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GDP per capita, consumption per capita and price level indices

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Highlights

In 2018, Luxembourg recorded the highest level of GDP per capita in the EU followed by Ireland.

Volume indices of GDP per capita, 2018 (EU-28=100)

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- Source: Eurostat (online data code: prc_ppp_ind)

This article presents the most recent analysis of purchasing power parities and related [economic indicators](#) ([gross domestic product \(GDP\) per capita](#), level of [actual individual consumption \(AIC\)](#) per capita, countries' [price level indices](#)) in the [European Union \(EU\)](#) and the countries mentioned below for the years 2015, 2016, 2017 and 2018, focusing primarily on the latest reference year. The countries included in the comparison are the 28 EU Member States, three [EFTA](#) countries (Iceland, Norway and Switzerland), five EU [candidate countries](#) (Albania, Montenegro, North Macedonia, Serbia and Turkey) and one [potential candidate country](#) (Bosnia and Herzegovina).

Full article

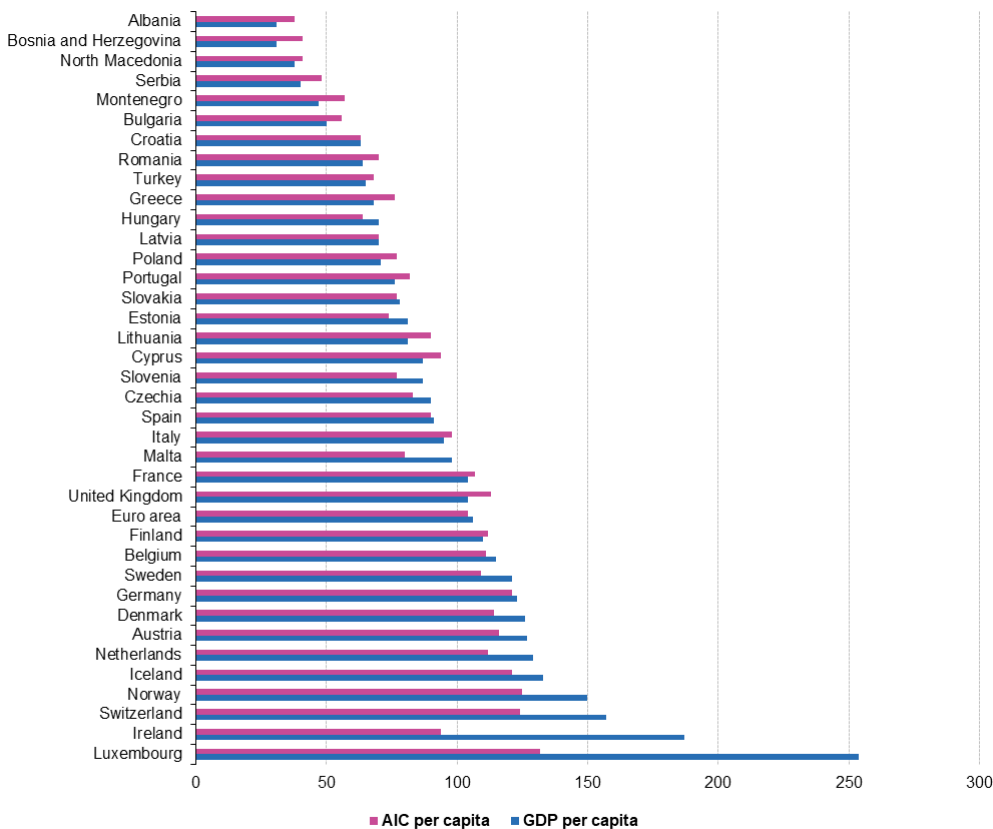
Overview

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In 2018, Ireland recorded the second highest level of GDP per capita in the [EU-28](#), at 87 % above the EU average, with only Luxembourg at a higher level. Bulgaria was the Member State with the lowest GDP per capita, at 50 % below the EU average. Levels of actual individual consumption were somewhat more homogeneous, but still showed significant differences across Europe. Luxembourg

recorded the highest level of AIC per capita in the [EU-28](#), at 32 % above the EU average, as well as the highest price level, at 42 % above the EU average.

Volume indices of GDP and AIC per capita, 2018, (EU-28=100)



Source: Eurostat (online data code: prc_ppp_ind)



Figure 1: Volume indices of GDP and AIC per capita, 2018 (EU-28=100) - Source:

Eurostat ([prc_ppp_ind](#))

Relative volumes of GDP per capita

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.

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 is quite remarkable. Luxembourg has by far the highest GDP per capita among all the 37 countries included in this comparison, being more than two

and a half times above the EU-28 average. This is partly explained by the fact that a large number of foreign residents are employed in the country and thus contribute to its GDP, while they are not included in the resident population.

Volume indices per capita, 2015-2018, (EU=100)

	Gross domestic product				Actual individual consumption			
	2015	2016	2017	2018	2015	2016	2017	2018
Luxembourg	266	260	253	254	140	134	132	132
Ireland	178	177	181	187	94	94	93	94
Netherlands	130	128	128	129	115	111	111	112
Austria	129	128	127	127	121	119	117	116
Denmark	127	126	128	126	116	113	114	114
Germany	124	124	124	123	122	122	122	121
Sweden	125	122	121	121	113	110	109	109
Belgium	118	118	116	115	114	113	112	111
Finland	109	109	109	110	114	113	112	112
EA19	106	106	106	106	105	105	104	104
United Kingdom	109	107	106	104	115	115	114	113
France	106	104	104	104	110	110	108	107
Malta	93	95	98	98	79	78	79	80
Italy	95	97	96	95	97	98	98	98
Spain	91	91	92	91	89	89	89	90
Czechia	87	88	89	90	78	78	81	83
Slovenia	82	83	85	87	76	76	77	77
Cyprus	82	84	85	87	91	92	92	94
Estonia	76	77	79	81	71	72	72	74
Lithuania	75	75	78	81	83	85	88	90
Slovakia	77	77	76	78	76	76	76	77
Portugal	77	77	77	76	82	82	82	82
Poland	69	68	70	71	74	74	75	77
Latvia	64	64	67	70	66	66	68	70
Hungary	68	67	68	70	63	62	62	64
Greece	69	68	67	68	79	77	76	76
Romania	56	59	63	64	58	64	68	70
Croatia	59	61	62	63	59	61	62	63
Bulgaria	47	48	49	50	53	53	54	56
Switzerland	165	160	156	157	131	126	124	124
Norway	156	145	146	150	130	127	126	125
Iceland	126	130	130	133	116	116	118	121
Turkey	66	65	66	65	66	66	67	68
Montenegro	42	44	45	47	54	56	56	57
Serbia	39	39	39	40	47	47	47	48
North Macedonia	36	37	36	38	41	42	40	41
Albania	30	30	30	31	38	37	38	38
Bosnia and Herzegovina	30	31	31	31	41	41	41	41

Note: countries are sorted according to their 2018 volume index per capita for GDP.

Source: Eurostat (online data code: prc_ppp_ind)

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Table 1: Volume indices per capita, 2015-2018, (EU=100) - Source: Eurostat ([prc_ppp_ind](#))

Ireland comes out second among the EU Member States, at 87 % above the EU-28 average, followed by the Netherlands, Austria, Denmark, Germany and Sweden, each with a GDP per capita more than 20 % above the average. The EFTA countries Switzerland, Norway and Iceland have a level of GDP per capita of 57 %, 50 % and 33 % above the EU-28 average, respectively.

Belgium, Finland, the United Kingdom and France are the other EU Member States with a GDP per capita above the EU-28 average. Malta, Italy, Spain and Czechia have a level of GDP per capita of less than 10 % below the EU-28 average. Slovenia, Cyprus, Estonia and Lithuania have a GDP per capita

between 10 % and 20 % below the EU-28 average. The GDP per capita of Slovakia, Portugal, Poland, Latvia and Hungary is less than 30 % below the average. Greece, Romania, Croatia and the candidate country Turkey have a GDP per capita of less than 40 % below the average. Bulgaria is placed at 50 % below the EU-28 average, followed by the candidate countries Montenegro, Serbia, North Macedonia, Albania and the potential candidate country Bosnia and Herzegovina.

Relative volumes of consumption per capita

While GDP is mainly an indicator of the level of economic activity, Actual Individual Consumption (AIC) is an alternative indicator better adapted to describe the material welfare of households.

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.

Luxembourg has the highest level of AIC per capita among all 37 countries included in this comparison at 32 % above the EU-28 average. It is followed by the EFTA countries Norway and Switzerland, with AIC per capita at 25 % and 24 % above the EU-28 average, respectively. 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 cross-border workers contribute to GDP in Luxembourg while their consumption expenditure is recorded in the national accounts of the country of their residence. Ireland, having the second highest level of GDP per capita in the EU-28, has an AIC per capita at 6 % below the EU-28 average.

Price levels in Europe

Table 2 shows countries' price levels to the right, with the EU-28 average at 100, for AIC only. It also shows the exchange rates applied in the calculation of the price level indices (see methodology described in *Data sources*). In the following, the discussion is restricted to the price levels of AIC, since this is closer to the concept of price levels that people are familiar with than a price level indicator based on GDP.

Exchange rates and price level indices for AIC, 2015-2018, (EU-28=100)

	Exchange rates				Price level indices for AIC			
	2015	2016	2017	2018	2015	2016	2017	2018
Luxembourg	1	1	1	1	132	137	140	142
Denmark	7.459	7.445	7.439	7.453	135	140	139	138
Ireland	1	1	1	1	122	126	129	129
Sweden	9.354	9.469	9.635	10.258	129	135	134	127
Finland	1	1	1	1	120	123	123	123
United Kingdom	0.726	0.819	0.877	0.885	135	124	118	118
Netherlands	1	1	1	1	110	114	115	115
Austria	1	1	1	1	107	110	113	114
Belgium	1	1	1	1	106	110	112	113
France	1	1	1	1	104	106	107	107
Germany	1	1	1	1	100	103	104	104
EA19	1	1	1	1	99	102	103	103
Italy	1	1	1	1	100	101	102	101
Spain	1	1	1	1	90	93	94	94
Cyprus	1	1	1	1	89	90	91	91
Portugal	1	1	1	1	79	82	84	85
Slovenia	1	1	1	1	80	82	83	84
Malta	1	1	1	1	80	81	82	83
Greece	1	1	1	1	81	82	83	82
Estonia	1	1	1	1	69	71	74	76
Latvia	1	1	1	1	64	67	68	69
Slovakia	1	1	1	1	62	64	65	66
Czechia	27.279	27.034	26.326	25.647	58	61	62	65
Croatia	7.614	7.533	7.464	7.418	61	61	63	64
Lithuania	1	1	1	1	56	58	60	61
Hungary	310.00	311.44	309.19	318.89	53	56	59	59
Poland	4.184	4.363	4.257	4.262	51	51	53	54
Romania	4.445	4.490	4.569	4.654	47	47	48	49
Bulgaria	1.956	1.956	1.956	1.956	42	43	45	46
Iceland	146.300	133.590	120.540	127.890	132	154	172	164
Switzerland	1.068	1.090	1.112	1.155	167	170	167	159
Norway	8.950	9.291	9.327	9.598	152	155	157	155
Montenegro	1	1	1	1	48	49	50	51
Serbia	120.733	123.118	121.337	118.272	43	44	46	48
Albania	139.740	137.360	134.150	127.590	40	43	44	47
North Macedonia	61.611	61.596	61.575	61.512	41	42	43	43
Turkey	3.026	3.343	4.121	5.708	50	50	45	37
Bosnia and Herzegovina	1.95583	1.95583	1.95583	1.95583	48	47	48	48
					Variation coefficients			
EA-19					23.3	23.6	23.1	22.3
EU-28					32.4	32.2	31.1	30.2
All 37					41.0	41.6	41.5	40.2

Note: countries are sorted according to their 2018 price level index for AIC.
Source: Eurostat (online data code: prc_ppp_ind)

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Table 2: Exchange rates and price level indices for AIC, 2015-2018, (EU-28=100) - Source:

Eurostat ([prc_ppp_ind](#))

Luxembourg has the highest price levels among the Member States, 42 % above the EU-28 average.

However, the EFTA countries Iceland, Switzerland and Norway have higher price levels, at 64 %, 59 % and 55 % above the EU-28 average, respectively. The EU Member States Denmark, Ireland, Sweden and Finland have price levels more than 20 % above the EU-28 average. The United Kingdom, the Netherlands, Austria, Belgium, France, Germany and Italy are the other EU Member States with price levels above the EU-28 average.

Spain and Cyprus have price levels less than 10 % below the EU-28 average, followed by Portugal, Slovenia, Malta and Greece at less than 20 % below the EU-28 average. Estonia has a price level situated at 24 % below the EU-28 average, followed by Latvia, Slovakia, Czechia, Croatia and Lithuania

with price levels less than 40 % below that average. The EU Member States Hungary and Poland have price levels between 40 % and 50 % below the EU-28 average, followed by the candidate country Montenegro at 49 % below that average. The Member States Romania and Bulgaria, the candidate countries Serbia, Albania, North Macedonia, Turkey and the potential candidate country Bosnia-Herzegovina all have price levels more than 50 % below the EU-28 average.

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. In fact, several of the major price level changes observed between 2015 and 2018 can be at least partly explained by fluctuations of country's currencies against the Euro. In 2018, the national currency of Turkey showed a large depreciation against the Euro; the same country shows the largest decrease of price levels between 2015 and 2018.

The last three rows in Table 2 show the coefficients of variation of the price levels for three groups of countries: the euro area (EA-19), the EU Member States (EU-28) and the entire group of 37 countries. A time series of these coefficients can be interpreted as a rudimentary price convergence indicator.

These figures show that, firstly, and unsurprisingly, the price dispersion is much less pronounced in the euro area than in the EU as a whole and in the 37-country group, which can be partially impacted by the volatility of exchange rates. Secondly, over this four-year period, price levels are very slightly converging within EA-19 and EU-28, and very slightly diverging for all 37 countries.

Data sources

The data in this article are produced by the [Eurostat-OECD Purchasing power parities](#) programme. The full methodology used in the programme is described in the [Eurostat-OECD Methodological manual on purchasing power parities](#).

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 EU-28 total.

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 6 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 [ESA 2010 Regulation 549/2013](#) of 21 May 2013. Thus, the 2015 results presented in this publication should be regarded as final, while the 2016, 2017 and 2018 results are still preliminary.

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 Kingdom it is 2.20 pound sterling, the PPP for hamburgers between France and the United Kingdom is 2.84 euro to 2.20 pounds or 1.29 euro to the pound. In other words, for every pound spent on hamburgers in the United Kingdom, 1.29 euro would have to be spent in France in order to obtain the same quantity and quality – or volume – of hamburgers.

The indices of relative volumes of GDP and AIC per capita published in this article have been adjusted for price level differences, and are expressed in relation to the European Union average (EU-28=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 EU-28 as a whole. The price level adjustment factors, referred to as purchasing power parities, can also be used in comparison of countries' price levels.

Price level indices (PLIs) 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. They are presented relative 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.

Volume and price level indices are not intended to rank countries strictly. In fact, they only provide an indication of the order of magnitude of the volume or price level in one country in relation to others, particularly when countries are clustered around a very narrow range of outcomes. The level of uncertainty associated with the basic price and national accounts data, and the methods used for compiling PPPs imply that differences between countries that have indices within a close range should not be over-interpreted.

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.

Context

GDP per capita volume indices (on a regional basis - see [GDP at regional level](#)) are used in the allocation of [Structural Funds](#) within the EU. Regions where real GDP per capita is less than 75 % of the EU average (taken over a period of three years) are eligible for support from the Structural Funds.

Eurostat is co-operating closely with other international institutions in the production and dissemination of PPPs. It co-operates with the OECD to produce PPP statistics for the OECD countries and with the [World Bank](#) and the [International Monetary Fund \(IMF\)](#) to produce global PPP data. See external links below.