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Building Strategic Partnerships to Sustain the ICP

Interview with Shaïda Badiee,
Director, Development Data Group, World Bank



How does the International Comparison Program (ICP) contribute to our understanding of development?

The ICP contributes to development work in three important ways. First, the results of the ICP provide a crucial information base for research and policymaking. Accurate measurement of real output, the structure of economies, and the relative purchasing power of currencies are essential for understanding development. For example, purchasing power parities underpin the widely used \$1-per-day international poverty threshold. Second, the ICP also encourages global data harmonization by demonstrating rigorous compliance with global standards for statistical classifications, data collection, processing, and reporting. Finally, the program contributes to, and benefits from, national capacity building initiatives, particularly in national accounts and price statistics. >>

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Purchasing Power Parity Exchange Rates for Counting the Poor

Angus Deaton, *Dwight D. Eisenhower Professor of International Affairs and Professor of Economics, Princeton University*



Global Poverty Counts

One of the most closely watched statistics in the development community is the global poverty count: the number of people in the world who live on less than \$1 or \$2 a day in 1993 Purchasing Power Parity dollars. When the World Bank statisticians do the global poverty calculation, the first step is to use Purchasing Power Parity (PPP) exchange rates to convert the \$1 and \$2 international lines into the local currency equivalent poverty line for each country; note that these will typically be different from the national poverty lines that countries use for their own domestic purposes. Country household surveys are then used to estimate the number of people in each country who live in households whose per capita total expenditure (or per capita income when expenditure is not available) is less than the local PPP value of the international lines. The dollar-a-day line itself was originally chosen because it was close to the PPP equivalent of the national poverty lines of a group of poor countries around the world. >>

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Notes from the Global Manager

Dear Readers,

The highlights of this edition are the contributions by Alan Heston and Angus Deaton, both eminent members of the Technical Advisory Group that is providing unparalleled support to the International Comparison Program. Special thanks to both for their discussions about the origins of the ICP and methodology to improve PPP-based measures of the number of people living below the poverty line. Bishnu Pant's contribution adds a user's dimension. Shaida Badiee shares her views on building strategic partnerships to sustain the ICP.

The recent publication of preliminary Purchasing Power Parities (PPP) and GDP indices from Latin America is raising expectations about what is to come. The Global Office has received numerous enquiries about when the remaining regional and global data will be available. In addition, some want advance or informal information, such the likely PPP for Country A. Others are requesting access to average prices.

Regional coordinators have raised questions about how their regional PPPs and expenditure shares will be reviewed during preparations of the global results. Till now, each region's data have been restricted to Global Office access only. The question becomes who sees what, when the regional data are combined into a global database to prepare global PPPs.

As a result, the Global Office has documented policies defining access to the different data sets. The fundamental principles followed by national and international organizations regarding data confidentiality and the release of official statistics form the backbone of the policy. These policies are being shared with the ICP Executive Board and regional coordinators, after which they will be posted on the ICP website.

Regions are being reminded of the data quality and time requirements for inclusion in the global results. The Executive Board will receive a status overview for each region when it meets on October 17-18, 2006. It will then set a date for when the first global results will be published. Regions and countries meeting the data quality and timetables will be included in these first results, with the remainder brought into the comparisons when final results are published.

The need for quick action regarding the future of the ICP is being raised by the regional coordinators and countries because they have devoted so much energy to the effort. Their point is that unless there are plans for the program to continue, staff in the national offices will slip away resulting in a huge loss of knowledge and experience. The Global Office will soon initiate an evaluation of this round to guide a smooth transition into the next one.

I want to close with special thanks to the 19 countries that are collecting prices for Ring List products. This work has required special commitment because it is on top of activities still underway to complete the regional comparisons.

Fred Vogel

News in Brief

Latin America Releases More Detailed Consumption Data

The Latin America region was the first to publish preliminary PPP data in June 2006 for household consumption, including health and education. The preliminary data included PPP estimates and related data such as per capita expenditures. The new release in October 2006 is restricted to Price Level Indexes and PPP rates, and provides detailed information covering 70 selected Basic Headings. Data for total GDP including Consumption, Government Expenditure, Construction, Machinery and Equipment, and their sub-aggregates will be published in early 2007. The new data can be accessed from the ICP website.

Moscow Workshop for Regional Coordinators

The ICP regional coordinators and Global Office staff met in Moscow from July 24-28, 2006. A primary purpose was for each region to present their average prices and preliminary PPPs by basic heading to the other regions. This is an essential exercise to ensure consistent methods are followed across regions. This review included prices and expenditure weights from the regional comparisons, and a first look at prices from the Ring Comparison. The discussion also included the steps to be followed to calibrate the regional PPPs to a common international currency and base. The policy to publish both preliminary and final results was also confirmed.

Executive Board Discussion in Paris

The ICP Executive Board met on June 16, 2006 in Paris. Its main actions were to direct the Global Office to finalize the data access policy statements, prepare a work plan leading to the publication of the global results for its consideration, initiate plans for an independent evaluation of this round, and to begin addressing the future of the ICP program. The Board again meets on October 17-18 in Washington to take final action on these matters and establish a date for the first global data publication.

Independent Evaluation of the ICP

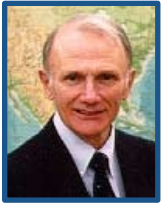
This round is unlike any ever completed. A new governance structure that included the formation of a Global Office (GO) supported by an Executive Board and Technical Advisory Group was formed. New methodology starting with the development of the Structured Product Descriptions, and followed by new or improved methods for equipment, construction, and housing, was developed and implemented. Numerous software systems were developed to support many data collection and validation activities. In the light of these many new developments, the Executive Board has directed the GO to prepare Terms of Reference for an independent evaluation. Commissioning a comprehensive evaluation, covering all aspects of the program at the national, regional and global levels requires careful planning and a substantial budget. The GO is preparing the Terms of Reference and mobilizing the required resources to carry out this mandate.

Progress Report on Regional and Ring Work Online

Regional validation of GDP weights and results of the Government Compensation survey for the Eurostat/OECD Ring Countries are being finalized. In Asia, expert groups associated with Construction and Equipment price surveys are being formed to assist in regional data validation. Visit the ICP website for more regional and Ring data collection updates: www.worldbank.org/data/icp.

The Other Face of ICP

Alan Heston, *Professor Emeritus of Economics,*
University of Pennsylvania



When the United Nations International Comparison Project (ICP) was established in 1968, it was envisaged that purchasing power and real product comparisons would be carried out among member countries. There were several choices to be made. Would the comparison be made for all of GDP, which was certainly the choice of ICP proponents? More fundamentally, should the comparison be made from the expenditure side of the national accounts or the production side, since both types of comparisons were envisaged in the establishment of the ICP? This note focuses on this question and how it has played out.

When this decision was made, there were different models for both types of comparisons. One widely used academic study at the time was the *Conditions of Economic Progress* by Colin Clark. His work emphasized the production side of the accounts and built up comparisons at the level of national income and expressed them in what he termed International Units for some 36 countries for the 1925-34 period. International Units had the purchasing power of the US\$ over those years. There are various degrees of detail that can be used in production side studies and Clark's work covered only the single digit sectors.

PPP Comparison of the 1950-65 Period

Milton Gilbert was instrumental in fostering two purchasing power studies, the first involving the United States in binary expenditure comparisons with France, Germany, Italy and the UK. (Gilbert and Kravis, 1954). The second was a study by Paige and Bombach (1959) that was a model for subsequent industry-of-origin studies, focusing mainly on manufacturing. Several parallel purchasing power studies from the expenditure side were carried out in the 1960s, including the Economic and Social Commission of Latin America of the United Nations (1963) and the Council for Mutual Economic Assistance (CMEA).

These purchasing power studies were landmarks leading to the establishment of the ICP, and CMEA, ECLA and OECD participants all took part in the early planning of the 1970 benchmark comparison. The early benchmark comparisons were from the expenditure side as they appeared easier from the data point of view, so long as exports and imports are not treated in detail. But expenditure comparisons are easier only if you impose standards of comparison as high as those in the Paige-Bombach study for production side studies. There are also very simple production side comparisons that can be carried out where most of the price comparisons are indirect, making assumptions about the relation of wage rates to productivity in pairs or groups of countries. This technique underlay most of Colin Clark's comparisons. And it was the technique that the US CIA and other defense-related agencies accepted from consultants for key countries (for example, Hol-

lister, 1957, for China). The final decision to go with the expenditure side meant that production comparisons can only be made imperfectly at the GDP level, whereas much analytic interest is in sectoral productivity comparisons.

Use of Direct and Indirect Price Comparisons and Unit Values
On both the expenditure and product side, it is often necessary to use indirect, in contrast to direct, price comparisons, another decision faced by the ICP. In the two-country case, the price comparison for any item in countries A and B is:

$$PA/PB = (\text{Expenditures}_A/QA) / (\text{Expenditures}_B/QB)$$

If we make a direct price comparison as is done for consumption items like a dozen eggs, then this can be used to derive QA/QB by dividing the expenditure ratios of A/B by the price ratios. At the time, most countries used specification pricing in their CPI collection, comparing over time the price of the same item in a written specification. It seemed desirable and a reasonable statistical goal to apply the same technique to comparing prices across space.

Returning to the basic identity, it is also clear that there are two other indirect ways to obtain the same information. One is to directly compare quantity indicators, say hospital bed days per 1,000 persons in both A and B, and take this as a direct quantity comparison. In this case, the estimation of PA/PB would be indirect, dividing the expenditure ratios by the directly estimated quantity ratios, QA/QB. The ICP uses these when direct price comparisons are very difficult, like health and education.

Still another form of indirect comparison used in the expenditure approach of the ICP, but even more so, in estimating PPPs from the production side, are unit values or indirect measures of unit values. A unit value estimate of PA is (Expenditures_A/QA). The ratio of two unit values is clearly another type of price ratio. Unit values are very commonly available from household expenditure surveys, which have been used in poverty work by Angus Deaton and Prasada Rao. These readily produce estimates for household purchases like eggs and grains that are needed for either the expenditure or production approaches.

However, for the government sector, there are few easily identified quantities. As a consequence, there are no direct quantity ratios from which indirect prices can be derived, nor can unit values be estimated. Typically, price ratios are approximated by comparing wages and salaries for similar occupational categories in different countries. The underlying assumption is that the government services produced by, say, a mechanic, will be the same across countries so that a comparison of mechanics' wages approximates a comparison of prices of output of government services.

Use of Unit Values from the Production Side

Angus Maddison was at the OEEC at the time of both the Gilbert-Kravis and the Paige-Bombach studies, and has always had a

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strong interest in productivity trends. While at the University of Groningen, Maddison took the lead in stimulating production side studies utilizing unit values as the basis for PPPs. His students, most notably Bart van Ark, expanded the number of countries and improved the methodology at The Groningen Growth and Development Center (GGDC). Their website provides their methodological papers and estimates of sectoral productivity of capital and labor on a per person and on an hourly basis. (www.GGDC.net).

Because GGDC builds their estimates up from the production rather than the expenditure side, it requires the estimation of industry or sector-specific PPPs. The GGDC, in collaboration with the National Institute of Economic and Social Research (London), has undertaken several such studies making extensive use of producer-based unit values, obtained from manufacturing production censuses and industry surveys (see Van Ark and Timmer, 2001, for a review). Only a few attempts have been undertaken to obtain a full reconstruction of industry PPPs which can be aggregated up to the GDP level, and for a small subset of countries only (Jorgenson 1995; Madison and van Ark, 1989, 2002).

4 Advantages of Production-side Estimates

The ICP has focused on the expenditure-side concept, by collecting price and budget shares for final expenditure categories, and using these to construct PPPs and deflators for nominal GDP. But many users of PWT have in mind the output-side concept, as when they use real GDP to construct and compare country productivities, which is why developing separate measures for the two concepts of real GDP is a goal of some importance.

Consider the aggregate GDP measure from the expenditure side. Typically, one finds that for countries like the Netherlands or Norway, the output per worker is significantly higher than the US. In 2004, the Netherlands was 103.8 and Norway 130.2% of the US labor productivity at the level of GDP, while for GDP per person it was 73.1 and 94.5%. For the Netherlands, this seeming paradox is clearly related to labor force participation rates of women and total hours worked. Not only is the workforce a higher percent of the population in the United States, they typically work more hours per year.

While this is part of the story, one really needs to look at the various manufacturing sectors to fully understand what is going on. For example, in Belgium, the productivity per hour is lower than in the United States in all industries, yet average productivity per worker is 16% higher than in the US. The explanation turns on the composition of Belgium production that is heavily into steel, often special steels, where their productivity per worker is less than in the US, but is more than most industries in either country. So the importance of steel for Belgium drives the average labor productivity of the economy above that of the US where production is spread out more evenly over all sec-

tors. These examples illustrate why, difficult as they are to carry out, that production side comparisons are such an important aspect of the ICP.

Fortunately, the work of the Groningen group is widely disseminated in terms of productivity growth in a joint effort with The Conference Board (www.conference-board.org). An annual GGDC report is published as part of The Conference Board program; it covers output per employee for 97 countries and output per hour for a smaller number of industrial countries. It offers comparative levels of productivity as well as growth, and has been well received.

Some Shared Problems and Potential

There are overlapping areas in the production and expenditure approaches that simplify harmonization. For better or worse, both approaches face similar problems in estimating PPPs for the government, education and health sectors. Other overlapping areas where the production approach tends to accept the expenditure side estimates are construction and producer durables. One reason is that unit values are not readily available for the construction sector. And while unit values are available for machinery, the categories are typically very heterogeneous so that diesel engines of different capacities may be included in the same quantity. Therefore, use of specification pricing as in the expenditure approach can be used for these sectors in the production approach. An obvious example is transport equipment where the quantities are very heterogeneous, while it is relatively straightforward to compare prices for a given specified model or estimated prices from a hedonic regression. Because the price concept for the production approach is value-added, the expenditure PPPs for these sectors require some adjustments, but are otherwise suitable.

Other complementarities between the expenditure and production approaches exist, and one example is the distributive trades. Although distributive services are not directly priced in the expenditure approach, they are important in explaining relative prices across space. In their studies of the retail and wholesale trade sectors, the GGDC has found very substantial differences in productivity across countries. These are highly informative for the expenditure approach because the productivity differences are frequently a function of scale of outlet. More efficient marketing sectors translate into lower final prices to consumers than would otherwise be the case.

Hedonic regressions provide estimates of the weight that various product or service characteristics have in determining price. These price-determining characteristics will be partly shared across both final and intermediate goods and services. This means that there is potential to use common information about the importance of different characteristics across both approaches. At present, this at best is a research topic, but with the increasing use of hedonics in price comparisons, applications may not be far in the future. >>

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Sbaida Badie ... continued from page 1

How does this round of the ICP differ from previous rounds?

One of the defining elements of the current round is an improved governance structure that emphasizes joint ownership and close collaboration between national statistical offices, regional organizations and international agencies.

In the past, there was little input from participating countries. In contrast, the current round is owned and managed by a consortium of national, regional and international organizations, under the auspices of the ICP Executive Board. The Board is comprised of distinguished statistical managers and experts, reflecting a balanced representation of stakeholders from all regions of the world. As a result, the program has become an example of a collaborative effort, moving away from isolated ad-hoc initiatives and promoting instead strategic partnership and a programmatic approach.

And the current round has addressed data-quality problems by means of targeted research. A Technical Advisory Group, composed of renowned experts, provided essential advice to the Global Office for its methodological work. A Poverty Advisory Group has also been created to focus on the problem of measuring the purchasing power of poor households. The advisory groups have identified a number of outstanding methodological problems, which are now being tackled. Two important outcomes will be poverty-specific PPPs and an international comparison of the cost of capital formation. Notable strides have also been made in data validation procedures and PPP aggregation methods.

A comprehensive handbook, an accompanying operational manual, and a related suite of software tools also fill critical gaps of previous ICP rounds. These tools have helped to ensure that common procedures are followed. Efforts have also been made to maximize the synergy between the ICP and national statistical programs. The effect of these changes will be increased statistical capacity and improved data quality.

Can you discuss the World Bank's role in the ICP?

The World Bank has supported the ICP since its inception in 1968, when it was introduced as a pilot project at the University of Pennsylvania. The Bank supported the subsequent phases of the program as it progressively moved from a pilot project to a regular program on a five-year cycle.

In 1999, the UN Statistical Commission requested a new strategic framework and an operational plan of action, which the Bank developed in close consultation with other international organizations. The new framework and action plan addressed the program's institutional, organizational, operational, and methodological shortcomings. Subsequently, the World Bank was mandated by the Commission to convene partners of the ICP, mobilize resources, and house an ICP Global Office responsible for the day-to-day management and coordination of the current round.

The current program's success truly hinges on the collective commitment of all partners. The World Bank provides financial, technical, and managerial support to the ICP Global Office, but no one institution can undertake a complex global program such as the ICP alone. In keeping with the principles of promoting widespread ownership and shared responsibilities, the Bank sees its primary role as broadening and deepening global partnerships so that a more robust basis for sustaining the work of the ICP can be established.

One of the issues raised in the Ryten evaluation of the ICP was the classic public goods dilemma when it comes to securing sustainable funding. How is this being addressed?

The problem of building a coalition to support a public good remains the most challenging impediment that the ICP needs to overcome. The Ryten report rightly calls upon the international development institutions, as primary users of the data, to rise to the challenge and establish a cost-sharing arrangement. The report makes a compelling case that a sustainable partnership must be based on the comparative advantages of the different partners, in terms of both capacity and resources.

Our strategy has been to develop partnerships on three levels: first with the main international organizations using the data; second with the regional organizations involved in capacity building; and third with bilateral partners who recognize the importance of ICP. We have been fairly successful, but more work needs to be done.

The current round has come a long way in building the program's credibility and we hope that this will encourage existing partners to increase their stakes and that new partners will join the cost-sharing arrangement. We also need to provide the capabilities for countries to carry their share of the cost of data collection by integrating the ICP work with their national CPI surveys. Last but not least, we look to the ICP Executive Board to play a key role in building global support and a sustainable financial base.

When do you expect the global data to be published?

Originally the plan was to release preliminary global PPP estimates in the second quarter of 2007. But some regions experienced delays in finalizing their PPP estimates, and because of unforeseen problems in deriving national accounts weights, the release schedule has been pushed to the last quarter of 2007. Some participating countries are revising their national accounts after facing significant problems at basic heading expenditure levels. This will result in enhanced quality of PPP data and improved national accounts estimates.

The Ryten report faulted multilateral development institutions for not using PPP data for operational purposes. Do you see the World Bank beginning to use PPP results from the current round for policy and operational purposes?

Recently, the Global Office was requested to prepare a briefing note for the Executive Directors of the World Bank on sources, methods, and use of PPP data for operational decisions, which

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was presented to a meeting chaired by President Paul Wolfowitz and attended by the Executive Directors and other senior managers. A similar briefing session was organized for the United Nations in New York. In general, there is a growing demand for quality PPP data to support evidence-based policy formulation and operational decision-making.

In principle, the World Bank recognizes that PPP estimates provide a sound basis for classifying countries by income level, assessing the purchasing power of currencies, and hence determining people's command over economic resources. In practice, its position has been to use official exchange rates until the quality, timeliness, continuity, and reliability of PPP data has improved sufficiently. Before migrating to PPPs, we need to ensure that the quality of data passes the "fitness for use" test. Rigorous testing and analysis must be conducted to ensure the robustness of the data. We also need to ensure the sustainability of the program.

Having said that, I am confident the results of the current round will meet the expectations of users. The data from the current round will offer a fresh opportunity to expand the use of PPP data from research to the policy and operational realms. And upon confirmation of the quality of the new global data, we will prepare a position paper advising our Board of Directors to consider using PPP data in operational decision making.

Meanwhile, we need to increase user understanding of PPP statistics. The program generates masses of information on prices and expenditure categories, but attention has until now focused on PPP-adjusted GDP per capita and \$1-per-day poverty PPPs. We can demonstrate that the data are useful for a wide variety of policy and operational work at national and international levels. This presents both a challenge and an opportunity.

Is there a plan for a new round of the ICP?

There is strong interest from participating countries and regional implementing agencies to continue the program and to begin planning for the next round. The ICP Executive Board has requested the Global Office to commission an independent evaluation. The purpose of the evaluation is to identify factors that impeded effective implementation and provide recommendations essential to preparation for future rounds.

In short, there is strong support for another round. The question is when rather than if. We are advised by regional and national coordinators to begin the next round immediately after the current round concludes in 2007. This is seen as essential if we are to build on the momentum of the current round, capitalize on the benefits of the capacity-building steps taken, and maintain the current experienced staff. The rapidly changing world economy also necessitates updating PPP estimates without delay. However, it is critical to take stock of the current round, to see what has worked and what needs to be improved. The timing of the next round will be addressed by the ICP Executive Board and ultimately decided by the UN Statistical Commission.

What is your view on the future strategic direction of the ICP?

One of the lessons we have learned from the current round is that the ICP should be seen as a means to an end, rather than an end in itself. The critical issue in sustaining the ICP is not focusing on PPPs, but rather focusing on the framework within which data collection, validation and processing occur. The goal should be to build a more efficient program that can help build the capacity of countries to improve national accounts and price statistics upon which the PPP estimates depend, while fulfilling the narrower objective of generating reliable, relevant and timely PPP data.

We need to identify the key elements that will form the program's strategic direction in respect of capacity building. In the next round, our focus should be on those activities that best support the harmonization of the ICP with national statistical programs. The goal should be to establish a cost-effective and well-integrated process.

Naturally, future rounds should build on the experience from the current round. Important lessons have been learned from the work of Statistics Canada as regional co-coordinator for the Latin American region, bringing a wealth of experience in the management and technical aspects of the program. The Australian Bureau of Statistics played a key role by providing technical assistance for the Asia-Pacific region. The ONS of the United Kingdom and INSEE of France provided technical support to ICP-Africa. We should develop similar collaborative links with other experienced statistical agencies.

Another challenge is determining the right mix and the optimal number of countries that should be grouped in a regional or sub-regional setting. From the program management point of view, this will be essential for effective and efficient coordination. From the capacity building perspective, this will allow us to design a more targeted strategy and action plan.

Is there anything else you would like to add?

I would like to end with a note of thanks to all our partners. It may be a bit early to celebrate, but we can take pride in the significant steps that have been taken to improve the credibility of the program, as noted by the UN Statistical Commission at its last session in March 2006. The success achieved thus far would not have been possible without the strong commitment and financial contributions of our partners. I must also note the ICP's partnership with the OECD and Eurostat comparison program which gave us a unique opportunity to coordinate two independently run programs under a common umbrella. Last, but not least, I wish to acknowledge, with grateful thanks, the valuable contributions made by the members of the Technical Advisory Group and the Poverty Advisory Group. ■

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PPP exchange rates clearly play a central role in the global poverty counts, both in setting the international poverty line itself, and in converting it to local currency for each country that contributes to the count. Measuring the PPPs accurately is also key because the global poverty counts are extremely sensitive to the PPP exchange rates that go into their calculation. In the poor countries that contribute most to the counts, a large fraction of the population lives near the international poverty line. In such cases, even small changes in the local value of the line, which could come from a small change in the PPP used to convert the \$1-a-day, will cause large numbers of people to be reclassified as poor or not poor. In 1998, the World Bank revised its global poverty counts and switched from the PPP exchange rates of version 5.6 of the Penn World Table to its own recalculated PPP estimates. The change raised the poverty rate in sub-Saharan Africa for 1993 (the *same* year in both calculations) from 39 percent to 50 percent of the population.

PPP Exchange Rates and Conversion of International Poverty Line

The Internal Comparison Program (ICP) is essentially an extension of the international system of national accounts. Its main task is to price the components of each country's national product in common international prices, so as to make possible useful cross-country comparisons in the same units. The PPP exchange rates that come out of this exercise are price indexes that convert consumption, investment, or GDP from local currencies to the international currency. More specifically, in the Geary-Khamis system that is used in the Penn World Table, the PPP exchange rate for India or for Kenya, for example, is the Paasche price index obtained by dividing Indian or Kenyan national aggregate consumption in rupees or shillings by its value in international PPP dollars. Such price indexes are far from ideal for converting an international *poverty* line into local prices. For this calculation, we want to compare, not the values of aggregate national consumption bundles, but the values of the bundles of goods and services that are consumed by people at or near the international poverty line. The World Bank has always understood this problem, and uses the standard ICP rates because more appropriate numbers are not available. That lack is something that is currently being addressed by the poverty group within the ICP which is working, in conjunction with the current round, to produce poverty-relevant PPPs, or "PPPPs," for a range of countries.

Why are Poverty-Relevant PPPs Different from PPPs for National Accounts?

There are two separate concerns about using the standard consumption PPPs for poverty work. The first is that the national prices collected by the ICP may differ from the prices paid by the poor, or by people near the poverty line. The second is that, even if the poor pay the same prices as everyone else, their patterns of consumption are different, so that the weights for a poverty-relevant PPP index should be different from the weights in an index of aggregate consumption. The first problem is much more intractable than the second, on which good progress is being made.

Why is it so hard to collect prices for people near the poverty line? One problem is some disagreement about the facts. It is often found that poor people must buy in small quantities, because they are poor, so that they cannot benefit from the economies of scale that richer households enjoy. Yet household surveys often show that the unit-values of staples such as rice or wheat are *higher* for better-off households, and while some of this undoubtedly reflects the higher quality bought by the rich, it casts doubt on the general importance of economies of scale in purchasing. For basic food staples such as cereals, the poor have every incentive to buy in bulk, and there is evidence that they do so. Another issue is that the poor often purchase in different markets from the rich, for example in small stores or stalls in village markets, rather than in supermarkets in the cities. To meet this, it is important that ICP enumerators do not only collect prices in urban areas, as has sometimes been the case in the past, and the current round is making great efforts in this direction. The poverty group has also instituted a small experimental study in which country statisticians will try to identify and collect prices typically paid by the poor when they differ from the prices collected for the general ICP effort.

That the poor spend their limited budgets in different ways than do the rich is clearly correct, and incorporating this fact into the PPP rates is where the poverty group has made the most progress. This adjustment is likely to be important because the poor sometimes buy goods that the rich do not. For example, in India, many poor people eat *jowar* (sorghum) as their basic staple, while the better-off eat rice or wheat. We should also note that the use of national aggregates does not represent all people equally. Because national aggregates are the totals of all money spent, those who spend more money are represented in proportion to the amount that they spend, so that when the expenditure patterns of the rich and poor differ, aggregate patterns are much more like the former than the latter. When we want to construct internationally comparable poverty lines between India and Kenya, say, we do not want the conversion factors to give much weight to the relative prices of automobiles, personal computers, or banking and insurance services. Getting this right will make a difference only if the international relative prices of goods consumed by the poor are systematically different. This would be certainly be the case if we were comparing poor people in poor countries with poor people in rich countries, and if poor people systematically consumed fewer traded goods and more non-tradeables. But it is not obvious in advance that this is true, and the situation is even less clear in the currently relevant situation, which is the relative prices for poor people in different poor countries.

How to Calculate Poverty-Relevant PPPs

The work currently underway will combine the national prices collected by the ICP with data on consumption patterns of the poor obtained from the large number of household surveys available to the World Bank and which have been processed over the last three years into a uniform framework in a massive data effort in the Bank's data group. Because household surveys are

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not harmonized internationally, the combination of prices and expenditure patterns can be done only at a relatively high level of aggregation, either at or above the basic heading level. In principle, it is a mechanical exercise to combine expenditure weights from one source (household surveys) with prices from another (the ICP) to calculate the price indexes for the PPPs and, once the expenditure patterns of the poor are known, there is nothing in these calculations that differs from the standard calculations of the familiar PPPs.

One new issue here is how to select the “internationally poor” households in each survey, since it is from those that we need to obtain the consumption patterns that are to be used as weights. Identifying these households requires a PPP exchange rate to convert the \$1-a-day line, but we can only know the PPP once we have the weights in hand. This simultaneity problem can be solved by trial and error, starting from a provisional set of PPPs, identifying the households at the poverty line in each country, averaging their consumption patterns, and using the results with the ICP prices to calculate new PPPs. The process is then repeated until convergence is obtained. Under special assumptions about household Engel curves, it is possible to short-circuit this process and calculate the PPPs directly, and these “special-case” PPPs can be used as starting values for the iterative calculation. In practice, convergence appears to be rapid, and the “special case” PPPs are a very good approximation to the final ones, so this aspect of the calculations does not present any great difficulty. Note also that, in any given survey, however large, we are unlikely to find households exactly at the poverty line. This difficulty is finessed by looking at the expenditure patterns of households near the poverty line, and taking a weighted average of expenditures, with weights that are larger the closer the household is to the poverty line. If we are prepared to assume a specific functional form for the Engel curves, this averaging near the line is not necessary, since the functional form can be used to estimate the expenditure pattern at the line itself.

One final issue concerns sample sizes and standard errors. While some of the household surveys contain tens and even hundreds of thousands of households, many are much smaller, and in these cases there is a real concern about the accuracy of the estimates of the consumption patterns. This concern is exacerbated by the fact that we do not use all of the households, but only those that are close to the international poverty line, and in some middle-income countries, there may not be many households whose expenditures are actually used. In our preliminary work, we have devoted a good deal of attention to this issue, using the sampling variability associated with the design of each survey to calculate survey-sampling standard errors for the poverty-relevant PPPs. Although there is no getting around the problem of surveys with very small numbers of poor households, our preliminary calculations have suggested that sampling error is not a major source of concern. One reason for this is that the PPP indexes can themselves be thought of as averages taken over a substantial number of commodity-specific price ratios, so that the index will be more precisely estimated than the consumption patterns that go into

its calculation. So we suspect that the sampling errors are likely to be less important than some non-sampling errors, for example, in the collection of some of the prices.

In the next few months, the poverty team will be putting together the newly collected prices with the data from the household surveys, and we shall learn whether our methodological advances can be turned into practical estimates, and whether the PPPs differ in important ways from the PPPs. If so, we shall have some basis for calculating better poverty counts. And if not, the knowledge will be a useful defense against the argument that the current global poverty counts are seriously flawed by the use of inappropriate exchange-rate conversions. ■

Alan Heston continued from page 4

Summing Up

This note has provided some background on why the expenditure approach to estimation of PPPs and real product was adopted in 1968 as the main research effort of the ICP. Since there is a large interest in comparable production by sector estimates of real product that could not be filled by the ICP, it is not surprising that alternative estimates have been made outside the ICP institutional framework, most notably the Groningen Growth and Development Center. One research initiative that would clearly serve the needs of both the production and expenditure approaches would be development of an international price archive that included both final product and intermediate goods prices. More meta-studies of hedonic regression studies across space, such as for dwelling rents, would also facilitate both the expenditure and production approaches.

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Relevance of Poverty PPPs in the Asian Development Bank

Bishnu D. Pant, *Assistant Chief Economist, Asian Development Bank*



The overarching objective of the Asian Development Bank (ADB) is to reduce poverty in its developing member-countries. To monitor this objective, it is imperative to use accurate measures of poverty incidence that are comparable and can be aggregated at the regional level. Such poverty measures form the basis for temporal and spatial

comparisons of poverty within the countries, across the countries and through the region. Getting the poverty count right is crucial to ADB as the Asia-Pacific region remains home to two-thirds of the world's poor. Governments and development agencies need these poverty measures to make informed policy decisions and monitor progress in the fight against poverty.

There are difficulties in comparing poverty levels across the countries since economic aggregates such as consumption and gross domestic product are expressed in national currencies. Converting data from a national currency to a common currency using exchange rates frequently yields results inconsistent with actual developments in the countries being compared, as exchange rates are influenced by short-term factors and subject to substantial distortions from speculative movements and, to some extent, government intervention. The Purchasing Power Parity (PPP) concept underlying the International Comparison Program (ICP) is the most robust method to compare levels of economic output as well as the purchasing power of the poor, directly reflecting differences in prices and volumes of goods and services in different countries.

The current ICP round represents a concerted global effort to improve both the quality and the relevance of the PPP data. Twenty-three Asia-Pacific countries are participating in this endeavor, under the general coordination and management of the ADB. One very notable milestone in the ongoing revamp of the ICP is the work to produce poverty-specific PPPs, under the general auspices of the ICP's Poverty Advisory Group (PAG). The ADB is adopting the new Poverty PPP aggregation methodology recommended by the PAG, which involves making use of national PPPs by basic heading and re-weighting these using expenditure patterns of the "poor" households in countries where poverty is prevalent. The ADB welcomes this improvement as a critical first step to address criticisms that general ICP PPPs do not fully reflect consumption patterns of the poor across countries.

The ADB, closely collaborating with 17 member-countries, has ventured to take the development of Poverty PPPs one step fur-

ther. The region is starting a pilot project to conduct sensitivity analysis on the Poverty PPPs resulting from the use of alternative sets of price data and from the use of different aggregation procedures. These analyses are designed to shed light on a longstanding question: Will PPPs generated from prices of goods and services relevant to the poor differ significantly from Poverty PPPs derived from average prices of goods and services consumed by the general population? This study will help identify areas for improvement in future ICP rounds.

A hallmark of Poverty-PPP work in the Asia Pacific is the participative approach, which involves countries in all stages of this process so that countries will take ownership of the enterprise and the study results. A poverty basket was drawn up for the survey and it contains food and non-food products commonly bought by poor households. In identifying products to be surveyed, a sub-regional approach was adopted to ensure that the different consumption patterns across the region are considered. The 17 countries were divided into three groups, namely, South Asia, Mekong and Others. Experts from each group met to draw up a list of products relevant to the consumption basket of the poor. The lists from the three groups were then consolidated to form the Asia-Pacific poverty basket. Outlets to be surveyed will be limited to those frequently visited by the poor, such as weekly or open markets, neighborhood stalls, and small shops. The survey will be conducted nationwide in all 17 participating countries for the purpose of estimating a national average price for urban and rural areas separately.

The ADB highly appreciates the countries' unwavering support for ICP activities, including the special study on Poverty-PPP sensitivity analysis. Improvement in the accuracy of Poverty PPPs will enable the ADB and its development partners to better understand country conditions, and this will lead to more focused country-specific policies and assistance strategies for its developing member-countries.

The ADB looks forward to the release of PPP-based poverty estimates and will continue to collaborate in, and contribute to, the global effort to improve the quality, relevance and timeliness of poverty data. It is also important to ensure that the new data and the methodology behind it are widely understood and accepted. The sustainability of the ICP is of paramount importance as it provides standardized infrastructure for data collection and processing for Poverty PPPs. The Poverty PPP series should be feasible to implement, using data either collected as part of the ICP work or that is fairly easy to obtain, using the ICP infrastructure with minimal effort and external support for the countries. The availability of PPP-based poverty data on a regular basis will go a long way towards tracking progress of the ADB's poverty alleviation programs. ■

“Improvement in the accuracy of Poverty PPPs will lead to more focused country-specific policies and assistance strategies for its developing member-countries... The sustainability of the ICP is of paramount importance as it provides standardized infrastructure for data collection.”

A New Data Collection and Validation Software Tool - For Equipment, Construction and Compensation Items

Vilas Mandlekar, *Senior Information Officer, World Bank*



Why a new software tool?

The Price Collection Module of the ICP Tool Pack was used by many countries and regions for their data collection, validation and processing of household consumption (HHC) items. Regions also had the option to use other software for HHC data collection, but primarily used the

Tool Pack's Data Processing Module for validation and processing. HHC items are well defined, with short and precise specifications and data collection requirements that include mainly the item price, unit of measure, and quantity. Countries also have had vast experience in HHC item price collections through their work on the CPI surveys.

However, for data collection and validation on Equipment, Construction and Compensation (ECC) items, there is a lacuna, in terms of a well-defined methodology for data collection and analysis, and also in the software tools for this purpose. The ECC categories together form a substantial share of the GDP for most countries and are therefore an important component of the ICP. Unlike HHC items where direct matching is required, for equipment goods, for example, the approach recommended is to match like with like where possible. In practice, however, price collection templates have been designed to capture major price-determining characteristics to provide flexibility for price collection. If exact matching is not possible, it will still be feasible to make price comparisons, holding constant the main characteristics of the item, including performance, reliability, function, technology, etc. Furthermore, besides the equipment cost, the installation, transportation and tax costs are also needed to make an effective analysis of the cost structure and comparison.

For Construction, in addition to the detailed description, scaled drawings, details of material costs, equipment lease costs, and labor costs are needed. Compensation items have their own data collection needs in terms of the detail to be captured to compare compensations for occupations across countries.

To meet these challenges, the Global Office (GO) developed two software tools – the ICP Data Capture Forms (DCF) for data collection, and the ICP Data Validation Module (DVM) for intra-country and inter-country validations. These software tools provide the first efforts toward standardizing and simplifying these operations. They would also help to build capacity in this area in countries, particularly since many of them are now establishing price indices for these categories of items.

What is innovative about the software tools and the analyses they support?

The DVM software is unique in that it offers simultaneously a

macro as well as a micro view of the Equipment, Construction and Compensation prices. It facilitates a very efficient mode of analysis by the regional coordinators. From a technical (software) standpoint, it has innovations in the way this complex data is structured and presented to the users.

From a data collection perspective, the software allows the user to view detailed descriptions. For example, for equipment goods users are given three options for each specification – “Preferred” product representing tight specification for exact matching; and an “Alternate” product that is comparable to the “Preferred” product if the “Preferred” product is not available in the market. The third option is “Unspecified Alternate” in the event that neither the “Preferred” nor the “Alternate” product can be priced in a country. In this case, countries are expected to provide a detailed description including the make and model of the product closest to the preferred product plus price-determining characteristics. This will allow an expert at the regional or global level to compare such unspecified items across countries and make judgments on whether to accept the item as a substitute to the preferred product as it is, to accept the item with some quality adjustment factor, or to reject the item and its price in the comparison.


For inter-country price and specification validation, the DVM allows all the observed prices (including the detailed price components and characteristics) and product specifications to be displayed side by side. For equipment goods, the DVM shows the components of prices – such as installation, taxes and transportation costs. For construction items, it shows the material, equipment leasing, and labor costs, etc – so that the regions can do price comparisons, both intra- country as well as across countries. Besides price validation for PPP purposes, the system allows comparisons of installation, tax, labor or other costs across countries that can give countries insights into their price structure and assess, for example, their tax rate in comparison with other countries.

The DVM computes the average prices from the observations both in local currency units and in USD, or any other selected currency. The module also produces the variation coefficient to indicate variability of average prices across countries. Displaying anomalous prices or price components in red, yellow or black, the module gives a visual indication to the user to probe further into problem data.

To illustrate these validation features of the DVM, the screenshot shows a sample comparison of a product item for two countries. Yellow shaded cells show the price components for three products – two Air Compressors and an Air Conditioner. Regional data analysts have many options in selecting or discarding individual price observations or choosing en masse only the “Preferred” and/or “Alternate” specified items in a comparison.

The user interface is intuitive and simple. The user sees the aggregate information at average level in US\$ or Local Currency

Methodology

| | B | C | D | E | F | G | H | I | M | N | P | |
|-----|---|--|---|---|--|---------|--------|--------|----------------------|-------------------------------|--------|-------|
| 2 |  Data Validation Module for Equipment | | | | Equip_General_Purpose_Machinery | | | | | | | |
| 3 | Enter 'X' to select | | | | Generated on 10/5/2006 4:54:21 AM | | | | | | | |
| 4 | Year | 2005 | | x | | | | | | | | |
| 5 | | 2006 | | x | | | | | | | | |
| 7 | Type of Product | Preferred | | x | | | | | | | | |
| 8 | | Alternate | | x | | | | | | | | |
| 9 | | Unspecified | | x | | | | | | | | |
| 10 | Country | | | | Country A | | | | Country B | | | |
| 11 | Exchange Rate | | | | 87.2 | | | | | 97.4 | | |
| 12 | Product Code | Product Name | | | USD Avg | LCU Avg | Obs. 1 | Obs. 2 | USD Avg | LCU Avg | Obs. 1 | |
| 13 | 15.01.12.1.11 | AIR CONDITIONING (Residential) | | | 176 | 15300 | 15600 | 15000 | 342 | 33300 | 33300 | |
| 45 | 15.01.12.1.02 | AIR COMPRESSOR (Towed Unit) | | | 103 | 8945 | 9121 | 8770 | | | | |
| 81 | 15.01.12.1.01 | AIR COMPRESSOR (Small) | | | 389 | 33915 | 34580 | 33250 | 476 | 46400 | 46400 | |
| 86 | Product Type | Preferred | | | | | x | | | | | |
| 87 | | Alternate | | | | | | x | | | | |
| 88 | | Unspecified Alternate | | | | | | | | | x | |
| 91 | Price Details | A. Equipment Costs (in national currency) | | | | | 26000 | 25000 | | | | 39000 |
| 92 | | B. Installation if not included | | | | | 2080 | 2000 | | | | 3000 |
| 93 | | C. Transportation if not included | | | | | 5200 | 5000 | | | | 500 |
| 94 | | D. Non-deductible tax if not included | | | | | 1300 | 1250 | | | | 3900 |
| 95 | | E. Deductible tax if included | | | | | | | | | | |
| 96 | F. Sub Total (B + C+D + E) | | | | | 8580 | 8250 | | | | 7400 | |
| 98 | Specification for Alternate | Make, Model, Year | | | | | | | | Make (ABC), Model (XYZ), 2004 | | |
| 99 | | Motor Power (kW) | | | | | | | | 1000 | | |
| 100 | | Pressure (bars) | | | | | | | | 10 | | |
| 101 | | Tank Volume (Liters) | | | | | | | | 35 | | |
| 102 | Comments | | | | | | | | With electric motor | | | |
| 103 | Price Source | | | | | | | | National Distributor | | | |

Unit (LCU) (colored yellow) and validates his/her data. There is an option to drill down into the details to see if the product was the preferred model, the alternate or the unspecified model (colored blue) as shown for the Air Compressor (Small). For the same product, he or she can drill down further to see price details (colored green). In the case of “Unspecified Alternate” the user can drill down even further to see product characteristics and values (colored gray), where the make, model, other characteristics and characteristic values entered are displayed. On finalizing the prices for a category of products, there is an option to create an average prices file in the ICP Tool Pack format that can be seamlessly integrated for PPP calculation.

From a process perspective, the data collection forms – the DCF module – offer an efficient way of price data transfer from countries to the region. Instead of the countries sending the data collection forms, which can be voluminous (25 MB) since they contain product descriptions and images, the software captures only the data actually entered by the user, in much smaller text files making data transfer through email easier. The region can then display the country’s detailed price observations and specification choices using the DCF software. ■

For more information on these two software modules, please send Email to Vilas Mandekar at vmandekar@worldbank.org or to Ram Erabelly at rerabelly@worldbank.org.

ICP in Western Asia Stays on Target despite Crisis in the Region

Tarik Alami, *Regional Coordinator, ICP Western Asia, UN-ESCWA*



Despite the recent crisis in Lebanon, the ICP activities in Western Asia remain on track. The Economic and Social Commission for Western Asia (ESCWA) headquarters is located in the Lebanese capital of Beirut, from where it manages and coordinates the ICP program for the region. The program was kept on target in no small part due to the commitment of the countries, the decision of senior ESCWA management to give ICP high priority and support, the dedication of the ICP regional coordinating team, the assistance from the ICP Global Office in Washington, and financial support from the Arab Fund for Economic and Social Development.

Despite the critical war situation that Lebanon endured in July and August, the ESCWA continued implementing its scheduled work program. This was possible through constant communication by email and telephone between evacuated staff members, local staff based in Beirut, and the Washington-based Global Office staff working on Western Asia.

The ICP Regional Office for Western Asia, in collaboration with the Global Office, is now compiling and finalizing consumption data for 2005. Consumption data will be combined with the National Accounts Basic Heading Weights, Consumer Price Indices and Regional Spatial Weights which are currently being verified, in order to compute National Annual Price Averages and to produce Preliminary Consumption PPPs. These will be published along with a regional report as the first set of deliverables at the beginning of 2007.

The next phase of the ICP is extremely critical. Along with the vigorous process of calculating National Annual Price Averages and Consumption PPPs for 2005, the Regional Office will validate construction, equipment, and compensation data. Work on the Ring Comparison, which includes Oman and Jordan from the Western Asia region, will be finalized. Preliminary PPP estimates covering total GDP will be produced at the start of the second quarter of 2007.

The Western Asia countries have each shown palpable interest and invested in the ICP, whether through securing financial resources, executing the required duties within deadlines, or establishing an ICP department in their National Statistics Offices. The countries clearly realize the extent of direct benefits at the national and international levels. The countries also know that significant policy implications lie ahead when PPP data shed light on the relative structure of economies, and consequently support evidence-based policymaking and monitoring of progress towards meeting desired objectives, such as the Millennium Development Goals.

An important point to note is that the participating countries have ownership of the program, particularly as a succession of meetings and workshops have highlighted the anticipated outcomes of this crucial program, in terms of producing a “clearer” set of economic indicators and a more reliable economic comparison between countries. ■

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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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