International Comparison Program 2017

Frequently Asked Questions

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Governance and organization

What is the ICP?

The International Comparison Program (ICP) is one of the world's largest statistical initiatives, coordinated by the World Bank under the auspices of the United Nations Statistical Commission and implemented through a partnership of countries and multilateral agencies. Since its inauguration 50 years ago, ICP 2017 is the ninth comparison covering 176 economies, producing results for reference year 2017. The next ICP comparison will be conducted for reference year 2021.

What does the ICP do?

The main objective of the ICP is to produce comparable volume measures of GDP and its expenditure components based on Purchasing Power Parities (PPPs). To meet this objective, the ICP coordinates the collection and reporting of comparable price data for a common basket of goods and services across the world. Detailed expenditure values in local currency are also compiled from participating economies' national accounts. PPPs are produced based on the collected price data and compiled expenditure values.

Why should an economy participate in the ICP?

The ICP provides robust global economic data that help economies compare their price levels, economic size and material well-being with those of other economies. An economy that participates in the ICP benefits from a wide range of capacity-building activities that help build national statistical capacity in the areas of price statistics and national accounts, as well as in data collection and quality assurance processes.

How many economies participated in the ICP 2017 cycle?

The ICP 2017 cycle covered 176 participating economies. A number of nonparticipating economies benefitted from ICP 2017 capacity-building activities, with a view to joining the ICP 2021 cycle.

Who oversees the ICP?

The governance structure of the ICP provides an overall framework for coordinating the international, regional, and national efforts to produce reliable ICP results. The ICP governance framework consists of the following bodies, each of which has distinct roles and responsibilities:

- The United Nations Statistical Commission decides the frequency and operational modality of the program.
- The ICP Governing Board sets the strategies and policies governing the production of ICP results.
- The ICP Technical Advisory Group develops the program's methodology and assesses the overall quality of ICP results.
- The ICP Inter-Agency Coordination Group coordinates activities across regions and develops common ICP standards, guidelines, and protocols for all participating economies in the program.
- The ICP Global Office at the World Bank undertakes the overall coordination and implementation of the ICP and calculates and disseminates global ICP results.

- Regional Implementing Agencies coordinate and implement the regional ICP comparisons and calculate and disseminate regional ICP results.
- National Implementing Agencies undertake the price surveys and compile the national accounts expenditure data required for producing PPPs.

Who carries out the survey and computation work for the ICP?

ICP price collection surveys and compilation of national accounts expenditure data are carried out by national implementing agencies in participating economies. The regional implementing agencies compute regional results. The Global Office at the World Bank, together with independent experts on the ICP Computation Task Team, links regional results with Eurostat-OECD results to produce a global set of results.

How does the ICP ensure that estimates are of high quality and free from political interference?

The ICP follows best practices in official statistics and has a strong governance structure to ensure that estimates are calculated independently based on common, sound and transparent methodology. ICP methods are developed and peer-reviewed by renowned experts and results are assessed for soundness by the ICP Technical Advisory Group prior to their release.

Who finances the ICP?

The ICP is financed by a consortium of international, regional and national development agencies. The 2017 cycle was funded by United Kingdom's Department for International Development, the World Bank, the International Monetary Fund, and regional development banks and implementing agencies.

Concepts and definitions

What are Purchasing Power Parities (PPPs)?

PPPs are both *currency conversion factors* and *spatial price indexes*. They convert different currencies to a common currency and, in the process of conversion, equalize their purchasing power by eliminating the differences in price levels between economies. They show, with reference to a base economy, the relative price of a given basket of goods and services in each of the economies being compared.

What is the conceptual framework of the ICP?

The conceptual framework for an ICP comparison is determined by the international definition of GDP. The ICP 2017 cycle adopted the internationally agreed definition of GDP provided by the System of National Accounts (SNA) 2008 as its framework. The previous 2005 and 2011 cycles used the definition of GDP provided by SNA 1993. The SNA defines GDP from the expenditure side as the sum of expenditures on final consumption, gross capital formation, and net exports.

What is the difference between the CPI and the ICP?

PPPs calculated by the ICP are *spatial* indexes in which each item priced by an economy must be matched to a corresponding item priced by another economy. A consumer price index (CPI), on the other hand, is a *temporal* index in which the same item must be priced

in each index period. The CPI basket of goods and services includes only those of importance to that economy. However, the ICP's basket of goods and services is more broadly based to include items that may be available in most of the economies but important to only a few. The ICP pricing is also more geographically representative than is usually the case for CPIs. In many economies, prices for the CPI are collected only in major cities or in capital cities, whereas the ICP encourages country-wide collection of prices in both rural and urban areas so that national annual average prices can be estimated. However, the ICP aims to work within an economy's CPI framework where possible and national statistical offices are encouraged to find synergies between the two statistical exercises wherever possible, to reduce costs and to simplify data collection and validation where possible, and to enhance statistical capacity.

What is the difference between PPPs and PLIs?

A PPP is a ratio of the price for an item (or item group) between an economy and the reference economy that preserves comparable purchasing power. An important measure based on PPPs is the price level index (PLI), which is the PPP divided by the nominal market exchange rate for each economy relative to the reference economy or region (which typically has an index level of 100). If an economy's PLI is less than that of another economy, then its items or expenditure aggregates are less expensive than those in the other economy. Conversely, if an economy's PLI is higher than that of another economy, then its items or expenditure aggregates are more expensive than those in the other economy. When indexed to the same reference economy or region, PLIs can be used to directly compare price levels across economies unlike PPPs.

What is the difference between real GDP in the temporal and spatial contexts?

In the *temporal* context, real GDP (or GDP at constant prices) is a macroeconomic measure of the value of the output of an economy adjusted for temporal price changes (i.e. inflation or deflation). It is used mainly to measure economic changes over time (either annually or quarterly). In the *spatial* context such as that provided by the ICP, real GDP is a macroeconomic measure of the level of economic output in different economies expressed in a common currency and adjusted for spatial price differences, i.e. by PPPs.

What is the difference between the GDP implicit deflator and the PPP changes for GDP?

Differences exist between GDP volume growth rates as measured by the national accounts time series and as implied by PPP benchmarks. The nature of these differences has been investigated since the initial phases of the ICP. Conceptually, it is impossible to maintain complete consistency in PPPs simultaneously across time and space, no matter which index number formulas are chosen for estimating both the time series price indexes and the PPPs in the selected years. The reason is that index number formulas are designed either to measure price changes over time (i.e. CPI) or to measure prices levels between economies (i.e. PPPs), but they cannot measure both simultaneously. Apart from the conceptual problems, practical issues also affect the comparability of PPPs over time, including different baskets of goods and services used in estimating the national accounts deflators and PPPs, different computational methods, and different weighting patterns.

Can PPPs and ICP results for different reference years be directly compared?

Comparisons of the relative real expenditure level for pairs of economies or the positions of economies in global rankings for each reference year can be made. However, ICP results should not be used to analyze changes in any given economy's GDP over time: the national accounts growth and constant measures of each individual economy provide the best data source for this purpose.

Is it appropriate to rank economies based on ICP results?

Many users are interested in the rankings of economies, whether by GDP (PPP) or GDP (PPP) per capita. However, because PPPs are statistical estimates and are subject to sampling, measurement and classification errors, it is generally accepted that differences of less than 5 percent lie within the margin of error of PPP estimation. This fact should be kept I mind when ranking economies by their GDP (PPP) or GDP (PPP) per capita.

ICP data and metadata

What are the indicators produced by the ICP?

The ICP produces, for each reference year, Purchasing Power Parities (PPPs), price level indexes, and measures of PPP-based GDP and its expenditure components, such as actual individual consumption, individual consumption expenditure by households, consumption expenditure by government, and gross fixed capital formation, for all participating economies. The ICP 2017 results are available through the ICP website and the World Bank's Databank and Data Catalog. Users can apply for access to more granular unpublished results and underlying data as set out in the ICP Data Access and Archive Policy.

Why were 2011 results revised?

Revisions are a common practice in official statistics. Revisions of national accounts methodology and data bring about a need for PPP revisions. The ICP 2011 results were published in 2014. These results have now been revised in accordance with the ICP Revision Policy using updated 2011 expenditures, regional PPPs, population, and market exchange rate data.

Will 2017 results be revised in the future?

ICP 2017 results will be revised and published together with the ICP 2021 results. Prior to that, PPPs for 2018-2020 will be extrapolated annually from 2017 PPPs using available interim deflators and price indices and published in the World Development Indicators (WDI).

Can ICP 2017 results be compared with ICP 2011 results?

ICP 2017 used the same methodology as ICP 2011, but the set of participating economies slightly differed between the two cycles. The regional country composition changed, especially in Latin America and the Caribbean, OECD, and Western Asia, with some economies shifting from one region to another (e.g. Colombia and Costa Rica), dropping from the ICP (e.g. Yemen), or joining the program (e.g. Argentina). Thus, comparisons of the relative size of the economies and their price levels between 2011 and 2017 can be made with some caution.

Are annual PPPs calculated for the period between 2011 and 2017?

Annual PPPs were calculated for 2012 to 2016 based on the interpolation of PPPs from the two reference years 2011 and 2017. These are available through the ICP website and the World Bank's Databank and Data Catalog.

Are PPPs imputed for nonparticipating economies?

In order to provide a complete view of the world economy in PPP terms, results are imputed for economies that do not participate in the benchmark exercise. In ICP 2017, as in previous ICP cycles, a regression method was used to impute PPPs for a selection of nonparticipating economies.

Why do the GDP, population, and market exchange rate data used by the ICP differ from those published in WDI?

The data for GDP, population, and market exchange rates used in the ICP were provided directly by national sources. For a few economies they differ from the data published in the WDI because of differences in vintage or statistical methods.

How do the ICP 2017 PPPs differ from 2017 PPPs extrapolated from 2011 PPPs in the World Development Indicators (WDI)?

The ICP 2017 PPPs bring forth new information on the world economies when compared with the 2017 PPPs extrapolated from 2011 PPPs in WDI. The ICP 2017 PPPs cannot converge with the extrapolated 2017 PPPs in the WDI for both conceptual and practical reasons (see Chapter 18 of the ICP book "Measuring the Real Size of the World Economy"). Experience has shown that sizeable discrepancies can arise between PPPs from a new cycle and extrapolated PPPs from a previous cycle, even when cycles are only a couple of years apart. Thus, a six-year gap between the latest ICP cycles resulted in some differences between the ICP 2017 PPPs and the 2017 PPPs extrapolated from 2011 PPPs for some economies.

How do 2017 PPPs produced by the ICP differ from those in the Penn World Tables?

The Penn World Tables (PWT) obtain their price input data from the ICP but they process the data using somewhat different methods: first, PWT does not use regional fixity, and second, in their version, the GDP is aggregated from its main expenditure components using an additive index number (a version of the Geary-Khamis index). In addition, PWT sources its GDP and expenditure component data from the UN National Accounts Main Aggregates Database. For more detailed information on the concepts and methods used by the PWT, please refer to the PWT website.

Methodology

What is a 'basic heading' and what is its importance in the ICP?

A basic heading is the lowest (or most detailed) level of aggregation for which expenditure values are provided by participating economies. The ICP divides expenditures on GDP into 155 mutually exclusive basic headings in accordance with the ICP Classification of Final Expenditure on GDP. These 155 basic headings cover all final expenditures on GDP, from

food, clothing and footwear to hospital equipment and compensation of government employees, etc. Furthermore, it is at the basic heading level that items are selected for pricing, that prices are collected, and that PPPs are first estimated.

How are basic heading expenditures compiled?

ICP data requirements require that all participating economies report expenditure estimates for 155 basic headings in accordance with the ICP Classification of Final Expenditure on GDP. In the absence of published or readily available estimates at that basic heading level, higher-level aggregates were required to be split using data and indicators available from household expenditure surveys, government accounts, and other most recent available data sources. Participating economies were also asked to allocate statistical discrepancy (if any) on the expenditure side to one or more basic headings based on their best judgment.

What goods and services does the ICP cover and how are regional differences accounted for?

Prices are collected for individual items within each basic heading to compute national annual average prices. At the *regional level*, each regional implementing agency works closely with the national implementing agencies to develop a list of regional items that are both representative of the economies' consumption patterns as well as comparable across economies within the region. At the *global level*, the Global Office works closely with the regional implementing agencies to develop a list of global core items that are comparable and representative across all regions and that are priced by all participating economies. The 2017 global core list for household final consumption expenditure included 651 items, including 7 for education and 13 for housing rents, while consumption expenditure by government covered 34 government occupations, and gross fixed capital formation covered 165 construction items, including materials, labor wages and equipment hire, and 107 machinery and equipment items. Furthermore, many economies sourced some of their ICP prices from their CPI, so data collection for the two statistical exercises could sometimes take place concurrently.

What is the geographical coverage of price collection?

ICP data requirements stipulate that all average prices reported by countries and used in PPP calculations be nationally representative annual average prices. Brief information on the survey framework for price collection in each participating economy is available in the ICP 2017 report, and additional details are available on the ICP website.

What improvements were made in the ICP 2017 cycle?

The 2017 cycle maintained the methods and processes of the ICP 2011 cycle. The ICP 2017 strengthened data quality assurance approaches and introduced a fully documented and more transparent process for computing results at the global level.

How will the ICP continue to adapt to a changing economy?

The ICP will continue to evolve and adapt to a changing economy, reflecting the rapid changes taking place across the world, not only in what people buy but in which outlets

and platforms they make their purchases, and complementing traditional surveys with new data sources such as scanner data and web scraping. Country participation in the program will also increase to leave no country behind. This is especially true for countries that are fragile and those that are affected by conflict and violence.

Uses and applications

When are PPPs preferable to market exchange rates?

Market exchange rate-converted GDP and its component expenditures do not accurately measure the relative sizes of economies and their levels of material well-being. Large differences in price levels exist across economies and market exchange rates do not normally reflect the relative purchasing power of one currency in another economy. Overall price levels are normally higher in high-income economies than they are in low-income economies, mostly because of the large differences in price levels between high-income economies and low-income economies for non-traded products. If no account is taken of the larger price level differences for non-traded products when converting GDP to a common currency, the size of high-income economies with high price levels will be overstated and the size of low-income economies with low price levels will be understated. No distinction is made between traded products and non-traded products when market exchange rates are used to convert GDP to a common currency: the rate is the same for all products. PPP-converted GDP does not have this bias because PPPs account for the different price levels of traded products and non-traded products. Thus, PPPs are more appropriate for comparing the output of economies and the average material well-being of their inhabitants, by controlling for price level differences across economies.

What should PPPs not be used for?

PPPs are designed specifically to make international comparisons of GDP and capture the differences between the cost of a given bundle of goods and services in different economies. They are not designed to compare investment flows, international trade, foreign currency reserves or migrants' remittances. These comparisons should be made with market exchange rates which balance the supply and demand of international currencies.

How are ICP results and data used?

ICP results are a global public good and are used for research and analysis, indicator compilation, policy-making, and administrative purposes at the global, regional, and national levels. They are used in indicators to monitor progress towards achieving the Sustainable Development Goals (SDGs) and the World Bank's twin goals of ending extreme poverty and promoting shared prosperity. The United Nations' Human Development Index, the World Economic Forum's Global Competitiveness Index, the Gates Foundation's Goalkeepers Report, the International Labour Organization's Global Wage Report, and the World Bank's Worldwide Bureaucracy Indicators also rely on ICP PPPs. Both the International Monetary Fund and the OECD use PPPs in estimates of regional and world output and growth in their respective publications, World Economic Outlook and Economic Outlook. The European Commission uses them for the allocation of structural and cohesion funds, while the International Bank for Reconstruction and

Development and the International Monetary Fund both rely on the GDP in PPP terms of economies to determine their shareholding and drawing rights.

How are PPPs used for the United Nation's 2030 Agenda for Sustainable Development?

PPPs underly indicators used to monitor progress towards achieving the Sustainable Development Goals (SDGs). PPPs are used for monitoring how far the world has come in achieving no poverty (SDG 1), zero hunger (SDG 2), good health and well-being (SDG 3), quality education (SDG 4), affordable and clean energy (SDG 7), decent work and economic growth (SDG 8), better industry, innovation, and infrastructure (SDG 9), and reduced inequalities (SDG 10).

Will the new 2017 PPPs be used to update the international poverty line?

ICP PPPs are one of five data sources that are used to compute the incidence of poverty using the "dollar a day" poverty line methodology. As of May 2020, the World Bank is assessing the impacts of 2017 PPPs on the international poverty line and global poverty measures, and will evaluate this against the recommendations of the Atkinson Commission Report on Global Poverty (2016).

For more information, visit the International Comparison Program website at icp.worldbank.org.