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Report on ICP Research Activities

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Report on ICP Research Activities

The purpose of this status report is to provide the International Comparison Program (ICP) 2011 Executive Board (EB) with an overview of the ICP 2011 research agenda, which is an update of the brief presentation of the same, included in the ICP report to the United Nations Statistical Commission (UNSC). The status report has three main parts: the development of the ICP-related National Accounts framework, which will also serve as the consistency framework of ICP 2011 research activities; a review of the Technical Advisory Group (TAG) research agenda; and the status of research collaboration with specialized units and institutions.

1 Development of the ICP-related National Accounts framework

To ensure optimal consistency between ICP surveys and processing and the System of National Accounts, a national accounts framework for ICP is being developed which will also be used as the coherence framework of the research program of the current ICP exercise. The System of National Accounts is, by the nature of the ICP, the reference framework for the determination of purchasing power parities (PPPs). This entails specifying the detailed ICP requirements for national accounts data, the major uses of these data and possible methods of estimating detailed data for those countries that do not compile their accounts at the level required for the ICP. These requirements will be useful to all the countries, whether they are implementing the System of National Accounts for the first time, improving their national accounts, upgrading the coverage of their accounts (particularly producing expenditure-based gross domestic product (GDP) estimates for the first time), or reviewing their national accounts to meet all the standards of the System of National Accounts 1993. The Global Office is developing the above in the form of an ICP-related national accounts framework, under which expenditure values will be compiled.

The current draft includes a section on the integrated economic accounts and lays further emphasis on GDP and its main aggregates, in terms of how the GDP is defined, how it should be measured with respect to ICP requirements. Having in mind the production boundary of the National Accounts, the document introduces the three types of outputs: market output, output produced for own final use and other non-market output.

It also underlines that some goods and services are acquired without any payment involved and the values all relevant transactions should be imputed to ensure that GDP measures the value of all the production in the economy and to improve the comparability between countries.

The ICP-National Accounts consistency requires that the prices aggregated into PPPs are based on the same principles and approaches as those subsumed in national accounts values.
Expenditures and actual final consumption constitute an important section in the document. All definitions, valuation, recording and calculation methods related to the analysis and compilation of expenditure flows deemed relevant for the ICP are properly reflected in the framework.

The framework also addresses the issue of classifications with a view to ensuring that all National Accounts work under the ICP abide by agreed harmonized systems of categories.

Another major section in the framework relates to data validation processes to be implemented by National Accounts experts and price statisticians. This includes a system of economic validation of price and expenditure data that will supplement approaches of statistical validation that proved effective in 2005.

Activities to be carried out by National Accounts experts in the countries will be defined in another section of the framework. These sequenced activities will be customized according to whether a particular country is still using an older version or has already migrated to the System of National Accounts 2008. National Accountants will:

- work together with price statisticians to cross check their respective products and prices;
- conduct early data collection for 2009, 2010 and 2011 GDP estimates that will enable data problems to be resolved before the final data collection for the 2011 reference year;
- prepare matrices of data availability for all major products in the products lists and create a data flowchart for input data, data sources, vintage of data, estimation methods and GDP expenditure values used from 2005-2011; implement the commodity-flow approach or develop supply and use tables as far as data sets can permit; and implement a price monitoring system for each major product under a given basic heading;
- update the vector of GDP breakdown for the reference year 2011, building on the steps above.

The Global Office will pilot the proposed ICP-National Accounts approach in 3 or 4 countries in the form of properly documented case studies which will be proposed to all participating countries as practical guidelines for the implementation of the approach.

For this to be effectively implemented, the Global Office recommends that each national ICP team should comprise price experts who will be in charge of price survey activities (list preparation, price collection and processing, at least for the main survey related to household consumption items) and national accountants who will handle national accounts activities, while establishing effective collaboration between the two components of the ICP team, under the
supervision of the national coordinator. The same division of work should be established at regional level where the regional coordinator can be either a price or a national accounts expert.

2 Review of the Technical Advisory Group (TAG) research agenda

At its first meeting, the TAG set a list of methodological areas that require specific research studies. It also established thematic working groups mainly comprising of its own members to agree on the objectives of the research, develop the program and method of work, exchange solutions and come up with a methodology to be submitted to the TAG for review and endorsement. The second meeting of the TAG, scheduled from February 17-19, 2010 in Washington DC, has the sole objective of reviewing the progress made by the various working groups, provide further guidance where necessary, and agree on the way forward. The research agenda includes the following 10 topics:

- The treatment of owner-occupied housing
  At its second meeting, the TAG was expected to discuss the current SNA guidelines for imputing rentals, the appropriateness of the User Cost method to estimate expenditures and also impute rents for some types of housing. The meeting had also to review the questionnaire that could be sent to the countries to obtain feedback about what data they can provide.

- The treatment of financial services
  The discussion on this topic was meant to decide what deflator should be used to convert nominal financial services into real services, and what information is required.

- The measurement of government outputs
  Health and education are two kinds of final expenditure that present special difficulties for international comparisons; they are sometimes described as “comparison resistant”. There are two difficulties. First, countries have different arrangements for providing health and education to their citizens. In a few countries households are left to their own devices and must purchase education and health services from private schools, clinics, hospitals and so on. At the other extreme, a few governments supply education and health services to all their citizens without charge. In the vast majority of countries, however, health and education services are provided through a mixture of government and private schools, hospitals etc. These different ways of providing health and education services make it difficult to compare the total volumes consumed in each country.
Also, it is hard to measure the output of health and education services provided by governments and by non-profit institutions serving households.

- Problems associated with the development of survey frameworks

The TAG addressed the issue of the collection of prices for consumer items, especially as it relates to the questions raised about the national coverage of both urban and rural components by data users and those using the PPPs for poverty research. They also discussed the use of representativity as a form of weighting when aggregating product price ratios to the basic heading level. While this has become standard practice in the Eurostat-OECD and CIS comparisons, the countries in the other regions were not able to consistently apply the representativity definition. Another issue is whether there should be an integration of the ICP data requirements with household consumption surveys. All these issues need to be considered, not only for the regional comparisons, but also for the pricing of the core list to be used for linking the regions as well as OECD-Eurostat into the Global comparison.

Poverty researchers are requesting more information about the national average price, especially the difference between urban and rural prices as well as the geographic differences and even differentiated by outlet to consider where the poor are most likely to make purchases. This had also to be discussed both under this item and the item of PPP-based poverty analysis.

- The treatment of exports and imports and the adjustment of household consumption data for net purchases abroad.

Given its relatively low share within exports and imports and the other uncertainties introduced by using exchange rates as reference PPPs, the working group on this topic recommended not making any special adjustment for freight within net exports. It further recommended to consider examining the possibilities for improving the overall methodology for net exports, although the chances of identifying a new approach prior to the data collection phase of the 2011 ICP are slim given the huge variation in the composition of exports and imports between countries. The issue of negative weights associated with net exports was also discussed.

- The aggregation of regional PPPs into global results

The TAG reviewed the aggregation methods used in 2005 as part of its discussion on methods to be implemented for 2011, knowing that different methods produce different results. The properties of the single vs. two stage linking process was also examined, in the light of the implementation of the
core list approach whereby a core set of goods and services will be priced by all countries. The TAG was also expected to determine whether countries should be linked by measures of similarity rather than by geographic region to mitigate the effect of the changing mixture of countries by region.

- **The determination of construction PPPs**

  The TAG reviewed the various methods used to compare construction prices internationally and recognized three types of method: Pricing outputs for representative types of construction in the country (per meter squared); Pricing input requirements for producing representative models or types of construction in the country and Pricing construction components for producing representative models or types of construction in the country. Special emphasis was laid on the method commissioned by the Global Office which is mainly based on pricing construction inputs and which requires further work.

- **PPP-based poverty analysis**

  In addition to issues pertaining to survey frameworks, the TAG identified two important areas: (a) address the issues that were problematic in the 2005 round, such as housing, and spatial pricing; (b) improve the quality and comparability of household consumption surveys.

- **The back-casting methodology in terms of handling PPP revisions**

  In order to meet data user demands, PPPs for years between ICP benchmark periods are estimated using specific regression models to be reviewed by the TAG to recommend the best approaches possible.

- **Sub-national PPPs.**

  The TAG was informed of initiatives being implemented in some countries on the comparison of price differentials across regions in the same country using ICP type methods and discussed related issues.
3 Status of research collaboration with specialized units and institutions

3.1 Background

This section is an overview of the status of collaboration between the ICP Global Office, the World Bank departments, and other organizations in the areas of education, health, government, energy, water and transport.

Education, health, and government are considered as comparison-resistant areas within the ICP. Additionally, the data collected within the 2005 round of the ICP has shown that the cost of energy, water supply, and transport services were difficult to measure and compare across countries.

The objective of the collaboration is to seek expert knowledge with the aim to improve the methodology to measure and compare these services across countries. Another objective is reaching out to researchers and users of ICP data and ensuring that the data collected responds to their needs.

3.2 Education

Previous efforts to calculate Education PPPs have shown that conceptual issues on how to compare education systems of differing structure and quality across countries complicate this task. The 2011 round of the ICP realizes the need for an improved methodology for calculating Education PPPs, reflecting the best current understanding of how education (public and private) can be compared across countries, including the costs of education services, the quantity of services delivered, and the quality of those services.

The ICP Global Office has joined effort with the Academy for Educational Development (AED) to improve the methodology for Education PPPs. The project consists in three phases over the period January – December 2010.

The first phase of the project will analyze existing literature, field experience, and models used to measure, estimate and compare education value across countries. There is a large body of literature on understanding how much and how well education services are delivered to children, including many field surveys and studies, analyses of assessments, and a number of meta-studies that synthesize, in different ways, a decade or more of research. This literature review will attempt to analyze what determines the quality and quantity of education services. The objective of this review is to 1) understand and integrate what is known about determinants of education quality and quantity; 2) start a list of indicators used to measure these determinants; 3) determine what models have been developed to integrate these elements; and 4) develop a conceptual model that outlines the components that should be included in the valuation and spatial comparison of education, and a general structure of relationships.
Subsequent phases of the project will 1) develop the mathematical model; 2) test it using internationally available data; 3) test it with additional data collected in two or three countries before the 2011 data collection; and 4) provide the ICP with a measure of assistance in analyzing the 2011 data and information collected.

In terms of deliverables and timetable for Phase I, AED will draft a conceptual note on the elements that should be included or considered for a revised ICP approach to the valuation and comparison of education services. A draft concept note will be presented at the third meeting of the TAG, in April 2010. The final deliverable will be a synthesis report of state of knowledge today and conceptual model for valuing and comparing education services, which will be finalized by June 2010.

The ICP Global Office is also joining efforts with the World Bank Human Development Network Education Team (HDNED). HDNED has agreed to provide a review of AED’s concept note, conceptual model, and the synthesis report, as well as to help the ICP Global Office analyze the education data and information that will be collected in 2011. HDNED has proposed to convene a meeting of the World Bank Economics of Education Thematic Group in May 2010, to further discuss the challenges faced with measuring and comparing education services, mainly the differences in the quality of education services across countries, and to review AED’s conceptual model and concept note.

HDNED is also working closely with the UNECSO Institute of Statistics (UIS) on improving the quality of education data. Collaboration between ICP, HDNED, and UIS is proposed, and has the potential of ensuring that education indicators are collected on a regular basis by National Statistics Offices or Statistical Units in relevant line ministries and thus mainstreamed in their activities.

HDNED will also review the survey instruments and guidelines for education services, including the government occupations in education.

3.3 Health

In order to improve the quality of Health PPPs and to strengthen the knowledge of costs of health services, the ICP Global Office is collaborating with the Institute for Health Metrics and Evaluation (IHME) to estimate and compare the cost of health care across countries. A project entitled Health Sector Price Project was developed to facilitate the achievement of this common goal.

Project implementation began in September 2009, when IHME started developing survey methodology and instruments to be piloted in a selected set of countries. Fact-finding missions took place in December 2009 and January 2010 to gather in-country information, discuss the
preliminary instruments with experts within the country, and highlight potential errors within the survey methods and methodology.

The next step involves conducting pilot studies in the countries visited in the fact-finding missions, to test the instrument and refine methods. Data gathered from the pilot studies will be shared with the ICP Global Office. IHME and the ICP Global Office will evaluate the value and quality of the information gathered as well as the survey instruments and implementation, with the goal to improve the health surveys. IHME will finalize the new method and data collection requirements by December 2010. ICP Global Office and IHME will prepare the survey materials by June 2011, and countries are expected to collect data on health services over the period July – December 2011.

In addition to this project, IHME has agreed to provide guidance to the Global office on pharmaceuticals and medical products specifications in the Core List, as well as the government occupations in health.

The ICP Global Office is also partnering with the Human Development Network Health team (HDNHE) to improve the national accounts expenditures on health, both private and public. HDNHE have a project to improve the National Health Accounts in countries. National health accounts provide a systematic compilation and display of health expenditure. They can trace how much is being spent, where it is being spent, what it is being spent on and for whom, how that has changed over time, and how that compares to spending in countries facing similar conditions. They are an essential part of assessing the success of a health system and of identifying opportunities for improvement. ICP Global Office and HDNHE are looking at ways to link the ICP and the National Health Accounts Project to benefit both projects from the data collected.

### 3.4 Compensation of Employees in Government

Compensation of employees is the largest component of the costs of producing government services. It is the only cost component for which separate price collection is required, the prices being the wage and salary rates paid including any supplementary benefits. Compensation of employees is reported for a selection of occupations in general government, public education and public health. The ICP Global Office will build the list of occupations, and countries in all regions will be asked to use the same list of occupations. Regions may, however, make minor modifications to fit particular conditions in their regions.

In the 2005 round of the ICP, the Global Office developed a list of government occupations based on the ISCO 1988. For the 2011 round, this list will need to be updated to reflect the latest ISCO 2008. Additionally, the ICP Global Office is partnering with the World Bank PREM Public Sector Governance team to ensure that the data collected on the government compensation of employees reflect the needs of researchers and users.
The World Bank Public Sector Governance team has provided their input and review to the list of government occupations, and suggested additional occupations to be surveyed. Also, the team suggested a list of additional aggregate indicators, such as the total wage bill and the total number of government employees, to be collected. These indicators will help with the validation of the compensation of employees’ data to be collected in 2011.

A World Bank consultant and expert on government services, Mr. Derek Blades, was hired to undertake the following: 1) update the ICP list of government occupations from ISCO 1988 to ISCO 2008; 2) incorporate the Public Sector Governance team's requirements and comments; and 3) update the survey forms and guidelines.

The updated list of government occupations, additional indicators to be surveyed, and survey forms and guidelines will be ready by the end of June 2010.

3.5 Energy

The 2011 round is looking to improve the quality of Energy PPPs by ensuring that energy products and services are well-defined in order to yield comparable prices across countries, and that metadata and systematic documentation on the sources and formulas that the countries used to collect energy prices are well-documented.

The ICP Global Office is partnering with the Energy team within the World Bank Energy, Transport, and Water department to review the specifications for energy products and services in the Core List.

The Energy team has agreed to provide advice on energy products and services, in particular: 1) review of the global specifications for energy products/services; 2) advice on the reference period for the prices (monthly, quarterly, hourly, etc), and the tariff formula, when applicable; 3) guidance on the different electricity tariff elements that add up to the total tariff, and which need to be included in the data collection form; 4) advice on the collection of data to estimate total production (in local currency) of energy products/services; 5) advice on the appropriate sources, by product/service; 6) guidelines to countries indicating that the sample of utilities should be defined in such a way so that the prices collected are representative of the country; 7) defining the supplementary metadata that should be required from each country to help assess the quality of the data collected; and 9) general guidance on the price formation process, including the types of prices to be collected for each product/service specified (residential purchasers price, producers price, import price, etc.), additional costs such as transport, distribution, etc., and taxes and subsidies.
3.6 Water

The ICP Global Office is partnering as well with the Water team within the World Bank Energy, Transport, and Water department to review the specifications for water supply in the Core List.

The Water team will help develop the methodology and formula for water tariff, and define the different tariff elements to be collected including taxes and fees. They will also provide the standards and definitions for tariff elements.

Additionally, they will provide guidance to countries on the sample of utilities to be surveyed in order to ensure that the prices collected are representative of the country.

This information will be used to derive the data collection forms and accompanying survey guidelines for the Water Supply basic heading.

This work is currently underway, and is expected to be completed by the end of March 2010.

3.7 Transport

Transport services, including transport by air, by land, and by sea and inland waterways, posed important difficulties in most regions in the 2005 round of the ICP. Difficulties were encountered at the stage of building the item list, where it was hard to identify the price-determining characteristics and develop comparable specifications of transport services across countries. Difficulties were also encountered at the data validation stage, mainly due to the absence of detailed metadata on the fare type, formula used to compute the different fares, and any deviation from the specifications.

The ICP Global Office is currently discussing with the Transport team within the World Bank Energy, Transport, and Water department a potential collaboration on urban transport, air transport, and marine transport to improve the quality of the transport services PPPs in the ICP. The expertise of the transport experts is needed to improve the description of transport services in the Core List of items, and to determine the metadata needed for the validation of the fares collected. Their expertise will also be needed at the stage of validation of data collected within the 2011 round, and later on in the analysis of the results.

The air transport team is also suggesting collaborating with IATA on the cost of air transport services.