



## CONSUMER PRICE INDEX: September 2023, annual inflation 1.6%

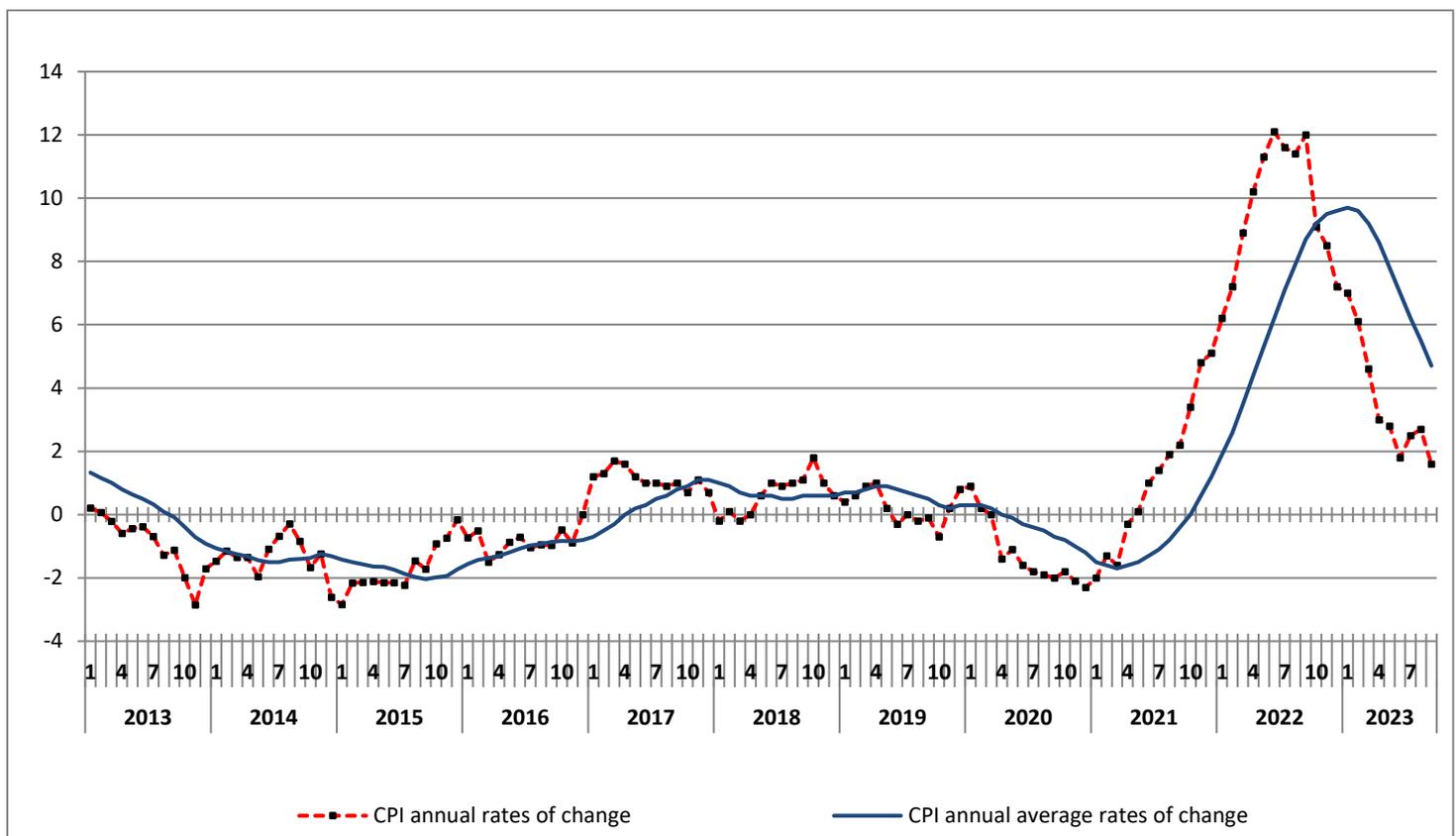
The evolution of the Consumer Price Index (CPI) of September 2023 (reference year 2020=100.0) is depicted as follows:

The CPI in September 2023 compared with September 2022, increased by 1.6%. In September 2022, the annual rate of change of the CPI was 12.0% (Table 2).

The CPI in September 2023 compared with August 2023, increased by 1.8%. In September 2022, the monthly rate of change of the CPI was 2.9% (Table 1).

The average CPI for the twelve - month period from October 2022 to September 2023, compared with the corresponding index for the period October 2021 to September 2022 increased by 4.7%. The annual rate of change of the average CPI between the twelve - month period October 2021 to September 2022 in comparison to the period October 2020 to September 2021 was 8.7% (Table 3).

**Graph 1. Annual and annual average rates of change (%) of CPI**



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## Analysis of changes of the CPI: September 2023

### I. Monthly rates of change: September 2023 compared with August 2023 (Tables 1, 4)

The 1.8% increase of the Overall CPI in September 2023, compared with the corresponding index in August 2023 is, mainly, due to the changes in the groups of goods and services as follows:

#### 1. An increase of:

- 0.2% in the group Food and non-alcoholic beverages due to the increase, mainly, in the prices of: *breakfast cereals, olive oil, other edible oil, fresh vegetables*. This increase was partly offset by the decrease, mainly, in the prices of: *other bakery products, beef, milk-cheese and eggs, frozen vegetables, sugar-chocolates-sweets-ice creams*.
- 40.5% in the group Clothing and footwear, due to the recovery of prices up to normal levels as before the summer sales period.
- 0.5% in the group Housing, due to the increase, mainly, in the prices of: *rentals for dwellings, natural gas*. This increase was partly offset by the decrease, mainly, in the prices of *electricity*.
- 0.1% in the group Transport, due to the increase, mainly, in the prices of *fuels and lubricants*. This increase was partly offset by the decrease, mainly, in the prices of *tickets for passenger transport by air*.
- 2.6% in the group Education, due to the increase, mainly, in the prices of: *fees of primary education, fees of secondary education*.
- 1.5% in the group Hotel-Cafés-Restaurants, due to the increase, mainly, in the prices of: *restaurants-confectioneries-cafes-buffets, hotels-motels-inns*.

#### 2. A decrease of:

- 0.3% in the group Alcoholic beverages and tobacco, due to the decrease, mainly, in the prices of *alcoholic beverages (not served)*.
- 1.1% in the group Miscellaneous goods and services, due to the decrease, mainly, in the prices of *other appliances and articles for personal care*.

## II. Annual rates of change: September 2023 compared with September 2022 (Tables 2, 5)

The 1.6% increase of the Overall CPI in September 2023, compared with the corresponding index in September 2022 is, mainly, due to the changes in the groups of goods and services as follows:

### 1. An increase of:

- 9.4% in the group Food and non-alcoholic beverages due to the increase, mainly, in the prices of: *bread and cereals, meat, fish, milk-cheese and eggs, oils and fats, fruit, vegetables, sugar-chocolates-sweets-ice creams, food n.e.c., coffee-cocoa-tea, mineral water-refreshments-fruit juices.*
- 2.5% in the group Alcoholic beverages and tobacco, due to the increase, mainly, in the prices of *alcoholic beverages (not served).*
- 6.2% in the group Clothing and footwear, due to the increase in the prices of clothing and footwear.
- 3.7% in the group Household equipment, due to the increase, mainly, in the prices of: *household appliances and repair, glassware-tableware and utensils of domestic use, non-durable household articles, domestic services.*
- 5.6% in the group Health, due to the increase, mainly, in the prices of: *pharmaceutical products, medical-dental and paramedical services, hospital care.*
- 3.0% in the group Transport, due to the increase, mainly, in the prices of: *new motor cars, second hand motor cars, spare parts and accessories for motor cars, fuels and lubricants, maintenance and repair of motor cars-motor cycles, tickets for passenger transport by air.*
- 3.1% in the group Recreation and culture, due to the increase, mainly, in the prices of: *major durables for recreation and culture, small recreational items-flowers-pets, cinemas-theatres, package holidays.*
- 3.0% in the group Education, due to the increase, mainly, in the prices of: *fees of primary education, fees of secondary education.*
- 4.8% in the group Hotel-Cafés-Restaurants, due to the increase, mainly, in the prices of *restaurants-confectioneries-cafes-buffets.*
- 2.4% in the group Miscellaneous goods and services, due to the increase, mainly, in the prices of: *hairdressing salons and personal grooming establishments, other appliances and articles for personal care, private insurance connected with health, motor vehicle insurance.*

### 2. A decrease of:

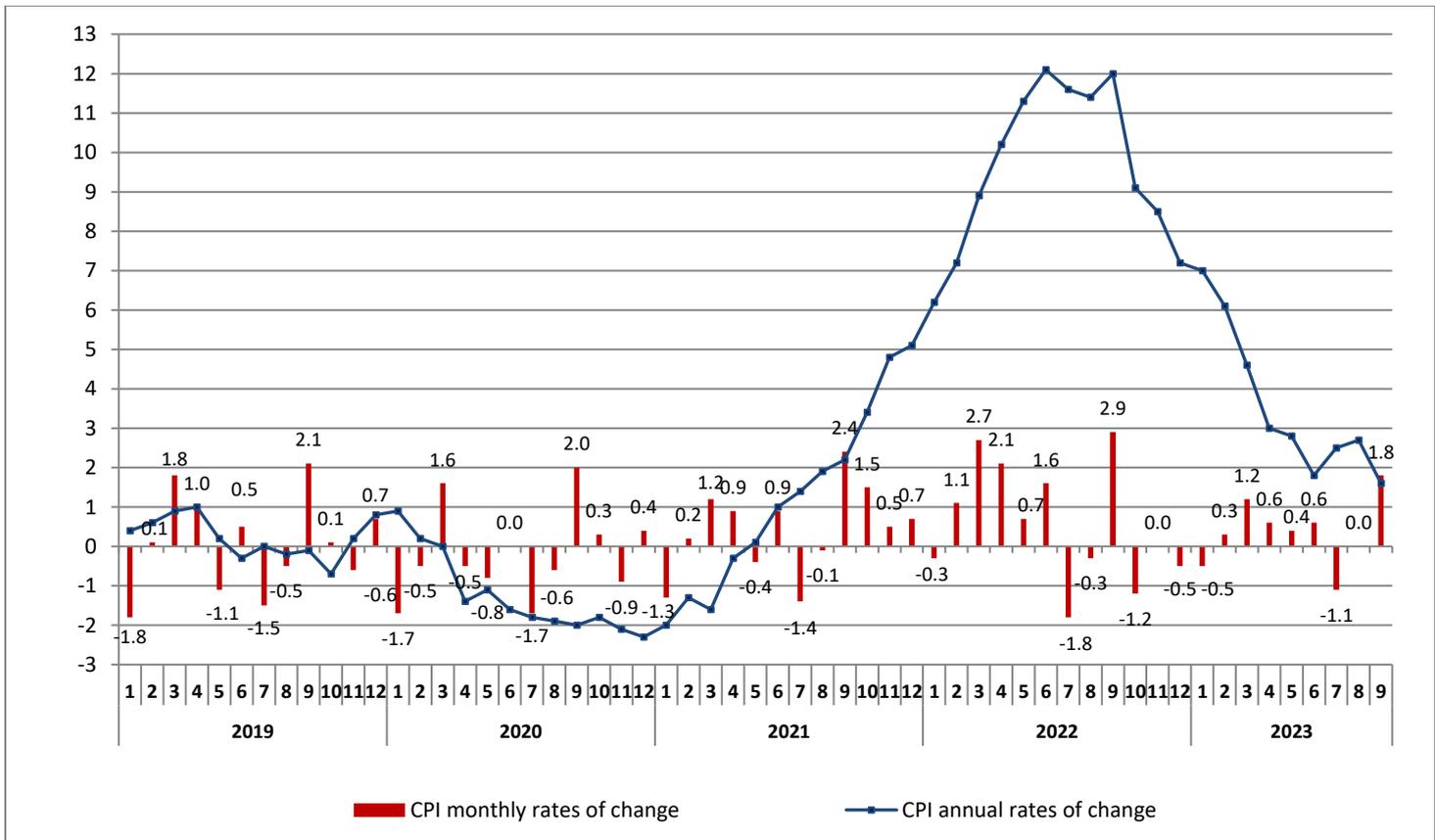
- 15.0% in the group Housing, due to the decrease, mainly, in the prices of: *electricity, natural gas, heating oil.* This decrease was partly offset by the increase, mainly, in the prices of: *rentals for dwellings, services for the repair and maintenance of the dwelling, solid fuels.*
- 3.1% in the group Communication, due to the decrease, mainly, in the prices of *telephone services.*

**Table 1. Monthly rates of change of CPI**  
(Reference year: 2020=100.0)

Main groups of goods and services	Weights 2023 (%)	2023	2023	Rate of change %	2022	2022	Rate of change %
		September	August		September	August	
1. Food & non-alcoholic beverages	216.27	127.82	127.52	0.2	116.80	115.15	1.4
2. Alcoholic beverages and tobacco	35.53	104.59	104.94	-0.3	102.06	101.70	0.4
3. Clothing and footwear	51.86	122.14	86.93	40.5	115.01	81.33	41.4
4. Housing	136.85	118.47	117.90	0.5	139.40	134.84	3.4
5. Household equipment	46.94	113.91	113.77	0.1	109.87	107.78	1.9
6. Health	73.28	107.85	107.85	0.0	102.13	101.82	0.3
7. Transport	136.96	123.63	123.53	0.1	119.98	121.63	-1.4
8. Communication	42.29	92.32	92.50	-0.2	95.30	95.45	-0.2
9. Recreation and culture	37.91	104.66	104.69	0.0	101.49	101.32	0.2
10. Education	36.66	105.79	103.12	2.6	102.71	100.93	1.8
11. Hotels-Cafés-Restaurants	115.24	114.90	113.18	1.5	109.58	106.69	2.7
12. Miscellaneous goods and services	70.21	104.55	105.71	-1.1	102.12	101.71	0.4
<b>Overall Index</b>	<b>1000.00</b>	<b>116.34</b>	<b>114.26</b>	<b>1.8</b>	<b>114.48</b>	<b>111.21</b>	<b>2.9</b>

Note: The indices are rounded up to two decimal figures when published and percentage changes up to one decimal figure when published.

**Graph 2. Annual and monthly rates of change (%) of CPI**



**Table 2. Inflation – Annual rates of change of CPI**  
(Reference year: 2020=100.0)

**I: September 2023/2022**

Main groups of goods and services	September		Rate of change (%)	Impact
	2023	2022		
1. Food and non-alcoholic beverages	127.82	116.80	9.4	1.9823
2. Alcoholic beverages and tobacco	104.59	102.06	2.5	0.0870
3. Clothing and footwear	122.14	115.01	6.2	0.3380
4. Housing	118.47	139.40	-15.0	-2.5839
5. Household equipment	113.91	109.87	3.7	0.1648
6. Health	107.85	102.13	5.6	0.4033
7. Transport	123.63	119.98	3.0	0.4119
8. Communication	92.32	95.30	-3.1	-0.1275
9. Recreation and culture	104.66	101.49	3.1	0.1099
10. Education	105.79	102.71	3.0	0.1048
11. Hotels-Cafés-Restaurants	114.90	109.58	4.8	0.5815
12. Miscellaneous goods and services	104.55	102.12	2.4	0.1569
<b>Overall Index</b>	<b>116.34</b>	<b>114.48</b>	<b>1.6</b>	

**II: September 2022/2021**

Main groups of goods and services	September		Rate of change (%)	Impact
	2022	2021		
1. Food and non-alcoholic beverages	116.80	102.92	13.5	2.9094
2. Alcoholic beverages and tobacco	102.06	100.08	2.0	0.0812
3. Clothing and footwear	115.01	111.16	3.5	0.2140
4. Housing	139.40	102.93	35.4	5.0928
5. Household equipment	109.87	100.52	9.3	0.4278
6. Health	102.13	99.37	2.8	0.2318
7. Transport	119.98	105.08	14.2	1.9260
8. Communication	95.30	97.34	-2.1	-0.0867
9. Recreation and culture	101.49	99.39	2.1	0.0728
10. Education	102.71	100.86	1.8	0.0578
11. Hotels-Cafés-Restaurants	109.58	100.40	9.1	0.8904
12. Miscellaneous goods and services	102.12	98.95	3.2	0.2067
<b>Overall Index</b>	<b>114.48</b>	<b>102.19</b>	<b>12.0</b>	

Note: The indices are rounded up to two decimal figures when published and percentage changes up to one decimal figure when published.

**Table 3. Comparisons of the overall CPI  
(Reference year: 2020=100.0)**

Year and month	Overall index	Monthly rates of change %	Annual rates of change Inflation %	Annual average index (moving average)	Annual average rates of change %
<b>2020 : 1</b>	100.49	-1.7	0.9	101.34	0.3
2	99.99	-0.5	0.2	101.35	0.3
3	101.57	1.6	0.0	101.35	0.2
4	101.11	-0.5	-1.4	101.23	0.0
5	100.29	-0.8	-1.1	101.13	-0.1
6	100.33	0.0	-1.6	101.00	-0.3
7	98.63	-1.7	-1.8	100.85	-0.4
8	97.99	-0.6	-1.9	100.69	-0.5
9	99.98	2.0	-2.0	100.52	-0.7
10	100.33	0.3	-1.8	100.37	-0.8
11	99.45	-0.9	-2.1	100.20	-1.0
12	99.84	0.4	-2.3	100.00	-1.2
<b>Annual average</b>	<b>100.00</b>	-	-	<b>100.00</b>	<b>-1.2</b>
<b>2021 : 1</b>	98.52	-1.3	-2.0	99.84	-1.5
2	98.72	0.2	-1.3	99.73	-1.6
3	99.91	1.2	-1.6	99.59	-1.7
4	100.82	0.9	-0.3	99.57	-1.6
5	100.43	-0.4	0.1	99.58	-1.5
6	101.36	0.9	1.0	99.66	-1.3
7	99.96	-1.4	1.4	99.78	-1.1
8	99.83	-0.1	1.9	99.93	-0.8
9	102.19	2.4	2.2	100.11	-0.4
10	103.75	1.5	3.4	100.40	0.0
11	104.24	0.5	4.8	100.80	0.6
12	104.95	0.7	5.1	101.22	1.2
<b>Annual average</b>	<b>101.22</b>	-	-	<b>101.22</b>	<b>1.2</b>
<b>2022 : 1</b>	104.68	-0.3	6.2	101.74	1.9
2	105.84	1.1	7.2	102.33	2.6
3	108.75	2.7	8.9	103.07	3.5
4	111.08	2.1	10.2	103.92	4.4
5	111.80	0.7	11.3	104.87	5.3
6	113.62	1.6	12.1	105.89	6.2
7	111.54	-1.8	11.6	106.86	7.1
8	111.21	-0.3	11.4	107.81	7.9
9	114.48	2.9	12.0	108.83	8.7
10	113.16	-1.2	9.1	109.61	9.2
11	113.15	0.0	8.5	110.36	9.5
12	112.53	-0.5	7.2	110.99	9.6
<b>Annual average</b>	<b>110.99</b>	-	-	<b>110.99</b>	<b>9.6</b>
<b>2023 : 1</b>	111.99	-0.5	7.0	111.60	9.7
2	112.33	0.3	6.1	112.14	9.6
3	113.73	1.2	4.6	112.55	9.2
4	114.45	0.6	3.0	112.83	8.6
5	114.91	0.4	2.8	113.09	7.8
6	115.62	0.6	1.8	113.26	7.0
7	114.30	-1.1	2.5	113.49	6.2
8	114.26	0.0	2.7	113.74	5.5
9	116.34	1.8	1.6	113.90	4.7

Note: The indices are rounded up to two decimal figures when published and percentage changes up to one decimal figure when published.

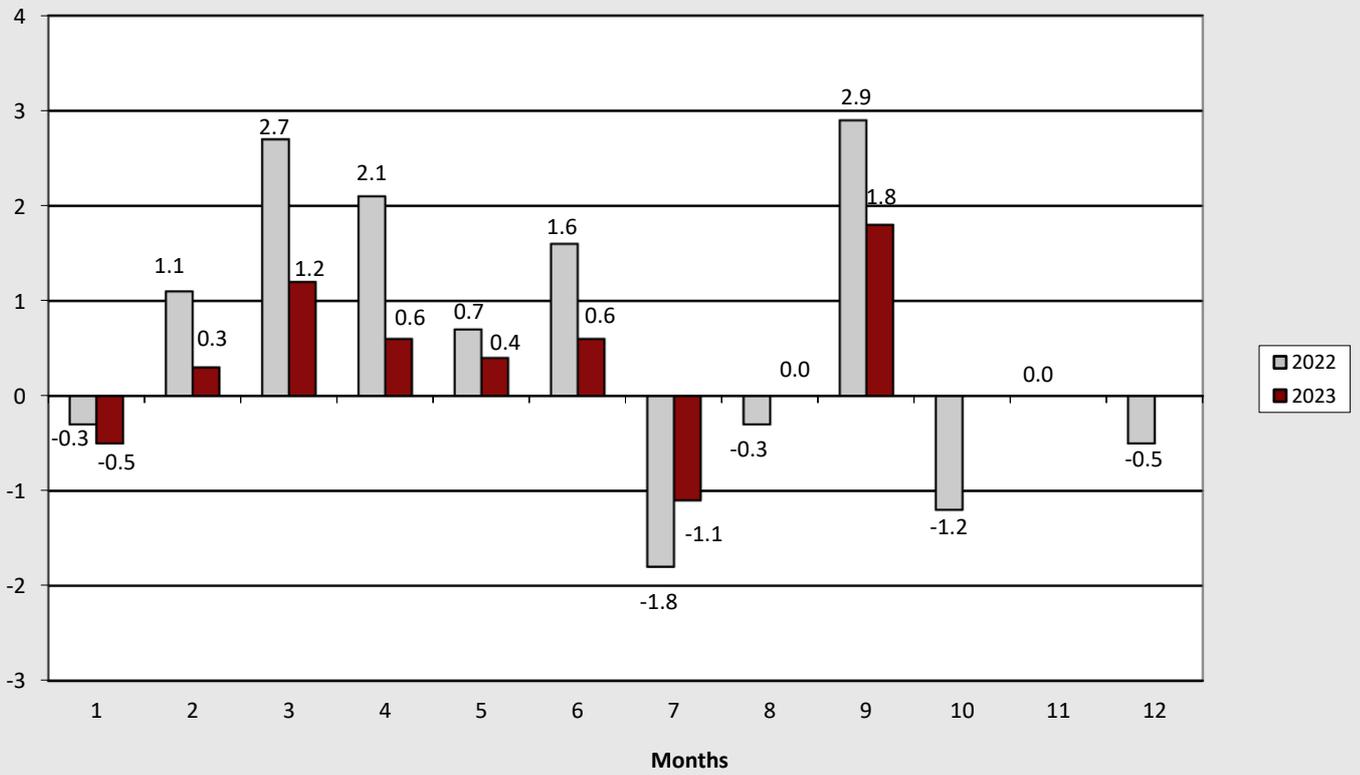
**Table 4. Major price changes from index comparison between  
September 2023 and August 2023 and their impact  
on the Overall CPI**

<b>Goods and services</b>	<b>Rate of change (%)</b>	<b>Impact</b>
Breakfast cereals	5.2	0.01
Olive oil	6.7	0.06
Other edible oils	6.0	0.01
Fresh vegetables	10.2	0.15
Other bakery products	-1.7	-0.01
Beef	-0.6	-0.01
Milk-cheese and eggs	-2.2	-0.08
Frozen vegetables	-3.8	-0.01
Sugar-chocolates-sweets-ice creams	-1.0	-0.01
Alcoholic beverages (not served)	-0.8	-0.01
Rentals for dwellings	0.6	0.02
Natural gas	14.4	0.05
Electricity	-0.4	-0.01
Household textiles	5.2	0.01
Non-durable household articles	-1.3	-0.03
Fuels and lubricants	2.4	0.13
Passenger transport by air	-10.9	-0.12
Primary education	3.1	0.03
Secondary education	3.1	0.06
Restaurants-confectioneries-cafes-buffets	1.3	0.15
Hotels-motels-inns	5.1	0.04
Other appliances and articles for personal care	-2.8	-0.09
Recovery of prices up to normal levels before the summer sales period	-	1.52

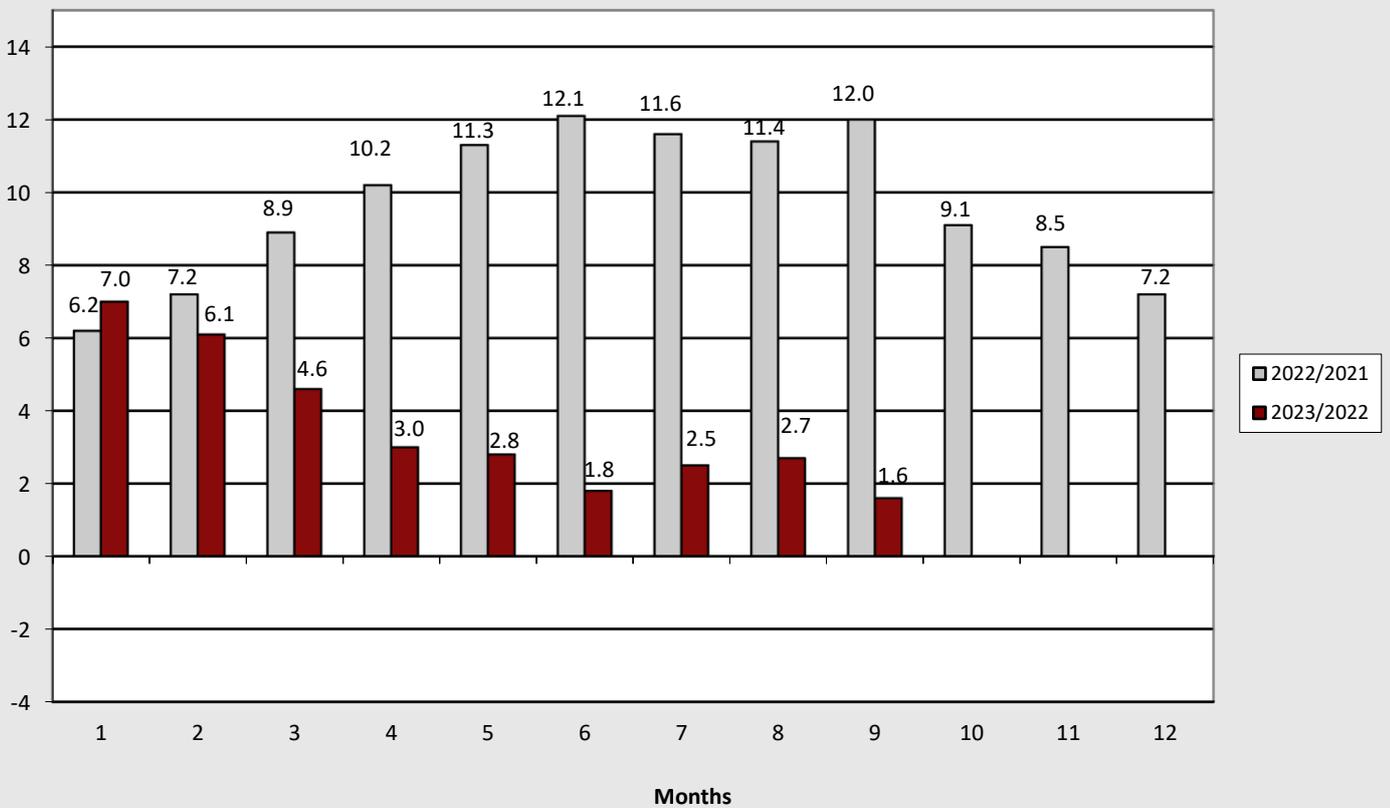
**Table 5. Major price changes from index comparison between September 2023 and September 2022 and their impact on the Overall CPI**

<b>Goods and services</b>	<b>Rate of change (%)</b>	<b>Impact</b>
Bread and cereals	4.8	0.16
Meat	8.4	0.38
Fish	4.1	0.06
Milk cheese and eggs	6.7	0.24
Oils and fats	16.1	0.20
Fruit	13.9	0.22
Vegetables	17.7	0.48
Sugar-chocolates-sweets-ice creams	8.2	0.09
Food n.e.c.	9.1	0.04
Coffee-cocoa-tea	6.0	0.04
Mineral water-refreshments-fruit juices	13.9	0.08
Alcoholic beverages (not served)	5.7	0.08
Clothing and footwear	6.2	0.34
Electricity	-1.2	-0.04
Natural gas	-82.0	-2.23
Heating oil	-20.7	-0.68
Rentals for dwellings	6.3	0.21
Services for the repair and maintenance of the dwelling	3.0	0.02
Solid fuels	19.2	0.12
Household appliances and repair	2.0	0.01
Glassware-tableware and utensils of domestic use	5.4	0.01
Non-durable household articles	3.3	0.07
Domestic services	7.2	0.06
Pharmaceutical products	11.8	0.27
Medical-dental and paramedical services	5.5	0.11
Hospital care	0.9	0.02
New motor cars	3.0	0.07
Second hand motor cars	9.0	0.14
Spare parts and accessories of motor cars	6.6	0.02
Fuels and lubricants	0.9	0.01
Maintenance and repair of motor cars-motor cycles	5.3	0.03
Passenger transport by air	7.9	0.12
Telephone services	-3.5	-0.14
Major durables for recreation and culture	2.2	0.01
Small recreational items-flowers-pets	5.8	0.05
Cinemas-theatres	10.6	0.02
Package holidays	9.1	0.02
Primary education	3.8	0.04
Secondary education	3.5	0.07
Restaurants-confectioneries-cafes-buffets	5.6	0.58
Hairdressing salons and personal grooming establishments	4.0	0.04
Other appliances and articles for personal care	1.8	0.05
Private insurance connected with health	5.7	0.03
Motor vehicle insurance	2.1	0.03

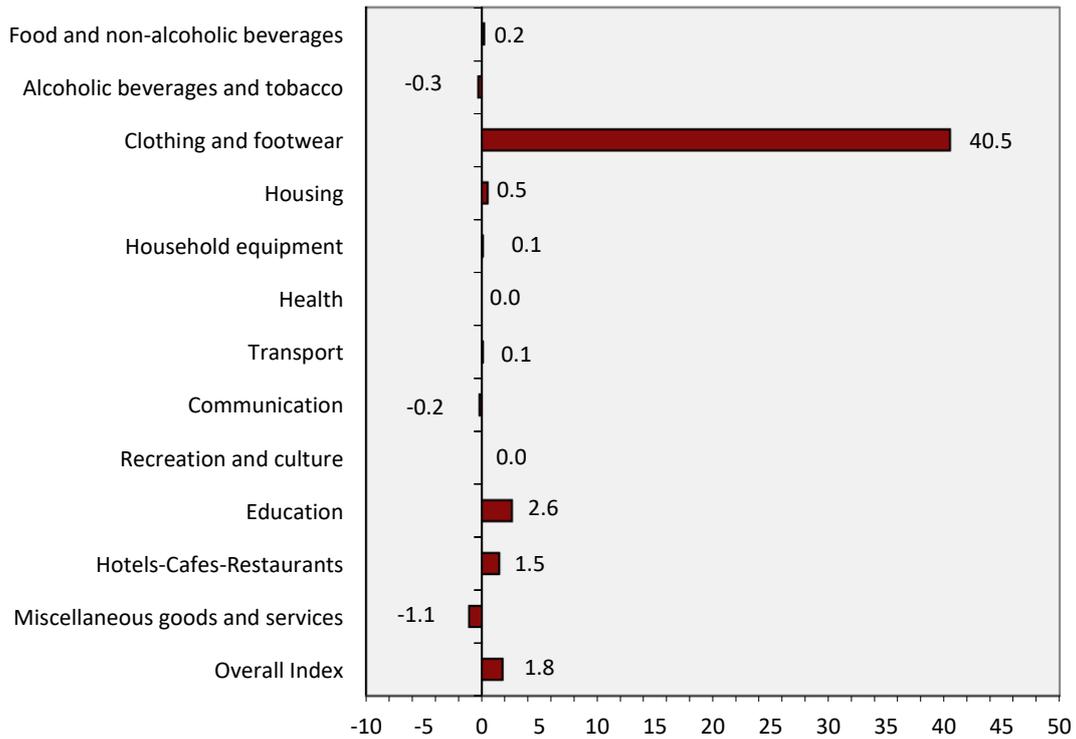
**Graph 3. Monthly rates of change (%) of the overall CPI, 2022 and 2023**



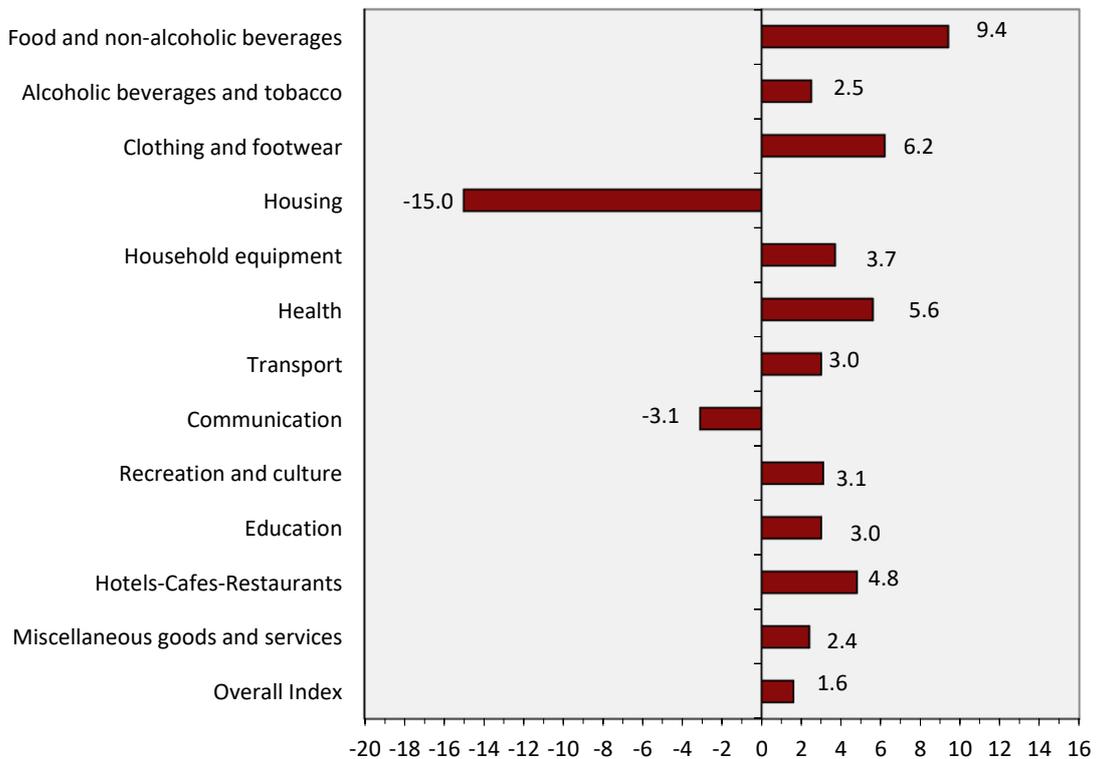
**Graph 4. Annual rates of change (%) of the overall CPI, 2022 and 2023**



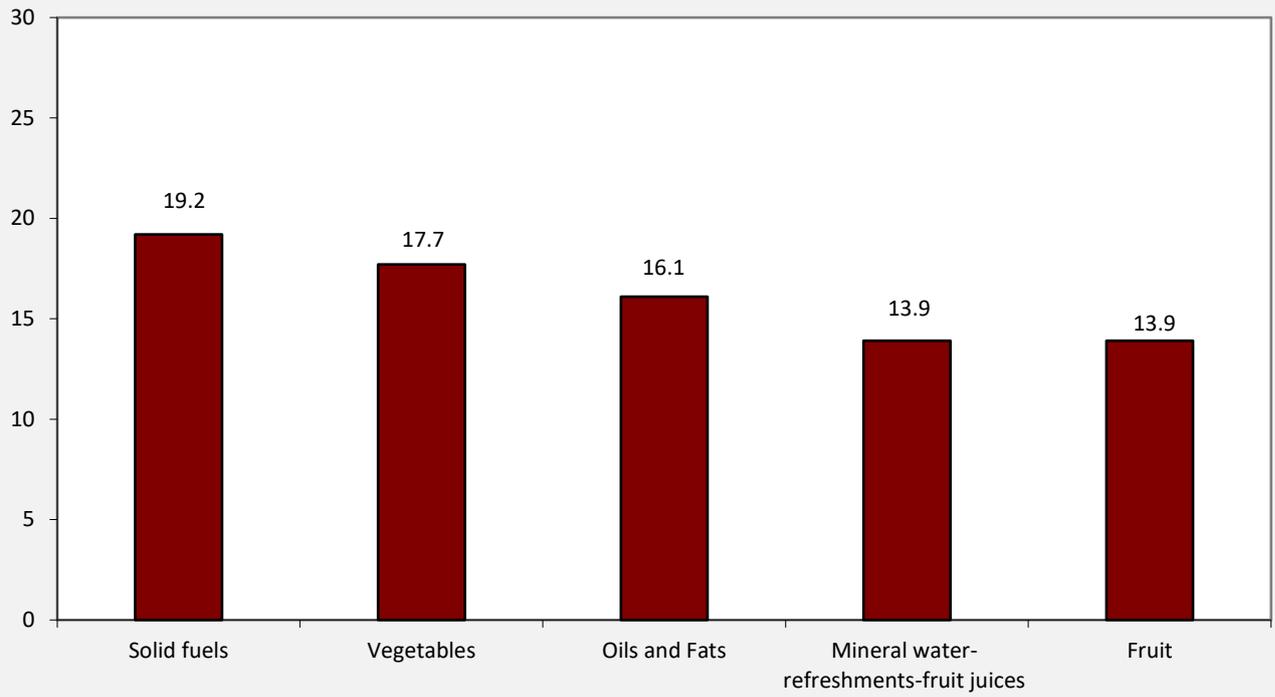
**Graph 5. Monthly rates of change (%) of CPI between September 2023 and August 2023**



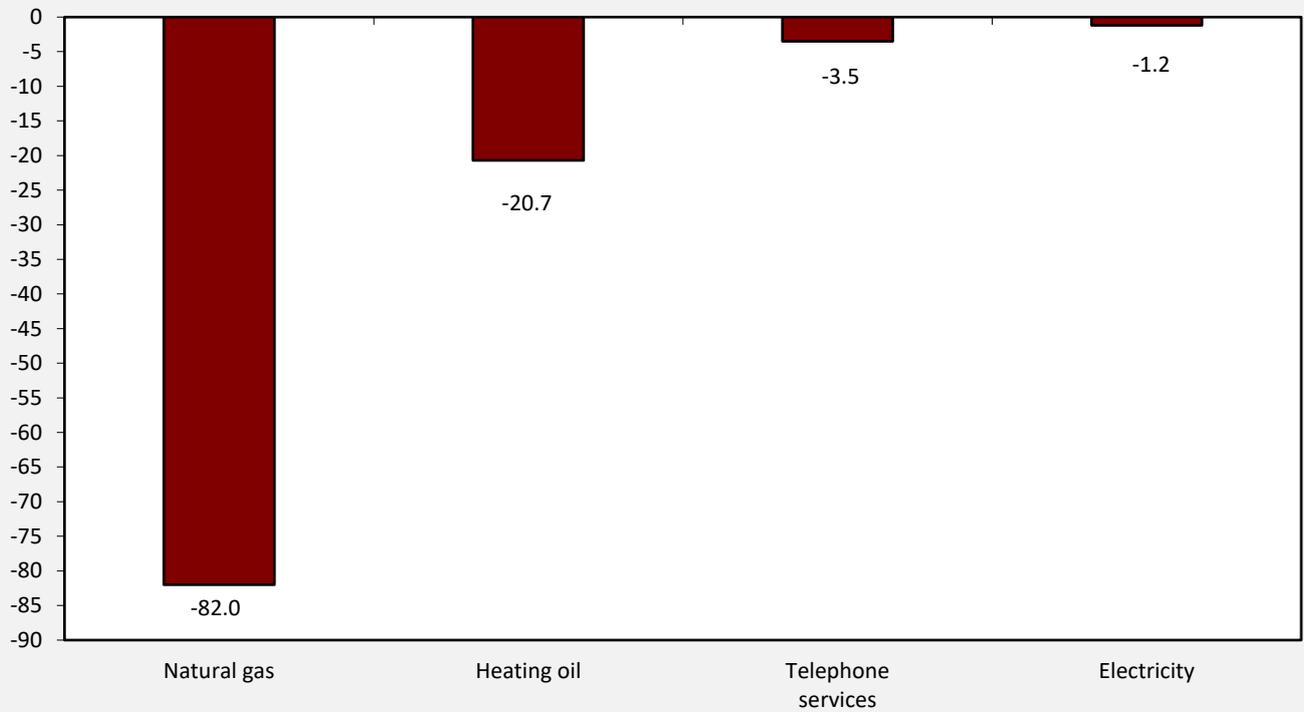
**Graph 6. Annual rates of change (%) of CPI between September 2023 and September 2022**



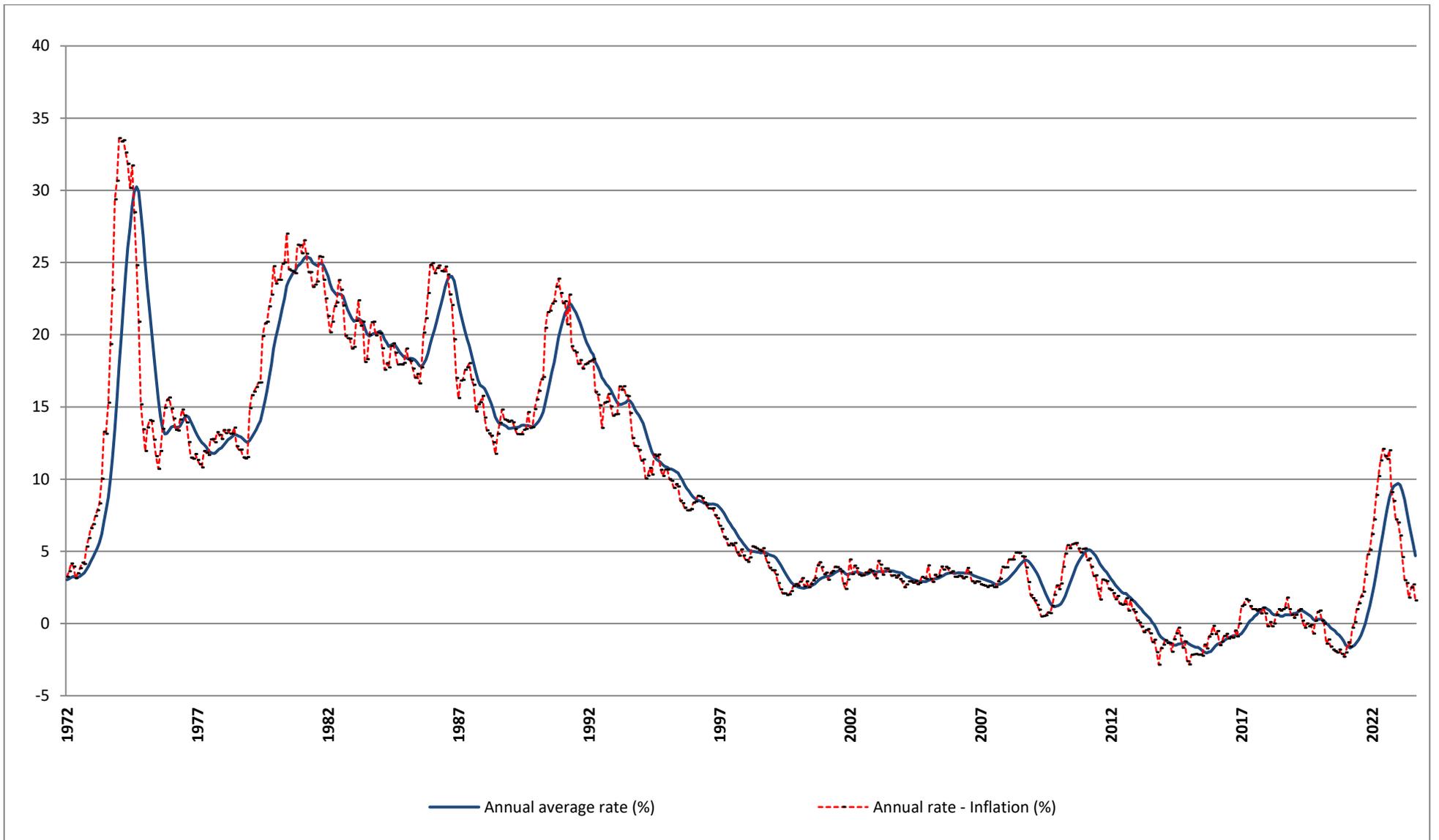
Graph 7. CPI highest annual increases (%)



Graph 8. CPI highest annual decreases (%)



Graph 9. Historical evolution of CPI, 1972 – 2023



## METHODOLOGICAL NOTES

<b>Generally</b>	The Consumer Price Index (CPI) is compiled by the Hellenic Statistical Authority (ELSTAT) since 1959. Until the year 2000, the CPI referred to the urban areas of the Country, while from 2001 onwards it refers to the whole Country covering urban, semi-urban and rural areas.
<b>Purpose of the index</b>	The purpose of the CPI is to measure the general level of prices of goods and services purchased by the average Greek household.
<b>Legal basis</b>	<a href="#">Law 3832/2010</a> .
<b>Reference period</b>	Month.
<b>Base</b>	December of the previous year.
<b>Reference year</b>	2020=100.0.
<b>Chain linking Index</b>	The CPI index follows the chain linking method, introducing new weights annually and having as a base the December of the previous year. The weights are estimated on the basis of the most recent available data of the Household Budget Survey (HBS), extrapolated to the prices of December. The CPI, adjusted on an annual basis to the most recent consumption expenditure pattern of the private households of the Country, ensures the representativeness of goods and services, which compose the “basket” of purchases of the average household.
<b>Geographical and population coverage of the CPI</b>	The CPI refers to the whole Country and covers the resident households of the territory excluding collective households (hospitals, homes for the elderly, boarding houses, prisons, etc.) and non-resident households (tourists) in the Country.
<b>Classification of items</b>	The classification of the CPI items (goods and services) is based on the international classification COICOP (Classification of Individual Consumption by Purpose) as this has been adapted to the needs of the HICPs of the EU Member States with the COICOP5/HICP classification.
<b>Weights of items</b>	The weights of CPI items are updated every year, on the basis of the most recent available data of HBS. The weights are calculated as the share (%) of the expenditures for each group, subgroup and item (good or service) to the total household expenditure of the average household.
<b>Price collection Cities</b>	The CPI prices are collected in 27 cities with representative markets for the coverage of the 13 Regions of the Country. The selection criteria of the price collection cities are the size and the particularities of their markets, the possibility of continuous price collection, the comparability of the index and the cost of price collection.
<b>Population weights</b>	The calculation of the population weights by regions is based on the population data of the 2011 General Population Census and the expenditure data of the latest available HBS by regions.
<b>Selection of items</b>	<a href="#">The composition of the "household basket"</a> i.e. the selection of goods and services which are included in the calculation of CPI is updated annually, using the results of the latest available HBS, other market research, etc. The chain linking methodology allows the change of items of the household basket on an annual basis, in order to ensure the representativeness of the items involved in the calculation of groups and subgroups of CPI.
<b>Price collection-Outlets</b>	The prices collection outlets are retail stores, enterprises providing services, street markets etc. which are considered representative of the branches of shops, where the households make their purchases in the 27 selected cities. The methodology allows the renewal of price collection sources, annually, in order to maintain their representativeness in the calculation of CPI. Prices are collected by employees of ELSTAT as well as by external price collectors, hired on a temporary basis. They pay a visit to the selected outlets within a specific time period of a month (monthly prices) or on a specific day of the week (weekly prices). The collected prices correspond to the prices actually faced by the consumer.
<b>Specification-Substitution of items</b>	All the collected items are defined by the specification, that is the particular characteristics which determine the quality, the trade show and the identity, in general, of good products (such as brand, weight, package etc), in order to avoid any price variations attributable to differences in the specification. Once a specified item (good or service) is no longer available in the market or has ceased to be important, as regards consumption, it is substituted by a newly specified item, which has taken its place in the market.

## Calculation of the Consumer Price Index

The Consumer Price Index is a Laspeyres-type index and it is calculated based on December of the previous year.

### Implementation of formula in five-digit level of COICOP5

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

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

where:

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

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

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

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

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

**Publication of data** The published CPI time series (reference year 2020=100.0), covers the period from January 1959 onwards. The CPI data are released each month as scheduled, in accordance with the Releases Calendar of ELSTAT, with the [Release and the tables](#).

**References** Further information concerning the methodology and the compilation of the CPI is available in the [Methodological Publication CPI \(2009=100.0\)](#) and the [Single Integrated Metadata Structure \(SIMS\)](#).