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Presentation and dissemination of results

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OECD

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Presentation and dissemination of results

13.1 Introduction

13.1 The chapter describes how Eurostat and the OECD present and disseminate the results of their comparisons. It also describes how Eurostat and the OECD update the disseminated results of the latest comparison before the results of the next comparison become available. In addition, the chapter explains the revision policy followed by Eurostat and the OECD with respect to results already disseminated for a comparison and subsequent revisions made by participating countries to their estimates of GDP for the year to which the comparison refers. This is an important consideration as such revisions can change the relativities originally established between countries. The chapter concludes by clarifying the access policy of the two organisations with regard to results and underlying basic data that are not in the public domain.

13.2 The term *results* is used in the chapter as shorthand for the *purchasing power parities (PPPs), the real and nominal expenditures and the associated price level indices (PLIs) and volume indices* that are generated by Eurostat and OECD comparisons of GDP expenditures. Except when specified otherwise, the results referred to are those calculated by the Èltetö-Köves-Szulc (EKS) method described in Chapter 12 and Annex V. The EKS results that Eurostat calculates for the EU Members States are the official results for the European Union.

13.3 Eurostat and OECD comparisons cover different, but overlapping, groups of countries. Eurostat comparisons focus on EU Member States; OECD comparisons focus on OECD Member Countries. Eurostat results are calculated at average EU price levels and OECD results are calculated at average OECD price levels. For countries that are covered by both calculations, this means that the relativities between them in the Eurostat comparison could differ from those in the OECD comparison. The existence of two sets of results can confuse users. In general, it is desirable to avoid such a situation, particularly if the results are used for administrative purposes as they are in the European Union[1]. To facilitate this, Eurostat and the OECD have agreed the fixity convention whereby the relativities between EU Member States established in a Eurostat comparison remain unchanged when these countries are included in a comparison with a wider group of countries such as the OECD comparison. How fixity is obtained is explained in Chapter 12, Section 12.2.6, and is not relevant here. What is relevant is that comparison results disseminated by Eurostat or by the OECD and discussed in this chapter respect fixity unless stated otherwise.

13.4 In the past, Eurostat and the OECD disseminated the results of their joint comparisons by publishing them in a report and by uploading them to a database accessible to the public. The last report published was the joint publication on the Eurostat-OECD comparison for 2005[2]. Comparison results in their entirety are now available through the public databases that each organisation maintains.[3] Selected results which are of interest to the general public are published by Eurostat in *Statistics in Focus*, *Statistics Explained* and in press releases on a regular basis. Its publication programme is discussed later in the chapter. The OECD also publishes selected results in *Statistics Brief* and in press releases, but publication is on a more ad hoc basis and does not a follow a strict timetable.

1 For example, the results for the European Union are used in the allocation of the Structural Funds which account for around a third of the European Commission's budget.

2 Purchasing Power Parities and Real Expenditures, 2005 Results, OECD and Eurostat, Paris, 2007.

3 Eurostat's Eurobase and OECD's StatsExtracts.

13.2 Presentation of results

13.2.1 Tables and analytical categories

13.5 Eurostat disseminates comparison results through the first set of tables listed in Box 13.1 and the OECD disseminates comparison results through the second set of tables listed. The coverage of both sets of tables is the same: nominal expenditures, real expenditures, PPPs, PLIs and volume indices (or indices of real expenditure).[4] In Eurostat tables, price and volume measures are presented at the average price levels of either EU27 or EU15[5], with either EU27 or EU15 as reference, and with the purchasing power standard (PPS) as numéraire[6]. In OECD tables the price and volume measures are presented at the average price levels of OECD34, with OECD34 as reference, and the OECD dollar as numéraire. (Both the PPS and the OECD dollar are artificial currency units as explained in the next section.) Although Eurostat tables have either EU27 or EU15 as reference, they include all 37 countries that participate in Eurostat comparisons (ECP37). Similarly, OECD tables include all 47 countries that participate in OECD comparisons (OECD47). The countries comprising EU15, EU27, ECP37, OECD34 and OECD47 are specified in Box 13.2.

13.6 All the tables refer to GDP broken down by *analytical categories*. The analytical categories used in Eurostat tables and OECD tables are listed in Box 13.3. The Eurostat breakdown with 60 categories is more detailed than the OECD breakdown with 49 categories (46 of which are the same as Eurostat). In both cases, the analytical categories reflect that the SNA 93[7] and the ESA 95[8] classify final consumption expenditure in two ways: one by reference to the *type of consumption* - that is, by whether the purchase is consumed by households individually or collectively (categories 02 to 34); the other by reference to the *purchaser* - that is, by whether the purchase is made by households, non-profit institutions serving households (NPISHs) or government (categories 45 to 49). The essential difference between these two classifications is how government final consumption expenditure is treated.

13.7 All final consumption expenditures of households and NPISHs[9] are considered to benefit individual households and to constitute individual consumption expenditure. But government final consumption expenditure can benefit households either collectively or individually and is divided between collective consumption expenditure, which is expenditure on collective services[10], and individual consumption expenditure, which is expenditure on individual services[11]. When final consumption expenditure is classified by purchaser, *government final consumption expenditure* is taken in its entirety (category 47). But when final consumption expenditure is classified by type of consumption, the individual consumption expenditure by government is removed from government final consumption expenditure and added to the individual consumption expenditures of households and NPISHs to obtain *actual individual consumption* (category 02).[12] The government final consumption expenditure that remains is the expenditure on collective services, otherwise known as *actual collective consumption* (category 34) or *collective consumption expenditure* (category 48).

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4 The OECD provides more coverage of nominal expenditures. This practice dates back to the early years of the PPP Programme when there was a need to educate users. To this end, the tables are ordered didactically allowing users to follow a progression from values through volumes to prices. They show first the nominal expenditures and the corresponding value indices, then the real final expenditures and the corresponding volume indices and, finally, the price level indices.

5 The two series do not have the same coverage of countries, years and variables.

6 The common currency in which the PPPs and the real expenditures are expressed.

7 *System of National Accounts 1993*, Commission of the European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank, 1993.

8 European System of Accounts 1995, Eurostat, Luxembourg, 1996.

9 Final consumption expenditure of NPISHs is not shown separately in Box 13.3 because it is not identified uniformly in the national accounts of participating countries. It is included in final consumption expenditure (category 45).

10 Principally general public services, defence, public order and safety, economic affairs, environment protection, and housing and community services.

11 Most services provided by government relating to housing, health, recreation and culture, education and social protection.

12 Summing the individual consumption expenditures of households and NPISHs and the individual consumption expenditure of government to obtain actual individual consumption affects the following analytical categories: 19-Housing, water, electricity gas and other fuels; 24-Health; 29-Recreation and culture; 31-Education; and 33-Miscellaneous goods and services.

Box 13.1: Tables for presenting Eurostat and OECD comparison results

Eurostat	
Table 1:	Purchasing power parities (EU27 = 1.00)
Table 2:	Purchasing power parities (EU15 = 1.00)
Table 3:	Price level indices (EU27 = 100)
Table 4:	Price level indices (EU15 = 100)
Table 5:	Nominal expenditure in national currency
Table 6:	Nominal expenditure as a percentage of GDP (GDP = 100)
Table 7:	Real expenditure in purchasing power standards of EU27 (PPS_EU27)
Table 8:	Real expenditure in purchasing power standards of EU15 (PPS_EU15)
Table 9:	Real expenditure per capita in purchasing power standards of EU27 (PPS_EU27)
Table 10:	Real expenditure per capita in purchasing power standards of EU15 (PPS_EU15)
Table 11:	Volume indices of real expenditure per capita (EU27 = 100)
Table 12:	Volume indices of real expenditure per capita (EU15 = 100)

OECD	
Table 1:	Expenditure at national price levels in national currencies
Table 2:	Purchasing power parities in national currencies per OECD dollar (OECD = 1.00)
Table 3:	Nominal expenditure at national price levels in US dollars
Table 4:	Nominal expenditures per capita at national price levels in US dollars
Table 5:	Indices of nominal expenditure at national price levels (OECD =100)
Table 6:	Indices of nominal expenditure per capita on GDP at national price levels (OECD = 100)
Table 7:	Real expenditure at average OECD price levels in OECD dollars
Table 8:	Real expenditure per capita at average OECD price levels in OECD dollars
Table 9:	Indices of real expenditure on GDP at average OECD price levels (OECD = 100)
Table 10:	Indices of real expenditure per capita at average OECD price levels (OECD = 100)
Table 11:	Price level indices for expenditure at average OECD price levels (OECD = 100)
Table 12:	Purchasing power parities in national currencies per US dollar (United States = 1.00)

13.8 The division of government expenditure between individually-consumed services and collectively-consumed services is necessary because of the various ways the former are financed in different countries. Under the classification by purchaser, households in countries where government directly provides individually-consumed services will appear to consume a smaller volume of goods and services than households in countries where households themselves pay directly for these services.[13] Hence, while household final consumption expenditure is a better measure of the total volume of goods and services purchased by households in different countries, actual individual consumption is a better measure of the actual volume of goods and services consumed by these households. Since one of the principal purposes of international volume comparisons of GDP is to facilitate comparisons of material well-being across countries, the classification by type of consumption is given pre-eminence.

[13] This is illustrated in Chapter 4, Box 4.2.

Box 13.2: Composition of country groups

Country group	Countries included in the group	Eurostat	OECD
EU15	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom	X	
EU27	EU15 plus Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia	X	X
ECP37	EU27 plus Iceland, Norway, Switzerland, Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia and Turkey	X	
EA11	Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain	X	
EA12	EA11 plus Greece	X	
EA13	EA12 plus Slovenia	X	
EA15	EA13 plus Cyprus and Malta	X	
EA16	EA15 plus Slovakia	X	
EA17	EA16 plus Estonia	X	X
OECD34	EU15 plus Czech Republic, Estonia, Hungary, Poland, Slovakia, Slovenia, Iceland, Norway, Switzerland, Turkey, Australia, Canada, Chile, Israel, Japan, Korea, Mexico, New Zealand and United States		X
OECD47	ECP37 plus Australia, Canada, Chile, Israel, Japan, Korea, Mexico, New Zealand, United States and Russian Federation		X

Box 13.3: Analytical categories

Eurostat	Analytical category	OECD	Note
01	**Gross domestic product**	01	
02	**Actual individual consumption**	02	
03	Food and non-alcoholic beverages	03	
04	Food	04	
05	Bread and cereals	05	
06	Meat	06	
07	Fish	07	
08	Milk, cheese and eggs	08	
09	Oils and fats	09	
10	Fruits, vegetables and potatoes	10	
11	Other food	11	
12	Non-alcoholic beverages	12	
13	Alcoholic beverages, tobacco and narcotics	13	
14	Alcoholic beverages	14	
15	Tobacco	15	
16	Clothing and footwear	16	
17	Clothing		PPPs and PLIs only
18	Footwear		PPPs and PLIs only
19	Housing, water, electricity, gas and other fuels	17	
20	Electricity, gas and other fuels		PPPs and PLIs only
21	Household furnishings, equipment and maintenance	18	
22	Furniture		PPPs and PLIs only
23	Household appliances		PPPs and PLIs only
24	Health	19	

Eurostat	Analytical category	OECD	Note
25	Transport	20	
26	Personal transport equipment	21	
27	Transport services		PPPs and PLIs only
28	Communication	22	
29	Recreation and culture	23	
30	Audio-visual, photographic and information processing equipment		PPPs and PLIs only
31	Education	24	
32	Restaurants and hotels	25	
33	Miscellaneous goods and services	26	
	Net purchases abroad	27	Nominal data only
34	**Actual collective consumption**	28	
35	**Gross fixed capital formation**	29	
36	Machinery and equipment	30	
37	Metal products and equipment		PPPs and PLIs only
38	Electrical and optical equipment		PPPs and PLIs only
39	Transport equipment		PPPs and PLIs only
40	Construction	31	
41	Residential buildings		PPPs and PLIs only
42	Non-residential buildings		PPPs and PLIs only
43	Civil engineering works		PPPs and PLIs only
44	Software		PPPs and PLIs only
	Changes in inventories and valuables	32	Nominal data only
	Balance of exports and imports	33	Nominal data only
45	**Final consumption expenditure**	34	
46	Household final consumption expenditure	35	
47	Government final consumption expenditure:	36	
48	Collective consumption expenditure	37	
49	Individual consumption expenditure	38	
50	**Total goods**	39	
51	Consumer goods:	40	
52	Non-durable goods	41	
53	Semi-durable goods	42	
54	Durable goods	43	
55	Capital goods	44	
56	**Total services**	45	
57	Consumer services	46	
58	Government services:	47	
59	Collective services	48	
60	Individual services	49	

13.9 Box 13.3 also includes analytical categories which classify final expenditures by type of product (categories 50 to 60). The classification first distinguishes between final expenditure on goods and final expenditure on services. Final expenditure on goods is divided between consumer goods and capital goods with expenditure on consumer goods being broken down into expenditure on non-durable goods, expenditure on semi-durable goods and expenditure on durable goods.[14] Final expenditure on services is divided between consumer services and government services with expenditure on government services being broken into expenditure on collective services and expenditure on individual services.

[14] The distinction between non-durable goods and durable goods is based on whether the goods can be used only once or whether they can be used repeatedly or continuously over a period of considerably more than one year. Durables also have a relatively high purchasers' price. Semi-durable goods differ from durable goods in that their expected lifetime of use, though more than one year, is often significantly shorter and that their purchasers' price is substantially less.

13.2.2 Purchasing power standards and OECD dollars

13.10 The PPS and the OECD dollar are the artificial currencies used respectively by Eurostat and OECD to express PPPs and real expenditures for analytical categories. Eurostat PPPs can be interpreted as the exchange rates of the PPS and OECD PPPs can be seen as the exchange rates of the OECD dollar. Since PPPs are different for different categories, the values of the PPS and the OECD dollar depend on the category in question. The values of the PPS and the OECD dollar for food, for example, will not be the same as their values for clothing.

13.11 The PPS is defined so that it has the same purchasing power as the weighted average of one euro's purchasing power for an analytical category over all EU Member States. The weights are the expenditures of participating countries on the analytical category. Hence, one PPS buys as many goods and services covered by the analytical category as one euro does for the average consumer in the European Union. The OECD dollar is defined in a completely analogous way with reference to the weighted average purchasing power of the US dollar for an analytical category across all OECD Member Countries.

13.12 In practice, real expenditures in PPS are derived by scaling the PPPs for an analytical category so that the total expenditure of the European Union on the category in PPS equals the corresponding expenditure in euro:

$$\sum (EXP_i/PPP_i) = \sum (EXP_i/XR_i)$$

Where EXP_i is the expenditure of country i and XR_i is the exchange rate of country i to the euro. For OECD, the exchange rate to the US dollar is used. The values of PPS and OECD dollar change with each reference year, as they are defined with reference to the purchasing power of the euro and US dollar in the reference year. This implies that values of real expenditure in PPS or OECD dollar cannot be compared between reference years.

13.13 As noted in the previous section, Eurostat publishes two sets of data: one with reference to EU27 and one with reference to EU15. The first data set uses a PPS defined on the basis of the average purchasing power of the EU27 countries, whereas the second data set uses a PPS defined on the basis of the average purchasing power of the EU15 countries. In the remainder of the chapter, these are referred to as PPS_EU27 and PPS_EU15 respectively.

13.2.3 PPPs for country groups

13.14 Besides presenting results for the individual countries participating in the comparison, the tables also present results for groups of countries. Eurostat tables include the country groups EU27 and EU15 and the euro areas EA11, EA12, EA13, EA15, EA16 and EA17. OECD tables include EA17, EU27 and OECD34. The composition of the country groups and the euro areas is given in Box 13.2.

Box 13.4: Deriving PPPs for a country group

Column	(1)	(2)	(3)	(4)	(5)	(6)
Countries in the group	**National expenditure** *(national currency)*	**Exchange rates** *(national currency per euro)*	**PPPs** *(national currency per PPS_EU27)*	**Nominal expenditure** *(euros)*	**Real expenditure** *(PPS_EU27)*	**Group PPP** *("Group euro" per PPS_EU27)*
Germany	1970	1	1.05	1970	1876	
France	1350	1	0.99	1350	1364	
Italy	1100	1	0.84	1100	1310	
Spain	565	1	0.79	565	715	
Sweden	2000	8.2	10.19	244	196	
United Kingdom	900	0.6	0.68	1500	1324	
GROUP				**6729**	**6784**	**0.95**

1. The hypothetical country group consists of six countries. The euro is the national currency of Germany, France, Italy and Spain. The krona and pound are the national currencies of Sweden and the United Kingdom respectively.

2. The basic data required to calculate the PPP for the group are the national expenditures in national currencies in column (1), the exchange rates between national currencies and the euro in column (2) and the PPPs between national currencies and the PPS in column (3). The latter are expressed at the average price levels of the EU27.

3. The nominal expenditures for the countries in column (4) are expressed in euros. They are obtained by dividing their national expenditures in column (1) by their exchange rates in column (2). The nominal expenditure for the group is the sum of these nominal expenditures.

4. The real expenditures for the countries in column (5) are expressed in PPS. They are obtained by dividing their national expenditures in column (1) by their PPPs in column (3). The real expenditure for the group is the sum of these real expenditures.

5. PPPs can be derived by dividing national expenditures by their corresponding real expenditures. The Group PPP in column (6) has been calculated by dividing the group's nominal expenditure in column (4) by its real expenditure in column (5). The Group PPP is based on the PPS_EU27. It reflects the average price level for the group as a whole vis-à-vis the price level for the EU27.

13.15 The PPPs and the real and nominal expenditures for EU27, EU15, the euro areas and OECD34 are derived using the PPPs and the national expenditures in national currencies of their constituent countries. A simple example of how PPPs and real and nominal expenditures are obtained for a country group is given in Box 13.4. Because EKS real expenditures are not additive, the process has to be repeated for each basic heading, aggregation level and analytical category.[15]

13.2.4 Selected Geary Khamis results

13.16 Annex VIII explains that EKS real expenditures are free of the Gerschenkron effect but not additive and that Geary Khamis (GK) real expenditures are additive but subject to the Gerschenkron effect. Because of this, EKS PPPs and real expenditures are considered to be better suited for comparisons across countries of the price and volume levels of individual analytical categories and GK PPPs and real expenditures are considered to be better suited for comparisons of price and volume structures between countries. Accordingly, the OECD database includes a selection of GK results to complement the official EKS results. However, unlike the EKS results, the selected GK

[15] With an additive aggregation method, such as the Geary Khamis method, the procedure has only to be done once, at the level of GDP.

results have no official status and do not respect fixity. They are made available for analytical purposes only.

13.17 The OECD selection is limited to those GK indices that are useful for the analysis of price and volume structures. They comprise two tables, namely:

- *Real expenditures on the component expenditures of GDP at average OECD prices as a percentage of GDP:* These show the relative importance of the final expenditures on the analytical categories vis-à-vis the final expenditure on their corresponding GDP after the expenditures have been valued at a uniform set of average prices. They enable the real shares of the component expenditures of GDP – the volume structure – to be compared across countries.
- *Relative price levels of the component expenditures of GDP at average OECD prices*: These are defined as the ratios of the specific PPPs for the analytical categories to the overall PPP for their corresponding GDP. They indicate whether the price level for a given analytical category is higher or lower relative to the overall or general price level in the country thereby facilitating the comparison of price structures between countries.

The two tables cover the same analytical categories, the same countries and the same country groups as the tables the OECD uses to present EKS results.

13.3 Eurostat annual publication schedule

13.3.1 Preliminary to final estimates

13.18 Eurostat makes comparisons covering the countries of EU27 and ECP37 every year. The detailed results of these annual comparisons are disseminated through Eurostat's public database, while selected summary results are published in Eurostat's *Statistics in Focus* series and in *Statistics Explained* on the Eurostat website, as well as in press releases that accompany the release of new data. The publication and dissemination calendar is synchronised with the timetable for the delivery of national accounts data set out in the ESA 95 Regulation[16]. The first delivery of annual national accounts data for t is in spring t+1. Countries provide expenditures on the seven main aggregates. This is when Eurostat makes its preliminary estimates of PPPs for t.

13.19 For the preliminary estimates, the most recent price data from consumer and capital goods surveys are used as input. For housing and compensation of government employees, input data for t do not become available until the autumn of t+1. For housing, preliminary estimates for t are calculated by extrapolating the PPPs for t-1 with the HICP[17] indices for actual rents. PPPs for compensation of government employees for year t-1 are extrapolated to t with the overall HICP indices. As expenditure data are available only for the seven main aggregates, weights for the basic headings are derived using the structure of the year t-1 or t-2. The data are released in the public database in t+6 months. At the same time, a press release presenting the preliminary estimates of per capita volume indices for GDP is distributed.

13.20 In t+9 months, countries report for the first time the expenditures at basic heading level for t. The PPPs calculated with these expenditures are considered to be first or provisional estimates. They are released in t+12 months. Countries are expected to report the best estimates for the various levels of aggregation - as defined in the Eurostat-OECD expenditure classification - that are available for t at the time. Being provisional, the extent to which the breakdowns, particularly at the lower levels of aggregation, will reflect that of a previous year rather than t will vary from country to country. As a minimum, GDP, the main aggregates and the expenditure categories should be current estimates for t, but the structure of expenditure below these levels - that is, at the level of expenditure groups, classes and basic headings - may be that of a previous year.

16 Council Regulation (EC) No 2223/96 of 25 June 1996 on the European system of national and regional accounts in the Community.

17 Harmonised Index of Consumer Prices. See the glossary in Annex IX for more details.

13.21 The PPPs for t will be calculated in t+12 months just prior to their dissemination. The detailed expenditures that were reported in t+9 months provide the weights for the calculation. But they do not provide the levels of either GDP or its components. Levels for GDP and the main aggregates are taken from the national accounts databases maintained by Eurostat and the OECD just before the calculation is made. The expenditure extracted for each of the main aggregates is then distributed proportionally across the aggregate's basic headings in line with each basic heading's share in the expenditure on the aggregate reported in t+9 months.

13.22 At the same time as the first or provisional estimates of PPPs are calculated for t, the second or intermediate estimates of PPPs are calculated for the year t-1, and the third or final estimates of PPPs for the year t-2 are also calculated. After calculation, these three sets of PPPs are added to the database (replacing the earlier PPP estimates in the database for t, t-1 and t-2), a *Statistics in Focus* is published and a press release is distributed. Both the *Statistics in Focus* and the press release presents the newly calculated per capita volume indices and PLIs for GDP and for actual individual consumption (AIC) for the years t, t-1 and t-2.

13.23 In addition, to the *Statistics in Focus* just mentioned and published in t+12 months, Eurostat also publishes other PPP related issues of *Statistics in Focus*. Every year in July, it publishes an issue on the price levels of a selection of analytical categories comprising household expenditure[18]. Every two years following the December calculation, it publishes an issue on the price levels of the analytical categories for gross fixed capital formation[19]. And every three years, in the year immediately following the price collection, it publishes an issue on the price levels of the analytical categories for food, beverages and tobacco[20]. The publication of this issue is accompanied by a press release. Most issues of *Statistics in Focus* are also published in *Statistics Explained*.

13.3.2 Revision of PPPs

13.24 The final calculation that Eurostat makes for the reference year t in t+3 is final in as much as the calculation will not be repeated to obtain new PPPs when countries subsequently revise their GDP estimates for the reference year. Such revisions occur frequently and regularly and continue long after the reference year has passed. The t+3 closure was chosen in the expectation that countries will have introduced most of the major revisions to their national accounts estimates for t by then, but experience shows that this is not always the case. The approach adopted by Eurostat when countries revised their GDP estimates for a reference year after the final calculation has been made is as follows. The revisions are incorporated in the original results without recalculating the PPPs. The revised national expenditures are converted to new real expenditures using the original PPPs. This means that the relativities between countries' volume measures will change, and that the relativities between countries' price measures – the PPPs and PLIs – will remain as they were. Volume measure relativities between countries and their country group will also change, but so too will the price measure relativities as PPPs for country groups are weighted averages which change when their expenditure weights change. To avoid the changes in price measure relativities, Eurostat rescales the original PPS_EU27.[21] The revised national expenditures converted with exchange rates and the original PPPs generate new nominal expenditures and new real expenditures for EU27 and these are used to compute the required rescaling factor. Rescaling is carried out separately for each analytical category.

13.25 Final calculations will be repeated under certain circumstances. During the second half of 1990s, there was a significant change in national accounting methodology as participating countries moved from the SNA 68 and the ESA 79 to the SNA 93 and the ESA 95. Countries introduced the new accounting systems by degrees, at varying speeds and at different points in time. As a result,

[18] 03-Food and non-alcoholic beverages; 13-Alcoholic beverages and tobacco; 17-Clothing; 18-Footwear; 20-Energy; 22-Furniture; 23-Household appliances; 26-Personal transport equipment; 27-Transport services; 28-Communication; 30-Audio-visual, photographic and information processing equipment; 32-Restaurants and hotels.

[19] 35-Gross fixed capital formation; 36-Machinery and equipment; 37-Metal products and equipment; 38-Electronic and optical equipment; 39-Transport equipment; 40-Construction; 41-Residential buildings; 42-Non-residential buildings; 43-Civil engineering works; 44-Software.

[20] 03-Food and non-alcoholic beverages; 04-Food; 05-Bread and cereals; 06-Meat; 07-Fish; 08-Milk, cheese and eggs; 09-oils and fats; 10-Fruits, vegetables and potatoes; 11-Other food; 12-Non-alcoholic beverages; 13-Alcoholic beverages and tobacco; 14-Alcoholic beverages; 15-Tobacco.

[21] Rescaling is not necessary if a country and not a country group is used as reference.

many breaks existed in their national accounts data that affected both the comparability of the volume measures between countries within a given year and the comparability of the volume measures over time – a fact that was widely criticised by users. Between April 2002 and December 2003, Eurostat and the countries participating in its comparison programme undertook a thorough revision of the PPPs for the years 1995 to 2000. Such a comprehensive and systematic revision was unprecedented in the history of PPPs. It was successfully completed with Eurostat publishing the final results in August 2004.[22] No similar exercise was conducted by the OECD. It is likely that Eurostat will repeat the exercise to accommodate forthcoming major changes in the national accounts compilation system due to the introduction of the ESA 2010[23].

13.26 The PPP Regulation allows for final calculations to be repeated if there has been a mistake made by either a participating country, Eurostat or the OECD.[24] A mistake is defined as "a use of incorrect basic information or an inappropriate application of a calculation procedure". For the recalculation to take place, the mistake must be discovered within three months of publication of the final results. For the results of the recalculation to be published and to replace the results initially disseminated, the mistake must cause at least a change of 0.5 per cent in the real GDP per capita of at least one participating country.

13.4 OECD estimation of PPPs outside benchmark years

13.4.1 Annual PPPs

13.27 By using the rolling survey approach, Eurostat is able to make annual comparisons that provide PPPs and real expenditures for each level of aggregation up to GDP. The OECD makes such detailed calculations only once every three years. PPPs for GDP, AIC and household final consumption expenditure for the years between these three-yearly benchmark calculations are obtained by extrapolation. For example, the PPPs for GDP for the latest benchmark year are extrapolated by the relative rates of inflation in different countries as measured by the implicit price deflators for GDP. More specifically, a country's PPP for the year t+1 is obtained by multiplying its PPP for the benchmark year t by its GDP implicit price deflator for the year t+1 and then dividing by the GDP implicit price deflator for the year t+1 for the reference country[25] when both implicit price deflators are relative to the year t. As changes in PPPs depend directly on relative rates of inflation in different countries, this method produces robust estimates for intermediate years provided they are not too distant from the benchmark year and there have been no significant changes in price or expenditure structures within countries. For AIC and household final consumption expenditure, the extrapolation is carried out with the national accounts deflators for these aggregates.

13.28 The summary data required for extrapolation are extracted from the national accounts series compiled quarterly by OECD Member Countries and the projections of GDP underlying the *OECD Economic Outlook*. The PPPs for the year t+1 that the OECD estimates for its Member Countries are available in the first quarter of the year t+2. They and the price and volume measures they give rise to are disseminated through the OECD's public database.

13.29 When PPPs for GDP, AIC and household final consumption expenditure are available for two benchmark years, t and t+3, the OECD estimates their PPPs for the intervening years, t+1 and t+2, in the following way. First, the aggregate's PPP for the benchmark year t is extrapolated to t+1 and t+2 by multiplying it by the aggregate's implicit price deflators for the years t+1 and t+2 and dividing by the aggregate's implicit price deflators for the reference country for the same years. Next, the aggregate's PPP for the benchmark year t+3 is retropolated to t+2 and t+1 by dividing it by the

[22] "Purchasing power parities and related economic indicators for EU, Candidate Countries and EFTA - Data 1991 to 2003, including final results of the revision 1995 to 2000", S. Stapel, J. Pasanen and S. Reinecke, *Statistics in Focus*, 37/2004, Eurostat, Luxembourg, August 2004.

[23] European System of Accounts 2010, Eurostat, Luxembourg, 2011.

[24] Annex 1, Section 10, "Corrections", Regulation (EC) No 1445/2007 of the European Parliament and of the Council of 11 December 2007 establishing common rules for the provision of basic information on Purchasing Power Parities and their calculation and dissemination.

[25] The choice of reference country does not influence the final results. In practice the OECD uses the United States.

aggregate's implicit price deflators for t+2 and t+1 and multiplying by the aggregate's implicit price deflator for the reference country for the same years. Lastly, the geometric mean is taken of the two PPPs that result for t+1 and t+2.

13.4.2 Monthly PLIs

13.30 In addition to estimating PPPs for non-benchmark years for GDP, AIC and household final consumption expenditure, the OECD also estimates monthly PLIs for household final consumption expenditure for its Member Countries. The procedure is the same as that described above for GDP except that the PPPs on which the PLIs are based are the PPPs for household consumption final expenditure from the latest benchmark year and the price deflators are the overall consumer price indices of Member Countries. The PLIs become available two months after the close of the month to which they refer. They are disseminated through the OECD's public database. The PLIs are not presented as a time series, only the PLIs for the latest month are available in the database. PLIs are the ratio between PPPs and the exchange rates and a monthly time series would primarily reflect movements in exchange rates rather than changes in the underlying PPPs which generally evolve slowly.

13.5 Data access policy

13.31 Box 13.5 gives the access rights of users of PPP data by type of user and by type of data. The comparison results that Eurostat and the OECD disseminate through their public databases are shown in the first column. All users have access to these data, namely: PPPs, real and nominal expenditures, PLIs and volume indices by the analytical categories listed in Box 13.3.

13.32 Underlying the comparison results are other information and data that users would like to access, such as the price observations from which the average prices used to compute PPPs are derived, the average prices themselves, and the PPPs, price and volume measures and product lists for basic headings. Eurostat, the OECD and the national statistical institutes (NSIs) of participating countries all have access to basic heading data and to average prices. It would be difficult to organise a comparison if this was not so. Only Eurostat and its contractors have access to individual price observations of all countries of ECP37.

13.33 As can be seen from Box 13.5, users in Commission services other than Eurostat, in OECD directorates other than the Statistics Directorate, in government departments of participating countries and in research institutes have special access rights to basic heading data and to average prices under certain conditions. They have no special access rights to price observations. Special access rights have to be applied for. This involves providing a project description that specifies the data requested and how they will be used and then, if the project is considered worthwhile, a signed declaration stating that the data will not be made public in any form and that the results of the research will not be published in more detail than the analytical category level.

13.34 The responsibility for granting special access rights is shared as follows.

- If the data requested concerns only one country, the NSI of the country decides;
- If the data requested concerns several countries, Eurostat decides after consultation with the countries involved;
- If the data requested concerns all countries, Eurostat decides;
- If the OECD receives requests for data that involve countries coordinated by Eurostat, the request is referred to Eurostat.

13.35 One user requiring particular mention is the ICP Global Office in the World Bank. The Global Office is responsible for carrying out a global comparison every six years. The comparison is to cover all regions of the world and to include those countries that participate in Eurostat and OECD comparisons. The Eurostat-OECD PPP Programme is organised independently of the ICP requiring

Eurostat and the OECD to work closely with the Global Office to ensure that a world comparison that includes their countries can be made.

Box 13.5: Access rights by type of user

Type of user	Public data	Non-public data		
	PPPs, PLIs, volume indices and expenditure weights for analytical categories	PPPs, PLIs, volume indices, expenditure weights and product lists for basic headings	Average prices	Individual price observations
Eurostat	yes	yes	yes	yes
OECD (Statistics Directorate)	yes	yes	yes	no
NSIs of participating countries	yes	yes	yes	no
Commission services other than Eurostat	yes	special access rights, cannot publish them	special access rights, cannot publish them*	no
OECD directorates other than Statistics Directorate	yes	special access rights, cannot publish them	special access rights, cannot publish them*	no
Government departments of participating countries	yes	special access rights, cannot publish them	special access rights, cannot publish them*	no
Research institutions and researchers	yes	special access rights, cannot publish them	special access rights, cannot publish them*	no
Journalists and other members of the public	yes	no	No	no
ICP Global Office at the World Bank	yes	for the purpose of linking Eurostat-OECD comparison into the worldwide comparison, cannot publish them	average prices of products priced specifically for the ICP so as to facilitate inter-country validation across regions and the linking of regions in the worldwide comparison, cannot publish them	no

*Only for Eurostat results

13.36 One condition for Eurostat-OECD participation in the ICP is that in ICP benchmark years Eurostat and the OECD provide the Global Office with basic heading PPPs and expenditure weights so that countries co-ordinated by Eurostat and the OECD can be combined at the basic heading level with countries co-ordinated by the Global Office. The second condition is that Eurostat and OECD countries price a selection of products from the ICP product list in order that their prices may be compared with those of ICP countries and links established between them. The Global Office needs the average prices of these products: first, to validate them across all countries participating in the global comparison and, second, to use them in the calculation of the world comparison.

13.37 To provide the Global Office with special access rights to basic heading PPPs and expenditure data for Eurostat and OECD countries and to the average prices of ICP products priced by Eurostat and OECD countries, a memorandum of understanding has been signed by Eurostat, the OECD and the Global Office. In the memorandum, the Global Office is granted the access it requires. On its part, it undertakes to treat the data as non-public and not to publish comparison results for Eurostat and OECD countries with more detail than that already published by Eurostat and the OECD.

13.6 Consistency between Eurostat, OECD and ICP results

13.38 Eurostat makes comparisons annually, the OECD makes comparisons every three years and the ICP makes comparisons every six years. So, every third year there is a reference year common to Eurostat and the OECD and every sixth year there is a reference year common to Eurostat, the OECD and the ICP. Countries participating in Eurostat comparisons are covered in OECD comparisons and ICP comparisons. To avoid confusing users, it is important that the results for Eurostat countries in OECD comparisons are consistent with those in Eurostat comparisons (ECP37). Similarly it is important that the results for Eurostat and OECD countries in ICP comparisons are consistent with those in OECD comparisons (OECD47). Consistency here means that the relativities between countries do not change from one comparison to another.

13.39 In the years between its comparisons, the OECD extrapolates the PPPs for GDP, for AIC and for household final consumption expenditure so as to keep the price and volume measures for the three aggregates in its database up to date. The World Bank and the IMF do the same, but with the ICP PPPs for the aggregates. Extrapolation is done at the level of the aggregates themselves (as described in Section 13.4.1).

13.40 Eurostat makes its first preliminary estimates of the PPPs for year t in June t+5 (as required by the annual publication schedule in Section 13.3.1). The OECD does not follow the same calculation and dissemination schedule as Eurostat and its extrapolated PPPs for GDP, AIC and household final consumption expenditure for t are usually in the public domain before those of Eurostat. To maintain consistency, it replaces the PPPs for Eurostat countries that it obtained by extrapolation with the corresponding PPPs calculated by Eurostat as soon as they become available. To ensure consistency at the world level, the IMF and the World Bank take the PPPs for Eurostat and OECD countries from the OECD after the substitution has been made.