

October 14th Draft

Report of TAG Meeting – September 22-24, 2004

[Those in attendance: All TAG members except Sergei Sergeev. Derek Blades and Peter Hill were able to attend all sessions and Angus Deaton had to miss the 1st day. From the Global Office, Giuliana Cane, Cindi Chi, Yuri Dikhanov, Fred Vogel, Nada Hamadeh, Farah Hussain, Jinsook Lee, Amy Lee, and Vilas Mandlekar. Misha Belkindas took part in the opening and concluding sessions. Sergeev was unable to attend because of visa problems but contributed importantly to the outcome in a variety of ways including providing illustrative calculations based on EU examples]

This report attempts to capture a work in progress. There were extensive interchanges about the methods of making comparisons at the basic heading level (BHL) before TAG met, a number of extensions and modifications arising as a result of the Regional Coordinators Meeting, and a continuing interchange on methods of linking for the ring comparison. There are two appendices, the summaries of discussions prepared by Paul McCarthy and David Roberts. The Minutes of the Regional Coordinators Meeting are included as a separate file, for which section 12 is referred to below. Other summaries were basically superseded by subsequent discussions. What follows deals with TAG discussion topics.

1. Machinery and equipment:

This TAG summary consists of two parts. The first is the that part of the report that David Roberts submitted on the TAG discussions. The second tries to tie together post-TAG discussions.

Part 1 (Roberts Appendix)

Machinery and equipment: The paper concerned the PPPs for plant and machinery for countries that mainly imported their capital goods. It proposed that the PPPs for such countries be determined by adjusting their exchange rates by post-CIF margins for trade, transport and taxes on capital items. The proposal was criticised for not taking account of pre-CIF margins (particularly that for transport between exporter and importer), price discrimination by producers and “facilitation charges”. However, other than actually pricing equipment goods in all countries participating in a full GDP comparison – which experience has shown to be difficult, expensive and of questionable reliability, hence the proposal - no alternative was put forward (although a small minority suggested using an unadjusted exchange rate). The proposal received general approval by default.

3. Countries following this approach will have to provide post-CIF margins for 2004 (data collection in 2005) and average annual exchange rates for 2005 (data collection early 2006 from countries or IMF). The PPPs derived using these data will be transitive if calculated as described in the paper. Countries actually pricing equipment goods will also have to provide data on post-CIF margins and average annual exchange rates so that links can be established between their PPPs and the PPPs of countries obtained by the adjusted exchange rate method. When determining

post-CIF trade, transport and tax margins, the coverage of capital imports has to conform with SNA 93 definitions (for example, the exclusion of single-purpose defence equipment or the allocation of dual-purpose goods, such as motor cars and computer software, between consumption and capital expenditure). Re-exports of machinery and equipment may also be an issue for entrepôt countries.

4. Countries that actually price equipment goods do not collect the prices paid by investors for motor cars and motor cycles. The PPPs for these items are calculated using the same prices that the countries have collected for purchases by households. This approach could also be followed by countries applying the adjusted exchange rate method.

Part 2

Presentation to Regional Coordinators

Derek Blades was not available for the Regional Coordinators meeting. Those participants from the TAG meeting attending the Regional Coordinators meeting did not feel comfortable enough with their understanding of the TAG discussions to make a firm proposal to the group. Instead, at the RC meeting, the subjects of the TAG discussion were described, including Derek's paper and the exchange rate approach and some of the results of the survey he had undertaken on imported capital goods. In addition, Peter Hill raised the question (that we had discussed together) of whether adequate cif unit values existed that would allow, with international margins, an approximation to usable parities between countries. The regional coordinators informed us that:

1. a. unit values were a non-starter in terms of available statistics and b. if they were available the usual composition problem was aggravated by the fact that unit values often involve both new and used items and,
2. the regions including Africa especially wished do some specification pricing of producers durables, and
3. in Africa, there was concern about multiple exchange rates, especially in WA franc zone.

Subsequent Discussions

At the TAG meeting the adjusted exchange rate approach (AERA) was questioned by some because it did not seem to be anchored in a concrete comparison of prices, but somehow out there in the ether. To anchor the AERA a description of linking to the specification pricing approach (SPA) needs to be spelled out. For example, suppose a group of African countries buys their capital goods only from France. France will have a Euro/\$ parity through OECD specification pricing that presumably differs from the exchange rate. The AERA approach would provide an estimate of how much should be added for these African countries to their exchange rate to get a parity for machinery with France, which would in turn link them to the US\$.

An alternative approach is to take Roberts last para on transport equipment. Here we have another kind of anchor, by way of which to go from motor vehicles to the rest of capital goods. Life gets more complicated because countries buy from several different

countries and because motor vehicles may be subject to different margins and/or degrees of price discrimination, compared to other imported machinery and equipment. So one conclusion is that the paper Blades presented to the TAG was, as its author said, a starting point but the AERA needs further elaboration.

There seems to be a consensus that some form of Blade's questionnaire should be a part of the process whether or not AERA is used. Further, there seems to be honest differences on the importance of price discrimination by sellers to different countries, with Hill saying VERY and Blades feeling it is one among many problems. What was clear at the RC meeting is that both Asian and African countries are interested in Specification Pricing precisely because they think there is substantial price discrimination between their countries, as well as their countries and other markets. (There may be some economic reasons, like scale that explain discrimination, as well as market power which is what interests many countries). Whether we would get any information on price discrimination from a questionnaire seems doubtful, but perhaps this can also be added.

Actions Resulting from TAG and Regional Coordinators Meetings

Action of Global Office: Currently the Global Office is developing SPDs for Machinery and Equipment. The regions showed interest and have some funding for surveying countries to obtain prices. Frequently there will be only 1 distributor for a type of capital good.

Activities in the Regions: In countries importing most of their machinery and equipment, an assessment will be made (local inquiries, consultant, and the like) to find out what are the models of an SPD being imported, without reference to a particular SP. It was recognized this process might produce few matches, but it would at least produce characteristic imports. For each imported SP there would be noted in addition to price and applicable taxes, the technical characteristics of the item, and the type and location of outlet.

Send out Questionnaire on Mark-Ups ala Blades.

Follow Up to Work by Global Office and Regions: The surveys may generate several possible outcomes:

1. There are sufficient matches to estimate basic heading parities for all headings of machinery and equipment.
2. There are sufficient matches for some headings (at least motor vehicles), but not all.
3. There are enough observations across countries to allow hedonic estimation for some headings.
4. If all of these options fail for all countries in a region for some headings then it may be necessary to resort to the AERA.
5. If some countries have a basic heading parities for a similar country, a reference country parity could be used, or AERA.

2. Construction

The summary captures fully the TAG discussions. The consultants were not available to present the approach to the Regional Coordinators but the subject was discussed. The conclusions were:

1. The “basket of construction components” (BOCC) approach was broadly accepted as the way to go.
2. For this round it will be assumed that margins on construction are constant, perhaps within a region, and should be the same as assumed in national accounts if known.
3. There may be inconsistencies between the BOCC parities and national accounts expenditure on construction if the latter are built up from material costs. In this round countries would be encouraged to examine their national accounts estimates, but if there are inconsistencies, they will be noted and accepted.
4. There was agreement that BOCC approach should be used to build capacity in countries in pricing construction components for potential use as a construction cost price index and deflator and for improving their current price estimates of construction in national accounts. Inputs into estimating each construction component are construction material costs and wages, that may already be collected by countries, or become an additional source of data for national statistics.
5. As presently designed, the BOCC does not adequately deal with own-account construction using ad hoc materials and methods, which is also true of alternative approaches. It is important to learn what is done in the national accounts for this component of construction, not only in construction but also housing services, as discussed below.
6. Taxes entering construction prices should be treated as a margin and derived from the treatment in the national accounts.
7. In the system presented by Sawhney and Walsh, different construction components form part of a system, and a construction project is composed of systems. As discussed by McCarthy in more detail, weights are needed to 1) get to systems and 2) from systems to projects, and 3) from projects to the BHLs of residential, non-residential and other construction. Sawhney and Walsh believe that weights can be obtained from an average of projects so that essentially step 2) is unnecessary.

Action Items:

1. Consultants meeting with Global Office in October, 2004 to discuss a “How to” manual for countries on the methods and sources of national data to carry out the BOCC approach.
2. Regional Coordinators need to obtain from countries information on how construction in the formal sector is estimated in their national accounts and to find out how own-construction is handled.
3. Research needs to be organized at the regional level to ascertain the weights to combine the systems in the BOCC approach.

3. Housing Services

Derek Blades presented a paper that formed a basis for discussion. It distinguished traditional and modern dwellings discussing user costs or quantity approach for the former, and where a substantial rental market exists, a rental survey for the latter. As an alternative to user cost, Blades offered a quantity approach that would essentially require a grid of dwelling characteristics, like availability of water and electricity, as well as size, rural-urban and the like. The TAG agreed that it would be valuable to:

1. **Use a traditional and modern distinction**, where the former is characterized as being own-built, owner occupied, of local materials, and with a short life.. This idea was greatly modified at the Regional Coordinators meeting because it was felt that traditional housing existed that was very substantial, and that make-shift housing was often rented in urban slums, e.g., favelas in Brazil.
2. **The Quantity Approach** should be followed up and a questionnaire developed. At the Regional Coordinators meeting this approach was supported but it was also noted that this could be pursued at the Regional and Global level as well as the country level. In particular, IF housing has been surveyed, then census materials are on the WEB that have much of the basic information.
3. **Inconsistent Results** may arise between the national accounts and either a price survey, user cost or quantity approach. For example, a quantity approach might produce a volume that when divided into expenditures yielded an implausible parity. Or a user cost or survey parity when divided into expenditures may yield an implausible volume comparison. Housing subsidies may also generate unusual results and how they are treated in the national accounts should be determined.
4. **Live with the Result** but urge the regions to discuss how flow of housing services are treated in the national accounts and urge consistency.

Action Items

1. **Develop Quantity Information** first using existing sources and seeking supplementary information for countries. As part of this the Blades stratification of housing needs to be expanded to include location and types of construction, taking into account OECD and other stratifications.
2. **Determine if Country Rental Markets are Representative.** A set of criteria suggested in Regional Coordinators meeting need to be set out by the Global Office to evaluate whether survey rents are representative of the urban housing market of a country. If not, then resort to a user cost or quantity survey will be necessary.

4. Government

TAG recommendations:

1. Equal Productivity Assumption be retained for this round

2. Make clear the importance of capital services in health, education and general government and undertake research at a later stage on whether capital services may be systematically introduced to modify the Equal Productivity Assumption.
3. The current treatment of government in the manual should be merged with the EU manual treatment to produce a new version.

5. Basic Heading Parities

Tag Recommendation is that regions use a version of the CPD that is developed in Chapter 10 of the Manual that takes into account the representivity of items in each country. This has been termed the **CPRD** method. Eurostat and OECD use EKS.

6. Item List for the Ring Countries

The Global Office presented detailed results investigating the overlap in the Regional lists for SPs. The results suggested there were many common characteristics of SPs in the region that were close but did not match because of use of different terms or other differences. The TAG closed with the idea of developing a meta-vocabulary that was common across regions, These would have been sent to the Ring countries to find the extent of overlap and need for additional items.

The Regional Coordinators meeting turned this around and instead called for a schedule that is described in the Minutes, item 12. Essentially it calls for Ring countries to tell the Global Office what SPs they plan to price in their Region. These will be collated for all regions and Ring countries will be asked to respond as to which items they can price. After that, the Global office will find what Basic Headings may need additional items from the Regions. A meeting will be held in June, 2005 to resolve remaining issues. The goal of meta-vocabulary will be an end product of this process, which will be very valuable for the next round.

7. Ring parities at the Basic Heading Level

The Tag had 3 papers presented on methods at the BH level: Diewert, Hill, and Dikhanov. One outcome of this discussion is described under 5 above, the recommendation that the CPRD method be adopted. A second outcome of this discussion was a preliminary blessing to a method of linking regions that was an outcome of the discussion of Diewert's paper on linking. At the March, 2003 TAG meeting Sergei had proposed a method that was a mirror image of this method involving moving from the Ring BH parities to the regions. The advantage of the present proposal is practical, namely that Regions can do their comparisons, not being dependent on the speed of the Ring comparison.

Heston and Aten distributed a very simple example intended to capture the essence of the proposal for BH linking, that eventually got to all of the TAG (Rao, McCarthy, Roberts, and Zieschang were accidentally left out the 1st time.). This resulted in a fruitful

exchange of emails among Diewert, Sergeev, Zieschang and others that reached the point of understanding that any remaining differences remaining are probably 2nd order.

Subsequently a more visual version of the example was presented by Aten to the Regional Coordinators. Discussion at that presentation brought out at least 4 important implications for how the comparisons can be actually carried out. Below, I review the mechanics of the BH linking idea, and spell out these implications

a. Mechanics

- (1) Regional BH parities (BHP) are estimated for each region by their method of choice. This BHP may be in the currency of any country in the region, whether Ring or not, or in the average of the region.
- (2) For each basic heading the prices submitted by Ring countries will be divided by the BHP of the region. The effect of this is convert these to Regional Prices because they have been in effect corrected for whether prices of a particular ring country are high or low within that region. However, whether a price is representative or not in the Ring country submitting them, remains attached to that price in the Ring Comparison.
- (3) At the BH level for the Ring, a price is now identified only by the region (Ring country identification can be retained but is unnecessary).
- (4) If a CPRD is then calculated for the Ring countries, it will yield basic heading regional parities (BHRP) that will equal to one for the World numeraire.
- (5) The BHRP is the conversion factor that permits the BHPs in each region to be denominated in a common currency. Going beyond this BH linking easily gets into aggregation discussions that are not necessary at this stage. The point is that the building blocks are there and the relationships of the BH parities of countries within (not between) each BH are untouched. Further
- (6) Eurostat and the OECD keep fixity among their member countries at the BH level and all other levels of aggregation, and several other regions are expected to follow this practice. The above method of handling the basic heading level linking is consistent with this practice. That TAG has not settled on the exact way to aggregate to the Global level but there are several alternatives that preserve fixity.

b. Some Implications

(1) In the proposed framework, it is important that the Region supply adequate prices for a basic heading, NOT each country. Put another way a Ring country that finds it hard to find items for a particular BH need not push on string so long as other Ring countries in that Region can price enough items.

(2) The mechanics above permit a straightforward way to collapse headings within regions. For example, suppose in Africa there are different levels of expenditure detail between groups of countries. Suppose for BH¹ Group 1 has broken an expenditure group into BH¹a and BH¹b, and Group 2 can only compare the aggregate BH¹. To obtain the parity for BH¹ for both groups of countries, first divide prices for Group 1 by BHP¹a and BHP¹b respectively and combine those with the prices of Group 2. Group 2 is now

linked to Group 1 in a way that will allow Group 1 to retain its expenditure detail and its detailed parities for BH¹a and BH¹b.

(3) In general this provides a linking method that may be used for sub-regions of Africa or Latin America, for example, at the BH Level. It may well be that sub-regions may be combined by use of sub-region Ring countries, a natural extension.

(4) Finally, where some countries are unable to provide prices for certain BHs, this becomes an alternative method to what is usually done, use of representative parities from other headings, which requires judgment.

8. National Accounts and Poverty

a. National Accounts. Based on examination of several African countries Gill and Mahinder discussed their ability to meet ICP needs for National Accounts. Often countries may not be able to have checks on their BH expenditures from both HESs and commodity flow. Regarding the expenditure headings, the main non-starter was beginning and ending stocks of valuables.

b. Poverty. Angus Deaton presented a set of comparisons based on HESs of India, Indonesia, and Pakistan, discussing a reconciliation between his results with alternatives. A satisfactory reconciliation hinges on the understatement of the CPI and probably the consumption deflator for Indonesia during after the crisis of 1996, which especially affect the poor. He also made an India-Ethiopia comparison where there was very little overlap between basic cereals. An interesting result is that a comparison based on price per unit of calories from different cereals provided much more coverage and more reliable results. Rao presented some results of comparing HESs unit values in Ethiopia and Uganda that demonstrated the feasibility of this approach, but also its dependence on the extent of detail in each HES.

Deaton concluded that the use of unit values from HESs provides a useful check on the small number of items priced in the ICP. He also suggested that further research should be possible using lower cost personnel, which would make it more economical. So far the work remains at the research level. Heston reported that for non-participating countries, there is a potential to include them at least for poverty studies by links such as Deaton and Rao have investigated. An example would be Mexico and Guatemala, both of which have unit values in their HESs, and Guatemala is not a benchmark country.

McCarthy Appendix--CAPITAL FORMATION - Construction

Presentation of the consultant's report

- A consultant's report (*International comparison of cost for the construction sector: An implementation framework for the basket of construction components approach*) was presented to the meeting.
- The approach adopted by the OECD and Eurostat is to price bills of quantities for models, some of which are designed specifically for different regions
 - in the consultant's report, this approach is referred to as a "standard projects method" (SPM)
 - the main reason for commissioning the consultant's report identifying possible alternatives is that the SPM was considered too complicated, too time consuming and too expensive for use in the ICP.
- The consultant proposed an approach based on measuring the prices of a "basket of construction components" (BOCC).
- The BOCC approach involves pricing identifiable, complete, installed components
 - materials, labour and capital equipment usage are all included so differing amounts of labour used, and therefore labour productivity, are taken into account within the prices estimated for each component (e.g. excavating and pouring footings).
- The BOCC approach prices a much smaller list of component activities than the SPM, which prices a complete set of building inputs
 - the BOCC list can be targeted to component activities that are carried out in virtually all countries.
- Apart from the much smaller number of products to be priced in the BOCC approach, it has the advantage that the components can be set up in such a way that they are more comparable between different countries than is the case using the SPM while still being reasonably representative of relevant parts of actual building projects in those countries
 - it also enables prices to be collected fairly readily in a number of cities/towns throughout the country to obtain better national average prices.
- The major shortcoming of the approach is that the margins applying to the overall project, particularly the profits for the whole project (as distinct from those at the individual component level), are not incorporated in the final quoted price
 - such margins can fluctuate significantly, depending on the market conditions prevailing over the pricing period.

Issues arising from the discussion

- Weights for the ICP fall into 3 separate categories
 - (a) those within each of the construction project components selected for pricing
 - (b) those used to weight together the components to a “total project” level
 - (c) those for different types of construction, such as dwellings, non-residential buildings, or civil engineering construction projects.
- The first two sets of weights (described in (a) and (b) above) would have to be identified in the process of setting up the pricing specifications for the components and for the overall projects, while the third set (those in (c) above) would be provided by the national accounts values at the basic heading level.
- The weights in (a) will have to be country specific because of the diverse nature of the methods used in construction, with individual components (e.g. excavating and pouring footings) ranging from being very labour intensive in some countries to very capital intensive in others.
- The weights in (b) may have to be country specific and possibly even region specific within some countries
 - the extent to which such detailed weights may be required needs to be investigated
 - an important aspect of this investigation is to determine whether it is possible to use regional weights to minimise costs, the extent to which this could be done, and under what conditions would this be a viable approach.
- A number of points were made about bridging the gap between producers’ and purchasers’ prices
 - add in product taxes, where they are significant
 - apply rates of non-deductible VAT used in the national accounts to the producers’ prices
 - take account of surcharges for corruption in awarding contracts in those countries where such amounts are significant, even if the adjustment has to be fairly arbitrary.
- It is necessary to work out how many components are required for each basic heading to ensure that sufficient product matches are obtained between countries.
- On what basis will the components be specified (SPDs?) and who will be responsible for this work.
- A timeline needs to be set out, with the final deadline for pricing being mid 2005.
- Some guidelines will have to be developed regarding the number of locations within different countries for which prices will have to be collected to enable national average prices to be calculated
 - what weighting data is available to assist in this process?

- Will the components be aggregated to overall projects by the individual NSOs or by the ICP Regional Office?
- It is important that the pricing can be carried out directly by NSOs rather than being dependent on hiring construction experts, so the product specifications need to be set up with this in mind.
- Documentation has to be produced to explain step by step what has to be priced by the NSOs and how.
- Estimates of the value of “traditional housing” should be included in each country’s national accounts
 - the values should be based on the time taken to construct such houses multiplied by an average hourly wage rate in rural areas, given that traditional housing is typically found in such areas
 - no prices would be applied to the materials used.
- During the discussion there was a debate on the extent to which productivity between components is an important issue that needs to be taken into account the view of the consultants was that this is not an issue and they offered to provide an example.

Roberts Appendix

Summary of the TAG discussions during the morning session of 24 September 2004

1. There were five items on the agenda: a paper on an alternative method to calculate PPPs for machinery and equipment, a draft of the chapter on the government sector for the ICP manual, a draft summary of recommendations for the ring comparison, a paper on measuring and analysing inter-temporal consistency between ICP benchmark comparisons and papers on poverty studies.
2. **Machinery and equipment:** The paper concerned the PPPs for plant and machinery for countries that mainly imported their capital goods. It proposed that the PPPs for such countries be determined by adjusting their exchange rates by post-CIF margins for trade, transport and taxes on capital items. The proposal was criticised for not taking account of pre-CIF margins (particularly that for transport between exporter and importer), price discrimination by producers and “facilitation charges”. However, other than actually pricing equipment goods in all countries participating in a full GDP comparison – which experience has shown to be difficult, expensive and of questionable reliability, hence the proposal - no alternative was put forward (although a small minority suggested using an unadjusted exchange rate). The proposal received general approval by default.
3. Countries following this approach will have to provide post-CIF margins for 2004 (data collection in 2005) and average annual exchange rates for 2005 (data collection early 2006 from countries or IMF). The PPPs derived using these data will be transitive if calculated as described in the paper. Countries actually pricing equipment goods will also have to provide data on post-CIF margins and average annual exchange rates so that links can be established between their PPPs and the PPPs of countries obtained by the adjusted exchange rate method. When determining post-CIF trade, transport and tax margins, the coverage of capital imports has to conform with SNA 93 definitions (for example, the exclusion of single-purpose defence equipment or the allocation of dual-purpose goods, such as motor cars

and computer software, between consumption and capital expenditure). Re-exports of machinery and equipment may also be an issue for entrepôt countries.

4. Countries that actually price equipment goods do not collect the prices paid by investors for motor cars and motor cycles. The PPPs for these items are calculated using the same prices that the countries have collected for purchases by households. This approach could also be followed by countries applying the adjusted exchange rate method.

5. **Government:** It was agreed that the present draft of the chapter on the government sector requires extensive pruning and thinning as it goes well beyond the needs of the current ICP manual. It was suggested that, as the input-price approach will be used for non-market services during the 2005 round of the ICP, the starting point for a redraft of the chapter could be the chapter on government services that has been prepared for the EU-OECD manual. Central to the input-price approach is the collection of data on the compensation of employees paid for selected occupations in collective services, public health services and public education services. How these data are to be collected is described in detail in the EU-OECD chapter and it would be relatively straightforward to redraft the chapter to conform to ICP requirements. Among these are the need to spell out the major weakness of the input-price approach – namely, that it does not take into account productivity disparities between the producers of non-market services that arise from variations in the levels of education, training and skill of employees and variations in the levels of capital inputs. Consequently, productivity disparities are being disguised as price differences. And the volumes of output of non-market producers in countries whose cost of inputs are relatively low are being overestimated and the volumes of output of non-market producers in countries whose cost of inputs are relatively high are being underestimated.

6. SPDs still need to be developed for the selected occupations and this will be done by the Global Office together with the ILO and the WHO. Data on compensation of employees for 2005 could be collected early in the first quarter of 2006.

7. **Ring comparison:** The draft summary of recommendations arising from discussions of the ring comparison at previous sessions was reviewed. It was reaffirmed that the Global Office was responsible for the ring comparison and that it should deal directly with the ring countries rather than use the regional co-ordinators as intermediaries (although they should be kept informed). It was also reaffirmed that the Global Office's approach to drawing up the product list for the ring comparison is sensible and the right one to follow. It is, however, labour intensive. The task would be made easier if only the products that the ring countries intend to price from their regional lists are considered and not, as is currently the case, all the products on the regional lists. The Global Office was encouraged to write to the ring countries requesting this information. As the price collection for the ring comparison will be a point-in-time exercise, it could be delayed until the third quarter of 2005.

8. **Consistency between benchmark years:** A paper on quantifying the causes of incoherency between benchmarks (changes in price and expenditure structures) that had been prepared by the UNECE Statistical Division was discussed briefly. It was considered interesting but of no immediate application to ICP 2005 (it requires data from two benchmark years that are relatively close together). The paper should perhaps be considered again during the next round of the ICP.