

## **Proposal – Supporting the ICP Research Agenda**

### **Exploring Innovations in Technology and Data Sources for PPP Measurement**

Currently, countries participating in the International Comparison Program (ICP) collect prices following the standard approach used in CPI compilation. Prices are collected from outlets in different locations and these data are then averaged and used in the calculation of elementary, or basic heading, purchasing power parities (PPPs). The growing importance of online or internet-based shopping, plus the increasing digitalization of services, has impacted the way households purchase goods and services. Additionally, big-data sources, such as transactions data from retailers, including detailed data on prices and quantities, are increasingly used in consumer price index (CPI) compilation by the National Statistical Offices (NSOs).

The ICP research agenda notes the need to modernize and incorporate new and emerging data sources in the compilation of PPPs. With the growing availability and use of scanner data and alternative data collection sources, such as web scraping, these new and emerging sources and methods offer potential for the ICP.

In the recent past, the ICP Global Office at the World Bank, piloted a project to collect price data via crowdsourcing using smart phones<sup>1</sup>. Under this pilot project, price collectors in different countries collected prices, characteristics, time and date of collection, and other details to allow comparison of collected products with defined ICP items. The pilot was discontinued due to the exorbitant cost of this method of collection.

The ICP research agenda item for exploring data innovations and technology identifies the following key points for investigation:

- Assess the quality of prices collected from alternative sources using standard ICP data validation methods; and
- Compare the price levels and dynamic between CPI and ICP price collection using alternative sources.

### **IMF Contribution**

The Statistics Department (STA) proposes to support the ICP research agenda item for exploring data innovations and technology to identify how alternative data sources, including big data, can be leveraged to improve the quality of ICP data. STA serves as one of the largest providers of technical assistance to improve and develop price statistics, including CPIs. STA's extensive

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<sup>1</sup> See <https://blogs.worldbank.org/opendata/can-modern-technologies-facilitate-spatial-and-temporal-price-analysis> for details.

training and technical assistance program can be leveraged to support progress on this research agenda item.

To support this effort, STA proposes the following:

1. Conduct outreach to OECD, Eurostat, and other regional implementing agencies to take stock of experience using alternative data sources in ICP collection.
2. Beginning with a targeted group of countries, identify which NSOs use online prices and other big-data sources in the calculation of their national CPIs and ICP, including details on which item indexes are compiled using alternative data sources, how these sources are incorporated into general CPI calculation methods, and which ICP items are sourced from web scraping or scanner data.
3. Beginning with the targeted group of countries, STA will work with the NSOs to expand CPI data sources to include scanner data and online prices where such alternative sources are judged to be representative of expenditure by the reference population.
  - a. Any alternative data source used in the compilation of a national CPI should be broadly representative of expenditure made by the reference population. In some cases, for example, scanner data are not considered representative because the sources of these data (supermarkets) cater to expats or the very wealthy only and are not considered representative.
4. Work with the targeted NSOs to identify a target group of ICP items that could be sourced from web scraping or scanner data and assess the quality of these prices.

An IMF working paper would be drafted jointly with ICP Global Office staff detailing results and providing guidance to countries on how alternative data sources can be used in the collection of prices for the ICP Program.