Revising the 2005 GDP Expenditure Data

Global Office
Preface

Following discussions on the revision of the ICP 2005 results at the 8th Executive Board meeting on February 24, 2013, the Board agreed that “in conjunction with the 2011 ICP results, the global publication will contain revised 2005 real expenditures based on each country’s 2005 revised GDP expenditures”, and also noted that “revised 2005 GDP expenditure data should come from countries or be reviewed and cleared by the countries themselves.”

As a first step, the Global Office estimated revised 2005 GDP expenditures for the ICP 2005 countries using international data sources. The objective is to test a possible method of GDP revision and confirm whether relevant data can be obtained from international sources. The thus revised expenditures will be submitted to ICP Regional Coordinators who may invite their countries to either (i) review and clear the Global Office estimated 2005 GDP expenditures, or (ii) provide their revised 2005 GDP expenditure data.

This note is prepared to inform the ICP Regional Coordinators of the process that the Global Office followed to estimate revised 2005 GDP expenditure data for the revision of the ICP 2005 results.

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1 Minutes of meeting, 8th ICP 2011 Executive Board Meeting, February 24, 2013 New York NY
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1. Background

After submitting GDP expenditure data for computing the final results of the 2005 International Comparison Program (ICP) round, many countries revised their data subsequently and it is likely that now most countries have their final National Accounts data for the year 2005. For the purpose of revising the ICP 2005 results, it is critical to use updated GDP expenditures.

However, most official revised National Accounts data do not provide figures for Basic Heading (BH) level (or even for higher level of aggregation) which is necessary for ICP purposes. Therefore, an effort is needed to disaggregate GDP expenditures down to the BH level for most ICP 2005 participating countries. It is to be noted that OECD/Eurostat have revised their results for 2005.

The objective is to test a possible method of GDP revision and confirm whether relevant data can be obtained from international sources. The thus revised expenditures will be submitted to ICP Regional Coordinators who may invite their countries to either (i) review and clear the Global Office estimated 2005 GDP expenditures, or (ii) provide their revised 2005 GDP expenditure data using the method described herein or any other suitable method.

2. Data Sources

The following data sources are used for this exercise:

**For the GDP and its main aggregates - in the order of priority**

- UNSD – National Accounts Official Country Data: Main Aggregates and Detailed Tables (MADT)
  
  Table 1.1: Gross domestic product by expenditures at current prices
  
  Table 3.2: Individual consumption expenditure of households, NPISHs and general government at current prices

- UNSD – National Accounts Estimates of Main Aggregates
  
  GDP by Type of Expenditure at current prices – National currency

- World Development Indicators (WDI)
  
  GDP

**For the Basic Heading structures**

- 2005 ICP Expenditure Data

GDP and main aggregates data from the sources highlighted above was used, then the structure of Basic Heading from 2005 ICP Expenditure Data was applied to get the estimated Basic Heading values. If there is no data available for a given country in **UNSD- National Accounts Official Country Data**, then **UNSD-National Accounts Estimates of Main Aggregates** is consulted, if neither can be obtained, the GDP figure from the **WDI** is used for the estimation.
3. Challenges Encountered

The process followed by the Global Office faced the following challenges:

**Differences between the UNSD and ICP classifications**

While there are similarities between the UNSD and ICP classifications, the UNSD indicator names and the ICP classification headings are different. In order to resolve this matter, each UNSD indicator is mapped to the relevant ICP classification heading.

**Treatment of fiscal year based figures**

Though data for most of the countries is based on the western calendar year, which ICP uses, some countries use their own fiscal year when reporting their data to UNSD. Since the UNSD database does not convert the fiscal year data to the western calendar year, the extracted data was recalculated to fit into the western calendar year, in line with the ICP requirement.

4. Estimation Process

**Data Preference and Usage**

**Preferred data sources: UNSD Official Country Data**

The estimation needs to be based as much as possible on the most recent data that are officially released by each country. In this regard, UNSD National Accounts Official Country Data (specifically, Table 1.1 and Table 3.2) have the most comprehensive set of data and therefore they are used as a primary data source for this exercise. If UNSD Country Data does not provide data for a specific country, UNSD National Accounts Estimates of Main Aggregates were used to fill the gap. For the countries for which UNSD does not have data, data from the World Bank World Development Indicators were used to fill the gaps at the GDP level where necessary. Where different data are provided for expenditures at the same level of aggregation (GDP, Main Aggregates, Category, etc.), UNSD National Accounts Official Country Data's Table 1.1 is preferred to Table 3.2.

**Choice of series: Latest series available**

UNSD National Accounts data provides a different series of data for each country. Series indicate the version of submitted data, and the higher the series the more updated the data are. Latest series could be different for different levels of aggregation for the same country, and sometimes several series are provided even for the same level of aggregation in different tables. In this exercise, for a given country, and for a given level of aggregation, the most update series are always used.

**Data for Basic Headings**

If data for a certain level of ICP classification are not available in data sets from UNSD, they are estimated using figures for classification levels above and structures from ICP 2005 data. In most cases, UNSD data are available down to the Main Aggregate level or Category level and therefore the ICP classification levels below are estimated. Exceptions exist for four ICP Basic Headings, which in most cases can be directly obtained from UNSD data. These are: (1) Exports of goods and services; (2) Imports of goods and services; (3) Final consumption expenditure of resident households in the rest of the world; and (4) Final consumption expenditure of non-resident households in the economic territory.
Calculation

Application of the Basic Heading structure of ICP 2005 to the latest revised expenditure data

The UNSD and other data sources provide data only down to the Main Aggregate or Category level and no data for ICP BH level are provided, except the four BHs mentioned above. For the purpose of this exercise, the estimation of the BH level expenditures is crucial. Thus, for the BH level, the structure of BH expenditure data from ICP 2005 round is applied. Here "applying" does not mean using the figure as it is but rather using the percentage share of BHs towards the available main aggregate or category level data. If the main aggregate or category level data are not available, those levels are also estimated using the ICP 2005 structure applied to the ICP classification level above.

Missing values

In the final expenditure estimates, there could be some BHs with no value. This is because, where there are BHs with no value in ICP 2005 data, if there are relevant data from UNSD data sets, the gap is filled with them, but if not, the gaps in 2005 structure are left as is.

Recalibration

As explained, if data are not available from the preferred sources for a specific level of ICP classification, data from other sources are used. Most BHs are calculated by applying the percentage share structures to the closest available higher aggregates. However, all of the BHs need to be added up to match to the higher level aggregates, up to the GDP figures. Therefore, in the final expenditure estimates, where necessary, all the levels of aggregation below GDP are re-scaled (recalibrated) to match the GDP figures.

Validating SNA Compliance and ICP requirement

In ICP exercises, seven BHs that should have negative values are treated as negative. If the UNSD's treatment / notation of negative values are not in line with the ICP, they are re-aligned to match the ICP requirement. In addition, other SNA compliances and ICP requirements such as an additivity check is done to review the estimated values.

Estimation Steps

The estimation process followed the following steps:

Step 1: Extract data for GDP and Main Aggregate level from the UN Country Data Table 1.1

Step 2: Extract data for Category level from the UN Country Data Table 3.2

Step 3: Where there is no information in Country data, extract the data for GDP and Main Aggregate level from the UNSD Estimate Data Table

Step 4: Where there are no UNSD Data, extract GDP figure from the WDI database

Step 5: If GDP and aggregate figures from the database are available, apply them directly using ICP classification mapping

Step 6: If Basic Heading figures from the database are available, apply them directly using ICP classification mapping

Step 7: For the rest of Basic Headings, apply structures to their closest aggregate figure obtained in Step 5

Step 8: Re-scale (re-calibrate) figures to match the GDP figure

Step 9: Conduct final validation to check whether the new estimated data follow SNA compliance and ICP requirements
5. Conclusion

A key lesson of the above test is that the revision of GDP expenditure data at basic heading level is feasible. For a particular country, it can be done by the country itself, or centrally by the Regional Coordinating Agency or the Global Office. In the latter cases, the results of the revision process for a given country must be submitted to the Regional Coordinator concerned who may use them for validation purposes or to seek the country’s review and clearance. However, a country that can estimate their own revised expenditure data at the most detailed level will be encouraged to do so.