Purchasing Power Parities

from

Western Asia's perspective

UNITED NATIONS
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What is the International Comparison Program?

The International Comparison Program (ICP), is a worldwide statistical initiative led by the World Bank under the auspices of the United Nations Statistical Commission, with the main objective of providing comparable price and volume measures of gross domestic product (GDP) and its expenditure aggregates among countries within and across regions. Through a partnership with international, regional, sub-regional and national agencies, the ICP collects and compares price data and GDP expenditures to estimate and publish purchasing power parities (PPPs) of the world's economies.

What are PPPs?

PPPS measure the total amount of goods and services that a single unit of a country's currency can buy in another country. The PPP between countries A and B measures the amount of country A's currency required to purchase a basket of goods and services in country A as compared to the amount of country B's currency to purchase a similar basket of goods and service in country B. PPPs can thus be used to convert the cost of a basket of goods and services into a common currency while eliminating price level differences across countries. In other words, PPPs equalize the purchasing power of currencies. Suppose that there is a basket of goods and services that costs 50 United States dollars (USD). 50 USD would be equivalent to 363 South African Rand (ZAR) when using a market exchange rate of 7.26. However, due to South Africa's lower price level in relation to the United States, the cost of a similar basket is actually 239 ZAR. Therefore, 50 USD would buy a larger basket of goods and services in South Africa than it would in the United States; the PPP of South Africa to the United States would be 239 ZAR/50 USD, which is equal to 4.77.

Why use PPPs?

Due to large differences in price levels across economies, market exchange rate-converted GDP does not accurately measure the relative sizes of economies and the levels of material well-being. PPPs make it possible to compare the output of economies and the welfare of their inhabitants in 'real' terms, thus controlling for price level differences across countries.

What are PPP Data Requirements?

- National annual average prices for a selection of goods and services included in the GDP. Goods and services need to be:
  ▪ Comparable and well-defined in order to ensure price comparability within countries as well as between countries.
  ▪ Representative and reflect the consumption in the region and country.
- National accounts expenditures, which need to be:
  ▪ Conforming to the System of National Accounts (SNA) concepts, definitions and valuation methods.
  ▪ Compiled according to a common detailed classification.

How are PPPs Calculated?

At the regional level, PPPs are calculated based on collected price and expenditure data:

- A common basket of well-defined regional and global goods and services is established and subsequently priced.
- Price relatives (i.e. ratios of prices in national currencies of the same good or service in two countries) are calculated for individual items, such as "white rice", "brown rice", etc.
- Price relatives calculated for the goods and services in a classification heading such as "rice", are averaged to obtain PPPs for that classification heading.
- PPPs for the classification headings covered by an aggregate, such as "Food", are weighted and averaged to obtain weighted PPPs for the aggregate. National accounts expenditures are used as weights for each classification heading.

At the global level, regional PPPs are linked to form a set of global PPPs:

- Between-region linking factors are calculated based on the prices collected for goods and services common across regions at the classification heading level.
- Regional PPPs are then linked to form a set of global PPPs for each classification heading.
- Global PPPs of classification headings are weighted and averaged to obtain weighted PPPs for each aggregate.
- Aggregate PPPs are adjusted to maintain regional fixity of the results.

What are the Key Characteristics of PPPs?

- Base country invariance: PPPs between any pair of countries should be the same regardless of which country is the base.
- Transitivity: A direct PPP between any two countries should be equal to an indirect PPP via any other third country, i.e. A $\rightarrow$ B equivalent to A $\rightarrow$ C $\rightarrow$ B.
- Fixity: The relative size of countries in PPP-terms within a region should be maintained in global estimates.

Who uses PPPs?

PPPs are widely used to convert national accounts data, like GDP, into a common currency, while also eliminating the effect of price level differences between countries. Since the demand for comparable volume aggregates is high, PPPs play a key role in the analyses carried out by policymakers, multilateral institutions, and the private sector actors, among others. Examples of uses and users of PPPs include:

- Sustainable Development Goals and Millennium Development Goals (United Nations).
- Human Development Index (United Nations Development Programme).
- Poverty rates at international poverty line, size of the economy, and price levels in the World Development Indicators (World Bank Group).
- Country group aggregates and growth rates in the World Economic Outlook and country quota formula (International Monetary Fund).
- Allocation of the European structural and investment funds (European Union).
- Analysis of national competitiveness (Policymakers).
- Welfare measures, consumption patterns, trade, productivity and competitiveness, energy efficiency, health and education costs and other uses (Academic and research institutions).
- Evaluation of investment costs across countries (Private sector).

How Reliable are PPPs?

- The reliability of PPPs depends on the quality of the underlying price and expenditure data reported by the participating economies, as well as the extent to which the goods and services priced reflect the consumption patterns and price levels of participating countries.
- Comparisons between economies that are similar are more precise than comparisons between economies that are dissimilar.
- PPPs for goods are more precise than PPPs for services.

What are the Latest PPPs Produced by the ICP?

The most recent ICP results covering 199 economies were released in April 2014 for the reference year of 2011. ICP results and their in-depth analysis help to better understand the structure of the world economy.

The full set of results are available at http://icp.worldbank.org.

The ICP in Western Asia:

A few years back, the United Nations Economic and Social Commission for Western Asia (ESCWA), as the regional implementing agency of the ICP in Western Asia, envisioned a strategy enabling the regular production of PPPs. ESCWA developed different projects and initiatives to guarantee the sustainability of PPP production in the region, even in the absence of global ICP rounds. Starting after the 2011 round, ESCWA developed an extrapolation methodology producing PPPs for 2012 and 2013. Afterwards, ESCWA conducted a full regional PPP production round in 2016, followed by retrapolation for 2014 and 2015 using the same methodology used in 2012 and 2013 given its success, however introducing some amendments to boost the level of accuracy further. Currently, ESCWA is participating in the 2017 ICP global cycle and is working on the production of PPPs for 2017 and 2018. Moreover, ESCWA's efforts do not stop here, as it is relying more and more on actual data and reducing the amount of extrapolation/retrapolation, with its participating member countries implementing annual data collection for non-household consumption and a subset of household consumption. Doing so, Western Asia has managed to produce a continuous annual time series of PPPs extending from 2011 onwards.
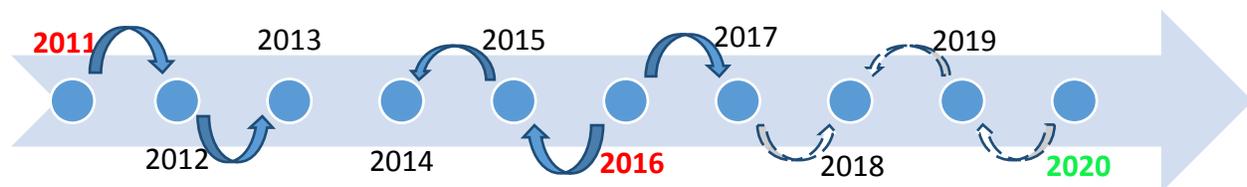

Figure 1 – Western Asia's PPP time series

ESCWA was also recently reviewing the 2011 to 2016 PPPs to achieve consistency with the updated global 2017 classification. The below figures represent the preliminary 2016 results for price level

indices, per capita real GDP and real GDP shares. As seen in figure 4, the shares out of the regional GDP change when calculated in real (PPP) terms. For instance, we notice that Egypt's share out of the total Western Asia GDP is 5% higher when using PPPs instead of exchange rate, whereas UAE's share out of Western Asia's GDP is 2.6% less when calculated in real terms than when calculated in nominal terms.
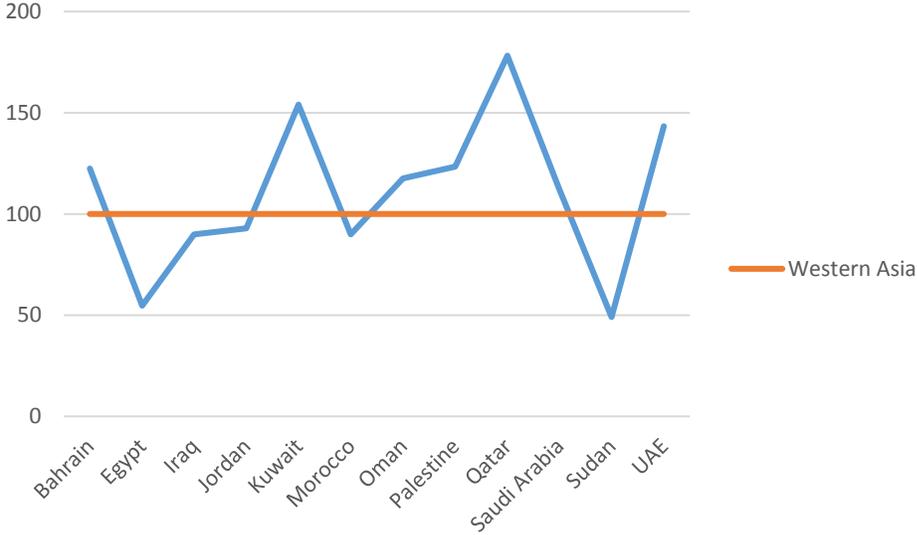

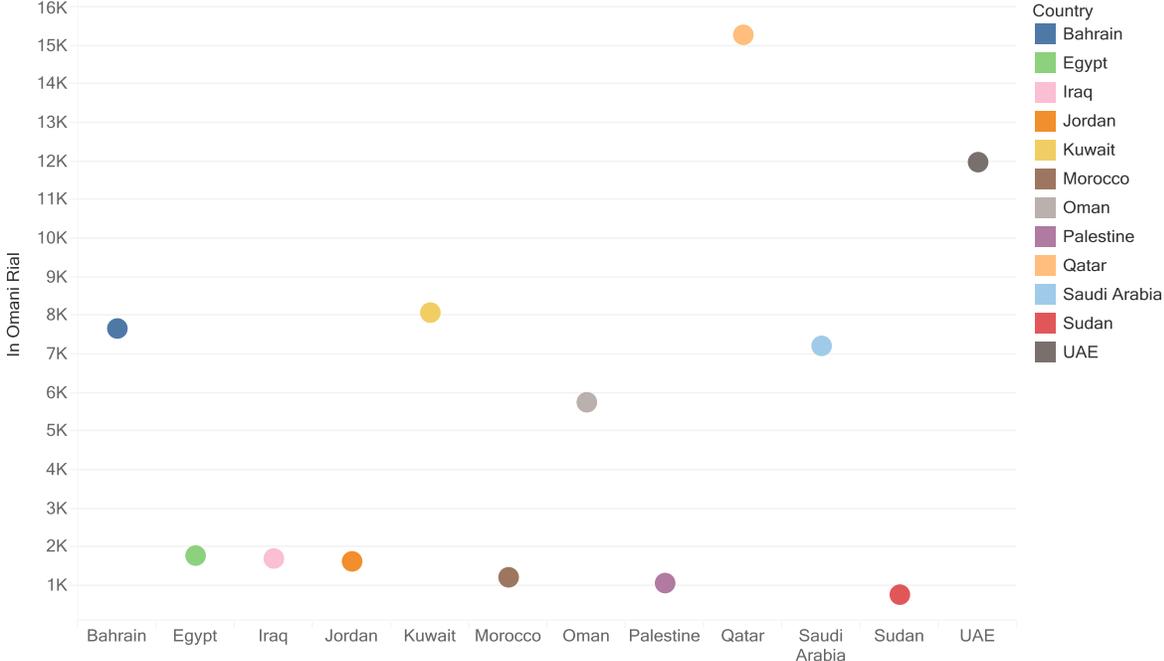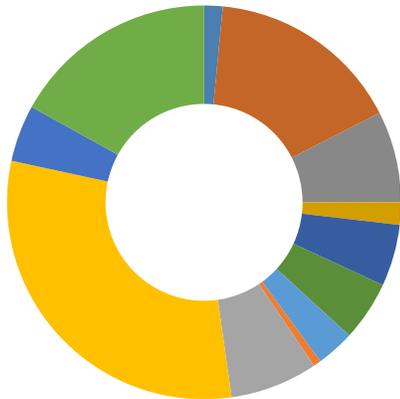*Figure 2 – Preliminary 2016 Price Level Indices, with Western Asia as base*

Figure 3 – Preliminary 2016 Per Capita Real GDP

Nominal GDP Shares

Real GDP Shares

Legend:
- Bahrain
- Egypt
- Iraq
- Jordan
- Kuwait
- Morocco
- Oman
- Palestine
- Qatar
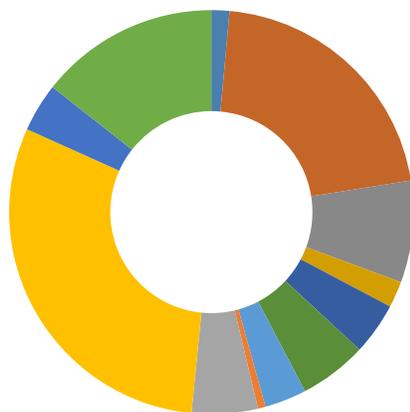- Saudi Arabia
- Sudan
- UAE

Figure 4 – Preliminary 2016 Real vs. Nominal Shares out of Western Asia GDP

Resources

World Bank. 2013. Measuring the Real Size of the World Economy: the Framework, Methodology, and Results of the International Comparison Program. Washington, DC: World Bank

World Bank. 2015. Purchasing Power Parities and the Real Size of the World Economies: A Comprehensive Report of the 2011 International Comparison Program. Washington, DC: World Bank

World Bank. 2015. Operational Guidelines and Procedures for Measuring the Real Size of the World Economy. Washington, DC: World Bank