# CONSUMER PRICE INDEX: July 2023, annual inflation 2.5%

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

The CPI in July 2023 compared with July 2022, increased by 2.5%. In July 2022, the annual rate of change of the CPI was 11.6% (Table 2).

The CPI in July 2023 compared with June 2023, decreased by 1.1%. In July 2022, the monthly rate of change of the CPI was -1.8% (Table 1).

The average CPI for the twelve - month period from August 2022 to July 2023, compared with the corresponding index for the period August 2021 to July 2022 increased by 6.2%. The annual rate of change of the average CPI between the twelve - month period August 2021 to July 2022 in comparison to the period August 2020 to July 2021 was 7.1% (Table 3).

Graph 1. Annual and annual average rates of change (%) of CPI
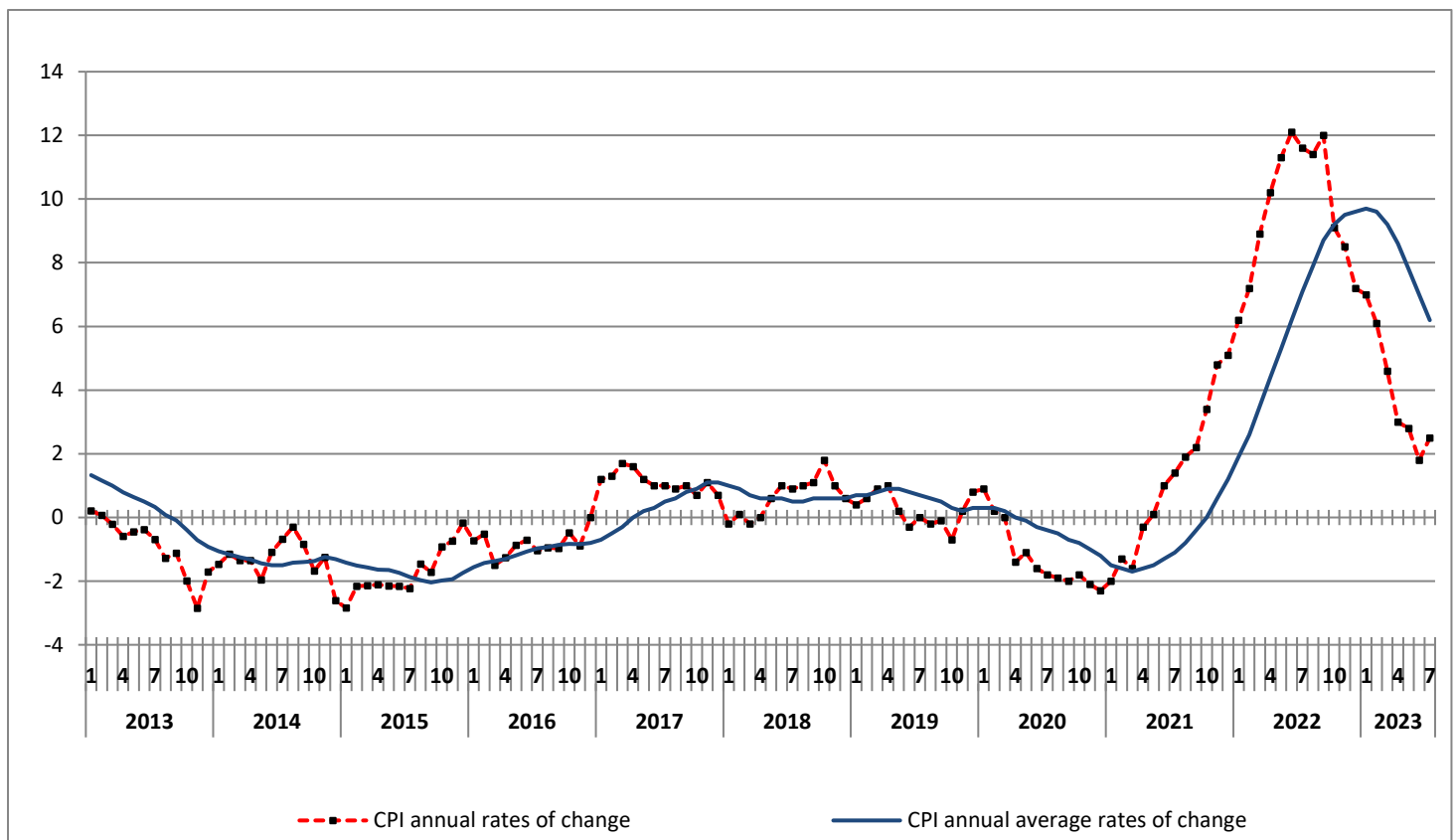
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Analysis of changes of the CPI: July 2023

The 1.1% decrease of the Overall CPI in July 2023, compared with the corresponding index in June 2023 is, mainly, due to the changes in the groups of goods and services as follows:

1. A decrease of:

- 23.8% in the group <u>Clothing and footwear</u>, due to the period of summer sales.
- 0.5% in the group <u>Housing</u>, due to the decrease, mainly, in the prices of: *electricity, natural gas.* This decrease was partly offset by the increase, mainly, in the prices of *rentals for dwellings.*
- 0.9% in the group <u>Household equipment</u>, due to the period of summer sales.
- 0.3% in the group <u>Communication</u>, due to the decrease, mainly, in the prices of *telephone services*.
- 0.3% in the group <u>Miscellaneous goods and services</u>, due to the decrease, mainly, in the prices of *other personal effects.*

2. An increase of:

- 0.6% in the group <u>Alcoholic beverages and tobacco</u>, due to the increase, mainly, in the prices of *wines.*
- 0.2% in the group <u>Health</u>, due to the increase, mainly, in the prices of *medical-dental and paramedical services.*
- 1.1% in the group <u>Transport</u>, due to the increase, mainly, in the prices of: *new motor cars, petrol, tickets for passenger transport by air.*
- 0.2% in the group <u>Hotel-Cafés-Restaurants</u>, due to the increase, mainly, in the prices of *hotels-motels-inns.*

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

The 2.5% increase of the Overall CPI in July 2023, compared with the corresponding index in July 2022 is, mainly, due to the changes in the groups of goods and services as follows:

1. An increase of:

- 12.3% in the group <u>Food and non-alcoholic beverages</u> 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.*
- 3.4*% in the group* <u>Alcoholic beverages and tobacco</u>*,* due to the increase, mainly, in the prices of *alcoholic beverages (not served).*
- 5.2% in the group <u>Clothing and footwear</u>, due to the increase in the prices of clothing and footwear*.*
- 6.4% in the group <u>Household equipment</u>, 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*.
- 7.8% in the group <u>Health</u>, due to the increase, mainly, in the prices of: *pharmaceutical products, medical-dental and paramedical services, hospital care.*
- 3.5% in the group <u>Recreation and culture</u>, due to the increase, mainly, in the prices of: *major durables for recreation and culture, small recreational items-flowers-pets, cinemas-theatres, package holidays.*
- 2.2% in the group <u>Education</u>, due to the increase, mainly, in the prices of: *fees of primary education*, *fees of secondary education.*
- 6.2% in the group <u>Hotel-Cafés-Restaurants</u>, due to the increase, mainly, in the prices of *restaurants-confectioneries-cafes-buffets*.
- 3.6% in the group <u>Miscellaneous goods and services</u>, due to the increase, mainly, in the prices of: *hairdressing salons and personal grooming establishments, other appliances and articles for personal care, other personal effects, private insurance connected with health, motor vehicle insurance.*

2. A decrease of:

- 11.8% in the group <u>Housing</u>, 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, co-proprietor charges, liquefied oil, solid fuels*.
- 3.7% in the group <u>Transport</u>, due to the decrease, mainly, in the prices of *fuels and lubricants.* This decrease was partly offset by the increase, mainly, in the prices of: *new motor cars, second hand motor cars, motor cycles, spare parts and accessories for motor cars, maintenance and repair of motor cars-motor cycles, tickets for passenger transport by air*.
- 2.8% in the group <u>Communication</u>, 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 July	2022 June	Rate of change %	2022 July	2021 June	Rate of change %
1. Food & non-alcoholic beverages	216.27	127.76	127.79	0.0	113.72	113.88	-0.1
2. Alcoholic beverages and tobacco	35.53	105.12	104.49	0.6	101.62	101.05	0.6
3. Clothing and footwear	51.86	92.76	121.79	-23.8	88.19	114.99	-23.3
4. Housing	136.85	118.06	118.61	-0.5	113.92	134.38	-0.3
5. Household equipment	46.94	113.36	114.37	-0.9	106.52	106.30	0.2
6. Health	73.28	107.62	107.35	0.2	99.79	99.63	0.2
7. Transport	136.96	122.08	120.71	1.1	126.82	130.64	-2.9
8. Communication	42.29	92.91	93.14	-0.3	95.62	95.69	-0.1
9. Recreation and culture	37.91	104.58	104.53	0.0	101.04	100.92	0.1
10. Education	36.66	103.12	103.12	0.0	100.93	100.93	0.0
11. Hotels-Cafés-Restaurants	115.24	112.98	112.73	0.2	106.36	106.09	0.3
12. Miscellaneous goods and services	70.21	104.55	104.83	-0.3	100.94	100.56	0.4
Overall Index	**1000.00**	**114.30**	**115.62**	**-1.1**	**111.54**	**113.62**	**-1.8**

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

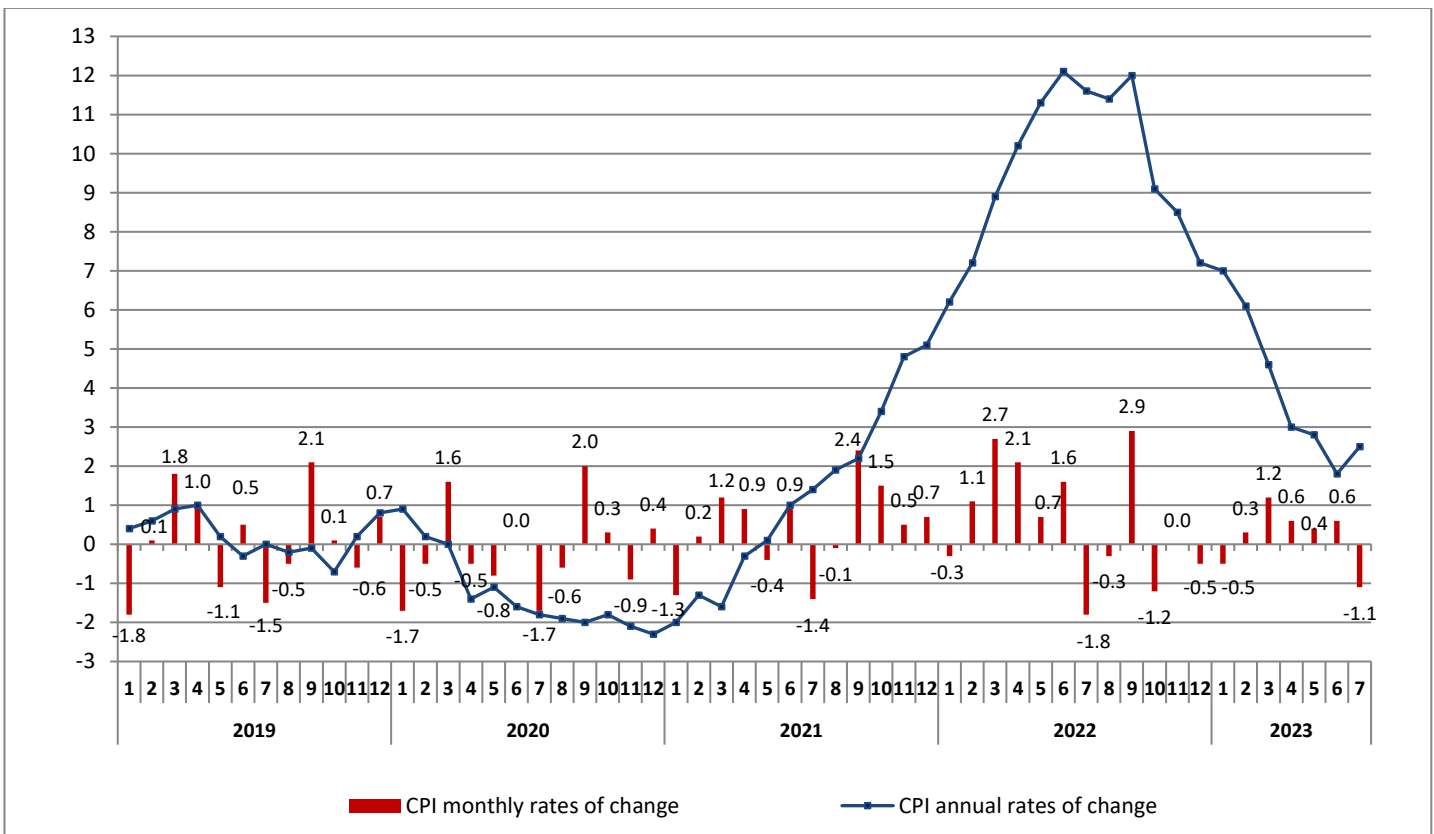## Graph 2. Annual and monthly rates of change (%) of CPI

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

I: July 2023/2022

	Main groups of goods and services	July		Rate of change (%)	Impact
		2023	**2022**		
1.	Food and non-alcoholic beverages	127.76	113.72	12.3	2.6105
2.	Alcoholic beverages and tobacco	105.12	101.62	3.4	0.1237
3.	Clothing and footwear	92.76	88.19	5.2	0.4620
4.	Housing	118.06	133.92	-11.8	-1.9948
5.	Household equipment	113.36	106.52	6.4	0.2859
6.	Health	107.62	99.79	7.8	0.5768
7.	Transport	122.08	126.82	-3.7	-0.5765
8.	Communication	92.91	95.62	-2.8	-0.1169
9.	Recreation and culture	104.58	101.04	3.5	0.1242
10.	Education	103.12	100.93	2.2	0.0626
11.	Hotels-Cafés-Restaurants	112.98	106.36	6.2	0.6791
12.	Miscellaneous goods and services	104.55	100.94	3.6	0.2344
	Overall Index	**114.30**	**111.54**	**2.5**	

II: July 2022/2021

	Main groups of goods and services	July		Rate of change (%)	Impact
		2022	**2021**		
1.	Food and non-alcoholic beverages	113.72	100.60	13.0	2.8605
2.	Alcoholic beverages and tobacco	101.62	100.15	1.5	0.0630
3.	Clothing and footwear	88.19	85.32	3.4	0.0526
4.	Housing	133.92	102.34	30.9	4.5046
5.	Household equipment	106.52	98.49	8.2	0.3790
6.	Health	99.79	99.11	0.7	0.0592
7.	Transport	126.82	105.16	20.6	2.8722
8.	Communication	95.62	97.69	-2.1	-0.0900
9.	Recreation and culture	101.04	99.10	2.0	0.0696
10.	Education	100.93	100.03	0.9	0.0333
11.	Hotels-Cafés-Restaurants	106.36	99.96	6.4	0.6201
12.	Miscellaneous goods and services	100.94	98.48	2.5	0.1667
	Overall Index	**111.54**	**99.96**	**11.6**	

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 %
2020 : 1	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
Annual average	*100.00*	-	-	*100.00*	*-1.2*
2021 : 1	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
Annual average	*101.22*	-	-	*101.22*	*1.2*
2022 : 1	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
Annual average	*110.99*	-	-	*110.99*	*9.6*
2023 : 1	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

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 July 2023 and June 2023 and their impact on the Overall CPI

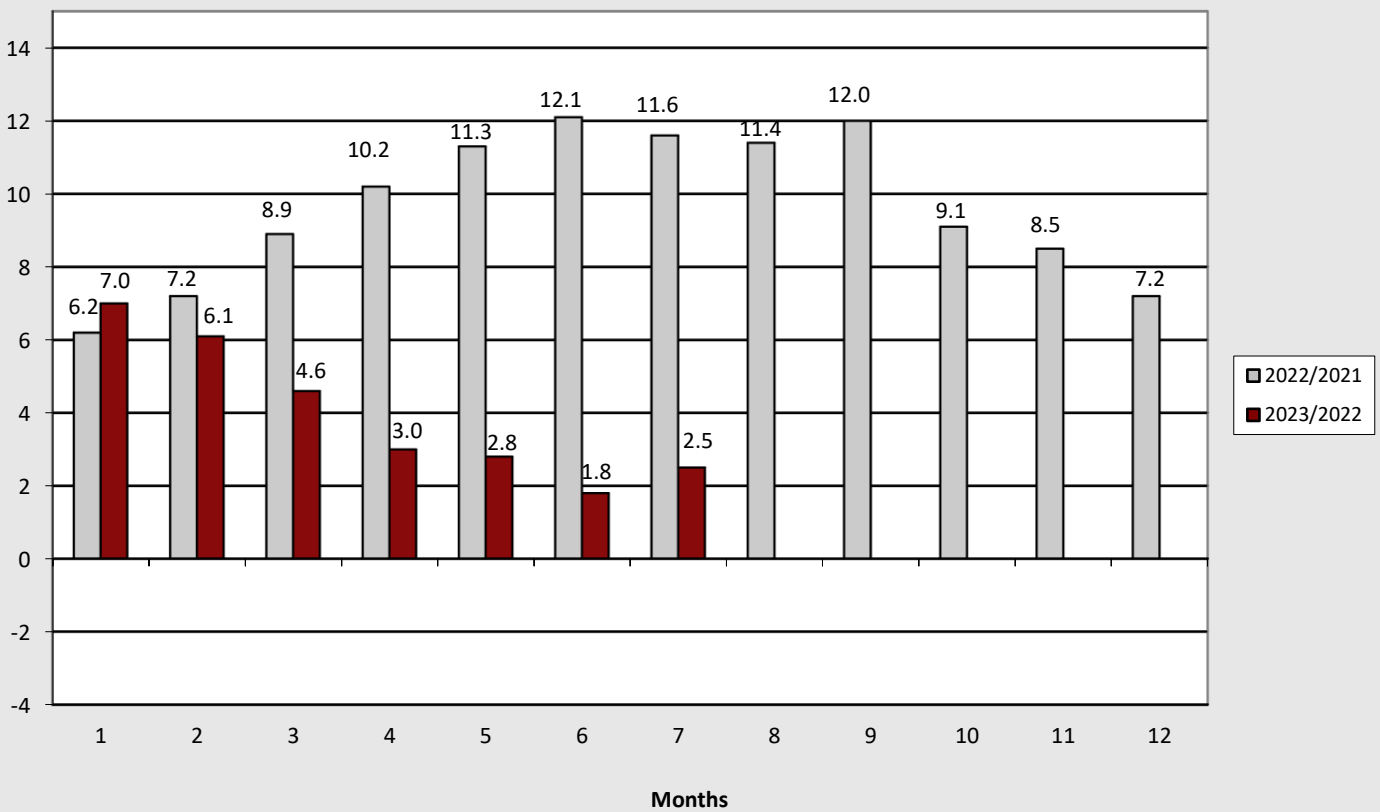| Goods and services	Rate of change (%)	Impact
Bread and cereals	0.6	0.02
Meat	0.8	0.04
Fresh fish	2.5	0.03
Milk cheese and eggs	0.9	0.03
Fresh vegetables	1.9	0.03
Frozen vegetables	6.7	0.02
Fresh fruit	-9.3	-0.17
Wines	3.1	0.02
Electricity	-2.2	-0.08
Natural gas	-5.9	-0.02
Rentals for dwellings	1.0	0.03
Medical-dental and paramedical services	0.8	0.01
New motor cars	0.6	0.01
Petrol	1.0	0.04
Passenger transport by air	8.5	0.09
Telephone services	-0.2	-0.01
Hotels-motels-inns	2.9	0.02
Other personal effects	-3.1	-0.01
Summer sales	-	-1.24

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

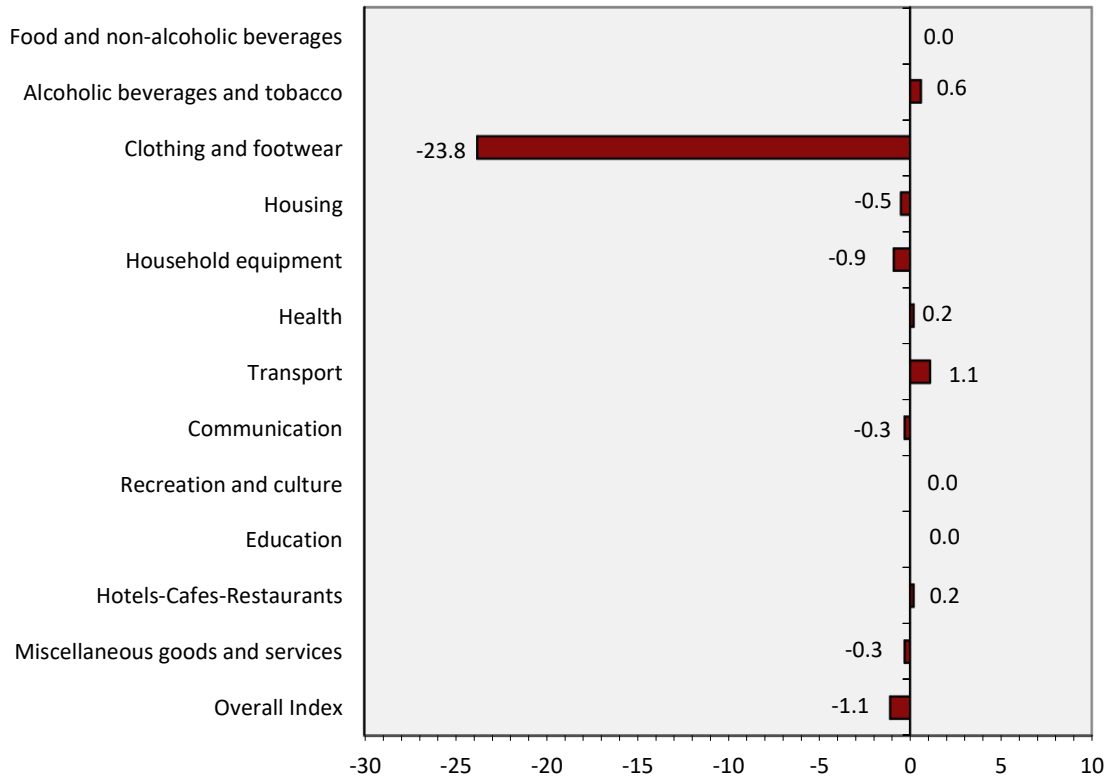| Goods and services	Rate of change (%)	Impact
Bread and cereals	8.6	0.29
Meat	10.9	0.50
Fish	8.3	0.13
Milk cheese and eggs	14.4	0.50
Oils and fats	10.6	0.14
Fruit	19.4	0.32
Vegetables	15.5	0.42
Sugar-chocolates-sweets-ice creams	11.6	0.12
Food n.e.c.	13.7	0.06
Coffee-cocoa-tea	9.2	0.06
Mineral water-refreshments-fruit juices	13.3	0.08
Alcoholic beverages (not served)	8.1	0.12
Clothing and footwear	5.2	0.46
Electricity	-16.2	-0.87
Natural gas	-68.9	-0.83
Heating oil	-20.7	-0.70
Rentals for dwellings	5.6	0.19
Services for the repair and maintenance of the dwelling	3.8	0.03
Co-proprietor charges	2.1	0.02
Liquefied gas	9.0	0.01
Solid fuels	26.6	0.16
Household appliances and repair	3.2	0.02
Glassware-tableware and utensils of domestic use	8.7	0.02
Non-durable household articles	7.9	0.16
Domestic services	7.9	0.07
Pharmaceutical products	18.7	0.44
Medical-dental and paramedical services	5.5	0.11
Hospital care	1.5	0.03
Fuels and lubricants	-15.6	-1.14
Passenger transport by air	11.6	0.24
New motor cars	4.2	0.10
Second hand motor cars	9.0	0.14
Motor cycles	5.1	0.01
Spare parts and accessories of motor cars	11.5	0.04
Maintenance and repair of motor cars-motor cycles	5.0	0.03
Telephone services	-2.9	-0.12
Major durables for recreation and culture	2.3	0.01
Small recreational items-flowers-pets	6.6	0.05
Cinemas-theatres	10.9	0.02
Package holidays	9.9	0.02
Primary education	2.6	0.02
Secondary education	2.7	0.04
Restaurants-confectioneries-cafes-buffets	7.1	0.68
Hairdressing salons and personal grooming establishments	4.4	0.04
Other appliances and articles for personal care	4.0	0.11
Other personal effects	3.5	0.01
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
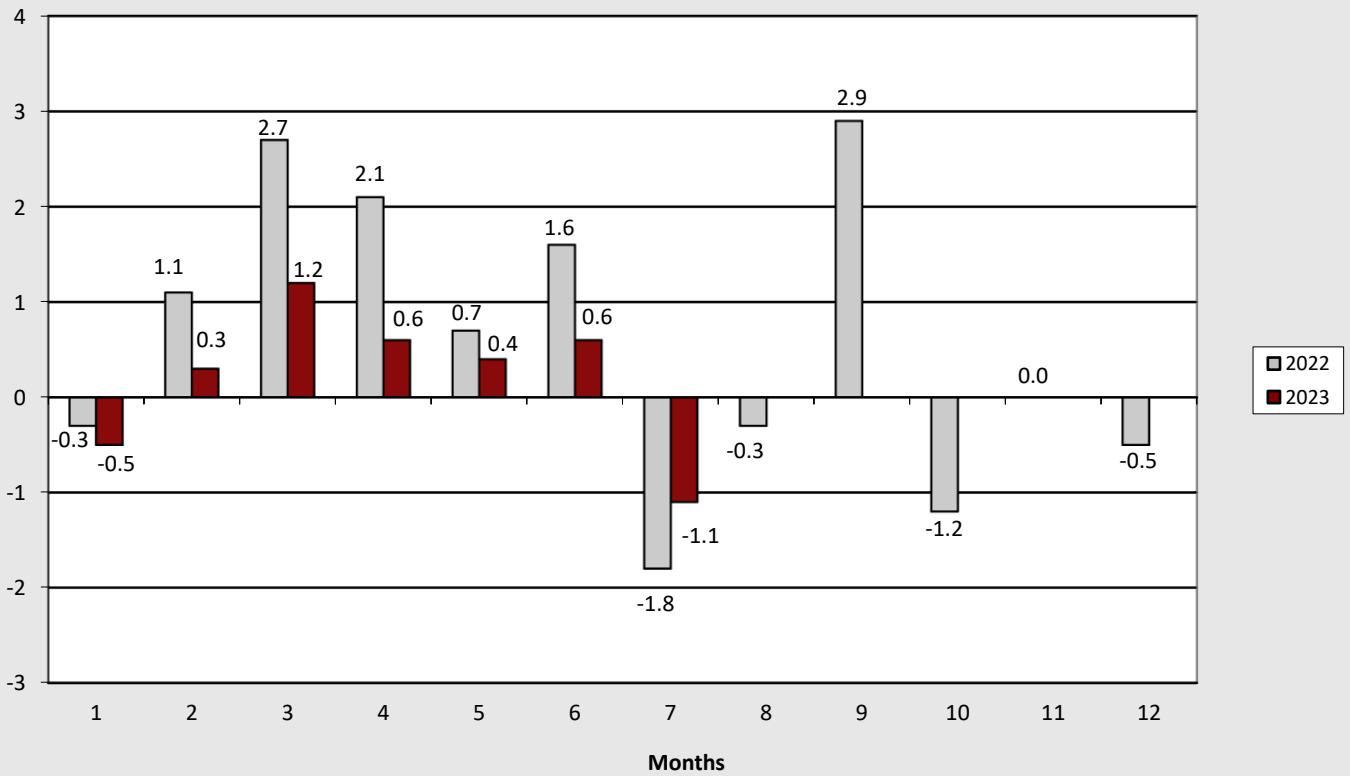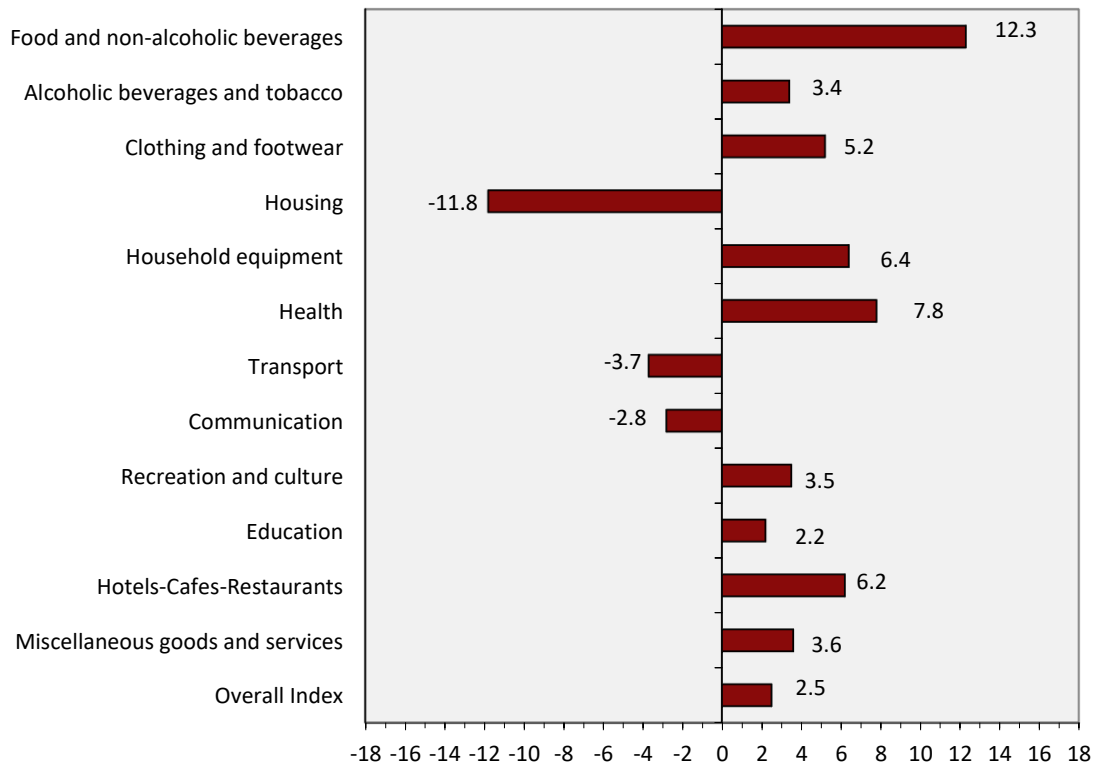

Months

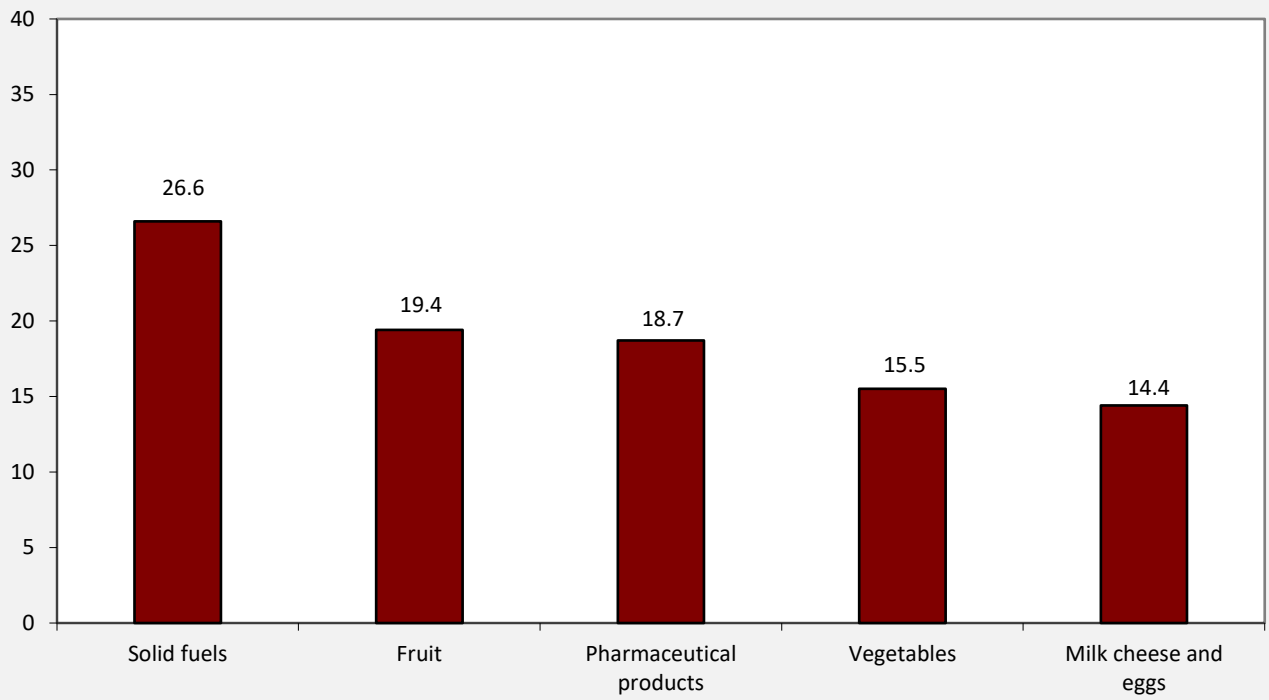**Graph 4. Annual rates of change (%) of the overall CPI, 2022 and 2023**

Months

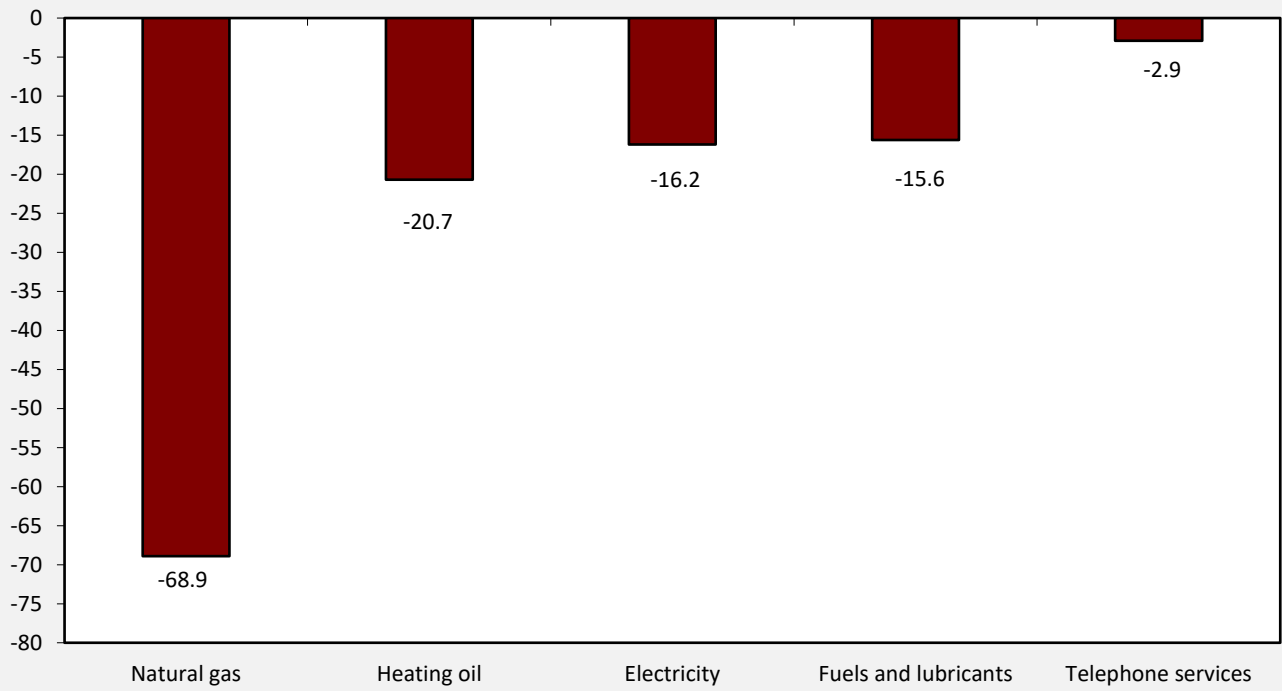**Graph 5. Monthly rates of change (%) of CPI between July 2023 and June 2023**

Category	Value
Food and non-alcoholic beverages	0.0
Alcoholic beverages and tobacco	0.6
Clothing and footwear	-23.8
Housing	-0.5
Household equipment	-0.9
Health	0.2
Transport	1.1
Communication	-0.3
Recreation and culture	0.0
Education	0.0
Hotels-Cafes-Restaurants	0.2
Miscellaneous goods and services	-0.3
Overall Index	-1.1

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

Category	Value
Food and non-alcoholic beverages	12.3
Alcoholic beverages and tobacco	3.4
Clothing and footwear	5.2
Housing	-11.8
Household equipment	6.4
Health	7.8
Transport	-3.7
Communication	-2.8
Recreation and culture	3.5
Education	2.2
Hotels-Cafes-Restaurants	6.2
Miscellaneous goods and services	3.6
Overall Index	2.5

Graph 7. CPI highest annual increases (%)

Category	Value
Solid fuels	26.6
Fruit	19.4
Pharmaceutical products	18.7
Vegetables	15.5
Milk cheese and eggs	14.4

Graph 8. CPI highest annual decreases (%)

Category	Value
Natural gas	-68.9
Heating oil	-20.7
Electricity	-16.2
Fuels and lubricants	-15.6
Telephone services	-2.9

Graph 9. Historical evolution of CPI, 1972 – 2023

Legend: —— Annual average rate (%)   - - - - Annual rate - Inflation (%)

Generally	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.
Purpose of the index	The purpose of the CPI is to measure the general level of prices of goods and services purchased by the average Greek household.
Legal basis	Law 3832/2010.
Reference period	Month.
Base	December of the previous year.
Reference year	2020=100.0.
Chain linking Index	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.
Geographical and population coverage of the CPI	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.
Classification of items	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.
Weights of items	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.
Price collection Cities	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.
Population weights	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.
Selection of items	The composition of the "household basket" 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.
Price collection-Outlets	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.
Specification-Substitution of items	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.

<u>Implementation of formula in five-digit level of COICOP5</u>

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 <u>Release and the tables</u>.

References

Further information concerning the methodology and the compilation of the CPI is available in the <u>Methodological Publication CPI (2009=100.0)</u> and the <u>Single Integrated Metadata Structure (SIMS)</u>.