

Developing a Strategy for the Continuous Production of Purchasing Power Parities and Improvement of Price Statistics in the Arab Region

Developing a strategy for the continuous production of Purchasing Power Parities and improvement of Price Statistics in the Arab Region

Majed Skaini*

Economic Statistician and ICP Regional Coordinator, United Nations Economic and Social Commission for Western Asia, Beirut, Lebanon

Skaini@un.org

Abstract

Purchasing Power Parities (PPPs) are both price relatives and spatial deflators used as real currency converters to compare the performance of economies around the world. In their simplest form, they show the ratio of prices in national currencies of the same precisely defined product in different countries. PPPs are essentially estimated by the International Comparison Program (ICP), which is a worldwide statistical initiative. Conversely, the Consumer Price Index is a temporal economic indicator that measures changes over time in the prices of a fixed basket of consumer goods and services and serves as a regular national indicator of inflation in addition to many other purposes such as ‘cost of living index’ and ‘compensation index’. Although not comparable, both indicators require the collection of a specific basket of goods and services. Thus, the integration of the CPI and ICP activities will produce many synergetic effects; the harmonized ICP methodology will help improve the CPI infrastructure, and the specific product descriptions used by the ICP will not only strengthen the national CPI product lists, but will also be integrated within the national CPI lists resulting in a more frequent production of PPPs. Moreover, the development of a harmonized subset in the CPI list of countries can potentially lead to the production of a comparable sub-regional or even regional CPI index. Furthermore, countries with considerable geographical surface and/or federal structures will not only profit from the capacity building benefits of the ICP in terms of improving the CPI processes, but can also integrate a harmonized subset within their sub-national CPI lists to compute sub-national PPPs on a regular basis. Sub-national PPPs will allow governments to draw more accurate economic and financial policies on the sub-national level and will provide investors with reliable economic indicators when assessing the situation in different regions within the country. A pilot project has been implemented in the United Arab Emirates with the year 2015 as base and results should be published by the last quarter of 2016. The outcome of the UAE project will undoubtedly evaluate the feasibility of a regular sub-national PPP production, and will also assess the viability of conducting similar projects not only in Western Asia region but anywhere in the globe.

Keywords: CPI, Harmonization, ICP, Integration, PPP, Price Index, Sub-national PPP

Introduction

Purchasing Power Parities (PPPs) are spatial price relatives used as real currency converters and allowing the comparison of prices across countries. Global PPPs are computed through the International Comparison Program (ICP) which is a worldwide statistical initiative recently taking place every five to six years and enabling the comparison of GDP and its main aggregates across different economies. The uses of PPPs are not restricted to the comparison of prices, but extend to cover multiple grounds, guiding in the monitoring of Sustainable Development Goals (SDGs), contributing to the construction of indicators such as the Human Development Index report, gender empowerment measures, poverty indices, etc., and assisting in policymaking and academic research. On the other hand, Consumer Price Indices (CPIs) are temporal economic indices measuring changes in the price of a country's basket of goods and services over time. They act as indicators of inflation and are used in determining cost of living indices and compensation indices.

ESCWA's ICP team is constantly developing innovative projects to serve its main goals of assisting member countries in the improvement of their national price statistics infrastructure, the development of their capacities in the area of price statistics, and the enlargement of their statistical output in this field, such as the continuous production of PPPs, the computation of sub-national PPPs, and the piloting of a Harmonized Consumer Price Index (HCPI). With the Consumer Price Index (CPI) constituting the main component of national price statistics, the integration between CPI and ICP activities achieved through the implementation of the above mentioned projects will undoubtedly be the biggest contributor to the improvement of price statistics in the Arab region.

Although they serve different purposes, the computation of PPPs and CPIs both require data collection for a specific basket of goods and services, follow the COICOP classification, and can be used in research on poverty, sub-national price comparisons, compensation indices and salary scales, etc. This is where the benefit of the integration stems from; through the harmonization between the CPI and ICP activities, the production of more frequent PPPs becomes possible with the synchronization of data collection activities, thus reducing the time, effort, and resources needed for data collection in the production of PPPs.

Given the major benefits and wide applications of PPPs, ESCWA's ICP team aimed at the development of different strategies to ensure the continuous production of PPPs and construction of a PPP time series with no gaps between ICP rounds. The team has been constantly exerting effort in pursuing different initiatives to produce annual PPPs at the regional level between the implementation of global ICP rounds, such as the extrapolation and retrapolation exercises and the implementation of complete regional PPP production rounds.

This paper sheds the light on the regional ICP team's efforts in implementing projects and developing innovative strategies leading to the continuous production of PPPs and improvement of price statistics in its different aspects across the Arab region.

Developing Strategies for the Continuous Production of PPPs

A- Extrapolation/ Retrapolation of PPPs for non-reference years

Capitalizing on the experience gained from previous ICP rounds, ESWA's ICP team aspired to continue the production of PPPs in the interim period between the different rounds through a combination of actual data collection and data extrapolation/retrapolation in order to construct a continuous PPP time series with no gaps. Therefore, the regional ICP team at ESCWA developed an innovative strategy for the computation of PPPs for 2012-2013 without conducting an actual data collection round. The developed methodology integrates between the CPI and ICP activities through the use of detailed quarterly or monthly CPI data (at the basic heading level) for the referenced period in the extrapolation of household consumption data. The household consumption (HHC) price data were extrapolated from 2011 by the regional ICP team, while non-household consumption price data - government compensation, housing rentals, machinery and equipment, private education, and construction - were either collected or extrapolated by the participating countries' national statistical offices using the 2011 prices and the corresponding price indices and deflators. The obtained data were then provided to the regional office which performed intra and inter-country validations for the received non-household consumption data and the computed HHC average annual prices before computing the PPPs. Additionally, national accounts expenditures for 2012 and 2013 were estimated by the participating countries using the Model Report on Expenditure Statistics (MORES) questionnaire. This innovative methodology in the computation of PPPs for the two years following the ICP round proved to be successful producing accurate PPPs for the GDP and its main aggregates.

This innovative strategy implemented by ESCWA's ICP team extended beyond the two years following the 2011 ICP round with a plan to compute PPPs for 2016 through an actual regional data collection round. Therefore, building on the successful experience, the team decided to apply the same methodology for the computation of PPPs for 2015 and 2014 using 2016 price data collected for the 2016 regional PPP production round. In other words, HHC data will be retrapolated from 2016 to 2015 and 2014 using CPI data at the detailed basic heading level, while non-household consumption price data will be provided by the participating countries which will either retrapolate them or obtain them from the specialized sources. National accounts expenditures for 2015 and 2014 will also be estimated at the basic heading level.

The aim of the described methodology is to sustain the production of PPPs through a 3-year cycle similar to the rolling benchmark approach without undergoing an annual full ICP round entailing actual data collection, in addition to the regular estimation of expenditures at the level

of the GDP and its aggregates. ESCWA's ICP team hence succeeded in constructing the intended continuous PPP time series while reducing the member countries' time, budget, and human resources constraints tied to data collection. By doing so, Western Asia became the only region along with the Eurostat-OECD to compute annual PPPs, providing its member countries with additional knowledge and experience to develop their statistical capacities in the field of price statistics, thus moving towards regional development of price statistics in terms of infrastructure and output.

B- The Regional 2016 PPP Production Round as a Stepping Stone Towards Permanent PPP Production

ESCWA's ICP team applies the extrapolation/ retrapolation technique described in the previous section for the two years following or preceding a complete data collection round for PPP production, thus maintaining the high quality of data and ensuring accurate results. Therefore, since there was no global ICP round scheduled for 2014, 2015, or 2016, the ICP team at ESCWA decided to carry out a regional interim round in 2016 in order to sustain the production of PPPs in the region thus achieving its goal of continuous PPP production and construction of an annual PPP time series without gaps between ICP rounds.

During the 2016 round, the participating countries collected prices for items from a newly constructed and updated regional product list developed by ESCWA's ICP team specifically for the 2016 regional round. The regional product list was constructed by incorporating the national CPI product lists of the participating countries, the updated global core list, and the previous regional product list used in the 2011 ICP round into one regional unified list. The 2016 regional product list was also supported by a bilingual HHC catalogue developed by the regional ICP team with illustrations for each item. This practice of integrating the CPI and ICP increases the representativeness and comparability of the products in the regional product list among countries and renders the data collection process easier for the national statistical offices by relying on the catalogue. Similarly, the regional ICP team also provided non-household consumption surveys in both English and Arabic, presenting some of them in illustrated catalogues facilitating data collection.

The 2016 regional round will result in the production of PPPs for 2016 and the retrapolation of PPPs for 2015 and 2014, thus complementing Western Asia's PPP time series from 2011 to 2016. Moreover, the participation in the regional PPP production round has created an opportunity for member countries to improve their CPI infrastructure, introduce a new subset of regional items to their national product lists, construct a national HHC catalogue for CPI data collection, and develop the statistical capacities in the area of price statistics and national accounts.

Western Asia will also participate in the 2017 global ICP round, producing PPPs for 2017, 2018 and 2019, hence supplementing the PPP time series and constructing a continuous sequence of annual PPPs starting from 2011 and extending to 2019 with no gaps.

Thus, the regional 2016 PPP production round and the 2017 ICP round will pave the way for the implementation of more frequent ICP rounds, whether global or regional, ensuring the continuous computation of PPPs and national accounts expenditures and enhancing price statistics in the Arab region.

Improving Price Statistics in the Arab Region

The mission pursued by ESCWA's ICP team includes improving the member countries' price statistics infrastructure and human resource skills, improving the coordination between the national statistical offices and the regional office, and enlarging the national statistical output through capacity building activities, introduction of new specific national price indices, and harmonization of price statistics and national accounts activities. Thus, the ICP team at ESCWA is always undertaking new initiatives in an endeavor to maximize the benefits received by the member countries and to provide them with opportunities for enhancement of their price statistics capacities and infrastructure. This section will tackle the various activities implemented in the region leading to improvement in the overall price statistics infrastructure.

1. The Production of Purchasing Power Parities

The participation in global and/or regional ICP rounds provides member countries with additional knowledge in the area of price statistics and the opportunity to apply the gained experience in their national statistical practices. Moreover, purchasing power parities also support the monitoring of the SDGs, mainly goal 1 on poverty eradication, and goals 7, 8 and 12 on promoting inclusive and sustainable economic growth and employment and ensuring sustainable consumption and production patterns and access to affordable, reliable, sustainable and modern energy.

Member countries' consciousness of the importance of PPPs for economic development is well reflected through their dedication to the different projects undertaken by ESCWA's ICP team in relation to the production of PPPs, especially since they are stakeholders sharing the success of these projects through their participation in the implemented activities. On a more specific note, the GCC member countries are particularly active in their participation in the ICP rounds whereby their awareness of the massive benefits resulting from the participation in these statistical initiatives and the importance of regular PPP production has encouraged them to take part in the 2005 and 2011 global ICP rounds, participate in the current 2016 regional round, and partake in the upcoming 2017 global ICP round as well and be actively involved in the different projects undertaken by the ICP regional team.

Member countries can improve their national CPI practices in terms of data collection and data validation through the incorporation of different elements from the ICP into the CPI methodology. For example, the structured product descriptions used in the ICP to ensure comparability among countries can also be applied on the national CPI level, thus guaranteeing consistency among the regions of the same country. Additionally, participating countries can also construct a catalogue similar to the regional catalogue developed by ESCWA's ICP team illustrating the item specifications and simplifying the data collection process, thus ensuring the price collection of the required items and guaranteeing consistency and comparability. Moreover, member countries can rely on the regional product list to develop and update the national product lists by introducing a subset of new regional items into the national basket, hence increasing the overlap between the regional and national product lists and facilitating the data collection for future ICP rounds. Furthermore, the ICP data validation tools can be used in the national CPI in order to boost data accuracy and enhance data quality.

2. The Production of a Regional/Sub-Regional Harmonized Consumer Price Index (HCPI)

Another innovative initiative carried out in the Arab region and realized through the integration between the CPI and ICP is the production of a regional/sub-regional Harmonized Consumer Price Index (HCPI). The HCPI is a consumer price index enabling the accurate comparison of inflation levels among the different countries and the measure of the regional/sub-regional inflation through the use of a common harmonized methodology developed by the ICP team at ESCWA. The harmonization between CPI and ICP practices will allow the computation of the harmonized index which provides an added value over the national consumer price index calculated by each country using a different methodology. The national CPI provides a temporal comparison of the changes in the price level of a certain basket of goods and services between a given period and a base period in a single country, while the HCPI also allows the spatial comparison of inflation levels across different countries.

The idea initially envisioned by ESCWA's ICP team entailed the division of the region's countries into two sub-regional groups for the production of the harmonized index, the first group composed of non-GCC member countries and the second group comprising the GCC member countries. The similarities in the economic structures of the GCC countries on one hand and the economic structures of the non-GCC countries on the other as well as the disparities in the structures between the two groups justify this sub-regional classification of ESCWA's member countries in the HCPI exercise offering great benefits for both groups resulting from the production of the harmonized index. At its first stage, the HCPI project is being piloted on a small group of member countries and will expand to include all the region's countries upon successful execution.

In order to launch this exercise, ESCWA's ICP team harmonized the national product lists of the participating countries classified according to the ICP basic headings by eliminating

incomparable items and developed a set of harmonized methodologies for the computation of the national HCPIs, ensuring accuracy and cross-country comparability of the resulting indices. Therefore, a time series of HCPIs will be constructed with no additional data collection burden for member countries since the same items are priced in the national CPI as well. Besides, the strategy followed by ESCWA's ICP team involves increasing the overlap between the member countries' national product lists throughout the project's progress moving the harmonization to a new level by gradually introducing new products and updating the product specifications, thus establishing a subset of common regional products within each country's national product list, increasing therefore the harmonization in the area of price statistics and synchronizing the CPI and ICP data collection activities.

Such an initiative will substantially benefit the member countries and the Arab region in general by allowing the temporal and spatial comparison of inflation levels across countries, the assessment of a country's economic situation in terms of a region with similar economies, and the measure of inflation in the region as a whole. Moreover, the HCPI can provide guidance in the formulation of economic and financial policies and assist in the analysis and forecast of price trends in the Arab region.

Furthermore, the computation of the HCPI represents an integration activity between the CPI and the ICP whereby the methodology developed for this project combines characteristics from the ICP in the production of a harmonized consumer price index enhancing the national CPI infrastructure and presenting opportunities for the improvement of the national CPI computation methodologies.

3. The Production of Sub-National PPPs

ESCWA's ICP team is implementing national projects in three pilot countries for the production of sub-national PPPs capitalizing on the experience gained from the ICP. The choice fell on the UAE as the first pilot country for the production of sub-national PPPs given its unique federal structure of seven Emirates, the variation of consumption patterns across the country, and the difference in the prices of goods and services between the Emirates. The UAE's sub-national PPPs were computed for the year 2015 and the results will be published by the end of 2016.

The different consumption patterns and inflation levels across the same country caused by demographic diversity emphasize the need for the computation of sub-national price indices. Moreover, the differences in the cost of living and income per capita between the different regions of the same country highlight the need for tracking purchasing powers for the same national currency across the country. This section will focus on the improvement in price statistics originating from the computation of sub-national PPPs.

This project integrates the ICP work into the ongoing CPI work of a certain country and results in the computation of sub-national PPPs and sub-national expenditures from the basic heading level to the GDP level. The participating country will reap the benefits of this exercise in terms of increased national statistical output, enhanced capacities in price statistics and national accounts, and improved national and sub-national indices, not to mention increased comparability, opportunities for economic development, and balanced economic growth between the different regions of the country. Other benefits resulting from this initiative include the increased coordination between the sub-national statistical offices, the adoption of a unified methodology across the country, and the expansion of frame and coverage of price data collection. The public sector will also receive the positive effects of the production of sub-national PPPs in the improved assessment of comparative sub-national growth and advantages within the country, solid estimation of the cost of living in the different regions of the country, better evaluation of the economic situation and formulation of more suitable policies to attract more investment. Other advantages arising from this project will also be captured by the private sector including the determination of the real market size of each sub-national region, the development of salary scales, and the evaluation of sub-national investment costs. Individuals can also use the sub-national PPP results in assessing the real income and purchasing power across the different regions of the country.

This project highlights the bilateral integration between the CPI and ICP through the incorporation of the ICP classification and methodologies within the CPI work and the use of the CPI ongoing processes in the computation of the sub-national PPPs, leading to enhancement of price statistics capacities, improvement of the statistical infrastructure, and overall national development in the area of price statistics.

Given the above mentioned benefits to be reaped from this project, the regional ICP team at ESCWA is looking into the implementation of similar projects in additional member countries characterized by a considerable geographical surface and vast differences in the prices of goods and services, such as Saudi Arabia or Oman for example.

Conclusion

Both PPPs and CPIs contribute to economic well-being through their various uses. They are different indicators with different purposes, the CPI providing temporal comparisons and the PPP spatial comparisons. Nonetheless, the integration between these two indicators can produce synergetic effects on the global, regional, national, and sub-national levels.

The double-folded integration between the CPI and ICP provides multiple benefits on the different levels. The activities and projects described in this paper, namely the continuous production of PPPs, the production of HCPIs and the production of sub-national PPPs all lead to the strengthening of the national CPI product lists, improvement of the national price statistics infrastructure, synchronization of data collection activities, and the development of capacities in price statistics and national accounts. All these synergetic effects produce in turn a ripple effect extending to the economy as a whole and reflecting the positive repercussions through the production of more accurate price statistics, the sound evaluation of the economic situation, and the formulation of appropriate economic and financial policies.

The integration between the CPI and ICP activities was highly recommended by the United Nations Statistical Commission (UNSC) at its 47th session which underlined the importance of PPPs and their production on a permanent basis. The regional ICP team's quest is thus in line with the UNSC recommendations whereby its main goals include the regular production of PPPs, the development of member countries' capacities in price statistics and the improvement of price statistics infrastructure and output in the Arab region, which it strives to accomplish through the continuous implementation of different innovative initiatives.