

## **Abstract for “Sub-national PPPs: Methodology and Application by Integration of CPI and PPP Data”**

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The need for constructing sub-national Purchasing Power Parities (PPPs) to carry out inter-area price level and real income comparisons in the context of poverty, rural-urban and regional differences in general, and also to implement adequate policy intervention at local level, has been discussed extensively in literature. However, in surveying international practice it can be seen that only few countries produce official indexes of spatial prices, without any international framework for comparison. In order to meet the growing demand for official estimates of PPPs at a sub-national level, different countries have undertaken experiments. In some countries, the computation of sub-national PPPs is based on data taken directly from the consumer prices collected from retail outlets throughout the country for the compilation of the Consumer Price Indices (CPI), while in other cases additional data are collected via a purpose-designed regional price levels survey for items of expenditure where suitable CPI data were not available (mainly clothing, furniture, electrical goods and travel).

From the international comparison point of view, though the International Comparison Program (ICP) and PPPs have gained international acceptance, the uses of these PPPs at the national level are less clear and, therefore, their use at the national level is currently somewhat limited. Further, the ICP relies heavily on collection of price data through price surveys conducted in countries specifically for the purpose of ICP. The product lists are based on considerations like comparability and representativity and therefore countries often find it difficult to use them for comparative analysis in the context of poverty, rural-urban and economic regional differences in general. For these reasons, recently, the need for constructing sub-national PPPs in the framework of the ICP and using the CPI data has been stressed in many occasions.

The aim of this paper is to discuss the methodological and computational problems of constructing sub-national PPPs considering the integration of CPI and PPP data, that is by using CPI and related expenditures data and, at least conceptually, using methods identical to those used for the computation of PPPs in the ICP. In moving towards implementing and finally compiling and publishing temporally consistent spatial indexes by using as much as possible the CPI data, it is worth stressing that the main issue in building the list of products for such comparisons is the implementation of two main principles, comparability and representativity, which are actually in conflict with each other as widely recognized by many researchers. As the main purposes of the CPIs and PPPs are quite different, the price data available from the CPI sources are usually not in a form suitable for spatial price comparisons. Though the issues of comparability and representativity are likely to be less serious issues in the context of sub-national PPPs, they need to be considered carefully in making use of the CPI data. However products collected for CPI construction may neither be comparable nor representative across different regions especially if the countries are large or diverse in terms of climate and tastes and preferences. The current ICP methodology is not designed to make an efficient use of CPI price data if the items are not comparable within all the regions.

The paper will investigate these issues and develop a new methodology that can make effective use of extensive price data collected as part of the national CPIs, using as much as possible CPI data from Italy. Another objective would be to verify the consistency of the estimated sub-national PPPs with information coming from the ICP process in order to evaluate the possibility to have an integration between collection of data for CPI and PPP of ICP saving the amount of resources involved in conducting a benchmark ICP.

The content of the paper refers essentially to the discussion of: (i) data preparation (problems of adequacy of the actual CPIs and expenditure share weights and other data available at sub-country level, verification of the definition of the products and services whose prices have been collected, etc.); (ii) aggregation of data at the Basic Heading level (identifying the most appropriate method among those already experimented for data aggregation in the ICP, such as various CPD and GEKS methods, but also the new implemented CTPD (Country-Time-Product-Dummy) method and the MST (Minimum-Spanning-Tree); (iii) aggregation above the Basic Heading level (computation of PPPs for various consumption aggregates choosing the most adequate technique among the current ICP methods); (iv) verify the adequacy of the data on expenditure share weights available from CPI or from other sources; and (v) to present estimated sub-national PPPs for different regions in Italy.