

New GDP Comparisons Based on Purchasing Power Parities for the Year 2002

The OECD, within the framework of the Eurostat-OECD joint PPP Programme has calculated purchasing power parities (PPPs) for the benchmark year 2002 for all 30 OECD Member countries and 12 other countries. Results at the level of total GDP can be found in the attached table and graph.

Eurostat, who provided the data for the 25 EU member states and 6 other associated European countries, published its final results 2002 at 13 December 2004 in the series "Statistics in Focus" and on its website.

What are PPPs?

PPPs are currency conversion rates that enable international volume comparisons of GDP by taking into account the differences in price levels between countries. To do so, prices of a basket of comparable and representative goods and services are compared across countries. The basket included some 3 000 items and covered the entire range of final goods and services (consumption goods and services, government services, equipment goods and construction projects) which make up GDP.

The appropriate tool to compare GDP per capita between countries...

Often, income or GDP levels across countries are compared by converting national data into a common currency using exchange rates. However, exchange rates only partly reflect relative prices of goods that are domestically consumed and invested - many other factors such as interest rates and capital flows shape exchange rates, witness their frequent and large swings. This is different with PPPs that directly reflect relative prices of consumer and investment goods in different countries.

Consider for example per capita GDP for Switzerland relative to the OECD average: when based on exchange rates, income per person would appear to exceed those of United States. However, when PPPs are used, Switzerland per capita GDP turns out to be lower than that of the United States. This is because the price level is higher in Switzerland than in the United States. However, when the price level effect is removed, the volume of goods and services purchased in the United States is higher, on a per capita basis, than any other country included in the comparison except Luxembourg and Norway.

...in particular when it comes to comparing groups of high and low income countries...

Generally, the gap between high-income countries and low-income countries narrows when PPPs are used instead of exchange rates. For example, the per capita indices based on PPPs of Mexico, Greece, Hungary, Poland, Portugal, Turkey and Russian Federation are closer to those of United States than are their per capita indices based on exchange rates. Again, this is because the price levels in these countries are low compared to richer countries.

...but care must be taken not to over-interpret small differences between countries...

Small differences in per capita GDP between countries are not, in general, statistically or economically significant. Thus, the precision of the underlying data does not justify claims that, for example, real GDP per person in Sweden (index of 111 with OECD average=100), Australia (110), Finland (109), France (109) were significantly different from each other.

...and country groupings are preferable to precise ranking.

As the per capita index based on PPPs is not sufficiently accurate to establish a strict order of ranking, four country groups have been identified. Country indices are based on OECD 30 = 100, where average per capita GDP corresponds to USD 23 100:

- a high-income group (120 and above): Ireland, Luxembourg, Norway, Switzerland and the United States;
- a high-middle income group (between 100 and 120): Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Italy, Japan, the Netherlands, Sweden and the United Kingdom;
- a low-middle income group (between 50 and 99): Cyprus, the Czech Republic, Greece, Hungary, Korea, Israel, Malta, New Zealand, Portugal, Slovenia and Spain;
- a low-income group (less than 50): Bulgaria, Croatia, Estonia, Former Yugoslav Republic of Macedonia (FYROM), Latvia, Lithuania, Mexico, Poland, Romania, the Russian Federation, the Slovak Republic and Turkey.

The index for Ireland rose from 114 in 1999 to 129 in 2002 moving it into the group of high-income countries. Elsewhere the groupings remained generally unchanged.

A way of establishing the relative size of economies...

In this context, another use of PPPs is that of measuring the relative size of economies. The attached table shows each country's GDP as a percentage of total GDP of the 30 OECD countries. There is a marked difference in the appreciation of the size of economies, depending on whether exchange rates or PPPs are used to compare GDP data: the discrepancy is in particular present in the group of low income countries. For example, on an exchange rate basis, the Russian Federation corresponds to about 1.3 percent of total GDP in the OECD area. Corrected for differences in the price level, this number rises to 4 percent.

PPP-based GDP data provide a clearer picture of the relative importance of the ten largest economies covered by the comparison -- United States, Japan, Germany, United Kingdom, France, Italy, Russian Federation, Mexico, Spain and Canada. They also confirm that by 2002 the 15 EU countries as a group were virtually of the same economic size as the United States.

For more detailed information, see:

- the OECD publication "Purchasing Power Parities and Real Expenditures: 2002 Results" (Forthcoming) with extensive information on more detailed aggregates
- Statistics in brief, No 3, March 2002, OECD, "Purchasing power parities – measurement and uses"
- Eurostat, Statistics in focus 53/ 2004 Purchasing Power Parities and related economic indicators for the EU, Candidate Countries and EFTA; Final results 2002 and preliminary data 2003
- Eurostat website: <http://europa.eu.int/comm/eurostat/>

Data and more information on PPPs are also available free of charge at: <http://www.oecd.org/std/ppp>.

Table: Exchange rates, PPPs, comparative price levels and indices of nominal and real final expenditure on GDP, 2002, (OECD 30 = 100)

<i>Country</i>	Exchange rates	PPPs	Compa-rative price levels	Nominal GDP	Real GDP	Nominal GDP per head	Real GDP per head
Austria	1.063	0.912	95	0.79	0.83	112	118
Belgium	1.063	0.883	92	0.93	1.01	103	112
Finland	1.063	0.967	100	0.50	0.50	110	109
France	1.063	0.900	94	5.43	5.81	102	109
Germany	1.063	0.959	100	7.50	7.53	104	105
Greece	1.063	0.678	70	0.50	0.72	53	75
Ireland	1.063	1.00	104	0.46	0.44	134	129
Italy	1.063	0.825	86	4.49	5.24	90	105
Luxembourg	1.063	0.980	102	0.08	0.08	209	205
Netherlands	1.063	0.921	96	1.58	1.66	112	118
Portugal	1.063	0.658	68	0.46	0.67	51	74
Spain	1.063	0.743	77	2.49	3.22	70	91
EURO 12	1.063	0.876	91	25.2	27.7	94	103
Denmark	7.895	8.43	118	0.65	0.55	139	118
Sweden	9.734	9.36	106	0.91	0.86	117	111
United Kingdom	0.6682	0.610	101	5.91	5.86	114	113
EU 15	1.063	0.899	93	32.7	35.0	98	105
Cyprus *	0.6113	0.438	79	0.04	0.05	64	80
Czech Republic	32.73	14.2	48	0.28	0.58	31	65
Estonia *	16.63	7.63	51	0.03	0.05	22	44
Hungary	258.2	114.	49	0.25	0.50	28	56
Latvia *	0.6174	0.254	46	0.03	0.08	17	38
Lithuania *	3.676	1.43	43	0.05	0.12	18	41
Malta *	0.4345	0.245	62	0.02	0.02	45	72
Poland	4.099	1.82	49	0.72	1.47	22	44
Slovak Republic	45.36	16.2	39	0.09	0.23	20	49
Slovenia *	240.1	144.	66	0.08	0.13	48	73
EU 25	1.063	0.863	90	34.3	38.2	86	96
Australia	1.841	1.33	80	1.51	1.89	88	110
Canada	1.569	1.22	86	2.75	3.18	100	116
Iceland	91.57	92.1	111	0.03	0.03	128	115
Japan	125.4	143	126	15.0	11.9	135	107
Korea	1251	778	69	2.07	3.01	50	72
Mexico	9.656	6.58	75	2.45	3.26	28	37
New Zealand	2.162	1.46	75	0.22	0.30	64	86
Norway	7.978	9.14	126	0.72	0.57	182	144
Switzerland	1.559	1.80	128	1.05	0.82	163	128
Turkey	1529732	611482	44	0.69	1.56	11	26
United States	1.000	1.00	110	39.5	35.8	157	142
OECD 30	1.000	0.906	100	100.0	100.0	100	100
Bulgaria	2.071	0.582	31	0.06	0.19	9	28
Croatia	7.869	3.75	53	0.08	0.16	22	42
Israel	4.738	3.46	81	0.39	0.49	72	89
FYROM	64.35	20.0	34	0.01	0.04	8	24
Romania	33226	9891	33	0.17	0.52	9	28
Russian Federation	31.35	9.27	33	1.30	3.99	10	32

* Countries which are EU members but non-OECD members.

Graph: Comparative price levels and indices of real GDP per head, 2002, OECD 30 = 100.

