

Gross Domestic Product (GDP)-Purchasing Power Parity (PPP) Adjusted: Its Construction and Pitfalls

By

Justice Dunstan Chingonda-Nkhoma February 2007

This presentation is based on a paper by Alan Heston and Robert Summers 1996 entitled '*International Price and Quantity Comparison: Potentials and Pitfalls*' pp.20-24. The author encourages the reader to read the aforementioned article for in-depth understanding.

GDP is a product of a basket of tradable goods and services in relation to their prices produce/consumed in a defined territory. The prices are adjusted to a common currency for making comparisons among/between territories. In this presentation the author considers territories as countries.

Different components if GDP-PPP adjusted are kept in tables in the database known as Penn World Tables (PWT).

Before presentation of the GDP construction and its pitfalls, the author would like to focus readers on how cakes are made. Think about how different groups of people would make different cakes. The final cake is a function of different things which include, among others, ingredients, the process and stages of baking, the expertise of the personnel etc. In the end they end up with different cakes from which comparisons can be made.

IMPORTANCE OF GDP-PPP ADJUSTED

Besides burden sharing and economic assistance, GDP-PPP adjusted is also important its effectiveness and efficiency in price and quantity comparisons among/between countries/sectors.

GDP-PPP ADJUSTMENT CONSTRUCTION

1. It involves the following:

- Data collection and consolidation across times and space. This is a study on its own which is quite involving. Therefore, interested countries do agree on certain issues for quality control purposes as below:

- Each country needs to have a basket including prices for each item in it.
- All the prices are adjusted to a common currency – United States Dollar.
- The countries need to have a System of National Account (SNA) in place
- The year in which the study is undertaken (Benchmark year).
- An interval of the benchmark year in view of the fact that this is an ongoing activity.
- The international data obtained from different countries is then consolidated and kept in databases by different institutions such as International Comparison Programme (ICP) and Penn World Tables databases (PWT).

2. Data collection and consolidation at different levels

- Price surveys on identical set of goods and services are done in many countries by SNAs
- Price parities are computed for more than 150 detailed components of GDP.
- Each country's estimates are then used as weights in a complicated logarithmic aggregation in order to come up with:
 - (a) overall countries' PPP
 - (b) price parities for different components and sub-components of the GDP.

The aggregation methods differ across times and space by these different data collecting institutions.

PITFALLS OF THE CONSTRUCTION METHOD AND THE USE OF PENN WORLD TABLES

- Data from different previous benchmark and non-benchmark sources is also aggregated and integrated into the present benchmark data. Other countries join at a later stage and provide data which may come from non-SNA.
- Quality of SNA affects data as there are different levels of skilled personnel.
- Other countries may include data from unregistered economic activities for different reasons.
- The PWT contains non- benchmark data which may increase statistical errors.

- The PWT deals with the expenditure side of national accounts and present capital stock estimates. Most estimates in the capital depreciation data are driven by tax laws rather than the country's NA surveys.
- Lack of good data on labour-force participation rates across countries.
- Data extrapolation for other periods. This may pose some dangers of influencing data deviations.
- Use of different aggregation methods affects the final results some methods are complicated. For example, OECD in its benchmark work gives different weights to same products in different countries while European Union gives each country the same weight. In the end, either the data for rich countries are underestimated or that for poor countries is overestimated hence data is influenced.
- Matching problems in identical goods across different countries. This is a very difficult task. For example, the same banana sold in Malawi along the road may have different value comparing to the identical banana which is sold in the food shop in Norway, as the Norwegian banana may have added value through the process through which it goes before it is bought in the shop.

Think about valuing furniture in this basket. It is really a big problem.

There is a diagram accompanying this presentation taken from the above said paper. Its purpose is to show some different stages of the construction work.

CONCLUSION

In our case of cakes, it may be good to compare cakes depending on the objective of our issue at hand. It may be prudent to compare wedding cakes with other wedding cakes, birthday cakes with birthday cakes not the other way round. Of course it depends on the objective of our comparison as already said.

Generally the data provides the basis for making comparisons between or among countries on the economic progress and ranking using the GDP-PPP adjusted. The GDP-PPP adjusted will give a general picture of a country's economic development such that one can rank them. However, it does not provide the precise economic level in detail like the individual household's economic status.