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Authors

Eckhard BORCHERT

Sebastian REINECKE

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Eating, drinking, smoking – comparative price levels in 37 European countries for 2006

Within the framework of the European Comparison Programme (ECP) – in which Eurostat closely co-operates with the OECD - surveys on prices of household goods and services are cyclically carried out by National Statistical Institutes (NSIs). 37 countries are currently participating in the surveys co-ordinated by Eurostat: the 27 EU Member States, the 3 Candidate Countries, Croatia, the former Yugoslav Republic of Macedonia and Turkey, the 3 EFTA countries, Iceland, Norway and Switzerland and the 4 Western Balkan countries, Albania, Bosnia-Herzegovina, Montenegro and Serbia. OECD co-ordinates the surveys for the non-European OECD Member States. These price surveys are the cornerstones of the work resulting in annual volume comparisons of the main National Accounts aggregates: Gross Domestic Product (GDP) and its components.

Each survey relates to a particular group of products. The results presented in this article refer to the survey on food, beverages and tobacco carried out in spring 2006 in the 37 participating countries. This survey covered a total of approximately 500 comparable products, enabling all countries to price a sufficient number of products representative of their consumption pattern.

Graph 1: Price level index for food and non-alcoholic beverages, 2006 (EU27=100)

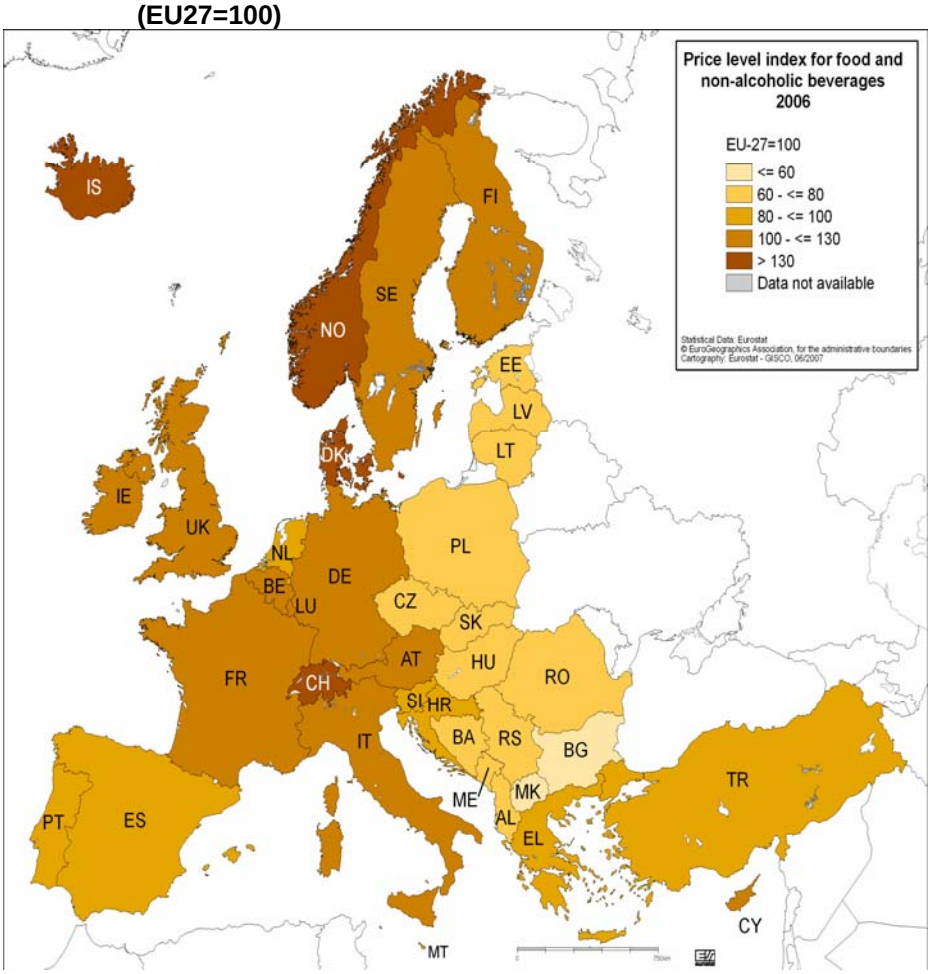
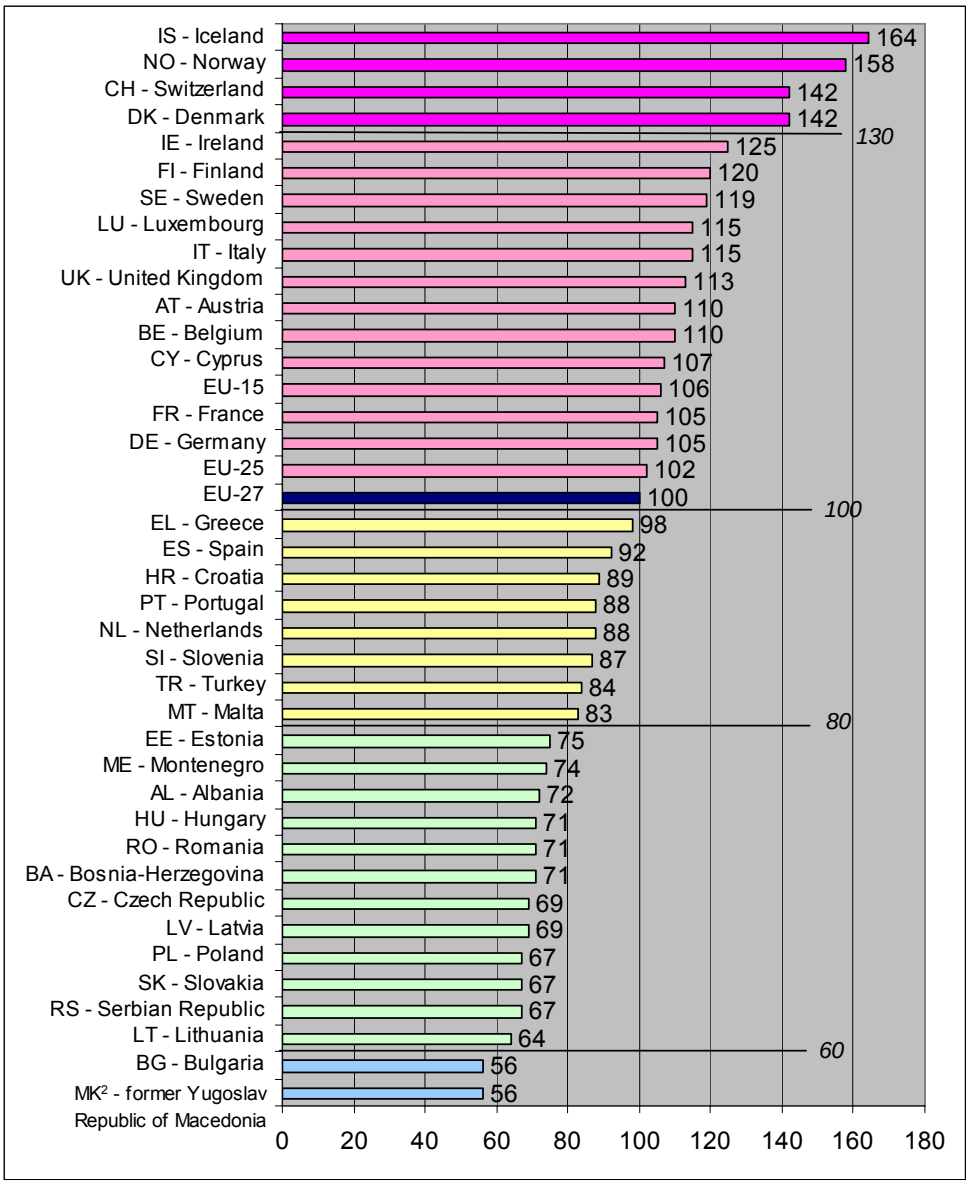


Chart 1: Price level index for food and non-alcoholic beverages, 2006, EU27=100



Food, beverages and tobacco: Price level indices for 2006 – a comparison between EU, EFTA, EU Candidate Countries and Western Balkan countries

Price level indices provide a comparison of the countries' price levels with respect to the European Union average: if the price level index is higher than 100, the country concerned is relatively expensive compared to the EU average and vice versa. (See also the methodological notes.)

Price level indices for 2006 are presented in **Chart 1** and **graph 1** for **food and non-alcoholic beverages**. The following country groups can be distinguished:

- **Group I** (≥ 130% of the EU average): Denmark, Iceland, Norway and Switzerland;
- **Group II** (≥ 100% and < 130% of the EU average): Belgium, Germany, France, Ireland, Italy, Cyprus, Luxembourg, Austria, Finland, Sweden and the United Kingdom;
- **Group III** (≥ 80% and < 100% of the EU average): Greece, Spain, Malta, the Netherlands, Portugal, Slovenia, Croatia and Turkey;
- **Group IV** (≥ 60% and < 80% of the EU average): the Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania, Slovakia, Albania, Bosnia-Herzegovina, Montenegro and Serbia;
- **Group V** (< 60% of the EU average): Bulgaria and the former Yugoslav Republic of Macedonia.

Chart 1 shows that disparities in the price level index between the EU countries are remarkable and lie between 56 (Bulgaria) and 142 (Denmark), **alcohol and tobacco excluded**.

This means that a comparable basket of food and non-alcoholic beverages in the most expensive EU country, Denmark, costs more than 2.5 times as much as in the least expensive country, Bulgaria. Moreover, the distribution generally tends to reflect a geographical element with eastern EU countries below the EU average.

The three EFTA countries appear to be among the most expensive in the survey group: prices in Iceland (164) and Norway (158) in particular are significantly higher than in Denmark (142). Switzerland has a comparable price level to Denmark.

Finally, the candidate countries, Croatia (89) and Turkey (84), have PLIs approaching those of the EU Member States average while former Yugoslav Republic of Macedonia (56) shows – together with Bulgaria - the lowest PLI of all countries compared.

Chart 2: Price level index for alcoholic beverages and tobacco, 2006, EU27=100

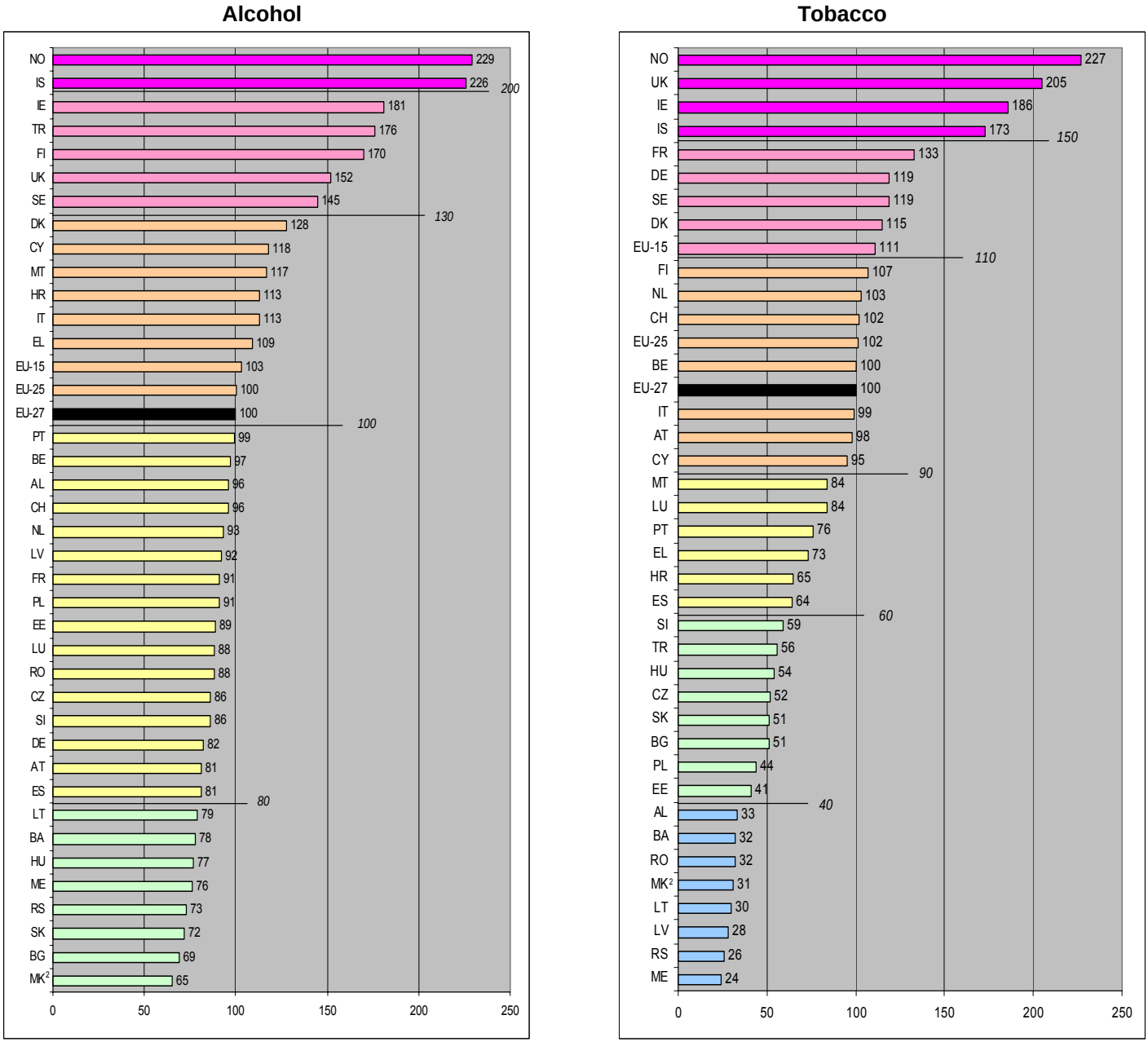


Chart 2 shows PLIs for **alcohol** and **tobacco**. We observe that disparities in the PLIs for these products between the EU countries are remarkable. They lie between 69 (Bulgaria) and 181 (Ireland) for alcohol and between 28 (Latvia) and 205 (United Kingdom) for tobacco. This signifies that smoking costs about 7 times as much in the UK as in Latvia. Looking at the ECP countries outside the EU, price dispersion is even higher, ranging from 65 (the former Yugoslav Republic of Macedonia) to 229 (Norway) in the case of alcohol and from 24 (Montenegro) to 227 (Norway) for tobacco. In Turkey, alcohol is also very expensive, showing a PLI of 176, whereas tobacco is relatively cheap with a PLI level of 56.

Table 1: 2006 Comparative price level indices for the main sub-groups of the survey, EU27=100

	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	HR	MK[2]	TR	IS	NO	CH	AL	BA	ME	RS
Overall survey	**107**	**56**	**68**	**136**	**104**	**72**	**140**	**95**	**87**	**106**	**112**	**106**	**65**	**62**	**104**	**69**	**86**	**90**	**105**	**66**	**87**	**68**	**83**	**65**	**124**	**121**	**128**	**87**	**53**	**85**	**170**	**172**	**129**	**68**	**65**	**67**	**62**
Food and non-alcoholic beverages	***110***	***56***	***69***	***142***	***105***	***75***	***125***	***98***	***92***	***105***	***115***	***107***	***69***	***64***	***115***	***71***	***83***	***88***	***110***	***67***	***88***	***71***	***87***	***67***	***120***	***119***	***113***	***89***	***56***	***84***	***164***	***158***	***142***	***72***	***71***	***74***	***67***
Food	**111**	**55**	**68**	**139**	**106**	**74**	**124**	**97**	**93**	**107**	**116**	**104**	**68**	**63**	**116**	**70**	**81**	**89**	**111**	**65**	**87**	**70**	**87**	**66**	**119**	**119**	**113**	**87**	**55**	**82**	**163**	**159**	**146**	**70**	**70**	**74**	**67**
Bread and cereals	109	41	61	150	108	70	121	95	112	103	109	108	59	61	119	60	76	89	126	60	95	59	93	56	141	131	103	87	55	70	188	164	142	59	62	66	56
Meat	123	48	60	149	118	64	129	91	81	122	118	81	58	50	120	65	69	105	121	52	82	60	83	58	119	133	126	86	53	77	189	182	195	62	73	69	68
Fish	128	62	76	138	121	73	123	101	89	106	122	142	71	57	110	75	82	115	111	67	70	85	102	68	111	109	91	84	64	76	112	128	142	85	65	70	82
Milk, cheese and eggs	109	82	80	116	87	79	126	138	96	100	126	139	75	75	112	83	111	78	98	67	105	94	83	75	110	104	115	89	62	117	149	160	126	84	76	77	75
Oils and fats	111	95	83	135	88	88	98	118	89	107	113	134	95	91	112	90	98	66	115	83	98	95	106	100	118	118	104	103	80	93	139	156	163	95	86	84	98
Fruits and vegetables	105	50	64	129	116	83	130	72	95	108	115	90	73	68	130	65	70	89	107	72	80	70	86	62	124	123	120	78	43	71	154	143	131	61	61	80	59
Other food	100	67	83	161	99	83	121	114	100	98	116	127	82	76	106	82	101	80	107	82	109	87	94	87	113	114	107	107	72	107	160	163	129	102	83	87	80
Non-alcoholic beverages	***101***	***73***	***82***	***170***	***103***	***90***	***135***	***118***	***87***	***83***	***109***	***142***	***89***	***79***	***104***	***77***	***108***	***83***	***97***	***84***	***93***	***88***	***88***	***77***	***132***	***118***	***121***	***107***	***67***	***101***	***176***	***159***	***104***	***98***	***89***	***77***	***72***
Alcoholic beverages	***97***	***69***	***86***	***128***	***82***	***89***	***181***	***109***	***81***	***91***	***113***	***118***	***92***	***79***	***88***	***77***	***117***	***93***	***81***	***91***	***99***	***88***	***86***	***72***	***170***	***145***	***152***	***113***	***65***	***176***	***226***	***229***	***96***	***96***	***78***	***76***	***73***
Tobacco	***100***	***51***	***52***	***115***	***119***	***41***	***186***	***73***	***64***	***133***	***99***	***95***	***28***	***30***	***84***	***54***	***84***	***103***	***98***	***44***	***76***	***32***	***59***	***51***	***107***	***119***	***205***	***65***	***31***	***56***	***173***	***227***	***102***	***33***	***32***	***24***	***26***

How to read this table?

The prices underlying this table are average annual national prices for the respective product groups. In the rows, the table provides a direct comparison of the price levels for the respective product group across all 37 participating countries. For example, the PLI for oils and fats is 4% above the EU average in UK and 18% above the EU average in Sweden. Oils and fats are, therefore, in Sweden about 14% more expensive than in the UK (118/104=1.14).

By column, the table refers to the PLIs of different product groups within one country and the interpretation is the following one. All PLIs are expressed relative to the EU average for the respective product groups. For example, for Fish the Portuguese price level is 30% below the EU average and for milk, cheese and eggs 5% above the EU average. In relation to the respective EU averages, therefore, Fish is relatively cheaper in Portugal than milk, cheese and eggs .

2006 Comparative price level indices and price dispersion for the main sub-groups of the survey

Table 1 shows for all participating countries the comparative PLIs for the main sub-groups of products making up the total survey.

Let's look at Luxembourg as an example for cross border comparisons. Luxembourg has borders with Belgium, France and Germany. It is at about the same price level as Belgium and Germany and France, when it comes to food, beverages and tobacco in total. Looking at individual product groups, the picture is different. According to Table 1, Luxembourgers would gain financially by buying bread and cereals in France, fruits and vegetables in Belgium and milk, cheese and eggs in Germany. For non-alcoholic beverages France (83) has clearly a lower price level than Luxembourg (104) and the two other countries. Also for fish France has the lowest price level of the four countries. A significant price level difference again exists for tobacco, Luxembourg (84) being the cheapest of the four by some way. In France (133) tobacco products are 58% more expensive than in Luxembourg, in Germany (119) 42% and in Belgium (100) 19%, respectively.

Similarly, we can look at the Czech Republic and Slovakia. At the overall survey level price levels are very close to each other and also in many product groups. At the same time, the respective populations would gain for example by buying oils and fats from the Czech Republic and meat from Slovakia.

Concerning the Netherlands it' should be noted that at the time of the survey a "price war" was going on between certain supermarket chains, resulting in relatively low consumer prices for several items.

Table 2 on this page is based on Table 1 and provides a coefficient of variation within the euro area (EA13) the 15 "old" Member States (EU15), the European Union (EU27) and the group of all countries participating in the survey. The measure used is, for each product group, the coefficient of variation, defined as the standard deviation as percentage of the average PLIs of the respective group of countries. The larger these numbers are the higher are price dispersions in the respective countries and product groups.

Table 2: Coefficient of variation for EA13, EU15, EU27 and all 37 survey participants by product groups

	EA13	EU15	EU27	ECP37
Overall survey	**15.1**	**15.0**	**25.8**	**32.2**
Food	*12.0*	*12.3*	*24.3*	*29.9*
Bread and cereals	13.0	14.7	30.9	37.2
Meat	15.7	15.6	33.2	41.0
Fish	13.8	15.0	24.8	25.9
Milk, cheese and eggs	16.2	13.9	20.1	24.1
Oils and fats	13.9	15.0	15.2	19.8
Fruits and vegetables	18.1	16.2	26.4	31.3
Other food	10.1	15.3	19.2	22.7
Non-alcoholic beverages	*16.0*	*20.2*	*22.7*	*25.9*
Alcoholic beverages	*29.8*	*28.3*	*28.1*	*37.8*
Tobacco	*32.1*	*33.6*	*50.4*	*61.1*

The most striking feature of Table 2 is that the price dispersion is greatest for tobacco, in all country groups. Alcoholic beverages also have quite high price dispersion in different country groups. However, large price dispersion is no real surprise, as these products are subject to very different national regulations, excise duties and other taxes. The high price dispersion appears as, for example, Nordic countries and Turkey show PLIs for alcoholic beverages that are significantly higher than those of all other countries (see Table 1).

For tobacco products consumers have to pay in UK and Norway prices more than twice above the level of the EU average. In Latvia and Lithuania, on the other hand, such products are available at about 70 % below the average EU price level (see Table 1).

Price dispersion is naturally greatest within the 37-country group of the survey participants, involving at the same time the high price EFTA and the mostly low price Candidate Countries, relative to the EU.

Table 3: Price convergence for EU27: comparison between 2003 and 2006 by product groups

	EU27		
	2003	2006	%-change
Food	***29.2***	***24.3***	***-16.8%***
Bread and cereals	35.2	30.9	-12.1%
Meat	36.5	33.2	-9.1%
Fish	27.0	24.8	-8.1%
Milk, cheese and eggs	22.2	20.1	-9.4%
Oils and fats	18.1	15.2	-16.2%
Fruits and vegetables	32.1	26.4	-17.6%
Other food	24.9	19.2	-22.9%
Non-alcoholic beverages	***25.3***	***22.7***	***-10.2%***
Alcoholic beverages	***32.6***	***28.1***	***-13.5%***
Tobacco	***54.1***	***50.4***	***-6.8%***

Table 3 shows a comparison of the coefficients of variation between the 2003 and 2006 surveys on food, beverages and tobacco. A decrease of the coefficient of variation is an indication of price convergence for the respective product group.

The most obvious result from the 2003 – 2006 comparison is a general convergence of prices among the 27 Member States. We observe a strong convergence especially for oils and fats, fruits and vegetables, other food and alcoholic beverages.

➢ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

What are PPPs and PLIs?

The data in this publication are produced by the Eurostat-OECD Purchasing Power Parity (PPP) programme. The full methodology used in the programme is described in the *Eurostat-OECD Methodological manual on purchasing power parities* which is available free of charge from the Eurostat website on

http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1073,46587259&_dad=portal&_schema=PORTAL&p_product_code=KS-BE-06-002

In their simplest form PPPs are nothing more than price relatives that show the ratio of the prices in national currencies of the same good or service in different countries. For example, if the price of a hamburger in France is 2.84 euros and in the United States it is 2.20 dollars, the PPP for hamburgers between France and the United States is 2.84 euros to 2.20 dollars or 1.29 euros to the dollar. In other words, for every dollar spent on hamburgers in the United States, 1.29 euros would have to be spent in France in order to obtain the same quantity and quality – or volume – of hamburgers.

Comparative price levels as presented in this publication are the ratios of PPPs to exchange rates. They provide a measure of the differences in price levels between countries by indicating for a given product group the number of units of common currency needed to buy the same volume of the product group or aggregate in each country.

Price level indices (PLIs) provide a comparison of the countries' price levels with respect to the European Union average: if the price level index is higher than 100, the country concerned is relatively expensive compared to the EU average and vice versa. The EU average is calculated as the weighted average of the national PLIs, weighted with the expenditures corrected for price level differences. Price level indices are not intended to rank countries strictly. In fact, they only provide an indication of the order of magnitude of the price level in one country in relation to others, particularly when countries are clustered around a very narrow range of outcomes. The degree of uncertainty associated with the basic price data and the methods used for compiling PPPs, may affect in such a case the minor differences between the PLIs and result in differences in ranking which are not statistically or economically significant. It is, therefore, preferable to use these indices to divide countries into groups of a comparable level, as done in this article.

The main use of PPPs is to convert expenditures (including GDP) of different countries into real expenditures (and real GDP). Real expenditures are valued at a uniform price level and so reflect only differences in the volumes purchased in countries. PPP and real expenditures provide the price and volume measures required for international comparisons.

How are consumer price surveys organised?

For the purposes of the collection of consumer prices, the 37 countries currently participating in the group co-ordinated by Eurostat, are divided in four groups that are organised as follows:

-the Northern group is composed of Belgium, Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Netherlands, Norway, Sweden, UK;

-the Central group is composed of Austria, Croatia, Czech Republic, Germany, the former Yugoslav Republic of Macedonia, Hungary, Luxembourg, Poland, Slovakia Republic, Slovenia, Switzerland;

-the Southern group is composed of Bulgaria, Cyprus, France, Greece, Italy, Portugal, Romania, Spain, Malta, and Turkey;

-the Western Balkan group, composed of Albania, Bosnia-Herzegovina, Montenegro and Serbia, is logistically attached to the Central Group.

Currently Finland, Austria, Portugal and Slovenia are acting as group leaders. The idea behind this approach is to combine countries in a group, which have similar market structures and consumption pattern due to their similar geographical location. Consequently, each group of countries has group-specific product lists. Specific meetings in all four groups and one so-called "overlap" meeting are organised in order to ensure:

- a harmonised approach to the survey concerned in all participating countries,

- the right balance between comparability of products selected for the survey and their representativity of the expenditure pattern in each participating country,

- and sufficient overlap between the group product lists for the overall European comparison. A particularly difficult problem in this process is to ensure a sufficient overlap between participating countries, as the consumption pattern differs still substantially in many countries.

The four group leaders co-ordinate the establishment of the group product lists, including pre-survey work, and validate the prices collected in their respective group. Eurostat is responsible for the overall European co-ordination and PPP calculation.

For practical and cost reasons, the consumer price surveys are organised in a rolling cycle over three years, and they are carried out in the countries' capital cities in a specific survey month. Subsequently, the prices are adjusted to annual average prices, using monthly consumer price indices of the survey year and to national average prices, using spatial adjustment factors. Between survey years, benchmark results are extrapolated using annual average CPI. The prices observed are the market prices consumers actually pay, including all taxes and duties.

Footnotes:

[1]Including Kosovo, under the auspices of the United Nations, pursuant to UN Security Council Resolution 1244 of 10 June 1999.

[2]MK is a provisional code which does not prejudge in any way the definitive nomenclature for this country, which will be agreed following the conclusion of negotiations currently taking place on this subject at the United Nations.

Further information:

Data: EUROSTAT Website/Economy and finance/Data

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- Purchasing power parities

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European Statistical Data Support:

Eurostat set up with the members of the 'European statistical system' a network of support centres, which will exist in nearly all Member States as well as in some EFTA countries.

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Contact details for this support network can be found on our Internet site: http://ec.europa.eu/eurostat/

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