

Purchasing power parities in Europe and the world

Statistics Explained

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Highlights

" In 2021, the gross domestic product (GDP) of the EU represented 15.2% of world's GDP."

" In 2021, 5 EU Member States collectively contributed about 10.1% to the world's GDP: Germany (3.4%), France (2.4%), Italy (1.9%), Spain (1.4%) and Poland (1.0%)."

" In 2021, Luxembourg was the country with the highest GDP per capita in the world and the highest actual individual consumption (AIC) per capita in the EU. "

This article provides a summary and a brief analysis of the results of 2021 [International Comparison Program \(ICP\)](#). The data are presented using the European Union as reference and expressed in [purchasing power standards \(PPS\)](#). The PPS is, in effect, the average of the currencies of all [EU Member States](#). The ICP is a worldwide statistical partnership to collect comparative price data and compile detailed expenditure values of countries' [gross domestic product \(GDP\)](#), and to estimate [purchasing power parities \(PPPs\)](#) of the world's economies. The complete results can be found on the [World Bank International Comparison Program website](#). Using PPPs instead of market exchange rates to convert currencies makes it possible to compare the output of economies and the material welfare of their inhabitants in real terms (that is, controlling for differences in price levels). [Eurostat](#), the statistical office of the European Union is a partner in the ICP and provides the required data for the [27 EU Member States](#), three [EFTA](#) countries and six [candidate countries](#). PPPs convert different currencies into a common unit and, in the process of conversion, equalizes their purchasing power by eliminating differences in price levels between economies. PPPs allow international comparisons of GDP and its components that avoid the over- or under-estimation of economic output inherent in market exchange rate comparisons, as the latter does not adjust for price levels. When the GDP and component expenditures are converted into a common currency using PPPs, they are valued at the same price level and thus reflect only differences in the volumes of goods and services purchased in the countries concerned. They are also not subject to fluctuations in market exchange rates. PPPs are calculated based on the prices of items in a common basket of goods and services and the expenditure shares, used as weights, for groups of items in each of the participating economies.

Shares in world GDP in PPS

In 2021, the gross domestic product (GDP) of the EU countries represented 15.2 % of the world's GDP expressed in purchasing power standards (PPS). Figure 1 shows the shares of all countries (outside the EU) that have a share larger than 1 % of world GDP expressed in purchasing power standards (PPS).



Figure 1: Shares in world GDP in PPS, 2021 Source: International Comparison Program 2021 and Eurostat calculation

The largest economy in the world in 2021 was China, with about 18.9 % of world GDP. The United States was the second largest economy, with 15.5 % of world GDP, just 0.3 percentage points more than that of the EU.

The two largest economies, China and the USA, together with the total EU countries' economy, accounted for almost half of world GDP.

Among the 20 countries with a share larger than 1 % of world GDP expressed in PPS, there were 5 EU countries: Germany (3.4 %), France (2.4 %), Italy (1.9 %), Spain (1.4 %) and Poland (1.0 %). They collectively contributed about 10.1 % to world GDP.

In 2021, India was one of the most populous countries in the world, with a share of world population close to that of China. However, the size of the Indian economy in PPS terms was only 38 % of that of China with the share in the world GDP of 7.2 %. Among the EU candidate countries, Türkiye had the largest share with 1.7 % of the world GDP.

GDP and actual individual consumption (AIC) per capita in PPS

GDP per capita is sometimes considered an indicator of the average material welfare of an economy. The high GDP per capita of an economy can sometimes reflect high levels of gross fixed capital formation and government consumption expenditure as well as a high level of net exports. **actual individual consumption (AIC)** per capita is more useful when describing the average material welfare of the population in an economy. AIC 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 2021, the average world GDP per capita and world AIC per capita was 39 % of the EU.

Table 1 shows indices of GDP and AIC per capita in PPS for a selection of countries, expressed in relation to the average across all EU Member States (EU=100). All countries that are included in Figure 1 are shown in Table 1, plus those countries in the world and in the EU that score the highest or the lowest on either indicator.

The most recent PPPs data, including for the year 2021, for the European countries included in the Eurostat regular comparisons are published [here](#) .

In 2021, GDP per capita varied enormously around the world: from 2 % of the EU in Burundi to 266 % of the EU in Luxembourg. For AIC the difference is less, but still significant.

Looking at GDP per capita for the world's 20 largest economies, only 6 countries were above the EU average in 2021: the United States, Germany, Australia, Canada, France and the United Kingdom. While the Chinese economy was the largest in terms of GDP in PPS, the GDP per capita of China was only 39 % of the EU average in 2021.

GDP and AIC* in PPS per capita, 2021

(EU=100)

	GDP	AIC*
Luxembourg	266	143
United States	137	159
Germany	119	120
Australia	117	112
Canada	108	112
France	103	110
United Kingdom	102	110
European Union	100	100
Saudi Arabia	97	79
Italy	96	97
South Korea	94	78
Japan	86	89
Spain	84	86
Poland	77	85
Russia	75	69
Türkiye	61	67
Bulgaria	57	64
Mexico	40	49
China	39	28
Brazil	33	38
Egypt	33	48
Indonesia	25	23
India	15	17
Congo, Democratic Republic	3	2
Central African Republic	2	3
Burundi	2	3

Note: countries are sorted according to their 2021 GDP per capita index.

AIC*: Actual Individual Consumption

Source: International Comparison Program 2021 and Eurostat calculations.

eurostat 

Table 1: GDP and AIC in PPS per capita, 2021, EU=100 Source: International Comparison Program 2021 and Eurostat calculations.

In 2021, Luxembourg was the country with the highest GDP per capita in the world and the highest AIC per capita in the EU. The large difference between the two indicators for this country was due to the significant share of cross-border workers in total employment. While contributing to GDP, these workers are not taken into consideration as part of the resident population, which is used to calculate GDP per capita. AIC by contrast only includes the consumption of residents.

The United States had the highest level of AIC per capita in the world for 2021.

Bulgaria, the country with the lowest levels of GDP and AIC per capita in the EU, had higher levels of both indicators than, for example Brazil and China.

Türkiye, with 61 % of the EU average for GDP per capita and 67 % of the EU average for AIC per capita, is the largest economy among the EU candidate countries.

Burundi and the Central African Republic registered the lowest index of GDP per capita. For AIC per capita, the lowest index was found in the Democratic Republic of the Congo.

Price level indices

The price level index - the ratio of a PPP to its corresponding market exchange rate - is used to compare the price levels of economies.

Table 2 shows price level indices for GDP and AIC for a selection of countries. Again, the countries of Figure 1 are included plus those countries in the world and in the EU that have the highest or lowest indices for either indicator.

The price level indices of the countries covered by the Eurostat regular comparisons are published [here](#) .

A price level index above 100 indicates that the price level for the respective country is above the average price level of the EU, and vice versa for an index below 100.

Price level indices for GDP and AIC*, 2021

(EU=100)

	GDP	AIC*
Bermuda	164	177
Switzerland	153	176
Australia	143	148
United States	134	132
Denmark	133	143
Luxembourg	130	153
Canada	126	127
Japan	121	119
United Kingdom	119	127
Germany	111	109
France	109	109
European Union	100	100
Italy	98	102
South Korea	97	101
Spain	94	98
China	83	80
Saudi Arabia	68	69
Mexico	66	62
Poland	60	56
Brazil	59	56
Romania	53	50
Indonesia	45	45
Russia	43	42
Türkiye	41	37
India	38	34
Egypt	33	31
Syria	26	28

Note: countries are sorted according to their 2021 price level index for GDP.

AIC*: Actual Individual Consumption

Source: International Comparison Program 2021 and Eurostat calculations.



Table 2: Price level indices for GDP and AIC, 2021, EU=100 Source: International Comparison Program 2021 and Eurostat calculations.

In 2021, the average price level of the world economy relative to the average price level of the EU was 85 % for

GDP and 83 % for AIC. Table 2 shows that, generally, no large differences between the price level indices for GDP and AIC exist. The economy with the highest price level indices in the world in 2021, for both GDP and AIC, was Bermuda. Denmark had the highest price level indices among the EU Member States for GDP and Luxembourg for AIC in 2021. Romania had the lowest price level indices among the EU Member States for both indicators. The difference between the highest and lowest price level indices in the world (found in Bermuda and Syria, respectively) is about 6 times, whereas this gap within the EU is about 3 times. Among the EU candidate countries, Ukraine had the lowest price level indices for both indicators. Switzerland was ranked third in the world for GDP price level indices and second for AIC price level indices.

Revised ICP 2017 results

Results published in 2020 for the ICP reference year 2017 have been revised using updated 2017 expenditure, population, and market exchange rate data. The ICP is primarily designed to compare levels of economic activity across economies in a particular reference year. However, given that the methodology for the 2017 and 2021 cycles was kept mainly the same, and the set of economies participating in each cycle differed only slightly, it is possible to compare the results from the two years, albeit with some caution.

Below some data highlighted from the ICP reference year 2017. For more information, see the [World Bank ICP website](#) . The World Bank has also produced and published PPPs for six major headings for 2018 to 2020 and for the first time the extrapolated GDP PPPs for 2022 and 2023, providing a comprehensive and up-to-date view of the global economic landscape. These data are consistent with the revised 2017 and new 2021 results.

In both 2017 and 2021 rounds of the ICP, China was the largest economy in the world, followed by the United States and the EU. In 2017, China's share of the world GDP was 16.9 percent, the United States' share was 16.1 % and EU accounted for 15.6 % of world GDP.

Luxembourg was the country in the world with the highest GDP per capita in PPS (269 %) in 2017. The United States had the highest level of AIC per capita in PPS (160 %).

In the EU, Luxembourg had the highest GDP per capita (269 %) and AIC per capita (151 %) in 2017. Bulgaria was the country with the lowest levels of GDP per capita (50 %) and AIC per capita (55 %) among the EU Member States.

In 2017, Bermuda was the economy with the highest price level indices in the world of both GDP (169 %) and AIC (193 %). Denmark had the highest price level indices among the EU Member States of both GDP (135 %) and AIC (143 %). Bulgaria had the lowest price level indices of both GDP, 50 %, and AIC, 47 %, in the EU.

Source data for tables and graphs

- [ICP 2021 results, Eurostat calculations: tables and figures](#)

Data sources

The data in this article are Eurostat estimates based on data produced by the [International Comparison Program](#) (ICP). The ICP is a worldwide statistical operation involving some 200 countries managed by the World Bank under the auspices of the United Nations Statistical Commission. It produces internationally comparable price and volume measures for gross domestic product (GDP) and its component expenditures. The measures are based on purchasing power parities (PPPs). To calculate the PPPs, the ICP holds surveys to collect price and expenditure data for the whole range of final goods and services that comprise GDP including consumer goods and services, government services and capital goods. The full methodology used by the ICP is described on its [website](#) .

The standard ICP methodology between the two most recent 2017 and 2021 ICP rounds has been maintained.

However, in ICP 2021, the Commonwealth of Independent States (CIS) region was linked through the standard global core list approach, unlike in ICP 2017, when the CIS region was linked through Russia, which participated in both the [Organisation for Economic Co-operation and Development \(OECD\)](#) and CIS comparisons. For ICP 2017, the Russia results are based on the OECD comparison, and for ICP 2021, they are based on the CIS comparison. The standard approach was utilized for the revised ICP 2017 results and ICP 2021 results, both at the regional and global levels, instead of the previously utilized reference volume approach.

The ICP is organised by region. There are six regions of which all but one are overseen by the ICP Global Office at the World Bank. The remaining region is covered by the joint PPP Program of Eurostat and the OECD. This program has a different timetable to that of the ICP but employs compatible methodology.

Results of Eurostat comparisons are disseminated through the [Eurostat public database](#) and results of joint Eurostat-OECD comparisons are disseminated through the [OECD public database](#). Eurostat comparisons are conducted annually, cover 36 countries, have the [European Union](#) as reference and the purchasing power standard (PPS). Joint Eurostat-OECD comparisons cover 48 countries, have the United States as reference and the international US dollar as numéraire.

The full methodology used in the program is described in the [Eurostat-OECD Methodological manual on purchasing power parities](#).

PPPs are both currency converters and spatial price deflators. They are used to, for example, better compare the GDPs of different countries. Initially, the GDPs are not comparable because they are expressed in national currencies and valued at national price levels. But, after PPPs are applied, the GDPs are converted to a common currency (called "Purchasing Power Standards" (PPS), if the EU is used as reference as in this article) and are revalued at a uniform price level. As a result, differences between the GDPs reflect only differences in the volumes of final goods and services purchased.

Price level indices 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 average of the EU.

Responsibility for the ICP within regions is shared between national and regional agencies. National statistical offices carry out data collection. Regional agencies provide guidance and coordinate data collection and data validation. They also put together and finalise the regional comparisons. Responsibility for ensuring that the regional comparisons can be combined in a world comparison and then combining them rests with the Global Office.

Results of regional comparisons are disseminated by regional agencies. Results of the world comparison are disseminated by the Global Office.

The indices presented in this article 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.

Context

PPPs are used for research and analysis, for statistical compilation and for administrative purposes. Their users include international organisations and government agencies, central banks, universities and research institutes, enterprises, the press and individuals at the national level.

International organisations use the real expenditures generated by PPPs for statistical purposes. Real GDP and its components are aggregated across countries to provide totals for groups of countries, such as the euro area, the EU and the OECD. Country shares in these totals are used as weights when economic indicators, such as price indices or growth rates, are combined to obtain averages for groups of countries.

The European Commission and the International Monetary Fund employ PPPs for administrative purposes. The

European Commission uses the PPPs of Member States when allocating the [Structural Funds](#) . The overall aim of the Funds is to gradually reduce economic disparities between Member States. The IMF uses PPPs when deciding on the quota subscriptions of member countries, which determine the financial resources to the IMF, the amount of financing that it can obtain from the IMF, its share in a general allocation of special drawing rights and its voting power in IMF decisions.

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[http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Purchasing power parities in Europe and the world](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Purchasing_power_parities_in_Europe_and_the_world).

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