administrative files, Statistical Confidentiality Committee, settlement of matters concerning the conduct of censuses and statistical works, as well as of matters of the General Secretariat of the National Statistical Service of Greece”*.

The Legal Framework is detailed in the following link:

<http://www.statistics.gr/en/legal-framework>

## 7.2 Data sharing

The CPI data are provided to the European Union (EU), the Organisation for Economic Co-operation and Development (OECD), the United Nations (UN), the International Energy Agency (IEA) and the International Labour Organization (ILO).

## 8. Confidentiality

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### 8.1 Confidentiality policy

The issues concerning the observance of statistical confidentiality by the Hellenic Statistical Authority (ELSTAT) are arranged by articles 7, 8 and 9 of the Law 3832/2010 as in force, by Articles 8, 10 and 11(2) of the Regulation on Statistical Obligations of the agencies of the Hellenic Statistical System and by Articles 10 and 15 of the Regulation on the Operation and Administration of ELSTAT.

More precisely:

ELSTAT disseminates the statistics in compliance with the statistical principles of the European Statistics Code of Practice and in particular with the principle of statistical confidentiality.

<http://www.statistics.gr/en/statistical-confidentiality?inheritRedirect=true>

### 8.2 Confidentiality – data treatment

ELSTAT protects and does not disseminate data it has obtained or it has access to, which enable the direct or indirect identification of the statistical units that have provided them by the disclosure of individual information directly received for statistical purposes or indirectly supplied from administrative or other sources. ELSTAT takes all appropriate preventive measures so as to render impossible the identification of individual statistical units by technical or other means that might reasonably be used by a third party. Statistical data that could potentially enable the identification of the statistical unit are disseminated by ELSTAT if and only if:

a) these data have been treated, as it is specifically set out in the Regulation on Statistical Obligations of the agencies of the Hellenic Statistical System (ELSS), in such a way that their dissemination does not prejudice statistical confidentiality or

b) the statistical unit has given its consent, without any reservations, for the disclosure of data.

The confidential data that are transmitted by ELSS agencies to ELSTAT are used exclusively for statistical purposes and the only persons who have the right to have access to these data are the personnel engaged in this task and appointed by an act of the President of ELSTAT.

ELSTAT may grant researchers conducting statistical analyses for scientific purposes access to data that enable the indirect identification of the statistical units concerned. The access is granted provided the following conditions are satisfied:

- a) an appropriate request together with a detailed research proposal in conformity with current scientific standards have been submitted;
- b) the research proposal indicates in sufficient detail the set of data to be accessed, the methods of analyzing them, and the time needed for the research;
- c) a contract specifying the conditions for access, the obligations of the researchers, the measures for respecting the confidentiality of statistical data and the sanctions in case of breach of these obligations has been signed by the individual researcher, by his/her institution, or by the organization commissioning the research, as the case may be, and by ELSTAT.

Issues referring to the observance of statistical confidentiality are examined by the Statistical Confidentiality Committee (SCC) operating in ELSTAT.

The responsibilities of this Committee are to make recommendations to the President of ELSTAT on:

- The level of detail at which statistical data can be disseminated, so as the identification, either directly or indirectly, of the surveyed statistical unit is not possible;
- the anonymization criteria for the microdata provided to users;
- the granting to researchers access to confidential data for scientific purposes.

The staff of ELSTAT, under any employment status, as well as the temporary survey workers who are employed for the collection of statistical data in statistical surveys conducted by ELSTAT, who acquire access by any means to confidential data, are bound by the principle of confidentiality and must use these data exclusively for the statistical purposes of ELSTAT. After the termination of their term of office, they are not allowed to use these data for any purpose.

Violation of data confidentiality and/or statistical confidentiality by any civil servant or employee of ELSTAT constitutes the disciplinary offence of violation of duty and may be punished with the penalty of final dismissal.

ELSTAT, by its decision, may impose a penalty amounting from ten thousand (10,000) up to two hundred thousand (200,000) Euros to anyone who violates the confidentiality of data and/or statistical confidentiality. The penalty is always imposed after the hearing of the defense of the person liable for the breach, depending on the gravity and the repercussions of the violation. Any relapse constitutes an aggravating factor for the assessment of the administrative sanction.

## 9. Release policy

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### 9.1 Release calendar

The Consumer Price Index is released on a monthly basis, through the corresponding Press Release, during the first 10 days after the end of the reference month (except the index of January whose data are announced approximately on 20 February). The release dates are set out at the end of the previous calendar year and they figure in the Press Releases Calendar of ELSTAT (in Greek-English).

### 9.2 Release calendar access

The press releases calendar is disseminated to the media and it is available to users for free. The release calendar is also posted on the website of ELSTAT ([www.statistics.gr/en/calendar](http://www.statistics.gr/en/calendar)), "Press Releases" / "Release Calendar" (Greek English).

### 9.3 User access

In compliance with Community legislation and the European Statistics Code of Practice, ELSTAT disseminates national statistical data on its website, fully observing professional independence and with a view to ensuring the simultaneous, equal and timely access of all users to statistical data.

Data are released simultaneously to all interest parties and to all users through the press release on the CPI, which is released on the website of ELSTAT ([www.statistics.gr](http://www.statistics.gr)), according to the release calendar and it can also be transmitted to users by fax or e-mail.

Neither users nor any government bodies have access to data before their official release.

## 10. Frequency of dissemination

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The CPI is disseminated on a monthly basis.

## 11. Dissemination format

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### 11.1 News release

The CPI data are published on a monthly basis through a scheduled press release, during the first 10 days after the end of each reference month. On the scheduled day of each month, according to the Announcement Calendar, at 12:00 o'clock a press release is announced presents the currently compiled indices in the Greek and English language. This press release is disseminated to the media and to other users, free of charge, through e-mail. The press release is also available on the website of ELSTAT.

<http://www.statistics.gr/en/statistics/-/publication/DKT87/>

### 11.2 Publications

The CPI is included in the following publications:

- The "Greece in figures" where annual average indices are published at the level of the general index and at the level of major groups.
- The "Greek Economy" where monthly and annual index data and rate changes are published for the last four years at the level of the general index.

### 11.3 On-line database

None.

### **11.3.1 Data tables – consultations**

For the year 2016 users' consultations, as regards the CPI data, amounted to 122253 webpage hits. It is not possible to distinguish between data consultations and metadata consultations.

### **11.4 Micro-data access**

Micro-data are made available to users after submitting a request to the:  
Statistical Information and Publications Division  
46, Pireos & Eponiton Str, PO Box 80847  
18510 Piraeus  
Tel: +30 213 135 2022  
Fax: +30 213 135 2312  
e-mail: [data.dissem@statistics.gr](mailto:data.dissem@statistics.gr)

For confidential reasons, access to micro-data is granted to users only under strict conditions and by always adhering to the relevant procedure  
[http://www.statistics.gr/en/scientific\\_provision\\_data](http://www.statistics.gr/en/scientific_provision_data).

### **11.5 Other**

Users can be given data or other statistical analysis, through fax or e-mail, upon request, after submitting an application to the Economic and Short-Term Indicators Division - Retail Prices and Price Indices Section (G70) or to the Statistical Data Dissemination Section (B31).

The contact e-mail addresses are:

[cpi@statistics.gr](mailto:cpi@statistics.gr), [m.glenis@statistics.gr](mailto:m.glenis@statistics.gr), [data.dissem@statistics.gr](mailto:data.dissem@statistics.gr)  
<mailto:data.dissem@statistics.gr>, [data.supply@statistics.gr](mailto:data.supply@statistics.gr), [data.source@statistics.gr](mailto:data.source@statistics.gr)

Users can have access to ELSTAT publications, even for previous years, where they can find data on the HICP, which are posted on the digital library of ELSTAT, through:

<http://dlib.statistics.gr/portal/page/portal/ESYE/>

The results of the Harmonized Consumer Price Index are posted on the website of ELSTAT, at the link:

[http://www.statistics.gr/en/statistics/-/publication/DKT90/-](http://www.statistics.gr/en/statistics/-/publication/DKT90/)

Data are sent to Eurostat and published in Eurostat online database.

<http://ec.europa.eu/eurostat/web/hicp/data>.

Users can submit their requests via website:

<http://www.statistics.gr/en/provision-of-statistical-data>.

#### **11.5.1 Metadata – consultations**

See paragraph 11.3.1 above.



## 12. Accessibility of documentation

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### 12.1 Documentation on methodology

The methodology on the compilation of the index is set out by ELSTAT, by fully taking into consideration international practices and more specifically instructions, guidelines and standards of Eurostat.

A methodological release containing detailed information on the sources and the related practices used for the compilation of the Consumer Price Index (2009=100.0), is available in the Greek and English language on the website of ELSTAT, at the following link:

[http://www.statistics.gr/en/CPI\\_publication](http://www.statistics.gr/en/CPI_publication)

There are also information notes about the updating works for the index.

[http://www.statistics.gr/en/information\\_note\\_2014/DTK87](http://www.statistics.gr/en/information_note_2014/DTK87)

[http://www.statistics.gr/en/information\\_note\\_2015/DKT87](http://www.statistics.gr/en/information_note_2015/DKT87)

[http://www.statistics.gr/en/information\\_note\\_2016/DKT87](http://www.statistics.gr/en/information_note_2016/DKT87)

### 12.2 Quality documentation

A concise Quality Report is available at the following link:

<http://www.statistics.gr/en/statistics/-/publication/DKT87/->

## 13. Quality management

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### 13.1 Quality assurance

Quality checks and validation of data are carried out through the whole process of the compilation of the index, from the stage of data collection to the final calculation of the index.

- Quality Policy and Quality Manual of ELSTAT are followed
- <http://www.statistics.gr/en/policies>
- At a first stage, each product selected to be monitored is fully and accurately defined on the basis of the characteristics, which define it (range, weight, packaging, other quality attributes).
- If certain items or product varieties cease to be representative or alter their determination characteristics, then new items or varieties replace the older ones.
- The methods of quality adjustment followed are mainly three:
  - a) The overlap method used in cases where the old (to be replaced) and the new product have common price collection period
  - b) The bridged overlap method (connection with increase or decrease on the index) and
  - c) Quantity adjustment, when the quantity of an item changes while its price remains the same.
- Well-trained and experienced staff is utilized for all the stages of the compilation of the index, that is, for data collection (including communication with the enterprises), initial checks, data entry and final checks, which are conducted after the calculation of the index. This way, the personnel have a comprehensive and longitudinal image of the enterprises under their responsibilities.
- Data are validated either before or after data entry by means of logical checks. During data processing data are checked in order to identify and correct any errors. When an error is identified, data are further investigated, in cooperation with the enterprises in order to confirm that it is an error or it is just an unusual price. At the same time, data are checked for completeness, accuracy and consistency of the correlating variables.
- The indices are calculated by means of specialised software, through computation routines, thus eliminating any errors to the final results. Nevertheless, even during this stage, consistency checks are carried out to the final results, mainly by means of comparing the percentage changes of the sub-indices and their impact on the overall index.
- Collaboration with technical experts to ensure the implementation of best practices.

### 13.2 Quality assessment

- The CPI is considered as a highly reliable index. It is being compiled for decades, thus the staff has acquired a lot of experience and expertise in its compilation.
- The concepts, definitions, and methodology of the CPI follow European and international standards and guidelines.
- The CPI is being compiled in Greece since 1924. More specifically, in 1924 the National Bank of Greece began compiling the "Cost of Living Index"; then, in 1931 the General Statistical Service of the Ministry of Commerce began compiling the "Cost of Living Price Index" for 44 cities. In 1938 the Bank of Greece compiled the "Cost of Living Price Index for Athens". From 1959 until 2000, *the National Statistical Service of Greece* (NSSG) had been compiling the "Consumer Price Index for the Greek urban areas" and from 2001 onwards, this Index was extended from the urban areas to the whole country. From 2014 onwards, the *Consumer Price Index* is revised on an annual basis utilizing the most recent results of the Household Budget Survey (HBS), which is conducted annually since 2008.

It is worth mentioning that since 1959 the Index, compiled by ELSTAT, is called "Consumer Price Index", following the proposal of the UN International Labour Office on the replacement of the previous term "Cost of Living Index", which was approved by the 6th Conference of Statistical Representatives of Member States (1947).

## 14. Relevance

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### 14.1 User needs

The Consumer Price Index covers primarily national needs, since the needs of European and other foreign users for international comparisons of inflation are covered by the Harmonised CPI (HICP) of the country.

The CPI is mainly used for:

- The estimation of the purchasing power of money.
- The calculation of the real wages and salaries.
- The readjustment of several commitments arising from contracts, compensations, etc.
- The readjustment of rents (according to law No 2741/1999).
- The deflation of several values and their calculation at fixed prices.
- The drawing up of socio-economic policy.

The main domestic users of the Consumer Price Index are the Government, public entities, the Central Bank of Greece, other banks, enterprises, universities, the Centre of Planning and Economic Research (KEPE), the Foundation of Economic and Industrial Research (IOBE), while on international level Eurostat, the International Monetary Fund (IMF), the Organisation for economic co-operation and development (OECD), the United Nations (UN), the International Energy Agency (IEA), the International Labour Organisation (ILO), etc.

### 14.2 User satisfaction

User requirements are monitored on a regular basis by Retail Prices and Price Indices Section (G70) and the Statistical Data Dissemination Section (B31) of the Statistical Information and Publications Division, to their satisfaction. Generally, there is a good cooperation and as immediate as possible response to requests, with positive comments obtained from users.

At the same time, ELSTAT conducts a user satisfaction survey every six months the results of which are published in the [Library's Newsletter](#) a bilingual publication issued by the Library Section and the Statistical Data Dissemination Section utilizing the user questionnaire. This publication presents half-yearly figures of the number of users, in combination with some other variables, such as the degree of coverage of requests, the type of the requested statistics, and the dissemination of statistical information. These characteristics are tabulated into absolute values and in percentages.

ELSTAT in an effort to explore the basic characteristics of the users of statistical information and record their needs, collects on a daily basis the User Questionnaire in order to collect important information for its products and services and thus contributing to their improvement. These statistical data are presented on an annual basis.

Finally, the Greek Statistical Authority (ELSTAT) has been conducting since 2010, annually, a Users Conference. Users Conferences help ELSTAT to draw useful conclusions on the areas where statistical output and services can be improved and to be more responsive to the evolving needs of users. These conclusions are included in the annual and medium term statistical work programs of ELSTAT.

The results of User Satisfaction Survey are presented at the following link on the portal ELSTAT:  
<http://www.statistics.gr/en/user-satisfaction-survey>

### 14.3 Completeness

The compilation of the CPI and the reported data are fully inline with the relevant Regulations and methodology on the HICP.

## 15. Accuracy and reliability

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### 15.1 Overall accuracy

The accuracy of CPI is generally considered to be high. Sampling errors are not calculated because for the sample selection of the price collection outlets (retail sale stores) the guided sampling is applied rather than random technique, so as to select a representative sample for all branches of outlets.

As regards non-sampling errors, these are mostly due to erroneous counting. The efforts are mostly focused on identifying and correcting as many errors as possible during the revision of data.

### 15.2 Sampling error

Sampling errors are not calculated because of the sampling method used (guided sampling).

### 15.3 Non-sampling error

There are no errors, which have to do with inconsistent use of definitions or with data processing. For each product, selected to be monitored, its features are fully and accurately defined (range, weight, packaging, other quality attributes).

There are some measurement errors, such as errors in reported data by enterprises. These errors are usually easily identified through checks and crosschecks and corrected appropriately.

If certain items or varieties of products cease to be representative or their determination features change, then new items or varieties of products replace the older ones.

#### 15.3.1 Coverage error

No.

##### 15.3.1.1 Over-coverage – rate

No.

##### 15.3.1.2 Common units – proportion

No.

#### 15.3.2 Measurement error

-The observed measurement errors are identified by carrying out data checks and cross-checks and are corrected.

#### 15.3.3 Non response error

No, because even a small number of enterprises that do not respond are directly replaced.

#### **15.3.4 Processing error**

The processing errors are detected and corrected by means of thorough logical checks and monitoring of changes.

#### **15.3.5 Model assumption error**

No.

### **16. Timeliness and punctuality**

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#### **16.1 Timeliness**

The index is published within the first 10 days after the end of the reference month, except for the index of January, which is announced until the 20<sup>th</sup> of February.

#### **16.2 Punctuality**

The data on the index are released as scheduled, in accordance with the [Press releases Calendar](#) of ELSTAT.

### **17. Comparability**

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#### **17.1 Comparability – geographical**

The compilation of the index follows the Regulations and the basic methodological principles of the Harmonized Index of Consumer Prices (HICP). This ensures comparability with other national indices and the European statistics, taking always into consideration specific conditions in each country, which may require minor deviations from methodology.

##### **17.1.1 Asymmetry for mirror flows statistics – coefficient**

Not applicable.

#### **17.2 Comparability over time**

The CPI time series data are fully comparable over time.

### **18. Coherence**

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#### **18.1 Coherence cross-domain**

Certain checks and comparisons are carried out on the basis of the Harmonized Index of Consumer Prices (HICP). The national CPI and the HICP present several similarities, however, some differences still exist. The main differences between the two indices are the following:

- The HICP reference year is 2015 = 100.0 and CPI 2009 = 100.0.
- The HICP covers all consumption expenditure, which takes place on the economic territory of Greece, irrespective of the consumer (residents and non-residents) while the national CPI covers only the consumption expenditure of private households, which take place on the economic territory of the country and abroad. The HICP weights of items are calculated on the basis of National Accounts data and HBS data while the CPI weights are calculated using HBS data.

##### **18.1.1 Coherence – sub annual and annual statistics**

Not applicable.

##### **18.1.2 Coherence – National Accounts**

The CPI data is available in the National Accounts for their estimates.

## 18.2 Coherence – internal

The CPI is internally coherent. Higher-level aggregations derived from detailed indices according to well-defined procedures.

## 19. Cost and burden

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Not available

## 20. Data revision

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### 20.1 Revision policy

The Index follows the revision policy of ELSTAT:  
<http://www.statistics.gr/en/policies>.

The Consumer Price Index meets its purpose provided the composition of consumption (consumption pattern) has not changed significantly in the course of time. Otherwise, the index does not fulfil its mission and has to be revised.

The main purpose of the revisions of the CPI is the adjustment of the weights and the renewal of the sample of items (goods and services), which are included in the Index, taking into account the most up-to-date composition of consumption, which is based on the results of the latest HBS.

### 20.2 Revision practice

Until 2013, the compiled CPI index was calculated as a fixed base index and the base year was 2009=100,0. The weights, on which CPI were calculated, were based on the composition of consumption expenditures of private households of the country as they had been recorded in the 2008/09 HBS. However, in the meanwhile, since the latest HBS, the structure of consumption and the living conditions have changed due to economic developments. Therefore, from 2014 onwards, it was deemed necessary to revise annually the Index by implementing the chain linking method, so as the new weights can be annually adjusted and estimated, according to the available data of the most recent Household Budget Survey which is conducted on an annual basis. Thus, for every year the base year will be December of the previous year.

For the revision works of the index an advisory Working Group is envisaged, consisting of representatives of business organizations, labour unions and professional groups, representatives of several general government agencies, the academic and research community, the Bank of Greece, representatives of employers (Hellenic Federation of Enterprises-SEV), and employees (General Confederation of Greek Workers -GSEE and Civil Servants' Confederation-ADEDY, as well as a European Statistical System (ESS) expert. Furthermore, the ESS expert on price indices provided advice to ELSTAT on the works of updating the CPI and the HICP in the framework of the above Working Group.

For the CPI revision, international practices are taken into account, as well as the methodology for the compilation of the Harmonized Index of Consumer Prices in the EU Member States, as set out in the relevant Council and Commission Regulations.

The annual based CPI adjusted to the recent consumption expenditures of private households of the country ensures the representativeness of goods and services which compose the "purchase basket" of the average household.

## 21. Statistical processing

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### 21.1 Source data

#### Selection of goods and variety of goods

The purpose of the Consumer Price Index is to measure the changes in the general price level of goods and services, reflecting the consumption pattern of the average household.

In practice, it is impossible to collect retail prices for all the varieties of goods and services purchased by the households. Therefore, it is deemed necessary to select a sample of goods and services, which are representative of all goods and services, as regards price changes.

The composition of the "household basket", in other words the selection of the consumer goods and services which are to be included in the index are annually updated from December 2013 onwards based on the results of the latest Household Budget Survey and other market research, etc.

The chain linking methodology allows for the change of items of the household basket, on an annual basis, in order to ensure the representativeness of items which are to be included in the calculation of groups and sub-groups of the index.

For each sub-group the necessary number of items was selected in order to ensure the representativeness of the individual index of the sub-group. More specifically, all the items in a subgroup were broken down into small categories of similar items and then for each category one or more items were selected, whose price changes reflect the price changes of all similar items in the category.

The representativeness criterion for the varieties of the items, according to which they were selected, is based on the most sold variety in terms of volume rather than in value.

Another selection criterion for the varieties of the items is the possibility to observe their price changes in the course of time, as well as their price, which should be affordable by the average consumer.

The total number of consumer goods and services of the Consumer Price Index comes to 800 and they are further broken down into a greater number of varieties.

#### Specification

All the items, for which prices are collected, are defined by their specification, namely the particular characteristics which determine the quality, appearance and general commercial identity of the goods (such as brand, variety, weight, packaging, etc.) in order to avoid any price changes, which are due to differences in the specification. The detailed specification of an item is not uniform throughout the Country and may differ not only from one price collection city to another, but also from one store of the city to another, since it is determined on the basis of the economic conditions and the local consumer habits.

### 21.2 Frequency of data collection

Data are collected mainly on a monthly basis. For several items data collection takes place on a weekly basis.

### 21.3 Data collection

#### Price Collection

The process and means of collecting price data for goods and services is a key factor for depicting correctly the evolution of prices through the index.

The collected prices correspond to the prices actually faced by the consumer and refer to sales "in cash".

The frequency of price collection depends on the nature of goods and services. For the majority of items, the prices

are collected once a month and these items are called items for monthly price collection. The prices of fresh products (vegetables, fruits and fishes) are collected more frequently, namely once a week on a fixed day (Tuesday or Thursday) because the prices of this group of goods are affected by external factors (weather conditions). The above-mentioned items (fresh products) are the items for weekly price collection of the CPI.

For the items whose prices are fixed administratively (public utility tariffs, motor vehicle registration fees, road tolls, tickets of public transports, postal services) and for some other items (tuition fees, insurance premiums) the prices are collected once a year (items for yearly price collection). For these items the prices are collected right after the new prices and tariffs are released and put into force. In case the prices of these items change and are readjusted within the same year, their prices are collected again.

For the items whose prices are collected on a monthly basis, price collection takes place, in general, approximately in the middle of the month. Yet, for some of these items namely for items in the supermarkets of the Greater Athens Area, prices are collected on a monthly cycle-basis, thus reflecting the evolution of prices during the whole month. (i.e. 1<sup>st</sup> group of stores in the 1<sup>st</sup> week of the month, 2<sup>nd</sup> group of stores in the 2<sup>nd</sup> week, etc).

There are some items whose prices are the same all over the country. The prices of these items are collected by the central office of ELSTAT and they are broken down into two categories:

- a) Items whose prices are the same throughout the country and are determined by the forces of supply and demand (cigarettes, motor vehicles, newspapers and magazines, insurance premium, banking services, etc). Their prices are collected on a monthly or yearly basis,
- b) Items whose prices are the same throughout the country and are set by the government (electricity, motor vehicle registration fees, road tolls, medicines, postal services). Their prices are collected on a yearly basis.

It should be noted that the prices for almost all the items of the Consumer Price Index are collected by means of an established procedure according to which experienced employees of ELSTAT pay visits to the price collection outlets during a specific period of the month (monthly price collection items) or on a specific day of the week (weekly price collection items) and record the prices on a specially designed price collection form. For some items (tuition fees for private schools, insurance premiums for motor vehicles, and motorcycles, etc) the prices are collected via fax or e-mail, that is to say the surveyed outlets after filling in the specially designed questionnaires submit them by fax or e-mail. In addition to all these, during the last years, the prices of some items are collected though the internet (natural gas and mobile telephony tariffs, road tolls, air and boat tickets, etc).

To ensure the reliability of the collected data concerning the prices, the data undergo a series of correctness checks both during their collection and their processing.

The total number of the prices collected for all the items of the Index by month is 49460 and their breakdown into the 12 major groups of items figures in the table below:

Main groups of items	No of observations per month
1. Food and non-alcoholic beverages	16802
2. Alcoholic beverages and tobacco	860
3. Clothing and Footwear	5835
4. Housing	2374
5. Durable goods, household articles and services	7254
6. Health	2152
7. Transport	2033
8. Communication	301
9. Recreation, cultural activities	4664
10 Education	257
11. Hotels, cafes, restaurants	2669
12. Miscellaneous goods and services	4241
<b>Total Consumer Price Index</b>	<b>49460</b>

### **Price collection outlets**

The price collection outlets are retail stores and services enterprises, which sell particular species and varieties of species that are consumed by the majority of households in the area.

The selected outlets are representative of the branches of stores in the 27 selected price collection cities where the households make their purchases.

The representativeness criteria for the selection of the outlets are the volume of sales, their geographic location and the availability of items, for which prices are collected, on a continuous basis. The biggest urban centers of Greece, Greater Athens area and Thessaloniki, are divided into zones depending on the income of their inhabitants. Therefore, the price collection outlets in these cities are selected on the basis of the criterion according to which the consumers from all income levels are represented.

Neither small stores selling poor quality products nor luxury stores selling products at exceptionally high prices are included in the sample of the outlets. Furthermore, prices are not collected for items sold on street-carts but on the contrary, price collection includes open-air markets but only for fresh fruit and vegetables.

The chain linking methodology allows the annual renewal of collection price outlets and their number, in order to maintain their representativeness on the calculation of CPI. At each updating of the index, the existing sample price collection outlets are kept those still representatives and are replaced those not fulfilling their necessary selection requirements. Apart from the replacement of non-representative price collection, the sample price collection extends to overcome the price collection of new items.

The sample size of outlets, in each price collection city, depends on the market size (population) of each area.

Depending on the items, the outlets are distinguished in department stores, specialized stores, supermarkets, open-air markets and services enterprises. For those items whose prices are collected by the central office (electricity, tickets of public transport, etc). The necessary data are collected from the competent corporations, organizations and agencies.

### **21.4 Data validation**

Data is validated through regular and logical checks. During data processing any errors are identified and are fully corrected. Special emphasis is placed on the errors that may have major impact on the results. After identifying the errors, those are further checked and cross-checked in cooperation with the enterprises in order to confirm that it is an error or it is just about an unusual price. At the same time, data are checked for completeness, accuracy and consistency of the correlating variables. Data processing and validation of data are carried out either during or after data entry.

The data are compared with data from previous months and with data of the corresponding month of previous years and in case of large deviations, a more thorough investigation is necessary.

### **21.5 Data compilation**

#### **Weights of items**

From December 2013 onwards, the weights of items are renewed every year according to the available results of the most recent Household Budget Survey. The weights of items represent the per thousand (‰) share of the average household expenditure for every group, sub-group and item (goods and services) in the total expenditure of the average household.

The weights of items of the revised CPI were based on the results of 2015 HBS, after having adjusted the expenditure data of this survey to the prices of December 2016 (base of the new CPI).

These weights refer to the average composition of the monthly consumption expenditure of the total of the private



households of the country, which was recorded during the conduct period of the survey.

The table below illustrates the weights of items based on the 2015 HBS results (adjusted to 2016 prices) expressed in (%), for the 12 main groups. For comparison purposes, the above-mentioned table also includes the corresponding weights of items based on the 2015 HBS results.

Main groups of items of the COICOP/HICP classification	Weights (%)	
	Year 2016 (HBS 2014)	Year 2017 (HBS 2015)
1. Food and non-alcoholic beverages	218.10	206.70
2. Alcoholic beverages and tobacco	42.79	41.68
3. Clothing and footwear	65.30	64.54
4. Housing	129.19	133.54
5. Durable goods, household articles and services	51.15	46.46
6. Health	75.42	77.02
7. Transport	122.40	144.09
8. Communication	42.74	41.86
9. Recreation, cultural activities	44.71	41.17
10. Education	33.47	32.79
11. Hotels, cafés, restaurants	103.94	102.82
12. Miscellaneous goods and services	70.79	67.36
<b>Total Consumer Price Index</b>	<b>1000.0</b>	<b>1000.0</b>

#### Population weights

For the calculation of population weights, the new population data as derived from the 2011 census and the results of the 2015 Household Budget Survey (HBS) were taken into account.

On the basis of the results of the HBS, i.e. the average monthly expenditure by expenditure category and per household in each of the 13 regions of the country and the number of households by region, as determined by the HBS for the year 2015, the annual expenditure for the total number of the households by region was calculated, i.e., extrapolating the HBS results, on an annual basis. for the total number of the households in every region.

In a later stage, the number of households of each region was allocated in the price collection cities on the basis of the number of households of each city. The percentage distribution of population of the region on the price collection cities was implemented on the expenditure that was calculated for every expenditure category of COICOP12 at the level of the region, on the basis of the HBS results. The weighting coefficient of each city, by expenditure category, is calculated as the expenditure in each city to the total expenditure for this category in the country.

In general, the population weights are used for the weighting of the individual indices (sub-indices) of the items for each price collection city, in order to calculate these sub-indices for the whole country.

For the weighting of the sub-indices of some items of the Index (e.g. urban transports), where accurate data on the local consumption value are available, these data are used instead of the above-mentioned population weights.

### Missing prices

The treatment of missing prices depends on the category of items, for which prices are collected.

For seasonal items (fresh vegetables, fresh fruit, clothing and footwear, etc.) the standardized method for dealing with the seasonality of these items is applied.

The treatment of missing prices for the other items depends on the duration of the item's absence from the outlet. If the item is absent for a period up to 2 months, then the price, which will be recorded, is the latest regular price observed. If the item is absent for more than 2 months, then the item is replaced, according to the procedure described in Chapter 15 "substitution of items".

### Substitution of items

When a specified item (variety) is no longer available in the market or it is no longer important, in terms of consumption, because of a new variety, then it is substituted by the item, which has taken its place in the market.

The criterion for this substitution depends on the most sold variety in terms of volume rather than in value for the specific item in the surveyed outlet.

If the substitute item  $y$ , can be compared with the item  $x$ , which is replaced, then an effort is made to estimate whether the difference in the prices is due to differences in quality, weight, packaging, etc. and to adjust the price accordingly, so that the item matches the quality of the replaced item. However, if the substitute item cannot be compared with the item, which is replaced, then the prices of the two items are linked. and a theoretical base price is calculated for the substitute item.

In particular, the prices for the current month.  $t$ . and for the previous month  $t-1$ , are collected for the substitute item  $y$ , and its theoretical base price  $p_y^0$ , is calculated according to the following formula:

$$p_y^0 = \frac{p_y^{t-1}}{R_x^{t-1}} \cdot 100 ,$$

where:

$p_y^{t-1}$  =the price of the substitute item  $y$ , during the previous month and

$R_x^{t-1}$  =the sub-index of the item  $x$ , during the previous month.

Furthermore, when a packed good, for which prices are collected, is offered in the market during a significant time period in larger or smaller quantities than usually but at the same price, then the price is adjusted on the basis of the offered quantity (quantity adjustment).

### Calculation of the Harmonized Index of Consumer Prices

The Consumer Price Index is a Laspeyres-type and it is calculated having as base December of the previous year.

#### Calculation formula on 5-digit level of COICOP

Specifically, if the 5-digit item  $h$  included  $q$  price collected items, then its index in month  $t$  of year  $T$ ,  $R_h^{t,T}$ , is given by the formula below:

$$R_h^{t,T} = R_h^{12,T-1} \left[ \frac{\sum_{i=1}^q w_i^T R_i^{t,T} / R_i^{12,T-1}}{\sum_{i=1}^q w_i^T} \right]$$

where:

$R_h^{12,T-1}$  = the individual index of the item h in December of year T-1.

$w_i^T$  = the weighting coefficient of the price collected item i, in year T.

$R_i^{t,T}$  = the individual index of the price collected item i, in month t of year T.

$R_i^{12,T-1}$  = the individual index of the price collected item i, in December of year T-1.

A similar methodology is followed for the calculation of individual indices in the upper levels (two-digit, three and four digit) of COICOP5 and the calculation of the overall CPI index as well.

The sub-indices  $R_i^t$  are calculated as follows:

- Firstly, the sub-index of a specific item i (where  $i=1.2.....k$ ) for each city y (where  $y=1.2.....m$ ) is compiled, from all its outlets j (where  $j=1.2....n$ ), by using the geometric mean of all prices collected from the outlets of the city, for the specific item, according to the following the formula :

$$R_{iy}^t = \frac{\left( \prod_{j=1}^n p_{iyj}^t \right)^{1/n}}{\left( \prod_{j=1}^n p_{iyj}^0 \right)^{1/n}}$$

where:

$R_{iy}^t$  = the sub-index of the item i, for the city y, in the month t.

$p_{iyj}^t$  = the price of item i in the outlet j of the price collection city y, in the month t.

$p_{iyj}^0$  = the price of item i in the outlet j of the price collection city y, in the base period 0.

- Then, the sub-index of the item i,  $R_i^t$ , for the whole country, is calculated as a weighted mean of the sub-indices of this item, for all cities. according to the following the formula:

$$R_i^t = \sum_{y=1}^m R_{iy}^t G_y ,$$

where

$G_y$  = the population weight of city y.

## **Seasonality of items**

### *a. Fresh fruit and vegetables*

The seasonality of fresh fruit and vegetables is addressed by using the method of “*Class-confined seasonal weights*”, which fully meets the requirements of the latest Council Regulation No 330/2009 on the treatment of seasonal products in the Harmonised Indices of Consumer Prices (HICP).

This method allows for zero weights for the products which are out-of- season and which remain out of the “basket” (no price data are needed). The prices of the in-season products (which are in the “basket”) are collected and their weights are based on the respective expenditure for these items as these derive from the results of the latest HBS.

### *b. Clothing and footwear*

For dealing with the seasonality of clothing and footwear is addressed by using the method of “*Class-confined seasonal weights*”, which fully meets the requirements of the latest Council Regulation No 330/2009 on the treatment of seasonal products in the Harmonised Indices of Consumer Prices (HICP).

This method allows for zero weights for the products which are out-of- season and which remain out of the “basket” (no price data are needed). The prices of the in-season products (which are in the “basket”) are collected and their weights are based on the respective expenditure for these items during the months when these products are available in the market.

The items of clothing and footwear of the CPI, depending on the time of the year when they are offered the same in the market, are divided into three groups:

- i. Clothing and footwear items available only in winter (winter items).
- ii. Clothing and footwear items available only in summer (summer items).
- iii. Clothing and footwear items available during all of the year (all-seasons items).

The items of the group (i) and (ii) are considered seasonal items.

Prices for the aforementioned seasonal items are collected during:

October-April: winter items

May-September: summer items

## **Offers and discounts**

The reductions in the prices of individual products and services are taken into account for the compilation of the CPI only in the following cases:

- a) The reductions are offered to all potential buyers, without discrimination.
- b) The buyer is aware of these reductions the moment he is making his purchases.
- c) The reductions can be applied at the moment of the purchase.

Therefore, reductions due to special offers or sales, which are offered only to specific consumer groups (e.g. pensioners, cooperative’s members, etc), are not taken into account for the compilation of the CPI. Accordingly, special offers, such as offering another product as a gift, or special offers on goods close to the expiry date or due to damage are not taken into account for the compilation of the CPI.

In addition, for the compilation of the CPI special offers available only in some stores (by means of bonus cards or coupons) are not taken into account because these offers are considered to be discriminatory.

On the contrary, the reduced prices of general offers and discounts are taken into account during the price collection of the CPI. In Greece the general winter and summer sales are established by law as follows:

- Ten days winter discount: 10 first days of November.
- Winter sales: mid January- end February.
- Ten days summer discount: 10 first days of May.
- Summer sales: mid July-end August.

After the end of the sales period, the prices come again to their normal level before the sales, therefore not affecting the Index over a 12-month period.

#### **Public Utility Corporations tariffs**

The readjustment in the tariffs of public utility corporations (DEH - Electric Power Corporation. EYDAP - Water supply corporation for Athens, etc) are treated by calculating the mean weighted changes in the relevant tariffs, recorded for the total of the household of the country and on the basis of the data provided by the public utility corporations. These data are provided by the corporations in the framework of Commission Regulation (EC) No 2646/98 "as regards minimum standards for the treatment of tariffs in the compilation of the Harmonized Index of Consumer Prices."

For fixed and mobile telephony companies, the calculation of the sub-index of services provided by company (service provider) is calculated on the basis of the mean weighed change in the prices of the services provided (per company). The weights used are the revenues of each company for the services provided to private households during the base year (2009). For the calculation of the sub-indices of fixed and mobile telephony, the corresponding sub-indices per company are weighted on the basis of the total revenues of these companies, which come from the provision of telephone services to private households during the base year.

#### **21.6 Adjustment**

The methods of quality adjustment which are followed are mainly, three: a) the overlap method used in cases where the old (to be replaced) product and the new product have common price collection period, b) the bridged overlap method (connection with increase or decrease on index) and c) quantity adjustment, (when the quantity of an item changes though its price remains the same).

Therefore, when a good is sold in a higher or lower quantity than usual, with the same price. then the value is adjusted on the basis of the offered quantity (quantitative adjustment).

##### **21.6.1 Seasonal adjustment**

Not applicable.

#### **22. Comment**

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None.