

New comparison of GDP and consumption based on purchasing power parities for the year 2005

The OECD, in partnership with Eurostat, ROSSTAT¹ and CISSTAT², has calculated benchmark purchasing power parities (PPPs) for GDP and consumption for the year 2005 for 55 countries following a common methodology³. The calculation covers the 30 member countries of the OECD, the 27 member states of the European Union, ten CIS countries, six Western Balkan countries and Israel. The results will be included into the forthcoming release of the world-wide comparison undertaken by the World Bank⁴ for the year 2005.

What are PPPs?

PPPs are currency conversion rates that take into account the differences in price levels between countries. To do so, prices of a basket of about 3000 goods and services were compared across countries. The basket covered the entire range of final goods and services which make up GDP (consumer goods and services, government services, investment goods).

Often, income levels across countries are compared by converting national data into a common currency using exchange rates. However, exchange rates do not reflect relative prices of goods and services that are consumed and invested in a country – many other factors such as interest rates or capital flows determine exchange rates, witness their frequent and large swings. This is different with PPPs that directly reflect relative prices of final goods and services in different countries. When applied to nominal values of GDP or consumption, PPPs enable international volume comparisons of these aggregates.

Consider for example per capita GDP for Denmark relative to the OECD average in Table 2. When based on exchange rates (nominal GDP per head), income per person would appear to exceed that of the United States. But when PPPs are used (real GDP per head), Denmark's per capita GDP turns out to be lower than that of the United States. This is because the price level is higher in Denmark than in the United States. Exchange rates overstate the purchasing power of Danish consumers compared to consumers in the United States. The PPP conversion corrects for this bias.

GDP is a central indicator of economic activity...

GDP is the most frequently-used measure of macro-economic activity. It captures the value of all final goods and services produced during one period within the boundaries of a country. GDP per capita is thus a measure of the average level of economic activity. Small differences in real GDP per capita between countries are not, in general, statistically or economically significant. Thus, the precision underlying the data does not justify claims that, for example, real GDP per capita in Australia (index of 113) and Sweden (110) are truly different from each other. For purposes of comparison, the groups shown in the table below have been formed.

¹ Federal State Statistics Service of Russia.

² Interstate Statistical Committee of the Commonwealth of Independent States.

³ Eurostat-OECD Manual on Purchasing Power Parities, available under http://www.oecd.org/document/3/0,3343,en_2649_34357_37961859_1_1_1_1,00.html.

⁴ www.worldbank.org/data/icp

Table 1: Real GDP per head as percentage of OECD average

Greater than 125%	Ireland, Luxembourg, Norway, United States.
Between 100% and 124%	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Japan, Netherlands, Sweden, Switzerland, United Kingdom.
Between 75% and 99%	Cyprus*, Greece, Israel, Italy, New Zealand, Slovenia, Spain.
Between 50% and 74%	Czech Republic, Estonia, Hungary, Korea, Malta, Portugal, Slovak Republic.
Between 25% and 49%	Belarus, Bulgaria, Croatia, Kazakhstan, Latvia, Lithuania, FYROM, Mexico, Montenegro, Poland, Romania, Russian Federation, Serbia, Turkey.
Less than 25%	Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Kyrgyzstan, Moldova, Tajikistan, Ukraine.

...and of the size of economies...

Levels of GDP, when converted with PPPs, measure the size of economies. PPP-based data provide a clearer picture of the relative economic importance of countries. On the basis of the 2005 results, the nine largest countries in the set are the United States, Japan, Germany, France, United Kingdom, the Russian Federation, Italy, Spain and Canada. In 2005, the 27 countries of the European Union as a group have roughly the same economic magnitude as the United States.

...but for comparisons of living standards, consumption per capita is just as important...

GDP is made up of household consumption, investment, government expenditure, and net exports. Thus, high levels of GDP per capita do not necessarily mean high levels of household consumption. The set of benchmark results for 2005 therefore includes PPPs for consumption expenditure. However, simple comparisons of household expenditure on goods and services can be misleading if government services such as health or education are provided to different degrees in different countries. The relative levels of consumption shown in the table below control for these differences and include all types of individual consumption. Thus, they measure what households actually consume ('actual individual consumption') as opposed to what they purchase.

The picture emerging from the 2005 index of real actual individual consumption is quite distinct from the pattern observed in the economy as a whole (Table 2). Several countries feature a significantly higher index of consumption per head than of GDP per head. The United Kingdom is a case in point: its GDP per capita is about 9% above the OECD average whereas its individual consumption per capita is 19% above the OECD average. This reflects a volume of investment per capita that is significantly below OECD average and an expenditure structure with a relatively large share of individual consumption. In the Netherlands or in Australia, the situation is reversed with GDP per capita being relatively higher than consumption per capita.

... and for some countries, international transfers can sizably change per capita income.

Another issue is that GDP per capita makes no allowance for international transfer payments such as profits received from abroad or remittances sent abroad. Gross national income (GNI) takes such flows into account. For some countries, in particular Switzerland, Ireland and Luxembourg, moving from GDP to GNI can markedly change the picture of income flows, putting the GDP per capita figure into perspective.

For example, Swiss GNI per capita is estimated to be at more than 30 percent over the OECD average⁵, significantly higher than GDP per capita (index of 122), signaling net transfer payments *into* Switzerland. The opposite holds for two other countries, Ireland and Luxembourg. Measured in terms of GNI per capita, their index relative to the OECD average falls from 131 to around 110 for Ireland, and from 246 to around 200 for Luxembourg, signaling the presence of significant net transfers *out* of these countries. For most other OECD countries, GNI and GDP rankings are very similar. No separate table with GNI/GDP comparisons is therefore provided in this press.

Developments over time...

Compared with the last benchmark results for the year 2002, the broad composition of country income groups (as in Table 1) has remained relatively stable, with some exceptions: Italy, whose GDP per capita fell from a level that was 5% above the OECD average in 2002 to a level that is now at 4% below the OECD average. A smaller but still marked change in positions has also been registered for Switzerland, whose per capita GDP dropped from a level that was 30% above the OECD average in 2002 to 22% above the OECD average in 2005. In the cases of Italy and Switzerland, the change in per capita income is reflective of a below-average GDP per capita growth. Norway's upward jump from 45% to 64% above the OECD average reflects a larger weight given to exports due to a rising price of oil in conjunction with Norway's position as an oil-exporting country⁶. From Table 3 it is also apparent that, over the 2002-05 period, several lower-income OECD countries raised their GDP per capita position relative to the OECD average: Czech Republic, Slovak Republic, Mexico, and Turkey.

... and a final note: the well-being of citizens depends on more than GDP.

While GDP and household consumption are indicators of economic and consumer activity, they should not be mistaken for direct measures of the well-being of citizens. This encompasses many elements, such as the health status of the population, the environment or the level of security. GDP is an important milestone in the measurement of citizens' well-being, but only one⁷.

⁵ GNI has been converted using the same PPPs as for GDP. Also, GNI data are not available for all OECD countries. Hence, the values relative to OECD averages are approximations.

⁶ Note that the two comparisons are comparisons of real GDP per capita *across* countries, but based on the price structures in 2002 and in 2005, respectively. Thus, a country's GDP per capita relative to other countries can rise/fall by growing quicker/slower in real terms than the OECD average where real growth is measured on the basis of GDP at constant (2002) prices. Or a country's position can improve/deteriorate because the 2005 price structure is more/less 'favourable' for the country at hand. Norway is an example for a favourable development of the price structure.

⁷ For more information on OECD's efforts to develop broader concepts of well-being and progress, see <http://www.oecd.org/worldforum>. See also the Conference on '*Beyond GDP*' and the related press release <http://www.beyond-gdp.eu/>.

Table 2: GDP per capita and Actual Individual Consumption (AIC) per capita in 2005

Country	Exchange rates	GDP						AIC	
		PPPs	Compa-rative price levels ¹	Nominal ²	Real ³	Nominal per head	Real per head	Real per head ⁴	Compa-rative price levels ¹
	National currency per USD	National currency per USD	Index	% of total OECD	% of total OECD	% of OECD average	% of OECD average	% of OECD average	Index
Australia	1.309	1.39	103	2.04	1.98	117	113	104	103
Austria	0.8041	0.874	106	0.87	0.83	124	118	111	105
Belgium	0.8041	0.899	109	1.07	0.99	120	111	103	108
Canada	1.212	1.21	97	3.25	3.33	118	121	112	98
Czech Republic	23.95	14.4	58	0.36	0.61	41	70	62	55
Denmark	5.992	8.52	138	0.74	0.54	160	116	102	143
Finland	0.8041	0.983	119	0.56	0.47	125	105	93	124
France	0.8041	0.923	112	6.11	5.48	114	102	106	108
Germany	0.8041	0.893	108	7.99	7.40	113	105	103	107
Greece	0.8041	0.702	85	0.71	0.83	75	88	88	86
Hungary	199.5	129	63	0.32	0.51	37	59	59	59
Iceland	62.91	97.1	150	0.05	0.03	184	123	128	153
Ireland	0.8041	1.02	124	0.57	0.46	162	131	100	127
Italy	0.8041	0.875	106	5.06	4.79	101	96	93	107
Japan	110.2	130	114	13.02	11.39	119	104	97	115
Korea	1024	789	75	2.26	3.02	55	74	58	78
Luxembourg	0.8041	0.922	112	0.11	0.10	274	246	163	114
Mexico	10.90	7.13	64	2.20	3.46	25	39	42	62
Netherlands	0.8041	0.898	109	1.81	1.67	130	120	107	106
New Zealand	1.420	1.54	105	0.31	0.30	89	85	85	103
Norway	6.441	8.84	133	0.86	0.65	219	164	117	144
Poland	3.235	1.90	57	0.87	1.52	27	47	49	56
Portugal	0.8041	0.707	86	0.53	0.62	59	69	73	88
Slovak Republic	31.04	17.2	54	0.14	0.25	29	55	53	51
Spain	0.8041	0.768	93	3.23	3.48	87	94	91	91
Sweden	7.464	9.24	120	1.02	0.85	133	110	104	121
Switzerland	1.245	1.74	136	1.07	0.78	167	122	109	142
Turkey	1.349	0.868	63	1.03	1.65	17	27	27	64
United Kingdom	0.5499	0.649	115	6.42	5.60	125	109	119	113
United States	1.000	1.00	97	35.41	36.42	140	144	152	98
OECD		1.03	100	100.00	100.00	100	100	100	100

1. Ratio between PPPs and exchange rates. If larger (smaller) than 100, residents' purchasing power is lower (higher) than suggested by exchange rate conversion.

2. GDP in national currency converted by exchange rate.

3. GDP in national currency converted by PPPs for GDP.

4. AIC in national currency per inhabitant converted by PPPs for AIC.

Note: Data for European countries are sourced from Eurostat. GDP and AIC for Greece have recently been revised. This revision will only be incorporated into the OECD National Accounts database by mid December when the full Greek dataset will be available.

Table 2: GDP per capita and Actual Individual Consumption (AIC) per capita in 2005 (cont'd)

Country	Exchange rates	GDP						AIC	
		PPPs	Compa-rative price levels ¹	Nominal ²	Real ³	Nominal per head	Real per head	Real per head ⁴	Compa-rative price levels ¹
	National currency per USD	National currency per USD	Index	% of total OECD	% of total OECD	% of OECD average	% of OECD average	% of OECD average	Index
Bulgaria	1.573	0.593	37	0.08	0.21	12	32	35	37
Cyprus*	0.4639	0.424	89	0.05	0.05	75	84	85	90
Estonia	12.58	7.81	60	0.04	0.07	35	57	54	58
Latvia	0.5598	0.298	52	0.05	0.09	24	46	46	50
Lithuania	2.777	1.48	52	0.07	0.14	25	49	54	49
Malta	0.3457	0.247	70	0.02	0.02	49	70	74	70
Romania	2.912	1.42	47	0.28	0.60	15	32	35	48
Slovenia	192.6	147	74	0.10	0.14	59	79	71	75
EU27		0.846	102	39.19	38.31	93	91	91	101
Albania	100.8	48.6	47	0.02	0.05	9	19	20	47
Bosnia and Herzegovina	1.573	0.727	45	0.03	0.07	10	22	31	46
Croatia	5.951	3.94	64	0.11	0.17	29	46	43	64
FYROM	49.30	19.1	38	0.02	0.04	10	25	29	39
Montenegro	0.8041	0.366	44	0.01	0.01	12	27	27	50
Serbia	65.72	27.2	40	0.08	0.19	12	30	32	42
Western Balkans		97.2	49	0.27	0.54	15	30	32	49
Israel	4.488	3.72	81	0.37	0.46	66	82	76	82
Russian Federation	28.35	12.7	44	2.18	5.00	18	41	38	38
Armenia	459.1	179	38	0.01	0.04	5	13	17	32
Azerbaijan	4729	1632	34	0.04	0.11	5	16	13	28
Belarus	2158	779	35	0.09	0.25	10	29	32	29
Georgia	1.815	0.738	40	0.02	0.04	5	12	15	33
Kazakhstan	133.2	57.6	42	0.16	0.39	13	30	26	38
Kyrgyzstan	41.14	11.4	27	0.01	0.03	2	6	9	23
Moldova	12.62	4.43	34	0.01	0.02	3	8	14	29
Tajikistan	3.119	0.744	23	0.01	0.03	1	5	7	20
Ukraine	5.132	1.68	32	0.25	0.77	6	19	22	27
CIS**		12.09	41	2.77	6.68	13	32	30	36

*Footnote by Turkey: "The information in this document with reference to « Cyprus » relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognizes the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the 'Cyprus issue'".

*Footnote by all the European Union Member States of the OECD and the European Commission: "The Republic of Cyprus is recognized by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus".

**CIS does not include Turkmenistan and Uzbekistan.

Table 3: GDP per capita and Actual Individual Consumption (AIC) per capita in 2002 and 2005

Country	2002		2005	
	Real GDP per head	Real AIC per head	Real GDP per head	Real AIC per head
Luxembourg	224	164	246	163
Norway	145	115	164	117
United States	141	146	144	152
Ireland	129	97	131	100
Iceland	121	113	123	128
Switzerland	130	118	122	109
Canada	117	109	121	112
Netherlands	125	117	120	107
Austria	119	115	118	111
Denmark	120	109	116	102
Australia	112	108	113	104
Sweden	111	107	110	104
Belgium	117	112	111	103
United Kingdom	111	122	109	119
Germany	108	108	105	103
Finland	108	93	105	93
Japan	105	94	104	97
France	108	113	102	106
Italy	105	100	96	93
Spain	94	94	94	91
Greece	85	91	88	88
New Zealand	87	85	85	85
Korea	73	60	74	58
Czech Republic	66	63	70	62
Portugal	72	74	69	73
Hungary	57	58	59	59
Slovak Republic	51	52	55	53
Poland	45	50	47	49
Mexico	37	40	39	42
Turkey	25	28	27	27
OECD	100	100	100	100