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GDP per capita varied by more than six to one across the EU in 2010

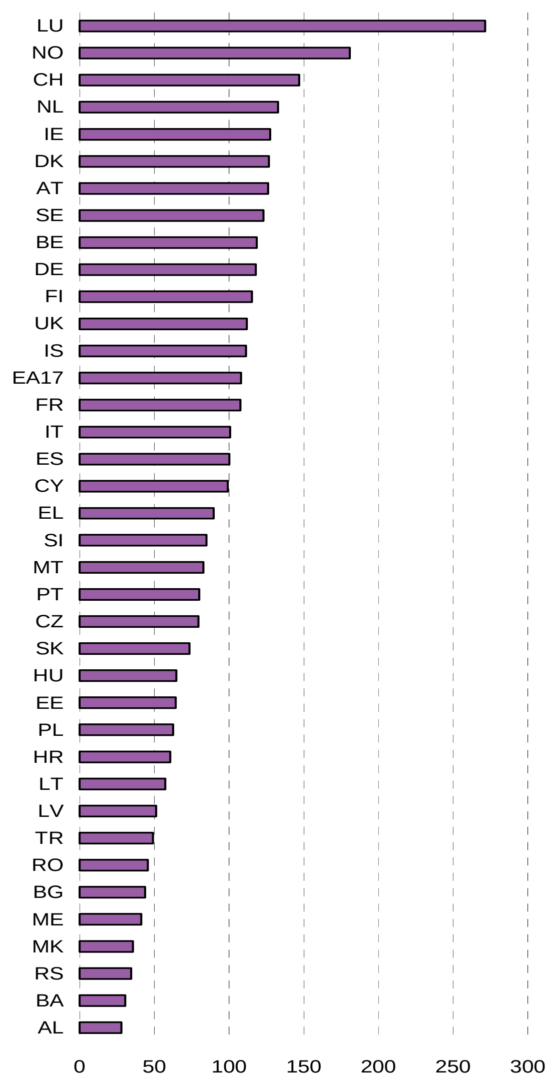
Consumption and price levels differed by more than three to one

As in previous years, Bulgaria remains the country with the lowest level of Gross Domestic Product (GDP) per capita among all EU Member States, at less than half the EU average. The Netherlands was 33 percent above that average, surpassed only by Luxembourg. Levels of Actual Individual Consumption (AIC) were somewhat more homogeneous, but still showed very substantial differences across EU Member States. The country with the highest price level remains Denmark.

These are among the findings in Eurostat's most recent analysis of purchasing power parities and related economic indicators, covering the years 2008, 2009 and 2010. Even though the results for 2010 are set to be revised in 2012 and 2013, this report will focus primarily on the latest reference year.

The countries included in the analysis are the 27 EU Member States, three EFTA Member States (Iceland, Norway, and Switzerland), four EU Candidate Countries (Croatia, the former Yugoslav Republic of Macedonia, Montenegro and Turkey) and three Western Balkan countries (Albania, Bosnia and Herzegovina, and Serbia).

Volume indices of GDP per capita 2010, EU27=100



Source: Eurostat (online data code: prc_ppp_ind)
For explanation of the country codes, see methodological notes

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In international comparisons of national accounts data, like GDP per capita, it is desirable not only to express the figures in a common currency, but also to adjust for differences in price levels. Failing to do so would result in an overestimation of GDP levels for countries with high price levels, relative to countries with low price levels.

The indices of relative volumes of GDP and AIC per capita published in this report have been adjusted for price level differences, and are expressed in relation to the European Union average (EU27=100). Thus, for instance, if a country's volume index is below 100, that country's level of GDP (or AIC) per capita is lower than for the EU27 as a whole.

The price level adjustment factors, referred to as purchasing power parities (cf. box 1), can also be used in analyses of countries' price levels. Like the relative volumes, the price level indices shown in table 2 are expressed in relation to the EU27 average (EU27=100).

Box 1: Purchasing power parities and related economic indicators

Purchasing power parities (PPPs) are currency conversion rates that are applied in order to convert economic indicators from national currency to an artificial common currency, called the Purchasing Power Standard (PPS), which equalizes the purchasing power of different national currencies and enables meaningful volume comparisons between countries. For example, if the GDP or AIC per capita expressed in the national currency of each country participating in the comparison is divided by its PPP, the resulting figures neutralise the effect of differences in price levels and thus indicate the real volume of GDP or AIC at a common price level. When divided by the nominal exchange rate of a given year, the PPP provides an estimate of the price level of a given country relative to, for instance, the EU27 total.

GDP per capita in the EU varied by more than six to one in 2010

Countries' volume indices of GDP per capita are shown in the left-hand part of table 1.

The dispersion in GDP per capita across the EU Member States remains quite remarkable. As in previous years, Luxembourg has by far the highest GDP per capita among all the 37 countries included in this analysis and it is more than two and a half times above the EU27 average, and about 6 times higher than Bulgaria, which is the poorest EU Member State as measured by this indicator. One particular feature of Luxembourg's economy which to some extent explains the country's very high GDP per capita is the fact that a large number of foreign residents are employed in the country and thus contribute to its GDP, while at the same time they are not included in the resident population.

The Netherlands comes out second among the EU Member States, at 33 percent above the EU27 average, but it is surpassed by EFTA Member States Norway and Switzerland. Ireland maintains its position among the richest EU Member States, but there is a clear downward trend between 2008 and 2010. This can be explained primarily by the development of its nominal GDP, which decreased by more than 13 percent in this period.

Other EU Member States with GDP per capita of 20 percent or more above the EU level in 2010 are Denmark, Austria and Sweden. Belgium and Germany are at about the same level, followed by Finland and the United Kingdom, while France comes out well ahead of Italy and Spain which have been at similar levels for several years.

Cyprus, with a GDP per capita marginally below EU27 average in 2010, remains ahead of Greece, which suffered from the economic crisis in 2010. Slovenia, Malta, Portugal and the Czech Republic are all clustered around 20 percent below the EU27 average, well ahead of Slovakia, Hungary, Estonia, Poland and Croatia (one of the EU Candidate Countries) which are around 40 percent below the EU27 average. Poland shows a clear improvement in its relative position, while Lithuania and Latvia, on the other hand, show a decline in GDP per capita between 2008 and 2010.

Romania and Bulgaria have GDP per capita levels just below 50 percent of the EU27 average. Turkey, an EU Candidate Country, was above the level of Romania and Bulgaria.

Five countries have a GDP per capita of 60 percent below the EU27 average or less. These are the two EU Candidate Countries Montenegro and the former Yugoslav Republic of Macedonia, and the three Western Balkan countries Serbia, Bosnia and Herzegovina, and Albania. The relative position of the latter countries has not substantially changed between 2008 and 2010.

Table 1: Volume indices per capita, 2008-2010 (EU27=100)

	Gross domestic product			Actual individual consumption		
	2008	2009	2010	2008	2009	2010
LU	279	266	271	151	153	150
NL	134	132	133	119	118	116
IE	133	128	128	109	103	102
DK	125	123	127	114	113	114
AT	124	125	126	113	115	116
SE	124	119	123	115	115	114
BE	116	118	119	108	109	110
DE	116	116	118	113	116	117
FI	119	115	115	110	110	111
UK	112	111	112	124	121	121
EA17	109	109	108	107	107	107
FR	107	108	108	111	113	113
IT	104	104	101	103	103	102
ES	104	103	100	99	95	95
CY	99	100	99	108	101	103
EL	92	94	90	104	104	101
SI	91	87	85	82	82	80
MT	79	82	83	81	85	83
PT	78	80	80	83	84	84
CZ	81	82	80	69	72	71
SK	73	73	74	70	72	71
HU	64	65	65	62	62	60
EE	69	64	64	64	58	57
PL	56	61	63	61	64	66
LT	61	55	57	70	63	61
LV	56	51	51	59	50	50
RO	47	47	46	49	46	45
BG	44	44	44	45	43	42
NO	192	176	181	132	135	136
CH	143	144	147	122	123	125
IS	124	118	111	122	109	105
HR	64	64	61	60	58	56
TR	47	46	49	50	50	53
ME	43	41	41	54	49	51
MK	34	36	36	40	41	41
RS	36	36	35	44	44	43
BA	30	31	31	37	37	37
AL	26	28	28	29	31	31

Source: Eurostat (online data code: prc_ppp_ind)

Consumption level in Luxembourg more than three times that of Bulgaria

While GDP per capita is often used as an indicator of countries' level of welfare, it is not necessarily a suitable indicator for households' actual standard of living. For the latter purpose, a better indicator may be Actual Individual Consumption (AIC) per capita.

In national accounts, Household Final Consumption Expenditure (HFCE) denotes expenditure on goods and services that are purchased and paid for by households. Actual Individual Consumption (AIC), on the other hand, consists of goods and services actually consumed by individuals, irrespective of whether these goods and services are purchased and paid for by households, by government, or by non-profit organisations. In international volume comparisons, AIC is often seen as the preferable measure, since it is not influenced by the fact that the organisation of certain important services consumed by households, like health and education services, differs a lot across countries. For example, if dental services are paid for by the government in one country, and by households in another, an international comparison based on HFCE would not compare like with like, whereas one based on AIC would.

Countries’ volume indices of AIC per capita can be found in the right-hand part of table 1. Generally, levels of AIC per capita are more homogeneous than GDP but still there are substantial differences across the EU Member States. To illustrate this, in 2010, thirteen countries were clustered in the range between 95 and 121 percent of the EU average, while the levels of GDP per capita for those countries vary between 90 and 133 percent.

Luxembourg keeps its position as the country with the highest level of AIC per capita in the EU, 50 percent above the average of the 27 EU Member States. However, while Luxembourg can be said to belong to "a division of its own" in terms of GDP, this is less so for AIC. One reason for this is that the consumption expenditure of foreign residents working in Luxembourg is recorded in the national accounts of the country of residence.

The EU Member State with the second highest AIC per capita is the United Kingdom at 21 percent above the average, while its GDP per capita was 12 percent above the EU average. Conversely, Ireland's AIC per capita was only marginally above the average EU level, while GDP per capita was 28 percent higher than the average. Ireland, the three Baltic countries and Iceland are the countries which have seen a very substantial decline in their relative position during the 2008-2010 period.

Price levels varied by more than three to one within the EU

The price level adjustment factors used to derive the volume indices in table 1 can also be applied in an analysis of countries' price levels. Table 2 shows countries' price levels to the right, with the EU27 average at 100, for AIC only. It also shows the exchange rates applied in the calculation of the price level indices (cf. box 1). In the following, we will restrict our discussion to the price levels of AIC, since this is closer to the concept of price levels that most people are familiar with than a price level indicator based on GDP.

Denmark has the highest price level, 47 percent above the EU average and remains by far the most expensive EU Member State. However, EFTA Member States Norway and Switzerland overtake Denmark in 2010 with price levels that exceeded the overall EU level by more than 50 percent. Other countries with price levels more than 20 percent higher than the EU27 average include Luxembourg, Sweden, Ireland and Finland. Belgium, France, Austria, the Netherlands, Italy, Germany and the United Kingdom all have price levels of up to 20 percent above the average.

The case of Iceland is particularly interesting, as the country used to be the most expensive in all of Europe. The most important factor contributing to this remarkable development is the very strong depreciation of the Icelandic króna in the years up to 2009. In 2010, price levels have increased again due to a strengthening of the króna.

Spain, Greece and Cyprus have price levels slightly below the EU average, followed by Portugal and Slovenia.

At the lower end of the table, we find several countries with price levels clustered between 25 and 50 percent below the EU average: Malta, the Czech Republic, Estonia, Slovakia, Latvia and two Candidate countries Croatia and Turkey. Lithuania, Hungary, Poland, Montenegro, Bosnia and Herzegovina, and Romania also fall within this range.

The lowest price levels – less than half the EU average – are found in Serbia, Bulgaria, Albania and in the former Yugoslav Republic of Macedonia.

Table 2: Exchange rates and price level indices (EU27=100) for AIC

	Exchange rates			Price level indices		
	2008	2009	2010	2008	2009	2010
DK	7.4560	7.4462	7.4473	143	148	147
LU	1.0000	1.0000	1.0000	127	132	132
SE	9.6152	10.6191	9.5373	118	112	126
IE	1.0000	1.0000	1.0000	133	132	124
FI	1.0000	1.0000	1.0000	120	124	123
BE	1.0000	1.0000	1.0000	114	117	116
FR	1.0000	1.0000	1.0000	111	113	111
AT	1.0000	1.0000	1.0000	109	112	110
NL	1.0000	1.0000	1.0000	105	109	109
IT	1.0000	1.0000	1.0000	103	106	105
EA17	1.0000	1.0000	1.0000	103	106	105
DE	1.0000	1.0000	1.0000	103	105	104
UK	0.7963	0.8909	0.8578	105	98	102
ES	1.0000	1.0000	1.0000	95	97	96
EL	1.0000	1.0000	1.0000	90	94	92
CY	1.0000	1.0000	1.0000	89	91	91
PT	1.0000	1.0000	1.0000	86	88	86
SI	1.0000	1.0000	1.0000	82	85	84
MT	1.0000	1.0000	1.0000	73	74	74
CZ	24.9460	26.4350	25.2840	71	68	70
EE	15.6466	15.6466	15.6466	71	70	68
SK	31.2600	1.0000	1.0000	64	67	66
LV	0.7027	0.7057	0.7087	69	68	65
LT	3.4528	3.4528	3.4528	60	61	59
HU	251.5100	280.3300	275.4800	64	58	59
PL	3.5121	4.3276	3.9947	64	54	57
RO	3.6826	4.2399	4.2122	56	51	51
BG	1.9558	1.9558	1.9558	43	45	45
NO	8.2237	8.7278	8.0043	146	143	156
CH	1.5874	1.5100	1.3803	131	142	151
IS	127.4551	172.6700	161.8900	120	102	111
HR	7.2239	7.3400	7.2891	70	71	71
TR	1.9064	2.1631	1.9965	61	57	64
ME	1.0000	1.0000	1.0000	53	53	52
MK	61.5201	61.2815	61.4800	41	40	39
BA	1.9558	1.9558	1.9558	52	52	51
RS	81.4672	93.9366	102.9022	52	49	47
AL	122.7000	132.0400	137.7664	45	44	43
Coefficients of variation of PLIs						
EA17				0.196	0.194	0.192
EU27				0.280	0.297	0.296
All 37 countries				0.342	0.358	0.368

Source: Eurostat (online data code : prc_ppp_ind)

Exchange rates are crucial in determining price levels, and exchange rate movements consequently often have a big impact on the development of price levels over time, as we have seen in the case of Iceland. In fact, several of the major price level changes observed between 2008 and 2010 can be at least partly explained by fluctuations of country's currencies against the euro. These movements have been more substantial between 2008 and 2009 than between 2009 and 2010. Between 2008 and 2009, the national currencies of Iceland, Poland, Serbia, Romania, Turkey, the United Kingdom, Hungary and Sweden depreciated more than 10%. Between 2009 and 2010 the currencies of almost all non-euro countries appreciated against the euro, in particular in Sweden, Switzerland and Norway. An exception is Serbia: the dinar continued to depreciate in 2010.

The last three rows in table 2 show the coefficients of variation of the price levels for three groups of countries: The euro area (EA17), the 27 EU Member States, and the entire group of 37 countries. A time series of these coefficients can be interpreted as a rudimentary price convergence indicator.

These figures tell us two things. First, and unsurprisingly, the price dispersion is much more pronounced in the EU as a whole, and in the 37-country group, than in the euro area. Second, while price levels are indeed marginally converging within the euro area, this seems not to be the case in the EU as a whole, or in the complete group of countries.

Box 2: Regular annual PPP revisions at Eurostat

PPPs are established on an annual basis. According to the regular publication calendar, PPPs are released as preliminary estimates 12 months after the end of the reference year and revised after 24 months, while the final results are released 36 months after the end of the reference year. In addition, an early estimate of PPPs, partly based on projections, is published 5 months after the end of the reference year. This regular PPP revision and release calendar is in line with the data delivery timetable for national accounts data as given in the ESA95 regulation(1). Thus, the 2008 results presented in this publication should be regarded as final, while the 2009 and 2010 results are still preliminary.

(1) ESA95; European System of Accounts 1995, Council Regulation (EC) 2223/1996 of 25 June 1996

METHODOLOGICAL NOTES

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.

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

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 by 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 cause minor differences between the PLIs and result in differences in ranking which are not statistically or economically significant.

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 to reflect only differences in the volumes purchased in countries. PPP and real expenditures provide the price and volume measures required for international comparisons.

Country abbreviations

EU member states

BE	Belgium	LU	Luxembourg
BG	Bulgaria	HU	Hungary
CZ	Czech Republic	MT	Malta
DK	Denmark	NL	Netherlands
DE	Germany	AT	Austria
EE	Estonia	PL	Poland
IE	Ireland	PT	Portugal
EL	Greece	RO	Romania
ES	Spain	SI	Slovenia
FR	France	SK	Slovakia
IT	Italy	FI	Finland
CY	Cyprus	SE	Sweden
LV	Latvia	UK	United Kingdom
LT	Lithuania		

EA17 **Euro area**

EFTA countries

CH	Switzerland
IS	Iceland**
NO	Norway

Candidate countries

ME	Montenegro
HR	Croatia
MK*	The former Yugoslav Republic of Macedonia
TR	Turkey

Western Balkan countries

AL	Albania
BA	Bosnia and Herzegovina
RS	Serbia

**MK: 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 UN*
***Also a Candidate country*

Further information

Eurostat Website: http://ec.europa.eu/eurostat

Data on "Purchasing power parities":
http://epp.eurostat.ec.europa.eu/portal/page/portal/purchasing_power_parities/data/database

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