

In This Issue

Cover Stories	1
• The International Comparison Program: Looking Back & Looking Forward	
• Latin America Publishes PPPs for Household Consumption	
Notes from the Global Manager	2
News in Brief	2
• ICP Executive Board Met in New York...	
• ... And Will Reconvene in Paris	
• UN Statistical Commission Discussed ICP	
• CIS Region to Host Regional Coordinators	
• Data Access Working Group Finalized its Report	
Feature	5
• Interview with Eduardo Pereira Nunes	
Methodology	6
• A Note on Linking Regional PPPs to Estimate Global PPPs	
• Thinking about the ICP Research Agenda	
Regional Spotlight	8
• Lessons from the Asia Pacific Experience	
Country Perspective	9
• ICP Experience Will Greatly Benefit Uganda	
ICP Publications	12

The International Comparison Program: Looking Back and Looking Forward

Robert Edwards, Director, Statistics Department, IMF



It is my pleasure to have the opportunity to contribute this article to ICP News, the issue of which will coincide with the first release of results, for Latin American countries, from the 2005 Round of the International Comparison Program (ICP). My association with the ICP goes back quite some years, and in a variety of capacities: (i) As a strong critic of the quality of ICP data from my perspective as head of macroeconomic statistics when I worked at the Australian Bureau of Statistics; (ii) As a “Friend of the Chair” in establishing a new governance and operating structure for the revamped ICP; (iii) As a founding member of the Asian coordinating committee overseeing the Asia/Pacific component of the ICP; and (iv) In my current capacity as a member of the ICP Executive Board.

It has been very pleasing for me to have had the opportunity to participate in the revamp of the ICP. While there is still much work to be done to complete the 2005 Round, I am very confident of a successful outcome, based on the robust nature of the framework within which the Round is being undertaken and the dedication and commitment of the many participants worldwide in the endeavor. >>

... continued on page 3

Latin America Releases Preliminary PPP Data for Household Consumption

Jacob Ryten, Senior Advisor to ICP Global Office and Executive Board Member



The South American region is the first region to close a most important phase in the 2005 Round of the International Comparison Program (ICP). The results from the comparison of Household Final Consumption among 10 countries will be released on June 28 in Rio de Janeiro at the headquarters of the Brazilian statistical office, Instituto Brasileiro de Geografia e Estatística (IBGE). Household Consumption is by far the largest single component of GDP. In the region it averages two thirds of the total GDP.

As useful as the consumption PPPs may prove to be for matters such as helping governments determine the prevalence of poverty in the region, the calculation of household consumption is not the end of the story. Early in 2007, the regional coordinators who take overall responsibility for the region’s ICP program expect to publish GDP and its expenditure components – capital formation in construction and in machinery and equipment, government expenditures on goods and services and of course the trade balance on goods and services. That should provide the best answer so far to the question of what is GDP per capita after adjustment for the purchasing power of different currencies. >>

... continued on page 4

Notes from the Global Manager

Dear Readers,

This issue of the newsletter represents a milestone with the inclusion of preliminary results from the Latin American comparison. Therefore, it is fitting that this issue begins with feature articles prepared by Rob Edwards and Jacob Ryten.

This round of the ICP is essentially founded on the principles and recommendations in the "Ryten Report" commissioned by the UN Statistics Commission. That led to the UN Statistics Commission forming the "Friends of the Chair" that included both Rob Edwards and Jacob Ryten and then to the establishment of the governance structure now in place. Both also serve on the ICP Executive Board, thus continuing to provide valuable leadership to the program.

While we are excited about the much awaited release of preliminary results from the LAC and other regions to follow; they will represent only the consumption component of the Gross Domestic Product. Data collection for the remaining components such as housing and capital formation is underway and, in some cases, based on new methodology.

A selection of countries from each region, 19 in total, is busy pricing items from a product list extracted from the combined regional lists. These results will be used to link the regional PPPs into a set of global parities. The new methodology being developed to link the regional results and aggregate them to global levels is built on the foundation laid by Erwin Diewert, also featured in this issue.

The ICP Executive Board met in early March to deal with several difficult issues such as the level of detail to publish in the Global report. The issue was not resolved and will be revisited at the June 16, 2006 Board meeting which will include a review of the recommendations on data access and publication prepared by a working group of national statisticians.

The Board meeting and the discussions at the UN Statistics Commission in March shared a common theme which was approval of progress that has been made and a sound endorsement that the planning process for the next round should begin. The Global Office was directed to do an internal evaluation of this round, prepare recommendations for future rounds, and present these to the 2007 meeting of the UNSC. We invite readers to take a look at the ICP website (www.worldbank.org/data/icp) which is continually being improved and updated.

In closing, it is fitting to again acknowledge the tremendous efforts of the regional and national coordinators to bring us to a point with publication in sight. We can say the governance structure, which provides the national and regional coordinators strong ownership in the overall process as envisioned by the "Friends of the Chair," was effective.

Fred Vogel

News in Brief

ICP Executive Board Met in New York...

The Executive Board met on March 6 in New York. The Global Office presented the status report and timeline for the publication of preliminary and final results of the current round. The Board endorsed the proposal to publish preliminary global results in the first quarter of 2007, followed by final results at the end of 2007. Board members also commented on a preliminary draft on Data Access and Confidentiality presented by the Chairman of the Data Access Working Group (DAWG). The Board also instructed the Global Office to undertake internal evaluation followed by an external evaluation in preparation for the next round, which the Board recommended should be organized immediately after the completion of this round.

... And Will Reconvene in Paris

The Executive Board will meet again in Paris on June 16. The agenda includes the status of the current round; data access policy including the timing and the level of details for publication; internal and external evaluation of the current round; and the future of the program.

UN Statistical Commission Discussed ICP

The Statistical Commission, at its thirty-seventh session (March 2006), discussed the status of the ICP and took note of the significant progress achieved. The Commission (a) endorsed the recommendation of the ICP Executive Board to mainstream the ICP as an ongoing program, in order to utilize the improved capacity in price data compilation and the established infrastructure, (b) requested that an evaluation of the 2005 round and a plan on the future of the Program be submitted to the Commission at its thirty-eighth session in March 2007, and (c) suggested that efforts be stepped up to expand the Program's country coverage.

CIS Region to Host Regional Coordinators

The CIS region will host the next Regional Coordinators' Meeting, from July 24-28, in Moscow. The meeting will review consumption price data from the last two quarters of 2006 and the corresponding expenditure weights for all regions other than Latin America, which is publishing its results in June 2006. The meeting will also review data submitted by the Ring Countries, as well as data on construction, equipment and government compensation for the first time.

Data Access Working Group Finalized its Report

A Data Access Working Group was established and its members selected by the Global Office, in close consultation with the Chairman of the ICP Executive Board. The Working Group was mandated to develop a policy for protecting the integrity of micro data holdings, and to formulate data access guidelines for researchers and the general public. In early March, the Group circulated a first draft for comments and subsequently prepared a final report, taking into consideration input from the Executive Board, Global Office, regional coordinators and Technical Advisory Group. The Executive Board will consider the Group's recommendations and provide guidelines on the issue.

Rob Edwards ... continued from page 1

The ICP is unique in that it requires both country statistical offices and regional and international agencies to split responsibilities in compiling and processing the basic price and expenditure data. It is also unique in that the quality of the ICP results for one country depends crucially not only on the quality of the basic data for that country, but also on the quality of the basic data for all other countries in the comparison. Strong coordination and collaboration is therefore necessary if the ICP is to be successful.

In the second half of the 1990's, three independent evaluations of ICP were conducted. The first report, prepared by Messrs. Raimundo Fombellida and Seppo Varjonen (1996), focused on the African 1993 comparison. This was followed by the evaluation by Mr. Ian Castles (former Australian Statistician) of the OECD program (1997). The third evaluation, sponsored by the International Monetary Fund, the UN Statistics Division, and the World Bank (1999), and conducted by Mr. Jacob Ryten, formerly from Statistics Canada, had a broader mandate with respect to covering all regional comparisons. The three evaluations shared common objectives: (a) to assess the demand for and the uses of purchasing power parity (PPP) data; (b) to identify weak areas of the program; and (c) to recommend strategies to strengthen it. The three independent reports agreed on most issues and all confirmed the value of PPP data — the estimation of which is the primary objective of the ICP — for a wide range of policy-relevant economic analyses.

The Ryten report (United Nations Statistical Commission - E/CN.3/1999/8) observed that the most serious problem facing ICP was the lack of credibility of its outputs, particularly at the detailed level. Lack of credibility was linked to a “data breeding” problem, which included poor management and supervision of country-level data collection, data editing and processing, and the lack of coordination between national statistical offices and regional coordinators. These problems were, in turn, attributed to insufficient funding and absence of a credible international coordinator.

In light of these reviews, proposals were developed by a United Nations Statistical Commission “Friends of the Chair” group and coordinated by the World Bank, for a major revamp of the ICP before its relaunch for a new round in respect of reference year 2005. Major attention was given to the governance structure for the ICP, the basic components being proposed as follows:

- The ICP Council, with its broad representation of sponsors, users, donors, and other stakeholders, to be the ultimate “owner” of the ICP, equivalent to the annual general meeting of shareholders in a corporation. Its main roles would be to provide a forum where the views of the stakeholders can be expressed, to confirm or otherwise amend the mandate and accountability mechanisms for the ICP Executive Board, and to ensure that the ICP has adequate resources.
- The ICP Executive Board, equivalent to the board of directors in the corporate model, to be responsible for the successful implementation of the ICP.
- The ICP Global Office, headed by the ICP Global Manager, to manage the ICP on a day-to-day basis. The position reports to the Executive Board and prepares annual work programs and budgets for their approval. The Global Office is located within the World Bank in Washington, D.C.
- The Technical Advisory Group provides guidance on technical issues and monitors the use of appropriate methodology. The Advisory Group has proven to be particularly useful in addressing many complex technical issues.
- Regional implementing agencies to be responsible for setting up the structures required to implement and monitor ICP at the regional level. Each regional agency has established a regional ICP office headed by a regional coordinator. Regional agencies have set up regional committees to maintain contact with participating countries.
- Within participating countries, the ICP is carried out by a national implementing agency, with a nominated national coordinator.

The ICP Executive Board subsequently agreed to a change in scope of the ICP Council from ultimate custodian of the program to an information sharing vehicle, allowing the ICP practitioners to provide progress reports to, and receive feedback from, a wide audience. Accordingly, the Board recommended that the ICP Council be replaced by an ICP Forum and that participation be open and not restricted in number, with donors, academia, researchers, the media, and other users being invited to attend the Forum. It is envisaged that communication with the Forum will take place through a website interchange and occasional meetings. As the results of the 2005 Round start to become available it will be important, in my view, to formally establish the Forum. The ultimate test of the success of any statistical endeavor is to have the statistics perceived as credible for the purposes to which they are being used. The Forum will be an important vehicle for this feedback.

While the results of the current round of the ICP are not yet available, and hence the jury is still out on the success of the program and the appropriateness of its governance structure, the March 2006 UN Statistical Commission meeting was optimistic of a successful outcome. It appreciated the significant progress in the program due to the leadership of the ICP Executive Board, the World Bank, the regional coordinating organizations, and the dedication of the participating national statistical offices.

I take this opportunity to congratulate all who have worked so diligently and collaboratively on the 2005 Round. In parallel with the completion of the Round, we now need to devote attention to the ongoing nature of the Program and, as part of this work, to thoroughly evaluate all elements of the current Round. ■

Jacob Rytén continued from page 1

As part of the global effort to establish the credibility of the ICP and to improve the quality of Purchasing Power Parity (PPP) estimates, the South American comparison was undertaken in light of the recommendations provided in the previous round's evaluation. The ICP for South America was distinguished by a number of unique features some of which may have played a decisive role in accounting for its relative success. First, the legitimacy of international coordination in South America was secured by the involvement of the Statistics Division of the United Nations Economic Commission for Latin America and the Caribbean (ECLAC). The Commission has performed a traditionally outstanding role in providing intellectual leadership to social and economic policy makers in the region and stands unchallenged in initiatives such as the ICP.

Secondly, the services of a highly professional national statistical agency – Statistics Canada – were solicited and secured for coordination, programming, guidance, processing and methodological advice. The pairing up of the two institutions and the seamless way in which they discharged their responsibilities and led the program to a successful outcome offers a new organizational model to other regions for future rounds. The Global Office assisted in the regional efforts by providing top-up finance, methodological advice, systems support, and liaison to other regions. But by and large it carried out its policy of devolving to the regions most of the initiative taking and local governance.

Three additional factors contributed to the program's success. First, it was decided from the start to limit the number of countries and concentrate exclusively on those countries that had a good statistical infrastructure. Second, the program benefited from the fact that all participating countries had cooperated in a joint effort to produce a harmonized Consumer Price Index (CPI). The work on the Harmonized Index gave the participating countries a head start in the choice of comparable consumption goods and services. Third, the South American countries share a language (Portuguese speakers can communicate easily with their Spanish speaking counterparts) a culture and an institutional history. Their experts were well known to one another and in many instances knew their Canadian and ECLAC colleagues.

The secret of a successful effort in the context of the ICP lies in good governance. Good governance is what promotes reliable communications; fosters rapid decision taking; reassigns resources as needed; balances national versus regional requirements; and above all keeps a highly complex program such as the ICP on time and focused on its prime objectives. Good governance provides leadership and leadership gives the coordinating authorities credibility. The ICP-South America program paid particular attention to good governance. It emphasized transparency and the collective taking of policy decisions.

An equally important feature of a successful program is full ownership by the stakeholders. Fortunately the regional program was financed adequately to achieve its ends but as recommended by the evaluators of the previous round the participating countries did not receive any financial help to carry out their price and out-

let surveys or any other activity carried out on national soil. All participating countries in the region had a stake in the program insofar as they financed their activities with national resources and took it that the program's success was linked to the use national authorities could make of the program's results.

The ICP-Latin America has had the indirect effect of strengthening national CPI's by expanding their product coverage and through the device of SPD's, by making much more systematic the recording of products' price driving characteristics.

The Regional coordinators are satisfied that they took the right decisions for the management of this round of the ICP and are proud of the response they got from national institutions. There are many details that they propose to change if and when there is a repeat initiative but the general outline of the organization has been tested and results suggest that the program has met the objectives and expectations of all involved.

Preliminary Results of Consumption PPPs

The current release of consumption parities and per capita expenditures includes a number of striking findings of which the following are examples.

Argentina has the highest per capita consumption: Argentina is at the top of per capita expenditures on household goods and services, with 60 % more than the regional average. Chile and Uruguay follow suit respectively with 48 and 43 % above average. Paraguay and Bolivia remain at the bottom of the table, the former with two-thirds of the regional average and the latter with 52 %.

The middle group is less spread out, with Venezuela at the top slightly above average and Colombia roughly 20 % below. Brazil ranks sixth, almost 10 % below par (see table 1). But the rankings may change when the results for GDP per capita are compiled.

Table 1: Household Consumption
(Average for region = 100)

Country	Per capita
Argentina	161.3
Chile	148.0
Uruguay	143.5
Venezuela	108.7
Peru	91.6
Brazil	90.5
Ecuador	88.5
Colombia	84.1
Paraguay	69.8
Bolivia	52.7

Chile, Brazil and Uruguay are the most expensive countries: Purchasing power parities makes it possible to determine comparative price levels. The estimates are expressed relative to the South American average. If a visitor from outside the region

Cover Story

moved from one country to another and bought rigorously the same basket of goods and services, he would find that he had to spend most of his resources when in Chile and feel most at ease financially when in Paraguay or in Bolivia (see Table 2).

Table 2: Relative Price Level for total household consumption (Average for region = 100)

Country	Relative price level
Chile	117.7
Brazil	114.2
Uruguay	108.0
Venezuela	101.3
Peru	85.8
Ecuador	85.7
Colombia	85.3
Argentina	77.5
Paraguay	57.4
Bolivia	53.8

Although, per capita comparisons may not be sufficiently reliable for specific products, the PPP's are of better statistical quality. Comparisons can be made for some of those products across the ten countries. Some of the examples are obvious. Beef is much more expensive in Chile than in beef-producing countries such as Argentina and Paraguay. Less obviously, pharmaceutical products are expensive in Uruguay and Brazil, but cheap in Chile and Ecuador (see table 3) ■

Table 3. Where it is relatively cheap and most expensive to buy selected products

Products	Where it is relatively cheap	Where it is relatively expensive
Meat (beef)	Paraguay, Argentina	Chile, Uruguay
Coffee	Brazil	Chile, Uruguay, and Venezuela
Electro-domestic equipment	Chile, Colombia, Uruguay, Venezuela	Brazil
Pharmaceutical products	Chile, Ecuador, Peru	Uruguay
Motor vehicles	Chile, Brazil, Argentina	Bolivia, Colombia
Telephone services	Argentina, Paraguay	Chile, Brazil, Peru
Books, periodicals	Argentina, Bolivia	Chile, Brazil, Venezuela

For more information and for the newly released detailed data for Latin America, visit the ICP website: www.worldbank.org/data/icp

Feature

An Interview with Eduardo Pereira Nunes



An interview with Eduardo Pereira Nunes, President of the “Instituto Brasileiro de Geografia e Estatística (IBGE)”. IBGE is hosting the data release event for Latin America. The institute employs over 8,500 staff, and offers undergraduate and graduate degrees in statistics. It has 530 branch offices covering 5,564 cities throughout Brazil.

What does the ICP represent for you, as a national accountant and as President of your institution?

E. P. Nunes: As someone who was involved in the discussions that followed the last round of the ICP and saw the program reaching this stage, I am enormously happy with the results. I believe my satisfaction is commensurate with the extraordinary efforts made first and foremost by the ten countries that took part in this region's program, and with the outstanding coordinating role played by Statistics Canada and Economic Commission for Latin America and the Caribbean (ECLAC), supported by the Global Office of the World Bank. And I would like to record that we have taken a giant step to make inter-country comparisons of economic variables possible and meaningful. But I am fully conscious that we must improve our own statistics in a number of important respects. This is a realization that came to light as a result of the systematic comparisons with other countries that the program imposed on us and for which I am truly grateful.

What are for you the fundamental changes revealed by the 2005 ICP round as distinct from the previous ones?

E. P. Nunes: It helped us master a discipline which we did not handle as effectively as we should. The machinery for technical coordination deployed for this program – ensuring that transparency and mutual trust was the order of the day and what was compared was always like with like – made it imperative that all respects of data collection be looked at with great care. Indeed, we used where necessary digital photography of selected goods and places of purchase. Moreover, our very frequent technical meetings in order to discuss whether or not the right products had been selected and priced; the methods used to establish prices in more complex situations; all of these made it possible for a systematic approach to quality control that many of the countries taking part were not used to and from which I am sure all benefited greatly.

How did the IBGE finance its participation to this ICP round?

E. P. Nunes: With its own resources. Initially, we thought that no more than marginal funding was required. After all, Brazil has a very broad-ranging CPI, based on an extensive basket of goods and services. We believed that the basket was ample enough to serve as a frame from which the subset of goods and services required for the ICP would be chosen. Subsequently we real- >>

... continued on page 10

A Note on Linking Regional PPPs to Estimate Global PPPs

Erwin Diewert, *Distinguished Professor, UBC, Canada*



In the ICP, participating countries are grouped by region, and global comparisons are carried out in two stages. Each of the 6 regions participating in the current ICP program will independently estimate a set of Purchasing Power Parities (PPPs) for each of the countries in its respective region. Regional PPPs are based on region specific baskets consisting of goods and services reflecting the expenditure patterns of countries in the region. These PPPs will be a set of 155 numbers, which convert national currency denominated expenditures in each of 155 categories (basic headings) for each country in the region into equivalent expenditures in units of currency of a base country in the region - for example, Argentinean Peso for Latin America and Kenyan Shilling for Africa. The PPPs within a region will then be linked across the six regions to generate global PPPs, expressed in a common international unit of currency, often the US dollar.

6 The Latin American region is the first to publish its preliminary PPPs for total household consumption and its components. The rest of the six regions will follow in due course, and global PPPs for consumption are expected in the first quarter of 2007. Preliminary PPPs for total GDP, including consumption, gross capital formation, and government expenditures are expected in the third quarter of 2007.

The ICP methodology that will be used to link the PPPs across regions is based on 19 countries selected from the five ICP regions plus the OECD/Eurostat group (these countries are called Ring Countries) agreeing to undertake the detailed collection of item prices for the 155 basic heading categories from a common list of items. The Ring product list of items is not equal to the product list from any one region; rather it is a global product list that is specially chosen so that there is a high probability that each item on it can be found in most of the Ring Countries. The Ring approach is an innovation to making international price and volume comparisons.

There are approximately 5 to 15 detailed product specifications for each of the 155 basic heading categories on the interregional product list, and each Ring Country will be asked to price these items. Once this price information for the Ring Countries has been collected, the information will be used to link the regions while preserving the within region PPPs. Respecting the within region PPPs is essential to preserve the relative position of countries established through regional comparisons.

Before moving to the Ring linking method, it is necessary to explain a method for determining PPPs within a region that was developed by the economist Robert Summers in 1973. This

method is called the Country Product Dummy (CPD) method, and it can be applied at GDP or at a basic heading level. Although there are other methods of computing PPPs, the ICP Technical Advisory Group has recommended the CPD method (the OECD/Eurostat group uses the so-called EKS approach.) In what follows, it is assumed that the CPD method is being applied at the basic heading level.

The CPD method for determining PPPs for a given basic heading, for example, "Fresh Fruit" assumes that the average price for a given product, say Bananas, for Brazil in the Latin American comparison is determined by two factors: a country factor and a product factor. The country factor is expressed by the ratio of price level in Brazil to the price level in the base country, say Argentina. This is equal to the price parity (PPP) for the basic heading, calculated as an unweighted geometric mean of ratios of national prices (for Brazil) to prices in the base country (Argentina). The product factor is equal to the average regional price for Bananas in the base country's currency. So the price for Bananas in Brazil can be estimated as Brazil's PPP multiplied by the average regional price. Neither BH-PPPs nor average prices are known in advance. They are solved either as a regression procedure or as a system of linear equations in logarithmic terms.

The CPD is a regression procedure in which natural logarithms of prices are expressed in terms of two sets of "dummy" variables; one set refers to the countries (excluding the base country) and the other to the products included in the basic heading. The coefficient of country dummy variable for Brazil, for example, gives the estimate of PPP of Brazilian Rial in terms of the base country's currency for "Fresh Fruits".

This basic model can be extended to include other factors such as outlet type (grocery store, open market, etc) and product characteristic: namely, is it a representative or non-representative price in the country of collection? A representative product means that the item is widely consumed in the country. If the product is non-representative, this means that while the commodity is available in the country, it is not widely consumed. With the addition of the representativity variable, the resulting model is called the Country Product Representativity Dummy (CPRD) method for determining PPPs within a region. If a region uses either the CPD or CPRD methods, it will be necessary to run regressions for each basic heading category of expenditures. The resulting regional PPPs are called stage 1 PPPs.

Now that the CPRD method has been explained, the method of linking the stage 1 regional PPPs across regions can readily be explained. This final stage of linking cannot be undertaken until the regions have determined their set of 155 basic heading PPPs across all of the countries in their region. For the final stage of linking across regions, the item prices in a basic heading category collected under the Ring program of price collection will be used. For the two to four Ring Countries in each region, the first >>

... continued on page 11

Thinking about the ICP Research Agenda

Michael Ward, *International Consultant*



Now that new common procedures have been established in the ICP and some of the more pressing methodological and practical issues of compiling global and regional Purchasing Power Parities (PPPs) have been addressed, there can be some pause for thought about what topics of research should form part of the initial analytical agenda. The publication of the preliminary results for Actual Final Consumption is imminent and the current round of the ICP should generate robust price level data for policy-relevant expenditure categories that will permit greater in-depth cross-sector as well as inter-sector comparisons between countries within and across regions than previously possible.

In this light, even a preliminary analysis of the new PPP results could yield new insights and substantial dividends for policy, and one or two selected areas are highlighted below. PPP data emphasize the relevance at a particular moment in time of ‘real’ expenditure structures stripped of what, 70 years ago, Pigou referred to as ‘the veil of money’. The ICP results represent quantum measures expressed in a common price level. By contrast, the reported nominal expenditures derived from surveys still used extensively in demand analysis conceal how consumption is actually structured in different countries in terms of a household’s acquisition of real goods and services.

A PPP based review of transactions sets aside the theory of ‘one price’ and a current implicit assumption that a common price level exists throughout an economy. The latter distinction is especially significant when analyzing what are widely accepted as ‘value free’ expenditure ratios across countries, including the share of official expenditures in overall health and education outlays, and the relative size of government.

Because of the careful attention that has been paid in the present exercise to the determination of the 155 or so basic heading expenditure categories, particularly for actual consumption, the structural decomposition of household expenditures can be taken a step further to support the consistent and comparable consideration of key economic parameters and characteristics such as, for example, the share of food in household consumption in different countries or even, at a more detailed level, the share of total food outlays spent on staple products (Engels coefficients). Comparing these expenditures against estimated income per head across countries by selected social groups will say much about the nature of society.

Looking further ahead

The ICP has consistently demonstrated over three decades of results that not only do low-income countries maintain much lower general price levels than the richer and more economically advanced ones, but that some key policy components of aggregate

expenditure such as ‘investment’ (or, more precisely, gross fixed capital formation in respect of both equipment and construction), show very different price relatives from those observed for overall GDP. The failure of apparently high relative investment outlays in developing countries as conventionally measured to secure faster economic growth has bewildered economic planners for years. While, clearly, there have been many mistakes, much of the explanation can be put down to the fact that the price level of investment goods, particularly of plant and machinery, is so much higher in poorer countries than that for GDP as a whole. This is because these countries have to purchase almost all of their requirements from the industrially developed economies where not only are prices and wages higher, but also international transport and installation costs must be taken into account.

The same observation can be made of current government expenditures and, specifically, of official outlays on behalf of individual households as compared with the collective spending necessary to maintain the bureaucracy, internal security and national defense. The respective prices (including those for labor) that apply to these items, whether partially or in aggregate, are also quite different. Research undertaken under European Union auspices throws starkly into focus the significance of making these distinctions in ‘real’ terms when considering the true size of government, the nature of its interventions and its absorption of total economic resources in total economic activities.

Indications of the relative importance of tariffs as well as non-tariff barriers in affecting prices can be readily approached using PPP and individual country detailed item price data, with evident implications for trade negotiations. In addition, using the PPP services data, it may be possible to test whether Ricardian (technology) or Heckscher-Ohlin (relative factor price) based explanations of trade relations hold in the case of services, or if institutional arrangements and complementarity are more important factors, and which is more likely to generate greater growth and employment?

Finally, renewed efforts are required to dispense with ‘consistentization’ and to explain why, when comparing ICP results over time, significant differences in international prices and corresponding GDP values arise between countries for the same years when using national growth rates and price changes on the one hand and PPP converted benchmark measures on the other. Is this really just an index number problem or a more crucial question about the extent of under-measurement of a ‘core’ autonomous inflation element embedded in reported global price change?

There is clearly a wealth of research opportunities to be explored when the new ICP data comes on line and these will open up further as the work proceeds and more data are released. ■

Michael Ward was a former World Bank principal economist. He authored the first ICP comparison of the OECD countries in 1980, and also worked with Eurostat on the first Africa regional comparisons.

Lessons from the Asia Pacific Experience

Vaskar Saha, *Regional Coordinator, Asian Development Bank*



Twenty-three Asia Pacific (AP) countries are participating in the ICP under the general auspices of the Asian Development Bank (ADB) which acts as a Regional Office (RO) responsible for the day-to-day management and coordination of the regional program. Six additional Pacific Island countries are engaged in a reduced-scale ICP covering a limited number of household consumption items, with financial assistance from AusAid and under the general management and coordination of the Australian Bureau of Statistics.

In addition to the large number of countries (50% more than in 1993), the 2005 round marks important organizational and methodological milestones. The AP region collaborated in the global effort led by the World Bank to develop a new ICP strategic framework that is aimed at addressing longstanding concerns on transparency, effective management structure, methodological problems, data quality, timeliness and sustainability. The framework bestows full ownership for the program to national and regional stakeholders and reflects an essential congruence of national, regional and international interests centered on a bottom-up approach.

New methodological developments were also introduced. These include Structured Product Description (SPD) for product specifications; Tool Pack (TP) software for data capture, validation, processing and index compilation; Basket of Construction Components (BOCC) approach for construction surveys; a new method for regional linking; and an innovative approach for the equipment list preparation. The ICP website and Newsletter are essential venues for resources and information.

LESSONS LEARNED:

The ICP Tool Pack: The TP greatly facilitates data entry, data validation and index compilation. It brings transparency and uniformity in the data structure for performing inter-country data validation. The region used the TP extensively at the national and regional levels. But countries faced some problems initially in TP usage. The countries and RO provided the Global Office (GO) with suggestions for improvement. The GO was very supportive and immediately released patches to improve the system's functionality and performance. The TP has become more user-friendly in facilitating data processing and data transfer back and forth between the countries and RO. A number of countries have shown interest in using the TP for CPI. Bhutan has already begun piloting it.

The Country Diagnostic Report Module is very useful in generating country-specific reports to identify errors in price data. It cut significantly the report generation and back-and-forth data validation time between the RO and the National Coordinators (NC).

The Price Collection Module (PCM), used by data collectors and supervisors in data collection centers, has limited functionality for spatial and temporal data validation. Most data validation protocols are in the Price Administration Module (PAM), which is installed where the ICP NC sits. For the next round, this process should be revisited. It is suggested that the PCM's data validation facility be enhanced with the same validation protocols that are in the PAM, and some new ones should be added. For example, a set of reports based on additional validation rules could be prepared by the RO or NC, from which the TP can generate these reports with data error lists. These lists could be reviewed at the price collection centers, and corrections made. All corrections, coming from different collection centers, can then be uploaded into the PAM for further analysis and validation. This will be particularly helpful for large countries with many collection centers and large numbers of observations.

Intra-Country Data Validation of Prices for Consumption Items:

The initial submission of price data from the countries revealed significantly high coefficients of variation (CVs). To assist countries for in-country data validation, the RO prepared a detailed Price Data Validation Procedure. The RO developed an automated system and implemented its own data validation procedure independent of procedures in the TP. These validation procedures include much more detailed protocols such as the preparation of summary tables showing statistical indicators for outlier identification; intra- and inter-country data analysis across several quarters at the product, basic heading, sub-regional and regional levels.

Inter-Country Data Validation: Three data review workshops have been conducted with the fourth scheduled in June/July 2006. After the first workshop, a few products were added, some product specifications were revised to eliminate ambiguities causing wide price variations, and some products were deleted. Two brief guidelines (i) "What to Price" and (ii) "List of Products Needing Special Attention" were prepared. Countries were requested to follow the two guidelines and make corrections. Special attention to the highlighted problematic products improved price parity very significantly.

Comparison of Gross Capital Formation: The share of capital formation, including construction and equipment goods, represents quite a significant portion of GDP in the region. Reliable PPP estimates depend on successfully implementing innovative methodology for these sectors. The region prepared well for equipment goods and construction surveys. It worked closely and significantly assisted the GO in developing core equipment goods. Construction and Equipment Goods workshops were organized in Manila for national experts, with international consultants providing overall direction. The region has formed construction and equipment core groups to provide expert advice on product identification, pricing and data validation. >>

... continued on page 11

ICP Experience Will Greatly Benefit Uganda in Rebasings its CPI

Nsubuga Vincent Musoke, *National ICP Coordinator for Uganda*



This is the first time Uganda is participating in the International Comparison Program (ICP). The exercise appeared quite complex and overwhelming initially, compared to the CPI under which our ICP work is proceeding. Our CPI only covers six urban areas and the items in the basket number just 124. The coverage for the ICP is six urban and six rural areas, with collected and validated prices for over 600 products every month.

Uganda has four statistical regions and the ICP program covers all of them. Both rural and urban areas are covered in each region. Price collection for perishable items is done twice a month in all outlets. Price collection for Pharmaceuticals and Health products is quarterly while the rest of the products are priced once a month.

The ICP implementation came at a time when the Uganda Bureau of Statistics (UBOS) was planning to rebase and revise its CPI, from the current base period of the 1997/98 financial year to a new base period of the 2005/2006 financial year. Since ICP activities started in Uganda, a lot has been achieved, especially in developing and improving our price statistics and national accounts.

Capacity Building

Based on the experience gained and lessons learned from the ICP implementation, the rebasing exercise will adopt the following:

Structured Product Description: ICP products are described in a very detailed way, especially for manufactured goods and services. This creates tight specification of products, which is a major tool for monitoring inflation. We will use the exact specifications of most products in the rebased CPI and modify the rest in a similar way.

Expanded Rural Coverage: As a result of ICP activities, a lot of work has been done to capture rural prices. We will utilize the rural prices collected and the infrastructure set up to support the rebased CPI. This will give us a CPI that is more representative since all population sectors will be catered for. Most products in the rural baskets for the rebased CPI will be the same as ICP products. It should be noted that in Uganda, 88% of the population live in rural areas and account for 68% of the total household final consumption.

Expanded Product Coverage: As noted above, the current CPI has 124 items. However, with the introduction of the ICP, our basket will expand for the rebased CPI. In the first place, certain products were difficult to describe in a systematic way, making price collection difficult and leading to a smaller basket in our current CPI. However, with the help of the SPD approach, we are now able to give a detailed specification for any product

consumed by households and that has substantial weight in the household basket. Secondly, some ICP goods and services will be used to expand our product coverage. Hence, a more representative basket with expanded product coverage is expected.

Price Indexes for Different Social Groups: In the ICP, all sectors of household expenditures were properly catered for. For the rebased index, we plan to collect prices for different social groups. This will be based mostly on the infrastructure of the ICP for both commodity coverage and geographical (outlet) coverage. This will be a significant achievement, as it will provide critical information for national policy making. This will also make our CPI more representative since all sectors of population will be included.

Data Validation: The SEMPER software for data validation has been developed by the African Development Bank. This tool picks all the prices that look like outliers and hence are suspected to be prices with some errors. The SEMPER software has proved to be extremely useful in detecting such abnormal prices. Currently, no software is being used to detect outliers for CPI prices. We were looking at every price, which was very tedious and time-consuming. We are now reformatting our questionnaires so as to use the SEMPER software for our price analysis before the final CPI is computed.

Purchasing Power Parities (PPPs): Though the ICP Tool Pack is not yet in use, some of its components were extracted to carry out ICP activities. These are used to compute Purchasing Power Parities (PPPs) between countries. The software being used for PPP computation is "ELFA" which was extracted from the Data Processing Module (DPM) of the ICP Tool Pack. In Uganda, we intend to produce PPPs between regions and data collection centres within the country. Also, PPPs between rural and urban areas will be computed. This will be done every year, and will be a very good information source for Uganda's data users.

National Accounts: National Accounts activities in Uganda for the ICP started with the detailed balanced 2002 Supply and Use tables (SUT), considered the best main data sources for disaggregating the Gross Domestic Product (GDP) into the required 201 basic headings. A detailed correspondence table was prepared between the product categories of the SUT and those of the ICP basic headings. The 2002/03 Uganda National Household Survey data was used in the apportioning. ICP Africa will help to improve the expenditure on GDP categories of private consumption, government services, construction, machinery, equipments and imports of goods and services. ■

Eduardo Pereira Nunes continued from page 5

ized that not only did we have to supplement the basket with a number of new products but we also had to gain access to outlets which were hitherto excluded from our purview. The consequence was that the funding required was far from marginal. But we decided that we should absorb those costs in the interest of improving the skills and the knowledge of our field-force and our price statisticians. The financial cost may have been unforeseen but whatever it cost was worth our while. We treated it not as a current expenditure but as an investment in the quality of our young professionals.

Do you think this program will have a particular impact on other IBGE programs?

E. P. Nunes: Of course. The first of the many positive effects that the program has on us and on any of the regional statistical offices is that it allows us to make well-founded inter-country comparisons at a critical time in our region's history. Do not forget that so many of the countries in our region opened up their doors to increasing trade with the rest of the world. The dynamic of economic change demands greater awareness of how our neighbours estimate their economic aggregates and deal with the computing of price indexes which, in turn, affects our own methods and the improvement thereof. But the effect to which I attach greatest importance is what the program leaves behind in terms of well-trained professionals much more capable to evaluate, analyze, interpret and compare -- be it prices, price indexes or national accounting aggregates.

The national statistical office of Canada was directly involved together with ECLAC and acted as the executing agency for the ICP in Latin America. How would you assess the experience?

E. P. Nunes: No matter how motivated the national institutes of our region, the program requires a coordinating agency, preferably one drawn from outside the circle of national participants. In our region, we are all used to ECLAC but it was a novel experience for us to work with a statistical agency like Statistics Canada. I was enormously impressed with the degree of professionalism introduced by the Canadian office and how well the regional coordinators worked together. Naturally, the perspective brought to bear by a fellow producer of national statistics helped us greatly to identify weaknesses in our region's systems of national accounts and prices.

Looking ahead, do you think a second round of this program should proceed?

E. P. Nunes: I am concerned at the speed with which relative prices have been changing and the constraints that such change imposes on the timetable we should observe for future rounds of the program. Take as an example what has been happening to the prices of crude oil. At the time of the previous round of the ICP, prices were of the order of USD 25. During our year of reference -- 2005 -- prices reached USD 50 but no other major component of the standard basket of goods and services showed an

even remotely comparable increase. If we were collecting prices today, oil would have clocked in at USD 70 plus thus introducing yet another very substantial change in relative prices. It is our responsibility as suppliers of official statistics to record, analyze and interpret such changes rather than leaving them unobserved because we did not bother to mount the right program.

Let me not ignore yet another collective undertaking assumed by the community of statistical agencies at the United Nations -- to keep up by measuring and monitoring with the millennium goals through the production of relevant information. Goal 19 foresees a reduction of half in the global population trying to subsist on incomes of less than USD 1 per capita and per diem. But we simply cannot honor the commitment unless and until we are capable of tracking reliably the purchasing power of USD 1 in different parts of the world.

What in your opinion should be done differently?

E. P. Nunes: Taking stock of what we learned in this round of the ICP is imperative. We can readily agree that we learned a great deal about the way in which prices should be specified, collected, and processed. Moreover, we gained additional knowledge through confrontation of our numbers with those of neighboring countries and were greatly helped by the coordinators' efforts to harmonize seemingly inconsistent results. Unfortunately, the same process did not take place with the national accounts. Admittedly we did not have the same freedom with the national accounts as we had with prices. The former exist and were not going to be changed especially for this occasion. But the fact is that we faced troublesome inconsistencies - at low levels of aggregation but troublesome nonetheless. I look forward to a forthcoming round where after thorough preparation we engage in a process of systematic comparison of the most elementary components of the national accounts, a process analogous to what we did for prices, and we find out just as much about our respective strengths and weaknesses.

Is there anything you would like to add in conclusion?

E. P. Nunes: The most important point I would like to stress is the obvious and pressing need to make out of this project an ongoing program. We must get a return on the enormous effort put into this round of the ICP. The next round should start immediately after this round comes to a finish. Preparation ought to start in 2007; data collection in 2008 and publication in 2009. If we can secure the continuing cooperation of Statistics Canada and ECLAC, I believe we should be capable of making ICP a permanent feature of our national statistical program. ■

Continued from previous pages

Vaskar Saha ... continued from page 8

GDP Weights Validation: The region organized two workshops on national accounts to guide countries on compiling and validating the required 155 basic heading expenditure weights. Prior to the regional data validation, the RO reviewed data submitted by NSOs, both at basic heading and higher aggregate levels. Various statistical techniques using CVs, Pearson correlation, rank correlation, etc, were used to identify outliers. Accordingly, countries were advised on the actions required regarding validation/confirmation of low and high values; no data; and confirmation of zero or almost zero weights.

For future rounds, an indicative or preliminary set of GDP weights could be made available from the countries before finalizing the product list. This is important for planning ICP price surveys to ensure adequate product coverage, especially for the BHs with significant weights.

Capacity Building: The current round has been an important instrument for statistical capacity-building. Price data reliability has improved significantly as data validation progressed. This round has also pointed out the deficiencies in national accounts estimates in identifying important data gaps, as pricing activities have not been consistent with the national accounts weights.

The experience in GDP weights estimation facilitated the implementation of some recommendations of the 1993 SNA, especially in the imputation of owner-occupied housing services; and capital formation such as mineral exploration and software development. Awareness of the 1993 SNA production boundaries will greatly improve GDP estimation.

In many countries, CPI work is expected to greatly benefit from ICP activities. A few countries have extensively used their CPI price collection efforts as inputs for ICP. The harmonization of these activities will reduce the burden on limited human and financial resources, and help to institutionalize ICP activities as part of their regular price collection work. The use of TP for CPI computation will help many countries, as new software development for index compilation is very expensive and time-consuming.

What Next?

Priority should be placed on advocacy to drum up interest in the significance of the PPPs, since this will translate into support for the ICP. Policymakers, researchers, users and the budget department of participating countries should be targeted.

Countries are emphatic that this round's momentum should be maintained and preparations for the next round should proceed. ICP Asia Pacific has instituted innovative methodologies to improve and ensure price parity, from product identification up to the data validation stage. These can serve as starting points for improvements in the next round. ■

Erwin Diewert ... continued from page 6

step is convert these country prices into prices expressed in units of regional base currency by dividing the Ring Country prices in their original currency units by the appropriate stage 1 regional PPP for that basic heading category. The resulting transformed prices can now be regarded as item prices that belong to one of six "super countries" and the CPRD method will be used to construct five regional PPPs that link the average level of prices in five of the regions to the level of prices in the base region. The relative parities will not be affected by the choice of the base country or region if the CPD or CPRD methods are used to construct within region or between region PPPs. A world set of PPPs can now be constructed by multiplying the within region PPPs by the appropriate between region PPPs.

The steps involved in constructing a complete world set of PPPs can be summarized as follows:

- Each region constructs its stage 1 PPPs for 155 basic heading categories of expenditures.
- The Ring Countries in each region collect item prices from a specially constructed "world list" of items. These item prices are forwarded to the Global Office for further processing.
- The item prices for each Ring Country in a region are converted into regional base currency units using the stage 1 PPPs constructed by the regions.
- Global Office runs 155 CPRD regressions in order to determine the six between region PPPs using the adjusted Ring Country price data described above for each of the 155 basic heading expenditure categories.
- A final set of 155 PPPs for each of the 150 or so countries participating in the ICP can be obtained by multiplying the within region PPPs by the appropriate between region PPPs.

For a more detailed explanation, read Diewert, W. E. (2004), On the Stochastic Approach to Linking the Regions in the ICP, or chapter 15 of the ICP Handbook, both available on the ICP website, www.worldbank.org/data/icp ■



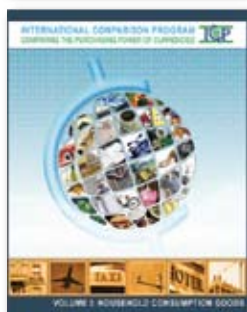
Handbook

The ICP Handbook is at the center of a range of documentation prepared for the 2005 round. The Handbook covers topics essential for understanding the conceptual foundation, the methodological framework and the classification standards of the program. It draws on experiences and operating procedures developed in earlier rounds and extends the program's knowledge base by introducing new methodologies and procedures initiated in the 2005 round.



Operational Manual

The Manual provides the basic principles underlying the ICP and how that knowledge impinges on the implementation and management of its operations. It serves as an operational guidebook for planning and coordinating the implementation of the program, and also provides step-by-step guidelines for data collection and validation. Like the handbook, it is a live electronic document.



List of Specification for Consumption Goods (Volume I)*

Following the Structured Product Description (SPD) method introduced in this round of the ICP, this volume provides a list of core products and services for household consumption that are available in most parts of the world. The SPD approach uses a set of price-determining characteristics for each ultimate class of product.



List of Specifications for Equipment Goods (Volume II)*

This volume describes the SPD/PS hybrid approach. It includes 108 tightly defined products, including their makes, models and power, with many comparable alternate products. It provides templates containing key price-determining characteristics of the products. This allows regions to customize an available machine to achieve the functional characteristics described for the preferred and alternate specifications.



List of Specifications for Construction Projects (Volume III)*

This volume describes the Basket of Construction Components (BOCC) approach introduced in this round. It includes Structured Product Descriptions and Product Specifications for 34 construction components. The BOCC approach establishes the taxonomy of projects, systems and components. It identifies clusters of materials, labor and equipment mixes which can be applied in various quantities to construct the desired component.

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The International Comparison Program (ICP) is the world's largest statistical initiative, involving 107 countries. It produces internationally comparable price levels, economic aggregates in real terms, and Purchasing Power Parity (PPP) estimates that inform users about the relative sizes of markets, the size and structure of economies, and the relative purchasing power of currencies. An ICP Global Office, housed in the World Bank, manages the global program. National Statistical Offices implement the program on the ground, under the general guidance and coordination of regional agencies. The Global Office works in close collaboration with the OECD/Eurostat's program for 43 countries, and publishes global data linking ICP and OECD/Eurostat results for 150 benchmark countries.

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