

Short overview of ICP-Africa - a South African perspective -

1. Background

A significant problem when comparing macro-economic aggregates between countries is the conversion of national currency denominated values into a common currency. This is required because economic theory and experience shows that cross-country comparisons that rely on market exchange rates are prone to yield misleading results due to frequent movements in exchange rates out of line with domestic inflation¹. It is therefore required to compare aggregates in real or volume terms to remove the distortion created when using different currencies and exchange rates (the price of a specific monetary unit). This can be done through equating the value of economic aggregates to the purchasing power that it has, rather than to the nominal value.

“A Purchase Power parity (PPP) is defined as the number of currency units required to purchase the amount of goods and services equivalent to what can be bought with one unit of the currency of the base country, for example the U.S. dollar”². The use of the US\$ is arbitrary, the calculation of PPP can be linked to any currency unit.

Using PPP allows for the comparison of real values in the country’s economy, as it has been adjusted through a common set of international (or regional) average prices. The PPPs can therefore be seen as the average price ratios in participating countries. This allows for removing the distortion caused by different price levels that exist between countries for similar goods and services (poor countries will tend to have lower price levels for instance).

Once PPPs are available for a country and its aggregates are expressed in these terms, it is possible to do comparisons of GDP, GDP per capita, relative price levels and because of the weight-related data used in the calculations, comparisons of expenditure patterns and structures within the economy. These results may differ significantly with comparisons based purely on a common exchange rate, as these may not accurately reflect the differences “on the ground” between economies.

The lack of recent PPP, which were based on actual country data with a wide international participation, sparked the International Comparison Programme (ICP) project. The ICP is a project driven by the World Bank internationally and by the African Development Bank within the African region. The purpose is to build capacity in the areas of national accounts and price statistics with the eventual goal of calculating Purchase Power Parities (PPP). The project started in 2002 and will be concluded in 2007. The reference year for the comparison is 2005.

¹ The South African economy, expressed in US\$, appears to have declined dramatically since the start of the decade. This is misleading given the real-world situation, but is caused due to the strengthening of the Rand from around R13/US\$ to R6,50/US\$.

² Source: Worldbank: ICP Handbook

2. Preliminary results

The first set of preliminary PPP-data will be made available in different phases during 2007. Each of the regions participating in the project has its own release schedule, normally separated between PPPs for household consumption only and then the PPPs for the full GDP.

The global estimate of PPP based on household consumption only will be launched in September 2007 with the full PPPs in December 2007. The African region will release household PPP in the 2nd quarter of the year with the full set following in the 3rd quarter.

The African Development Bank made preliminary household PPP data available at a workshop in Rwanda in January 2007. The data is preliminary for 2 reasons:

- Not all countries have submitted the required data (information was also only given for 44 African countries)
- Not all aspects of household consumption expenditure have been taken into account, e.g. expenditure on education and housing have not been included in the calculations. It is therefore noticeable that the estimates of GDP (per capita) included in the tables are significantly lower for all countries than what is officially published.

Once the required data has been received, the PPPs for the entire household final consumption expenditure component of GDP can be calculated and made available.

The calculation of the remaining components of GDP, namely foreign trade, individual and collective government consumption expenditure, capital formation and inventory changes is nearly finalized as well. Most countries have submitted the national accounts weights for the relevant items, but need to finalize the collection of specific prices that are required to calculate average prices. This seems to be a stumbling block in many countries as it is not items that are routinely collected within the statistical offices. Separate surveys are therefore required, e.g. pricing construction projects, machinery and equipment, rental data etc³. The results of these surveys must be submitted in March 2007 to allow for the validation and comparison of data within sub-regions and later the entire African region before it can be included in the global GDP PPPs.

The use of PPP adjusted data has many strengths, but care should be taken when the results are analyzed. The data is based mostly on price statistics and national accounts. On a detailed level, price statistics are used that are not always collected routinely in a specific country⁴, which could therefore be of a lower quality than the other price vectors. From a national accounts perspective, expenditure weights are not always available for all items in the reference year, in this case 2005⁵. This causes the weights to possibly differ from what the “real world” situation is. The quality of the data should however not be questioned too much as it still corresponds with official estimates of national

³ All prices were submitted by RSA, except for rental data (not yet included in national accounts) and the pricing of machinery and equipment (response rate 30%).

⁴ In our case prices of meals in restaurants etc

⁵ Household consumption items are strongly based on IES2000, taken forward to 2005

accounts⁶, albeit on an aggregate level. Two other datasets are required as well, namely mid-year population estimates and the official exchange rate with the US\$, but this is readily available.

It should also be remembered that in all cases, a country's adjusted information is relative to the data of the countries that it is being compared with. The quality of the data submitted by a country therefore impacts directly on the results of all other countries included in the comparison. The challenge from the perspective of the compilers of these estimates is to be satisfied that the inter-country comparisons seems reasonable, given that it cannot explicitly comment on the quality of data submitted by others. As a minimum, possible explanations should be available for differences between countries, differences from the averages etc

3. Benefits

The benefits of the ICP programme are clear. It built capacity in the areas of national accounts and price statistics, areas where it is traditionally difficult to recruit expert statisticians and economists. The international best practices in collecting price statistics, i.e. using SPD's, data validation etc were implemented in participating countries. In the area of national accounts, support was provided top countries to move closer to the recommendations of SNA93 and deeper analysis of country data was encouraged through comparisons with similar economies.

Benefits further extend to the analysis of issues such as the feasibility of regional integration, as information is now available that can compare economies in real or volume terms, actual expenditure patterns and other possible linkages. It is shown whether countries share similar consumption patterns as well as how do their price levels compare for different items.

The initial tabulations of the results of ICP-Africa compares all participating countries to an imaginary African currency; which provokes interesting debates relating to economic integration within the region itself.

4. Impact

The impact of the ICP will be felt on different levels. At the level of the national statistical office, the impact was felt through the surveys that had to be done as well as the capacity that was built in the offices. On the level of international statistics, there are once again estimates of PPP that are based on active participation by countries and actual survey data, rather than regression models for some countries. In addition, the PPP are now updated to 2005 levels.

The most important impact lies on the level of the user of the data. The results of the PPP will be widely used by politicians, commentators, analysts and economists. The PPP naturally ranks counties according to size of the economy, per capita expenditure on items such as health, education etc. Detailed analysis of the relative weighs for each country further provides information on the different types of products that are consumed in each country and region. This indicates areas of production that can be fruitfully

⁶ In the case of RSA, the aggregate of consumption data used in PPP calculations differ from the official estimate of GDP by the value of the statistical residual within the goods and services account

developed in a country and alternatively provides a basis for considering trade between countries and regions. There is a vast array of applications for the results of the ICP project.

It is therefore crucial that the communication around the release of the results of ICP is managed correctly. The strengths of ICP-data as well as the caveats associated with the comparisons should be made explicitly clear to ensure that the results are used in a responsible manner.

The new estimates of PPP could make a significant difference to the HDI-score of some countries. It will be used as relative rankings by international agencies such as the World Bank and others.

Given the impact of PPP calculations, it is important of each country to take ownership of the data. We all need to actively improve our statistics to ensure that the PP is calculated as accurately as possible. To this extent the required resources should be made available to NSO to ensure sustainability and quality of not only the PPP-data, but of price and national accounts statistics in general.

Summary of activities done by Stats SA as participants in the ICP-Africa project

A General

Stats SA became involved with the ICP-Africa project at the end of 2002. Although initial meetings were conducted directly with ADB, the governance structure later changed to include SADC as well. The role for SADC was twofold and related to administrative matters (the disbursement of funding) and technical matters (assisting with validation of data on a sub-regional basis). The latter responsibility was hampered due to lack of resources in SADC. Stats SA did not make use of ADB funding during the project.

B Price Statistics

1. Main survey

The main survey was based on individual household consumption, which is related to the CPI. It was the largest sub-project, since it was collected for the period of at least 12 months. The ADB provided a list of around 1200 products, including separate Structured Product Description (SPD) that had to be collected. After numerous regional meetings, the products were reduced to 853 in Africa.

During the inception of the survey, Stats SA started with the introduction of a new method of data collection to improve CPI, i.e. direct collection of products from outlets. It was decided that Stats SA would rely on products that were currently in its CPI basket as inputs for the ICP, as it did not want to introduce new products for collection at such an early stage of its own CPI-improvement project. Stats SA therefore had an overlap with the ICP product list of only 472 products.

Stats SA started the survey with a pilot in the province of Mpumalanga and gradually increased the coverage by going into field in other provinces. The actual submission of survey data to ADB started in July 2005 with data from provinces in which the roll-out has been completed, representing more than 50% of economic activity. At the beginning of second quarter 2006 we were in the position to submit data nationally. Data was submitted until July 2006.

During the submission of data by countries to ADB, data was validated and analyzed by countries in various sub-regional meetings organized by the SADC secretariat. Quaranta tables were used to compare the prices between countries within the sub-region as well. Countries used Semper Software to validate and verify data before sending to the ADB. Semper software was a very useful tool to validate data since it pointed out outliers in the dataset, which could be investigated.

2. Pharmaceuticals survey

In the context of the International Comparison Program for Africa, the Pharmaceutical Products Survey is designed with the involvement of the World Bank for the international list of groups of essential drugs. This list was compiled in collaboration with the European Comparison Program and the World Health Organization, in liaison with similar organisations in other regions. The aim of this multilateral scientific exercise is to ensure consistency on commonly prescribed medicines to ensure comparability across the countries and region.

The list was given to all the participating countries in Africa. Stats SA used an administrative data source to complete the questionnaires. In the case of products for which prices could not be sourced administratively, pharmacists were visited to complete the questionnaires. The collections were done quarterly.

3. Compensation of employees

Compensation of employees is the largest component of the costs of producing government services. It is the only cost component for which a separate price collection is required (within the expenditure items of general government). Compensation of employees is to be reported for a selection of occupations in general government, public education and public hospitals. The Global Office makes the selection of occupations and countries in all regions are required to use the same list of occupations. The intention is to represent the various education and skill levels that are commonly to be found among employees working in these government services. Regions may, however, make minor modifications to fit particular conditions in their regions.

Compensation of employees includes all payments in cash and kind made by general government in a year. These payments in cash and kind comprise of gross salaries and wages in cash, benefits in kind, employers' actual social contributions and imputed social contributions

Stats SA used administrative data sources to complete the questionnaires. Initially the job descriptions provided was mapped to the job descriptions within the administrative source to ensure that the correct “jobs” were being “priced”. It was not possible to distinguish the years of experience in a specific job at this stage. The decision was taken

to use a fixed salary increment to compensate for years of experience on a specific job grade.

This was a once-off collection for the 2006. The data was collected and submitted to ADB.

4. Dwelling survey

For the dwelling survey, the quantity approach was used to collect data. This approach had type of dwelling, i.e. Modern and Traditional Dwellings, whereby modern dwelling is the house or villas and flats or apartment. It included quantity indicators such as number of dwellings, number of rooms, etc and also included the services like electricity and water supply.

Stats SA used data from existing household surveys to complete the questionnaire. The data was submitted in January 2007.

5. Education survey

The ICP private education survey aims to collect information necessary to calculate, for each "private education" basic heading, the annual average price at the national level and to give indications necessary to better understand the education cost determination for each training cycle in the African countries.

The survey is requested the annual fee for education only, excluding payments for meals and collateral services, in private training institutions except boarding school. The following schooling levels were used for the survey: Pre-primary Education, Primary Education; Secondary Education, Secondary Education (Upper level) and Tertiary Education.

Stats SA completed questionnaires using the administrative data from the Department of Education. The data was submitted to ADB in January 2007.

6. Construction survey

The construction survey was given to a outside contractor to complete, since the SPD's were very technical in nature. The questionnaires were completed and submitted to ADB in January 2007.

7. Machinery and equipment survey

Stats SA decided to undertake the survey itself by collecting data from the different suppliers and distributors. Data collection has been done internally at Stats SA and the results will be submitted to ADB by the end of March 2007 as agreed.

C National Accounts

The primary concern with the required national accounts statistics relate to the varying success of countries implementing SNA93 as well as the level of detail in which expenditure estimates are available as official statistics. Countries were expected to provide a time-series of estimates for each of the components of GDP in both real and nominal terms from 1990 to date. The situation in South Africa is that SARB is responsible for the estimates of the expenditure components of GDP, although it is integrated into the supply and use framework by Stats SA

Several difficulties were faced:

1. Statistical discrepancy

A statistical discrepancy is published between the expenditure on GDP and the official estimate of GDP (derived from the production and income approaches). The submission of data to ADB does not make provision for a “residual” item in the national accounts. This causes the total of the expenditure components of GDP not to correspond to the official estimates (difference of 0,5%). The matter was referred to Mr. Vogel at the World Bank, who advised that the discrepancy should be proportionally allocated across the components of household consumption and capital formation.

2. Household consumption

Stats SA doesn't make use of the COICOP classification in the supply and use framework and could therefore not extract the information readily. On the other hand, SARB only publishes estimates of final household consumption expenditure according to COICOP on a very aggregated level. Although SARB provided Stats SA with unpublished estimates for 2004, these were not as detailed as required for the ICP project. Further estimates of expenditure “weights” was therefore made by Stats SA, based on the results of the 2000 Income and Expenditure Survey (IES). The use of internationally recommended classification systems has since been addressed as the 2005/6 IES was designed around the COICOP classification. South Africa's CPI will therefore be COICOP based in the near future.

3. Non-profit institutions serving households

The information relating to the role of NPISH in the economy is not published separately by SARB as it is included in the Household institutional sector. Stats SA has however made estimates of the total size of the sector in the economy, but it was not published as official statistics. The information was therefore not given to ADB for the 2005 reference year.

4. Gross capital formation.

The information was not available on a detailed level and was supplemented with estimates based on the current weights in the PPI

5. Changes in inventories

The data was available as required

6. Government consumption expenditure

The data was available for individual and collective consumption expenditure as well as for some of the sub-categories. In a few cases such as expenditure by level of education, the survey areas assisted by provided lower level estimates of expenditure).

7. Imports and Exports

The required information was available.

D Preliminary results

The preliminary results were made available in January 2007 during a workshop in Kigali. Although it was only based on household consumption expenditure, validation of the

results was done with comparable countries. This was problematic, as the other African countries that have high levels of GDP per capita do not have the same structure or size as the South African economy. Further analysis raised questions relating to the relative rankings of other countries, but with no first-hand knowledge of those economies and statistics, we are reliant on ADB and regional experts to validate the accuracy of the data.

E Benefits

The ICP-Africa project provided many benefits for participating countries. For South Africa specifically, it provided an opportunity to interact with experts from various international agencies and counterparts in national statistical offices. It provided guidance on methodological issues as well as reassurance with respect to current activities. The benefits extended further than only the areas linked to ICP, as it also provided the opportunity to network with experts and to have informal discussions on related issues and concerns in the areas of price and national account statistics.

Concrete examples are the use of SPD's in price collections that have now been implemented in South Africa. The use of COICOP and the more accurate measurement of the non-observed economy is currently under investigation for inclusion into the national accounting framework in South Africa during the next benchmarking exercise in November 2008.