PRESS RELEASE

## CONSUMER PRICE INDEX: August 2019, annual inflation -0.2%

The evolution of the Consumer Price Index (CPI) of August 2019 (reference year 2009=100.0) is depicted as follows:

The CPI in August 2019 compared with August 2018 decreased by 0.2%. In August 2018, the annual rate of change of the CPI was 1.0% (Table 2).

The CPI in August 2019 compared with July 2019, decreased by 0.5%. In August 2018, the monthly rate of change of the CPI was -0.3% (Table 1).

The average CPI for the twelve - month period from September 2018 to August 2019, compared with the corresponding index for the period September 2017 to August 2018 increased by 0.6%. The annual rate of change of the average CPI between the twelve - month period September 2017 to August 2018 in comparison to the period September 2016 to August 2017 was 0.5% (Table 3).

Graph 1. Annual and annual average rates of change (%) of CPI
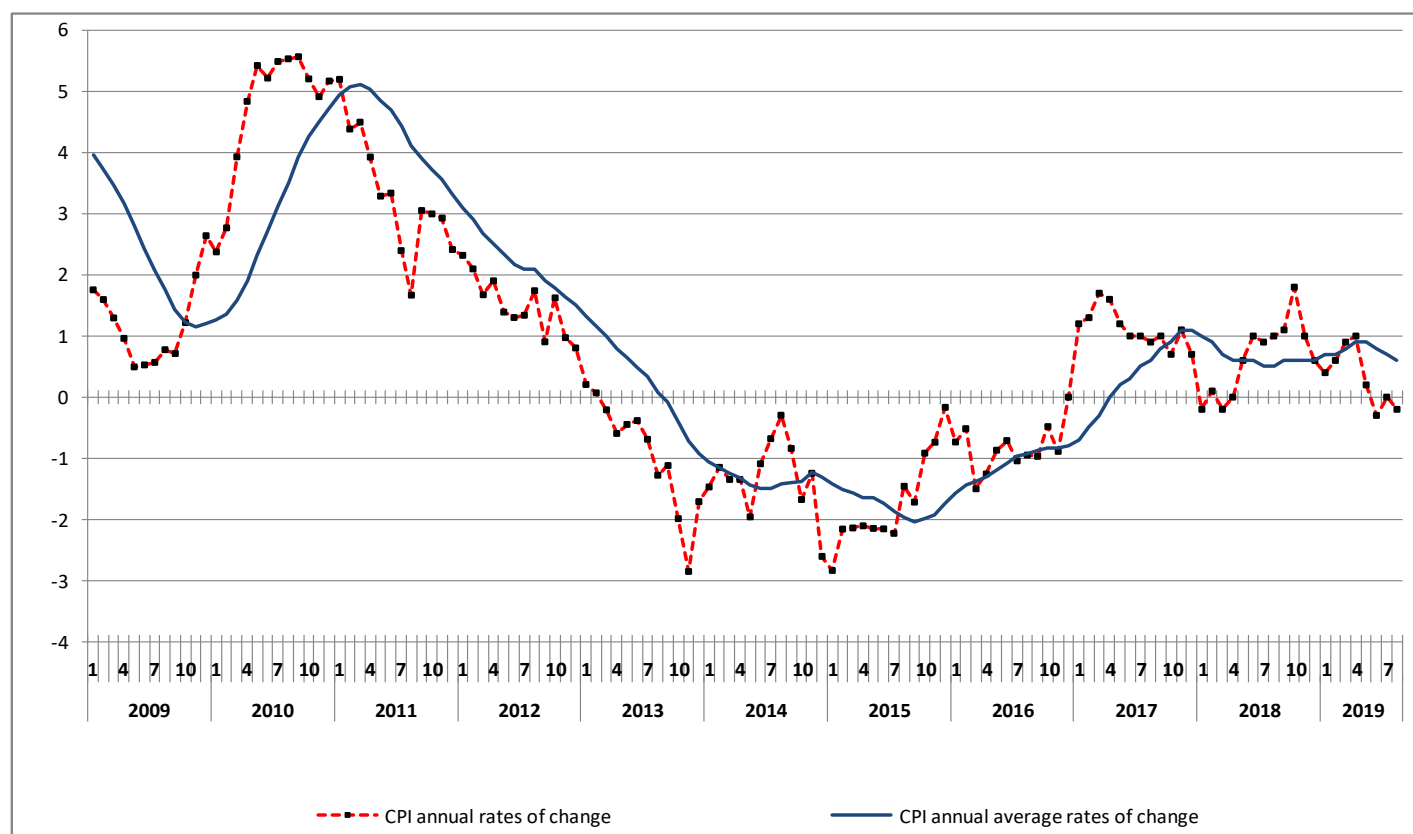
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Analysis of changes of the CPI: August 2019

The 0.5% decrease of the Overall CPI in August 2019, compared with the corresponding index in July 2019 is, mainly, on account of the changes in the groups of goods and services as follows:

1. A decrease of:

- 0.4% in <u>Food and non-alcoholic beverages</u>, due to the decrease, mainly, in the prices of*: cheese, olive oil, fresh vegetables, fresh fruit, potatoes.* This decrease was partly offset by the increase, mainly, in the prices of: *bread and cereals, milk whole fresh.*
- 4.9% in <u>Clothing and footwear</u>, due to the period of summer sales.
- 1.7% in <u>Transport</u>, due to the decrease, mainly, in the prices of *tickets for passenger transport by air.* This increase was partly offset by the decrease, mainly, in the prices of *petrol.*
- 0.2% in <u>Hotel - Cafés - Restaurants</u>, due to the decrease, mainly, in the prices of *hotels-motels-inns.*

2. An increase of*:*

- 0.6% in <u>Miscellaneous goods and services</u>, due to the increase, mainly, in the prices of *other appliances and articles for personal care*.

II. Annual rates of change: August 2019 compared with August 2018 (Tables 2, 5)

The 0.2% decrease of the Overall CPI in August 2019, compared with the corresponding index in August 2018 is, mainly, on account of the changes in the groups of goods and services as follows:

1. A decrease of:

- 1.9% in Food and non-alcoholic beverages due to the decrease, mainly, in the prices of: *bread and cereals, yoghurt, cheese, oils and fats, fresh fruit, preserved or processed vegetables, sugar-chocolates-sweets-ice creams, other food, coffee-cocoa-tea, fruit juices.* This decrease was partly offset by the increase, mainly, in the prices of*: meat, milk whole fresh, fresh vegetables.*
- 0.2% in Clothing and footwear, due to the decrease in the prices of articles of clothing and footwear.
- 0.8% in Housing, 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 *heating oil*.
- 1.6% in Household equipment, due to the decrease, mainly, in the prices of: *household textiles, household appliances and repair, non-durable household articles.*
- 1.7% in Recreation and culture, due to the decrease, mainly, in the prices of *audiovisual and information processing equipment*.
- 0.8% in Education, due to the decrease, mainly, in the prices of *fees of secondary education*.
- 0.8% in Miscellaneous goods and services, due to the decrease, mainly, in the prices of *other appliances and articles for personal care*. This decrease was partly offset by the increase, mainly, in the prices of *motor vehicle insurance*.

2. An increase of:

- 0.7% in Alcoholic beverages and tobacco, due to the increase, mainly, in the prices of *tobacco*.
- 1.9% in Health, due to the increase, mainly, in the prices of *pharmaceutical products.*
- 1.8% in Transport, due to the increase, mainly, in the prices of *tickets for passenger transport by air.* This increase was partly offset by the decrease, mainly, in the prices of *fuels and lubricants.*
- 2.7% in Communication, due to the increase, mainly, in the prices of *telephone services*.
- 0.1% in Hotel – Cafés – Restaurants, due to the increase, mainly, in the prices of: *restaurants-confectioneries-caf*é*s-buffets.* This increase was partly offset by the decrease, mainly, in the prices of *hotels-motels-inns.*

Table 1. Monthly rates of change of CPI
(Reference year: 2009=100.0)

Main groups of goods and services	Weights HBS 2017 (‰)	2019 August	2019 July	Rate of change %	2018 August	2018 July	Rate of change %
1. Food & non-alcoholic beverages	205.76	103.33	103.71	-0.4	105.32	105.23	0.1
2. Alcoholic beverages and tobacco	39.57	148.61	148.78	-0.1	147.56	148.15	-0.4
3. Clothing and footwear	64.79	72.56	76.28	-4.9	72.73	76.05	-4.4
4. Housing	141.34	118.63	118.59	0.0	119.64	119.63	0.0
5. Household equipment	43.29	86.17	86.10	0.1	87.52	87.90	-0.4
6. Health	74.17	99.12	99.06	0.1	97.26	96.82	0.5
7. Transport	142.99	128.38	130.61	-1.7	126.05	127.41	-1.1
8. Communication	43.85	107.54	107.46	0.1	104.73	103.70	1.0
9. Recreation and culture	39.76	87.21	87.34	-0.2	88.72	88.81	-0.1
10. Education	32.49	88.50	88.50	0.0	89.22	89.22	0.0
11. Hotels – Cafés – Restaurants	106.64	109.77	109.96	-0.2	109.66	109.53	0.1
12. Miscellaneous goods and services	65.33	91.05	90.49	0.6	91.75	92.06	-0.3
Overall Index	**1000.00**	**105.31**	**105.89**	**-0.5**	**105.49**	**105.84**	**-0.3**

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

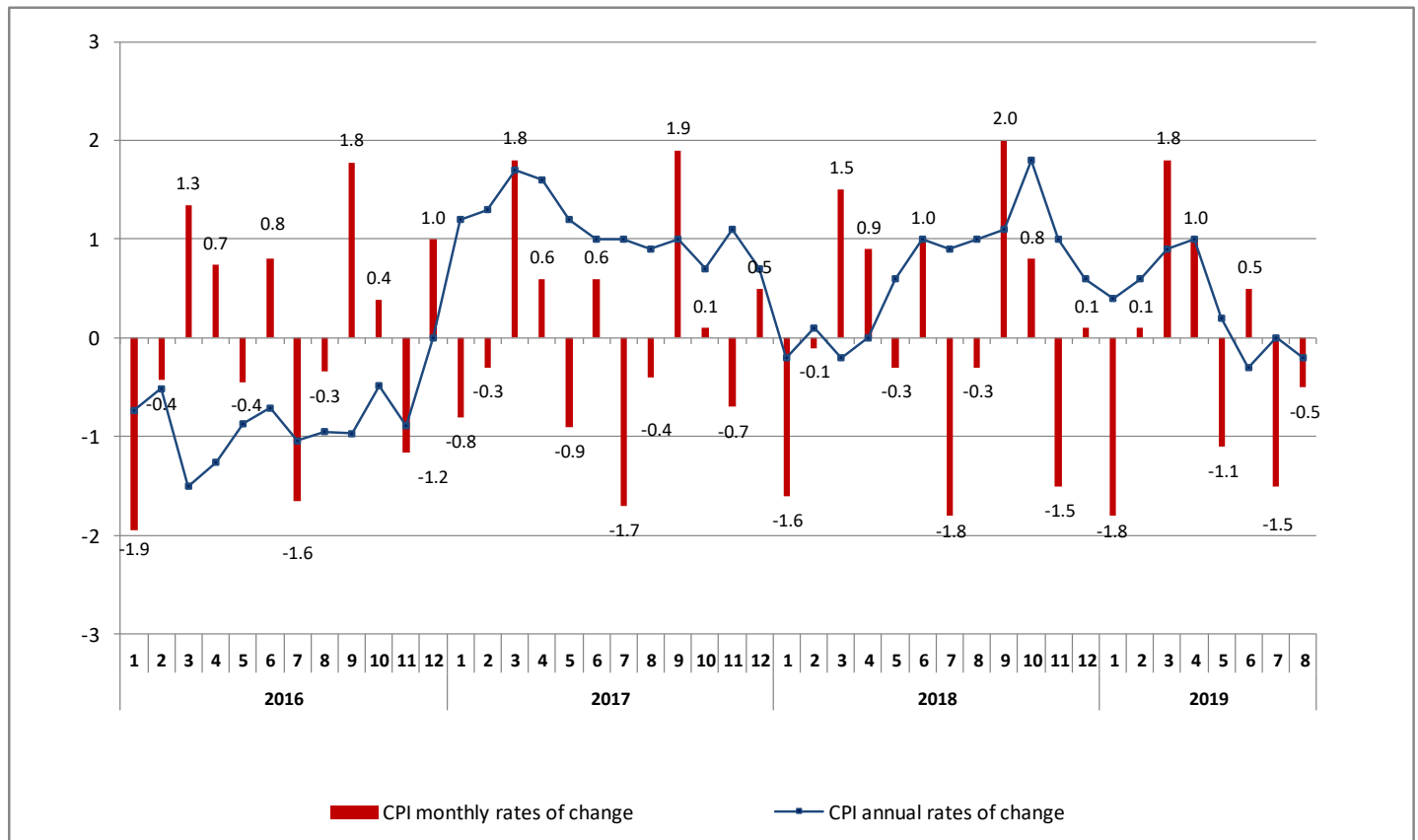## Graph 2. Annual and monthly rates of change (%) of CPI

Table 2. Inflation – Annual rates of change of CPI
(Reference year: 2009=100.0)

I: August 2019/2018

	Main groups of goods and services	August		Rate of change (%)	Effect
		2019	2018		
1.	Food and non alcoholic beverages	103.33	105.32	-1.9	-0.3947
2.	Alcoholic beverages and tobacco	148.61	147.56	0.7	0.0300
3.	Clothing and footwear	72.56	72.73	-0.2	-0.0157
4.	Housing	118.63	119.64	-0.8	-0.1231
5.	Household equipment	86.17	87.52	-1.6	-0.0663
6.	Health	99.12	97.26	1.9	0.1436
7.	Transport	128.38	126.05	1.8	0.2653
8.	Communication	107.54	104.73	2.7	0.1182
9.	Recreation and culture	87.21	88.72	-1.7	-0.0691
10.	Education	88.50	89.22	-0.8	-0.0265
11.	Hotels – Cafés – Restaurants	109.77	109.66	0.1	0.0190
12.	Miscellaneous goods and services	91.05	91.75	-0.8	-0.0510
	Overall Index	**105.31**	**105.49**	**-0.2**	

II: August 2018/2017

	Main groups of goods and services	August		Rate of change (%)	Effect
		2018	2017		
1.	Food and non alcoholic beverages	105.32	104.31	1.0	0.2024
2.	Alcoholic beverages and tobacco	147.56	146.49	0.7	0.0323
3.	Clothing and footwear	72.73	72.39	0.5	0.0361
4.	Housing	119.64	119.32	0.3	0.0380
5.	Household equipment	87.52	88.85	-1.5	-0.0677
6.	Health	97.26	95.81	1.5	0.1142
7.	Transport	126.05	122.31	3.1	0.4564
8.	Communication	104.73	100.41	4.3	0.1835
9.	Recreation and culture	88.72	89.77	-1.2	-0.0486
10.	Education	89.22	89.03	0.2	0.0068
11.	Hotels – Cafés – Restaurants	109.66	108.14	1.4	0.1439
12.	Miscellaneous goods and services	91.75	92.51	-0.8	-0.0550
	Overall Index	**105.49**	**104.48**	**1.0**	

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: 2009=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 %
2016: 1	103.56	-1.9	-0.7	105.46	-1.6
2	103.12	-0.4	-0.5	105.41	-1.4
3	104.51	1.3	-1.5	105.28	-1.4
4	105.28	0.7	-1.3	105.17	-1.3
5	104.81	-0.4	-0.9	105.09	-1.2
6	105.65	0.8	-0.7	105.03	-1.1
7	103.91	-1.6	-1.0	104.94	-1.0
8	103.55	-0.3	-0.9	104.85	-0.9
9	105.39	1.8	-1.0	104.77	-0.9
10	105.80	0.4	-0.5	104.73	-0.8
11	104.57	-1.2	-0.9	104.65	-0.8
12	105.64	1.0	0.0	104.65	-0.8
Annual average	*104.65*	-	-	*104.65*	*-0.8*
2017: 1	104.76	-0.8	1.2	104.75	-0.7
2	104.46	-0.3	1.3	104.86	-0.5
3	106.33	1.8	1.7	105.01	-0.3
4	107.01	0.6	1.6	105.16	0.0
5	106.06	-0.9	1.2	105.26	0.2
6	106.72	0.6	1.0	105.35	0.3
7	104.94	-1.7	1.0	105.44	0.5
8	104.48	-0.4	0.9	105.51	0.6
9	106.45	1.9	1.0	105.60	0.8
10	106.56	0.1	0.7	105.67	0.9
11	105.77	-0.7	1.1	105.77	1.1
12	106.33	0.5	0.7	105.82	1.1
Annual average	*105.82*	-	-	*105.82*	*1.1*
2018: 1	104.58	-1.6	-0.2	105.81	1.0
2	104.52	-0.1	0.1	105.81	0.9
3	106.08	1.5	-0.2	105.79	0.7
4	107.05	0.9	0.0	105.80	0.6
5	106.70	-0.3	0.6	105.85	0.6
6	107.76	1.0	1.0	105.94	0.6
7	105.84	-1.8	0.9	106.01	0.5
8	105.49	-0.3	1.0	106.09	0.5
9	107.61	2.0	1.1	106.19	0.6
10	108.44	0.8	1.8	106.35	0.6
11	106.81	-1.5	1.0	106.43	0.6
12	106.92	0.1	0.6	106.48	0.6
Annual average	*106.48*	-	-	*106.48*	*0.6*
2019: 1	105.04	-1.8	0.4	106.52	0.7
2	105.17	0.1	0.6	106.58	0.7
3	107.08	1.8	0.9	106.66	0.8
4	108.14	1.0	1.0	106.75	0.9
5	106.95	-1.1	0.2	106.77	0.9
6	107.46	0.5	-0.3	106.75	0.8
7	105.89	-1.5	0.0	106.75	0.7
8	105.31	-0.5	-0.2	106.74	0.6

Note: The indices are rounded up to two decimal figures when published and percentage changes up to one decimal figure when published.
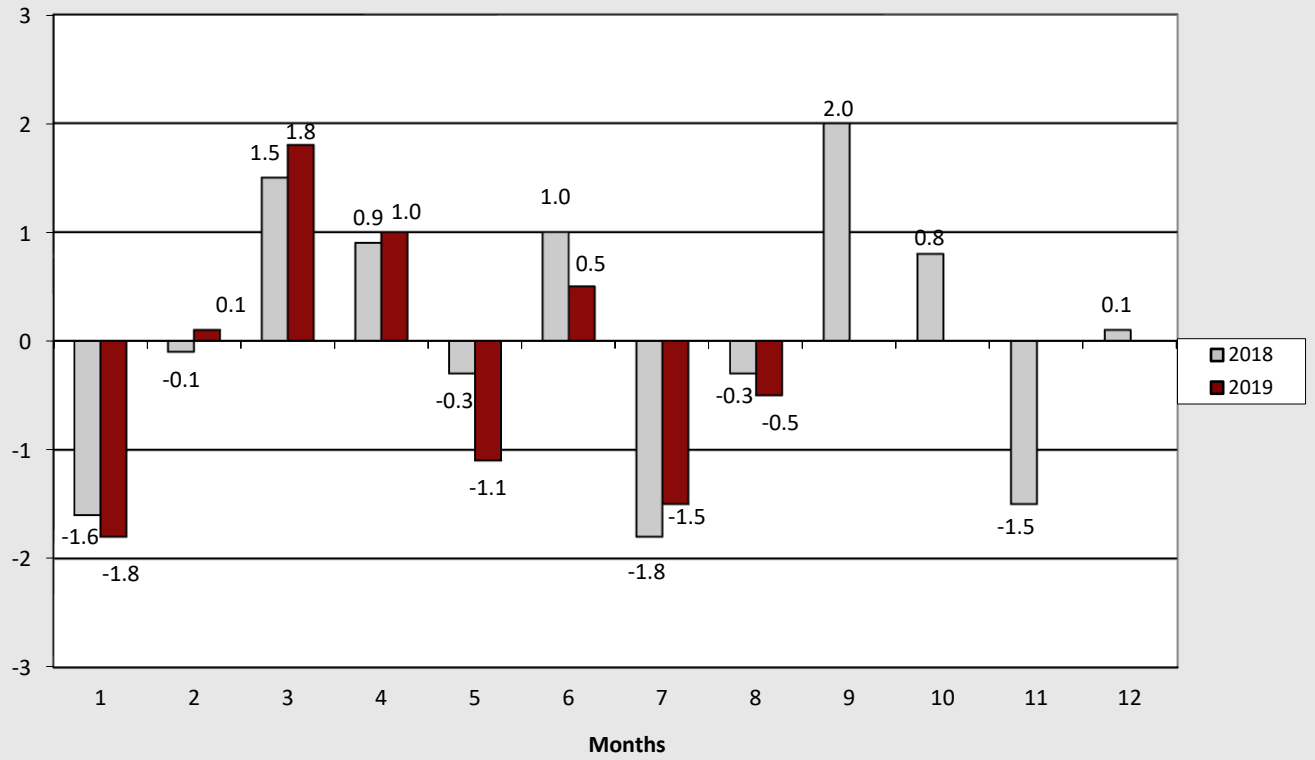
**Table 4. Major price changes from index comparison
August 2019 with July 2019 and their impact
in the Overall CPI**

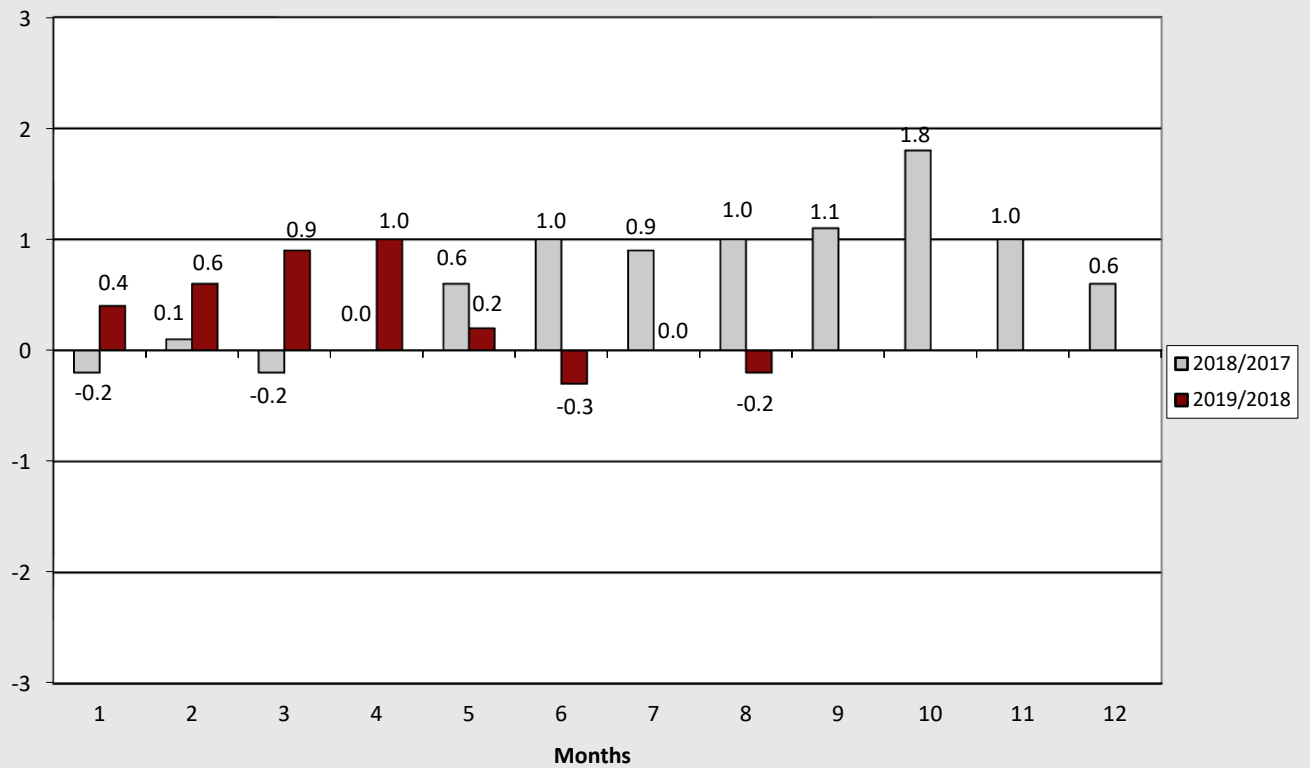| Goods and services	Rate of change (%)	Impact
Bread and cereals	0.6	0.02
Fresh vegetables	-3.7	-0.05
Fresh fruit	-1.8	-0.02
Milk whole fresh	4.2	0.03
Cheese	-0.7	-0.01
Olive oil	-3.3	-0.03
Potatoes	-3.8	-0.02
Petrol	0.4	0.02
Passenger transport by air	-12.2	-0.28
Hotels-motels-inns	-2.3	-0.02
Other appliances and articles for personal care	1.2	0.03
Summer sales	-	-0.24

Table 5. Major price changes from index comparison August 2019 with August 2018 and their impact in the Overall CPI

Goods and services	Rate of change (%)	Impact
Fresh vegetables	9.3	0.11
Oils and fats	-8.0	-0.10
Milk whole fresh	2.0	0.01
Fresh fruit	-9.1	-0.14
Cheese	-2.1	-0.03
Meat	0.2	0.01
Yoghurt	-6.7	-0.03
Bread and cereals	-2.6	-0.09
Preserved or processed vegetables	-1.5	-0.01
Sugar-chocolates-sweets-ice creams	-3.9	-0.04
Other food	-3.4	-0.02
Coffee-cocoa-tea	-6.8	-0.04
Fruit juices	-9.1	-0.02
Tobacco	0.7	0.02
Clothing and footwear	-0.2	-0.02
Heating oil	5.8	0.15
Electricity	-6.2	-0.24
Natural gas	-10.0	-0.04
Household appliances and repair	-2.8	-0.02
Non-durable household articles	-1.1	-0.02
Household textiles	-3.0	-0.02
Pharmaceutical products	5.8	0.15
Fuels and lubricants	-1.3	-0.11
Passenger transport by air	22.9	0.38
Telephone services	2.9	0.13
Audiovisual and information processing equipment	-10.9	-0.07
Secondary education	-1.2	-0.02
Restaurants - confectioneries - cafes - buffets	0.3	0.03
Hotels-motels-inns	-0.5	-0.02
Other appliances and articles for personal care	-2.9	-0.07
Motor vehicle insurance	1.0	0.02

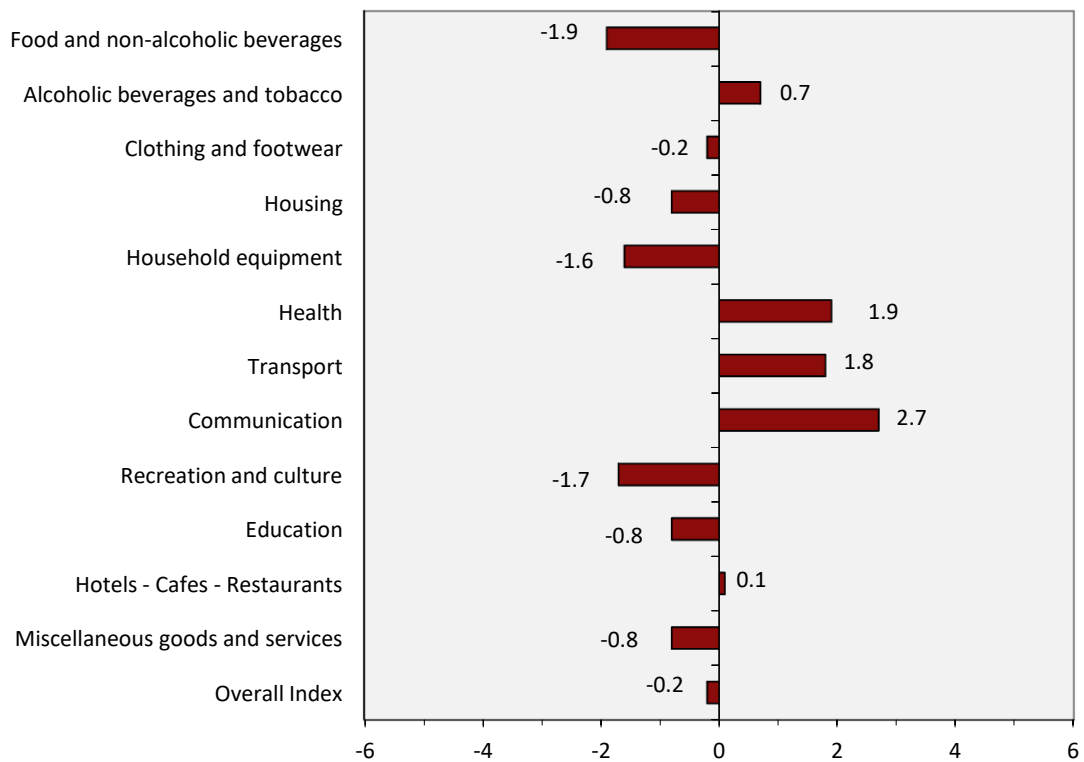**Graph 3. Monthly rates of change (%) of the overall CPI, 2018 and 2019**

Legend: 2018, 2019

Month	2018	2019
1	-1.6	-1.8
2	-0.1	0.1
3	1.5	1.8
4	0.9	1.0
5	-0.3	-1.1
6	1.0	0.5
7	-1.8	-1.5
8	-0.3	-0.5
9	2.0	
10	0.8	
11	-1.5	
12	0.1	

Months

Graph 4. Annual rates of change (%) of the overall CPI, 2018 and 2019

Legend: 2018/2017, 2019/2018

Month	2018/2017	2019/2018
1	-0.2	0.4
2	0.1	0.6
3	-0.2	0.9
4	0.0	1.0
5	0.6	0.2
6	1.0	-0.3
7	0.9	0.0
8	1.0	-0.2
9	1.1	
10	1.8	
11	1.0	
12	0.6	

Months

Graph 5. Monthly rates of change (%) of CPI between August 2019 and July 2019

Category	Value
Food and non-alcoholic beverages	-0.4
Alcoholic beverages and tobacco	-0.1
Clothing and footwear	-4.9
Housing	0.0
Household equipment	0.1
Health	0.1
Transport	-1.7
Communication	0.1
Recreation and culture	-0.2
Education	0.0
Hotels - Cafes - Restaurants	-0.2
Miscellaneous goods and services	0.6
Overall Index	-0.5
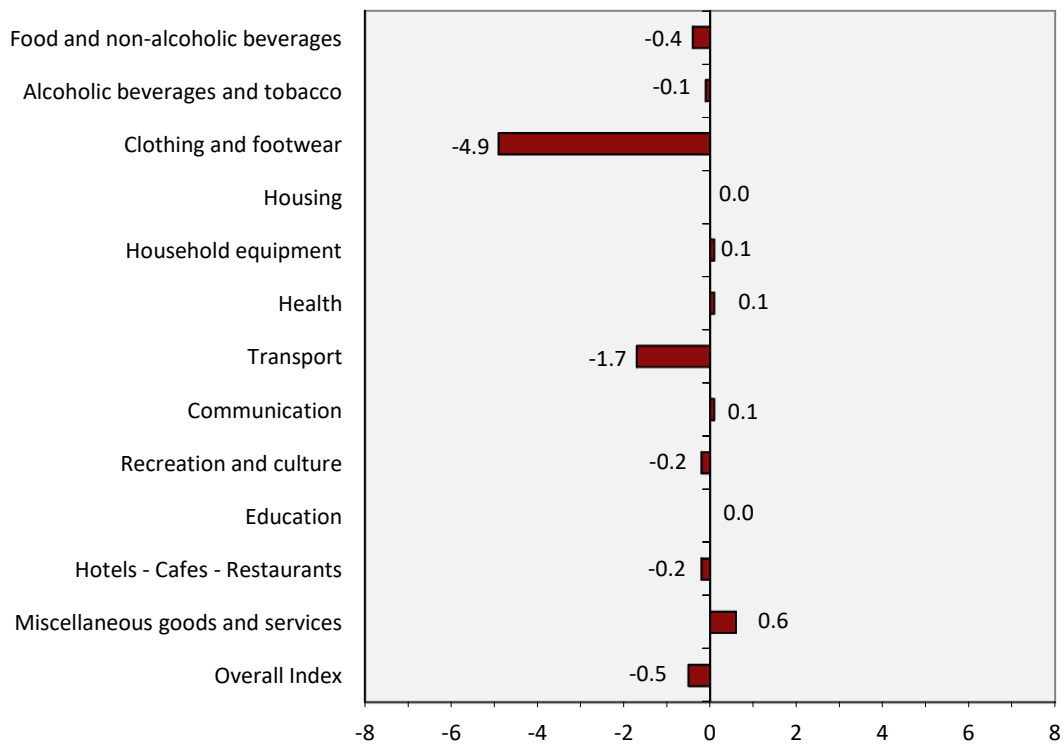
Graph 6. Annual rates of change (%) of CPI between August 2019 and August 2018

Category	Value
Food and non-alcoholic beverages	-1.9
Alcoholic beverages and tobacco	0.7
Clothing and footwear	-0.2
Housing	-0.8
Household equipment	-1.6
Health	1.9
Transport	1.8
Communication	2.7
Recreation and culture	-1.7
Education	-0.8
Hotels - Cafes - Restaurants	0.1
Miscellaneous goods and services	-0.8
Overall Index	-0.2

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Graph 7. CPI highest annual increases (%)

Category	Value
Passenger transport by air	22.9
Fresh vegetables	9.3
Heating oil	5.8
Telephone services	2.9
Milk whole fresh	2.0
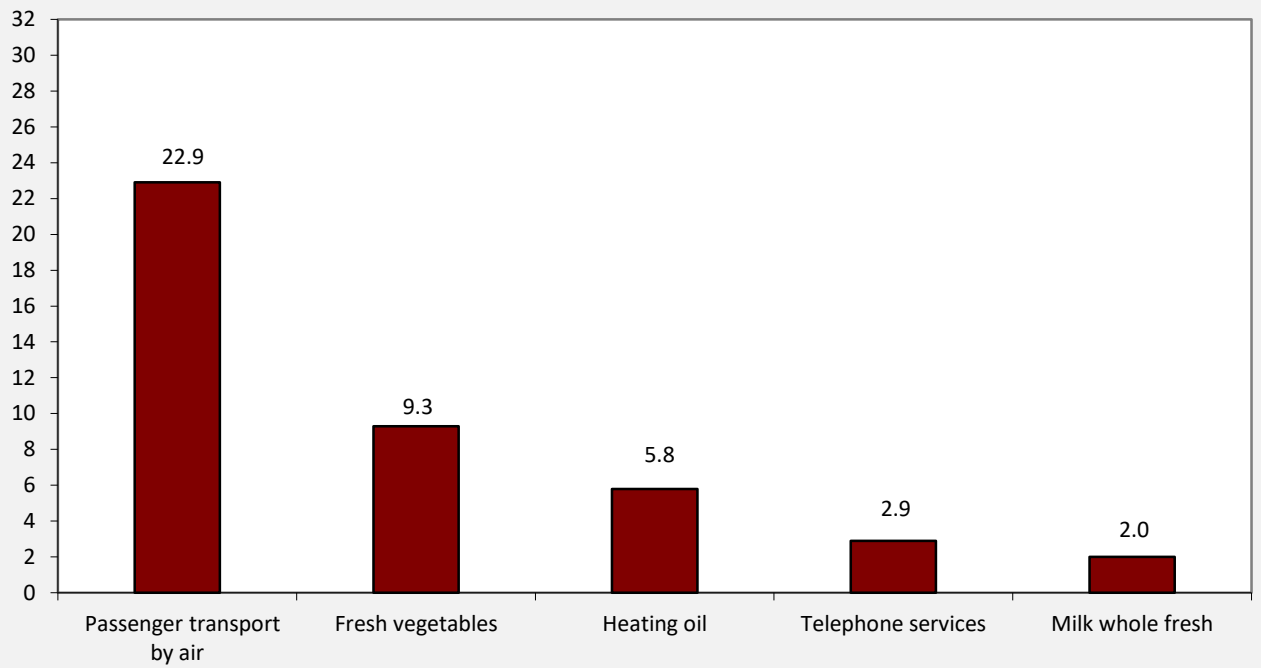
Graph 8. CPI highest annual decreases (%)

Category	Value
Audiovisual and information processing equipment	-10.9
Natural gas	-10.0
Fresh fruit	-9.1
Fruit juices	-9.1
Oils and fats	-8.0
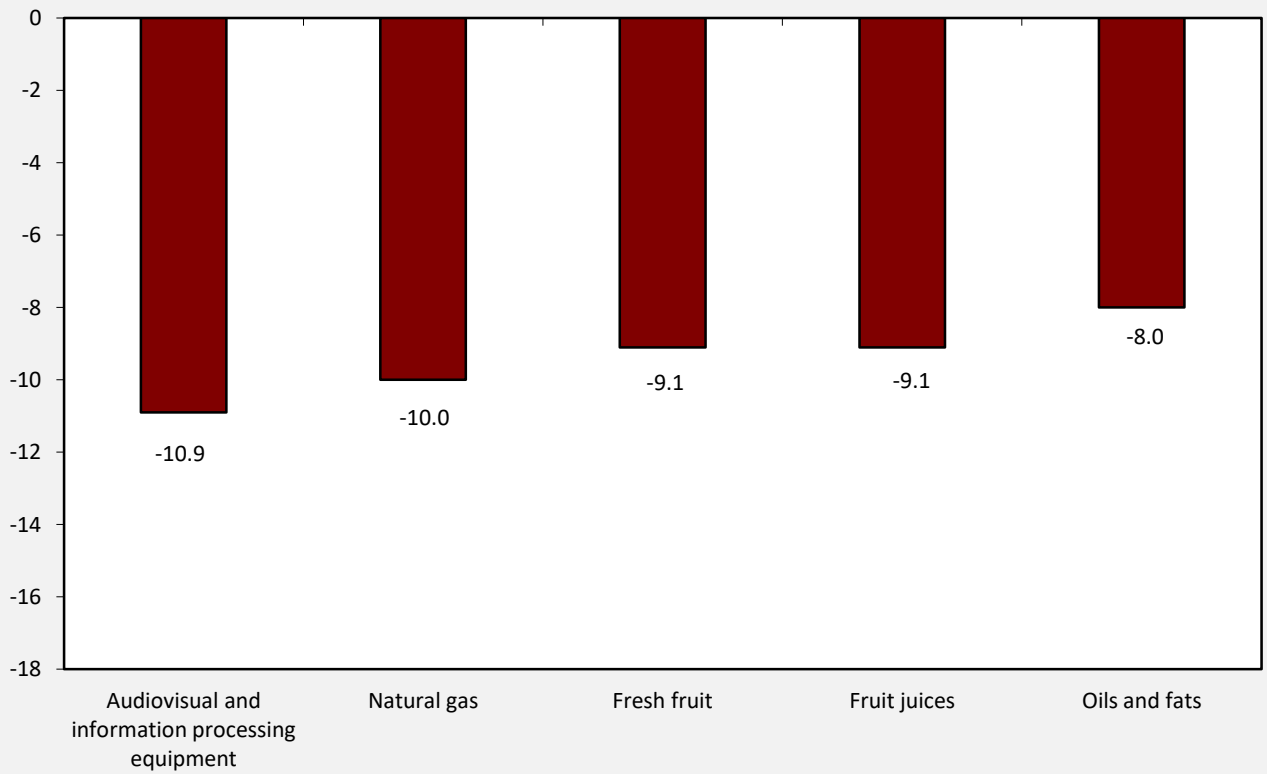
Graph 9. Historical evolution of CPI, 1968 – 2019

METHODOLOGICAL NOTES

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 2009=100.0.

Chain linking Index The CPI index follows the chain linking method, introducing new weights annually and having as a base 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.

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| **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 2009=100.0), covers the period from January 1959 onwards. The CPI data are released each month as scheduled, in accordance with the Press Releases Calendar of ELSTAT, with the Press 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).