

CHAPTER 2: DATA REQUIREMENTS AND ORGANISATION

Introduction

- 2.1. Eurostat and the OECD make international volume comparisons of GDP from the expenditure side. The volumes are estimated indirectly using purchasing power parities (PPPs). PPPs are used because they are measures of relative prices. Prices are easier to observe directly than are volumes and measures of relative prices usually have a smaller variation than measures of relative volumes. Eurostat-OECD comparisons start as price collecting exercises, though other data, such as data on final expenditures, have also to be collected before they can be concluded. This chapter identifies the price and other data needed by Eurostat and the OECD to make their comparisons and explains how countries participating in the comparisons are to obtain these data. The chapter has two parts. The first part defines price concepts and, given these concepts, data requirements. The second part describes how Eurostat-OECD comparisons are organised and how data identified in first part are collected by means of the “rolling benchmark approach”.
- 2.2. Pricing guidelines are not included in the chapter. These are to be found in Chapters 4, 5 and 6 which cover respectively consumer goods and services, government services and capital goods and services. Nor are the details of the classification of final expenditure on GDP presented here. They are available in Chapter 3. For the moment, it is sufficient to know that the classification adheres to the definitions, concepts, classifications and accounting rules of the SNA 93¹ and the ESA 95², that it covers all final expenditure on GDP, and that it comprises 226 product groups or basic headings.
- 2.3. Note that, throughout this chapter and the rest of the manual, the term “product group”, which was used extensively in Chapter 1, will be replaced by “basic heading”. There is a close correspondence between the two terms in theory which defines a basic heading as covering “a group of similar well-defined goods or services”. The correspondence is much weaker in practice where the coverage of a basic heading is determined by “the lowest level of final expenditure for which explicit expenditure weights can be estimated”. Hence, a basic heading can comprise a cluster of diverse product groups instead of the theoretically-preferable group of similar products. In addition, the absence of weights below the basic heading level means that other ways have to be used to indicate the relative importance of the products priced for the basic heading.

PART I: DATA REQUIREMENTS

Background

- 2.4. To calculate PPPs from the expenditure side, it is necessary for each country participating in the comparison to provide a set of national annual pur-

chasers’ prices and a detailed breakdown of final expenditure on GDP. The prices should refer to a selection of products chosen from a common basket of precisely-defined goods and services. The final expenditures should be broken down by basic heading according to a common classification. Both prices and expenditures should refer to the year of the comparison – or “reference year”. And both should cover the whole range of final goods and services included in GDP. Participating countries have also to provide annual average exchange rates and the mid-year resident population for the reference year.

- 2.5. The prices reported by participating countries are used to calculate price relatives, or PPPs, first at the product level, then at the basic heading level and finally at the various aggregation levels above the basic heading level. The PPPs at the aggregation levels are obtained using the final expenditures that participating countries have supplied on the constituent basic headings as weights.³ The PPPs for basic headings and aggregates are used to convert national final expenditures on GDP into real final expenditures on GDP. The exchange rates are used to derive comparative price levels. They are also used as proxies for the PPPs for exports and imports when calculating the PPPs for GDP.⁴ The population data are used to compute real final expenditures per head.

Consistency

- 2.6. National final expenditures are in national currencies at national price levels. Real final expenditures are in a common currency at a uniform price level. PPPs, besides being currency converters, are also price deflators. For this reason, the prices supplied by participating countries should be *consistent* with the methods of valuation used to estimate their final expenditures on GDP. Failure to observe this requirement will result in biased results. The basis of a comparison is the identity: expenditure = price x volume. Volumes are obtained by dividing expenditures by prices. If the volumes are to be estimated correctly, the prices collected should be those used to derive the expenditures. Deflating with prices that are not consistent with those underlying the expenditure values will result in volumes being underestimated if the prices are too high or overestimated if the prices are too low.
- 2.7. In principle, the final expenditures on GDP that participating countries report for the reference year are estimated using national annual purchasers’ prices of actual market transactions. Consistency requires participating countries to collect *national* prices – that is, prices that have been averaged over all localities of a country so as to take account of regional variations in prices. The national prices have to be *annual* prices – that is, prices that have been averaged over the days, weeks, months or quarters

of the reference year so as to allow for seasonal variations in prices as well as general inflation and changes in price structures. The national annual prices have to be *purchasers' prices* – where a purchaser's price is defined as the amount paid by the purchaser in order to take delivery of a unit of a good or service at the time and place required by the purchaser. It includes supplier's retail and wholesale margins, separately invoiced transport and insurance charges, non-deductible tax on products and sometimes, as in the case of certain items of machinery and equipment, installation costs. Finally, the national annual purchasers' prices have to be *market or transaction prices* – where a market price is defined as the actual amount of money a willing buyer pays to acquire a good or service from a willing seller. In other words, it is the actual price for a transaction agreed on by the transactors⁵. As such, it is the net price inclusive of all discounts, surcharges, rebates and, in the case of certain services, invoiced service charges and voluntary gratuities.⁶

- 2.8. Besides being consistent with the final expenditures on GDP, the prices participating countries report must be for items that are *representative* of their final expenditure on GDP and which are *comparable* between them. These requirements are not necessarily complementary. Consumption patterns can vary from country to country because of differences in tastes, cultures, climates, price structures, product availability and income levels. Products representative of the final expenditure of one country are not necessarily representative of the final expenditures of other countries, while products that are strictly comparable across countries are unlikely to be equally representative of them all. Failure to observe either of these two requirements will result in either an overestimation or underestimation of price levels and a corresponding underestimation or overestimation of volumes. Eurostat-OECD comparisons employ methods for selecting products and for calculating PPPs that are designed to respect both requirements. Inevitably compromises have to be made and, in such cases, comparability is favoured over representativity.

Comparability

- 2.9. Comparability requires participating countries to price products that are identical or, if not identical, equivalent. Products are said to be comparable if they have identical or equivalent physical and economic characteristics – that is, if they have the same or similar technical parameters and price determining properties. In this context, equivalence or similarity between products is defined as meeting the same needs with equal efficiency so that purchasers are indifferent between them and are not prepared to pay more for one than for the other. The pricing of comparable products ensures that differences in prices between countries for a product reflect “actual” price differences and are not influenced by differences in quality.⁷ Comparability involves pricing to constant quality to avoid quality

differences being mistaken for “apparent” price differences and the consequent underestimation or overestimation of price levels.⁸

- 2.10. Comparability is obtained in Eurostat-OECD comparisons by participating countries pricing product specifications that fully define the products in terms of the principal characteristics that influence their market or transaction prices. The approach is called “specification pricing” and requires the characteristics of both the product and the transaction to be specified. Product specifications can be brand and model specific – that is, a specification in which a particular brand and model, or a cluster of comparable brands and models, is stipulated. Or they can be generic – that is, a specification where only the relevant technical parameters and other price determining characteristics are given and no brand or cluster of brands is designated. Generic specifications and, to a lesser extent, specifications with brand clusters are two of the ways of enabling countries to price items that are both comparable and representative. Another way is to permit countries to treat brand and model specifications as generic specifications – that is, countries price products that match all the characteristics specified other than those of brand and model which are considered to be indicative only.⁹
- 2.11. Ideally, all product specifications would be brand and model specific so that countries would price products of identical quality. In practice, this is not possible for reasons of availability and representativity. Generic specifications have to be employed as well and inevitably some variability in quality between the products priced by countries will occur. Quality differences can arise as a result of countries pricing items that do not match exactly the product specifications. Participating countries are required to state if the items they have priced deviate from the product specifications and how they deviate when reporting their prices.¹⁰ Quality differences can also arise because, although the items priced appear to match the product specifications exactly, the product specifications are not precise enough to ensure that countries price items of the same quality. These differences are generally identified when the price data are edited. Neither Eurostat nor the OECD adjusts prices to compensate for differences in quality. Mismatches in quality are dealt with either by re-matching the prices reported - an ex post refining of the specifications - or by discarding them.

Representativity

- 2.12. Representativity is a concept that relates to individual products within a basic heading. It is a necessary concept because, by definition, there are no explicit expenditure weights below the basic heading level. Without such expenditure weights the relative importance of the various products priced for a basic heading cannot be determined. To make a comparison, participating countries have to price both representative products and unrepresentative

products for a basic heading. Representative products generally have a lower price level than unrepresentative products. Unless this is taken into account when calculating the PPPs for a basic heading, the PPPs will be biased. To avoid this, countries participating in Eurostat-OECD comparisons are required to do two things. The first is to ensure that there are representative products they can price in each basic heading when the product list¹¹ is being finalised prior to price collection. The second is to identify which of the products they have priced within a basic heading are representative when reporting their prices.

- 2.13. Representativity is defined in terms of an individual country within a basic heading. A product is either representative or unrepresentative of the price level in country A for a given basic heading. It is representative, if in country A, its price level is close to the average for all products within the basic heading. Usually, though not necessarily, the purchases of the product will account for a significant proportion of the total purchases of all products covered by the basic heading. If not, the product will at least be sold in sufficient quantities for its price level to be typical for the basic heading. Basic headings can cover a heterogeneous mixture of goods or services, but this only becomes a consideration if there are significant disparities in their price levels. In these circumstances, representativity is defined in two stages. First in terms of the product types comprising the basic heading – representative product types are those that account for the bulk of the expenditure on the basic heading. And then in terms of products within the representative product types – representative products are those whose price level is close to the average for all products of its type.
- 2.14. The decision as to whether or not a product is representative of the price level of a basic heading is made independently of the relative importance of the basic heading with respect to other basic headings. For example, assume that in country A the expenditure shares of the three basic headings that comprise the expenditure group “alcoholic beverages” are: “beer” 60 per cent, “wine” 35 per cent and “spirits” 5 per cent. The fact that beer and wine are considerably more representative of the type of alcoholic beverages consumed in country A than are spirits does not mean that all spirits sold in country A are to be treated as unrepresentative. If vodka has the largest market share of the spirits sold in country A, it is likely to be representative of the price level for “spirits” in country A and this should be recognised when calculating the PPPs for “spirits”. Vodka is probably not representative of the price level of “alcoholic beverages”, but this is reflected by the 5 per cent expenditure share of “spirits” that will be used in the calculation of PPPs for “alcoholic beverages”. If “alcoholic beverages” consisted of a single basic heading, with no breakdown into “beer”, “wine” and “spirits”, it is unlikely that vodka would be considered a representative product.
- 2.15. It has been mentioned already that the price levels of representative products are usually lower than the price levels of unrepresentative products. A comparison based on products that are not equally representative of all participating countries will result in biased price relatives. Price levels for countries pricing a smaller number of representative products will be overestimated, while price levels for countries pricing a larger number of representative products will be underestimated. When putting together the product list for a comparison, it is important to ensure that it is equally representative – or “equi-representative” - of all participating countries for each basic heading identified in the common expenditure classification. This does not mean that each country should have the same number of representative products for each basic heading because the method used by Eurostat and the OECD to calculate PPPs for a basic heading treats representative and unrepresentative products differently. What it does mean is that each country should be able to price that number of representative products which is commensurate with the heterogeneity of the products and price levels covered by the basic heading and its expenditure on the basic heading.
- 2.16. The responsibility that the product list is equi-representative is shared by participating countries on the one hand and by Eurostat and the OECD on the other. Each country has to ensure that it is able to price the appropriate number of representative products for each basic heading by proposing products it wishes to see added to the list. Products proposed by one country may not be available or, if available, not representative in other countries. At least one other country has to agree to price them if they are to be included on the list. Eurostat and the OECD have to oversee the “horse trading” that will be necessary between countries if the list is to be equi-representative. At the same time, they have to guard against the product list becoming too large and unmanageable. It is important that countries, when proposing products for the list, define them precisely so that other countries can identify them correctly in their markets and price comparable products.
- Primacy of volume comparisons**
- 2.17. Adherence to the consistency rule requires countries participating in Eurostat-OECD comparisons to provide national annual purchasers’ prices of actual market transactions for the reference year. This is not an issue for most final expenditures, but there are two exceptions:
- The first exception concerns final expenditures for which it is not always feasible to collect the price actually paid by purchasers. Discounts received on motor vehicles, voluntary gratuities or tips (as opposed to invoiced service charges) left in cafés and restaurants or given to taxi drivers and hairdressers, and VAT actually paid on capital goods are particularly difficult for price

collectors to determine for individual transactions. To overcome this problem, participating countries are required to report the prices that purchasers pay for the transaction specified before allowing for discounts in the case of motor vehicles, tips in the case of cafés, restaurants, taxi drivers and hairdressers, and VAT in the case of capital goods. They are also required to report the global rates for discounts, tips and VAT that are applied by their national accountants when estimating final expenditures on motor vehicles, café and restaurant services, taxis and hairdressers, and capital goods. The global rates are used by Eurostat to adjust the prices reported by countries to make them consistent with the corresponding expenditure.¹²

- The second exception concerns final expenditures that include those social transfers in kind which involve two “purchasers” and two “market prices”. This can occur with housing services and with medical goods and services when rents for dwellings and prices for medical products are paid partly by households and partly by government (or non-profit institutions serving households).

For example, in many countries, payments for medical services are shared between households and government. Either households pay the medical practitioner in full and subsequently receive the government’s share as a reimbursement or both households and government pay their share to the medical practitioner directly. Whatever the system, in the national accounts, the amounts actually paid by households (based on prices paid less any reimbursements) are recorded under household expenditure and the amounts actually paid by government (based on reimbursements paid to households and/or payments made directly to medical practitioners) are recorded under government expenditure. If households actually pay 20 euros per consultation and government actually pays 80 euros per consultation and 100 consultations take place, 2000 euros would be recorded under household expenditure and 8000 euros under government expenditure. To obtain the correct volume it is necessary to divide both household expenditure and government expenditure by the total or composite price of 100 euros ($[2000 / 100] + [8000 / 100] = 100$ consultations). Otherwise, if the expenditures are divided by the prices households and government actually paid, that is by 20 and 80 euros respectively, there would be double counting ($[2000 / 20] + [8000 / 80] = 200$ consultations). To avoid this, countries participating in Eurostat-OECD comparisons are required to report total or composite prices for all final expenditures to which they apply.

- 2.18. Both exceptions illustrate an important feature of Eurostat-OECD comparisons: the priority given to the volume comparison. The first objective is to obtain comparable volume measures by deflating final expenditures with prices that are consistent

with those underlying the estimates being deflated. Whether the prices also give comparable price measures is of secondary importance. The prices for individual products derived by applying global adjustments are not strictly comparable because they are approximations of the actual prices paid by purchasers, but, when averaged, the price measures they give at aggregate levels probably are. This assumes that national accountants really do apply global rates. If, for example, a country uses list prices to estimate final expenditure on motor vehicles even though purchasers receive discounts, it will report a global discount rate of zero. This means that the motor vehicle prices reported by the country will not be adjusted. They will be consistent with the national accountant’s expenditure estimate, but they will not be comparable with the prices of other countries which have been adjusted by a global rate. Likewise, the use of composite prices gives comparable price measures for actual individual consumption¹³, but the measures are not suitable for comparisons of prices paid by households or for comparisons of prices paid by government.

Actual data requirements

- 2.19. The range of final goods and services included in GDP covers consumer goods and services, general government services, capital goods and services, inventories, valuables, exports and imports. Countries participating in Eurostat-OECD comparisons are only required to price consumer products, capital goods and general government services. They do not have to price inventories, valuables, exports and imports. As explained earlier, the prices that countries collect should be national annual purchasers’ prices of actual market transactions in the reference year, but, in practice, they are not.

- *Consumer goods and services:* Participating countries are required to report purchasers’ prices for consumer products.¹⁴ The prices are to be collected from a variety of outlets - corner shops, markets, supermarkets, specialist shops, departmental stores, service establishments, etc. - located in the capital city. This is the practice followed by the majority of countries. But some countries do not limit their price collections to capital cities and collect prices in other cities and towns as well. When averaged, these prices are considered to be national prices.

To reduce the response burden that national statistical offices would have to shoulder if they were required to price the full set of consumer products in a single year, prices are collected over a period of three years. The product list is divided into six parts. Two parts are surveyed each year: one part in the first half of the year, the other in the second half of the year. For the reference year t , one third of the prices that countries report for consumer products will refer to the year $t-2$, one third to the year $t-1$ and one third to the reference year t .

In most cases, these prices are not national because they refer to the capital city. In all cases, they are not annual because they refer to a point in time. Those countries that collect capital city prices are required to provide spatial adjustment factors with which to convert their capital city prices to national prices. All countries are required to provide temporal adjustment factors with which to centre the prices collected in the years $t-2$, $t-1$ and t on the reference year t .

Spatial adjustment factors and temporal adjustment factors are to be supplied for each basic heading. Temporal adjustment factors are also to be supplied at the product level when the products are seasonal. Countries are only required to determine spatial adjustment factors once every six years as usually a special survey needs to be conducted to establish regional differences in price levels. Countries report the spatial adjustment factors that are relevant for a particular price survey one month after reporting the prices for the survey. The temporal adjustment factors, which are monthly and which countries extract from their CPI¹⁵ data bases, have to be reported after the end of each year.

- *Capital goods and services:* Participating countries are required to report national purchasers' prices for capital goods once every two years¹⁶. There are two price surveys: one for equipment goods, the other for construction. The prices collected should be mid-year (July) prices because it is too costly to monitor prices over the whole year. But for reasons of timeliness they are April prices¹⁷.

Prices for equipment goods are to be obtained from producers, importers, distributors or actual purchasers. The prices collected can be either purchasers' prices for actual market transactions or purchasers' prices for hypothetical market transactions – that is, what purchasers would pay if they made a purchase.

Prices for construction are to be compiled using a set of standard construction projects covering different types of buildings and civil engineering works. Prices for the projects are to be at the level of prevailing tender prices – that is, the prices of tenders that have been accepted by purchasers.

- *General government services:* Participating countries are required to report national annual purchasers' prices for general government services every year¹⁸. The services produced by general government are non-market services and have no economically-significant market price. Because there are no market prices, the convention is to value non-market services in the national accounts at cost. The prices that countries are to collect for general government services are the prices of the inputs used in their production.

Not all inputs are priced. Only the most important – labour – is priced. Participating countries are required to provide the annual compensation of employees that general government pays to a cross-section of occupations in general public services, public health services and public education services. The compensation of employees collected for an occupation is a purchaser's price for a hypothetical market transaction – that is, what general government would pay an employee of a specified seniority working in the occupation. In principle, the price is to be computed using general government salary scales. In practice, it is often extracted from the payroll.

- 2.20. In addition to the prices and adjustment factors enumerated above, participating countries have to provide expenditure weights, annual average exchange rates and mid-year resident population for the reference year. The expenditure weights are discussed in Chapter 3. The exchange rates should be annual averages of daily market or central rates such as those published by the European Central Bank or the International Monetary Fund. The mid-year resident population should refer to the economic territories covered by the GDPs of the participating countries. Countries report their expenditure weights directly to Eurostat or the OECD. Data on their exchange rates and population are extracted by Eurostat or the OECD from in-house data bases.

- 2.21. The complete set of data that participating countries have to supply Eurostat or the OECD for a comparison is itemised in Box 2.1. Fifteen surveys are identified: ten to collect prices and five to collect a miscellany of data other than price data. The surveys are divided by frequency of collection and by organiser. These are explained in more detail in Part II.

PART II: ORGANISATION

Background

- 2.22. When the Eurostat-OECD PPP Programme was established in the early 1980s, only OECD Member Countries were covered, benchmark comparisons were made every five years and all data were collected over an 18 month period centred on the reference year. Organisation was straightforward. Eurostat was responsible for those OECD Member Countries that were also Members of the European Union (EU) and the OECD was responsible for those OECD Member Countries that were not. This division of responsibilities has changed with time mainly as the result of the enlargement of the European Union and the participation in the Programme of countries that are not members of either the European Union or the OECD. The evolution of Eurostat and OECD responsibilities is charted in Annex I. The Annex gives a brief history of the Programme.¹⁹

- 2.23. The frequency of data collections and comparisons has changed as well. After the 1990 comparison,

Box 2.1: Data requirements of Eurostat and OECD comparisons⁽¹⁾

Data	Survey	Frequency of collection		Organised by
		Eurostat	OECD	
Prices	01. Food, drinks and tobacco	Every three years	Every three years	Group leader
	02. Personal appearance	..	..	..
	03. House and garden	..	..	..
	04. Transport, restaurants and hotels	..	..	..
	05. Services	..	..	..
	06. Furniture and health	..	..	..
	07. Equipment goods	Every two years	..	Centre ⁽²⁾
	08. Construction projects	..	..	..
	09. Actual and imputed rents ⁽³⁾	Every year	..	..
	10. Compensation of employees	..	..	..
Expenditure weights	11. Final expenditure on GDP	..	..	..
Other	12. Annual average exchange rates	..	..	..
	13. Mid-year resident population	..	..	..
	14. Temporal adjustment factors	..	Every year	..
	15. Spatial adjustment factors ⁽⁴⁾	Every six years		..

⁽¹⁾ Eurostat comparisons are made every year; OECD comparisons every three years. ⁽²⁾ Eurostat and/or the OECD. ⁽³⁾ Countries with small or unrepresentative rent markets provide data on the housing stock instead of prices. ⁽⁴⁾ Not required for OECD comparisons as countries report national prices.

Eurostat and the OECD adopted the “rolling benchmark approach”. With this approach, data collection is continuous, but cyclical, with each cycle taking three years. The advantages of the approach are that it reduces response burden on participating countries, it enables them to include the price surveys in their regular programme of data collection and it fosters continuity of expertise in their national statistical agencies.²⁰ Also, by “rolling” data collected in one year over to the next year, it is possible to make “benchmark” comparisons annually. Since 1990, Eurostat has been making comparisons every year, while the OECD, for reasons explained later, has been making comparisons every three years. The next joint comparison will be 2005.

Rolling benchmark approach

2.24. The rolling benchmark approach facilitates annual comparisons as follows. The starting point is the matrix of basic heading PPPs by participating country for the reference year, *t*. In the subsequent year, *t*+1, some of the basic heading PPPs are replaced by new PPPs calculated using prices collected during *t*+1, while the basic heading PPPs that have not been replaced are advanced to *t*+1 using temporal adjustment factors specific to these basic headings. All the basic heading PPPs in the matrix now refer to *t*+1. Aggregating the matrix with expenditure weights for *t*+1 gives PPPs and real final expenditures for each level of aggregation up to the level of GDP with which a comparison can be made for the new reference year, *t*+1. By continuing the cycle of replacement, extrapolation and aggregation through *t*+2, *t*+3, *t*+4, etc., comparisons can be made for the reference years *t*+2, *t*+3, *t*+4, etc. As over a third of all basic heading PPPs are recalculated each year, all the basic heading PPPs in the matrix for any

given reference year have been replaced, at least once, during the 36 months prior to its close. The approach is described in more detail in Box 2.2

2.25. The rolling benchmark approach requires continuous price collection with part of the product lists being priced each year, regular reporting of temporal adjustment factors at the level of the basic heading and annual provision of expenditure weights. Participating countries generally have temporal adjustment factors of sufficient detail and reliability with which to extrapolate the PPPs for consumer goods and services. But most of them do not have suitable temporal adjustment factors with which to extrapolate the PPPs for actual and imputed rents, for government services and for capital goods. One solution is to price actual and imputed rents, government services and capital goods every year. This was the solution originally adopted by Eurostat. But pricing capital goods annually is expensive. It was to avoid this cost that the OECD decided to make its comparisons every three years – that is, each time there has been a complete turnover in basic heading PPPs. More recently, to reduce costs, Eurostat has adopted another solution – namely, the pricing of capital goods once every two years and estimating the PPPs for the interim year by interpolation.

The 2005 comparison

2.26. The Eurostat-OECD comparison for 2005 will cover the 45 countries listed in Box 2.3. Eurostat is co-ordinating the collection of data in 31 countries: 25 EU Member States, three Member Countries of the European Free Trade Area (EFTA) and three EU Candidate Countries. The OECD is co-ordinating

Box 2.2: Rolling benchmark approach

Data	Survey	Reference year			
		2005	2006	2007	2008
Prices	01. Food, drinks and tobacco	2003-1	2006-1	2006-1	2006-1
	02. Personal appearance	2003-2	2006-2	2006-2	2006-2
	03. House and garden	2004-1	2004-1	2007-1	2007-1
	04. Transport, restaurants and hotels	2004-2	2004-2	2007-2	2007-2
	05. Services	2005-1	2005-1	2005-1	2008-1
	06. Furniture and health	2005-2	2005-2	2005-2	2008-2
	07. Equipment goods	2005	2005, 2007	2007	2007, 2009
	08. Construction projects	2005	2005, 2007	2007	2007, 2009
	09. Actual and imputed rents	2005	2006	2007	2008
	10. Compensation of employees	2005	2006	2007	2008
Expenditure weights	11. Final expenditure on GDP	2005	2006	2007	2008
Other	12. Annual average exchange rates	2005	2006	2007	2008
	13. Mid-year resident population	2005	2006	2007	2008
	14. Temporal adjustment factors	2003, 2004, 2005	2004, 2005, 2006	2005, 2006, 2007	2006, 2007, 2008
	15. Spatial adjustment factors	2003, 2004, 2005	2004, 2005, 2006	2005, 2006, 2007	2006, 2007, 2008

Italics = data collected for the reference year. Shading = data from a previous or subsequent reference year.

- The table shows the data on which the comparisons for 2005, 2006, 2007 and 2008 will be based. Each comparison uses either new data collected for the reference year or data "rolled over" from a previous or subsequent reference year. For example, the PPPs and real final expenditures for 2005 will be calculated using:
 - The national or capital city prices for the consumer products covered by surveys 01 and 02 that were collected respectively in the first and second halves of 2003. The capital city prices have been converted to national prices with the spatial adjustment factors reported in 2003 for the two surveys. The national prices have been converted to annual prices with the temporal adjustment factors for 2003. The annual prices have been used to calculate PPPs for 2003 for the basic headings covered by the two surveys. These basic heading PPPs for 2003 have been advanced to 2005 with the temporal adjustment factors for 2004 and 2005.
 - The national or capital city prices for the consumer products covered by surveys 03 and 04 that were collected respectively in the first and second halves of 2004. The capital city prices have been converted to national prices with the spatial adjustment factors reported in 2004 for the two surveys. The national prices have been converted to annual prices with the temporal adjustment factors for 2004. The annual prices have been used to calculate PPPs for 2004 for the basic headings covered by the two surveys. These basic heading PPPs for 2004 have been advanced to 2005 using the temporal adjustment factors for 2005.
 - The national or capital city prices for the consumer products covered by surveys 05 and 06 that were collected respectively in the first and second halves of 2005. The capital city prices have been converted to national prices with the spatial adjustment factors reported in 2005 for the two surveys. The national prices have been converted to annual prices using the temporal adjustment factors for 2005. The annual prices have been used to calculate PPPs for 2005 for the basic headings covered by the two surveys.
 - The national annual (April) 2005 prices of the capital goods covered by surveys 07 and 08 that were collected in Q2 2005.
 - The national annual (2005) prices for rents, or data on housing stock if rent market small or unrepresentative, from survey 09 that were reported in 2006. The national annual (2005) prices for compensation of employees from survey 10 that were reported in 2006.
 - The final expenditure on GDP (survey 11) for 2005 collected in Q3 2006 for the preliminary calculation and again in Q3 2007 for the final calculation. Average annual exchange rates (survey 12) and mid-year resident population (survey 13) for 2005 that were reported in 2006.
- The PPPs and real final expenditures for 2006, 2007 and 2008 will be similarly calculated except that:
 - In 2006, new prices will be collected for the consumer products covered by surveys 01 and 02 and the basic heading PPPs calculated with these prices will replace the corresponding PPPs based on prices collected in 2003. The basic heading PPPs for capital goods will be estimated by interpolation using the basic heading PPPs for 2005 and the basic heading PPPs for 2007.
 - In 2007, new prices will be collected for the consumer products covered by surveys 03 and 04 and the basic heading PPPs calculated with these prices will replace the corresponding PPPs based on prices collected in 2004. The basic heading PPPs for capital goods will be calculated using the prices collected by surveys 07 and 08 in Q2 2007.
 - In 2008, new prices will be collected for the consumer products covered by surveys 05 and 06 and the basic heading PPPs calculated with these prices will replace the corresponding PPPs based on prices collected in 2005. The basic heading PPPs for capital goods will be estimated by interpolation using the basic heading PPPs for 2007 and the basic heading PPPs for 2009.

the data collection in 14 countries: seven non-European OECD Member Countries and seven other countries that are mostly European. The cycle of price surveys for the 2005 comparison started in 2003 and will finish in 2005. But data collection will not be complete until the third quarter of 2007 when countries report their final detailed estimates of final expenditure on GDP for 2005. Preliminary results of the comparison will be released at the end of 2006. Final results will be released at the end of 2007.

2.27. There are ten price surveys to a cycle: the six surveys that cover consumer goods and services and take place once every three years; the two surveys that cover capital goods and take place once every two years; and the two surveys, one covering actual and imputed rents, the other covering compensation of employees paid to producers of government services, that take place every year.²¹ Before each price survey for consumer products and each price survey for capital goods, there are meetings at which participating countries, together with Eurostat and the OECD, select the products to be priced during the survey. An essential input into the selection process is the pre-survey that participating countries are required to conduct before the meeting to familiarise themselves with the situation in their domestic markets with regard to the products about to be surveyed. The meetings have a direct bearing on the quality of the price collections carried out by countries.

2.28. Experience shows that the effectiveness of these meetings depends on the number of products to be considered, the number of countries at the meeting and the thoroughness of the pre-survey conducted by countries prior to the meeting. The three variables interact. As the number of countries increases, the number of products increases. As the number of products increases, the quality of pre-survey work decreases. Experience also shows that this interaction can be a serious problem for meetings held to select consumer products where there are a large number of items to be discussed. (It is much less of a problem for meetings held to select capital goods where the number of products to be considered is much smaller.)

2.29. When the number of countries Eurostat co-ordinated rose from 21 to 31 in 1999, it was clear that meetings to select consumer products involving 31 countries reviewing some four to five hundred products per survey would be unmanageable and detrimental to the quality of the comparison. For the purposes of organising the surveys of consumer prices, Eurostat divided the 31 countries into three groups with one of the countries in the group acting as group leader. Box 2.4 gives the composition of the groups and the group leaders for the 2005 comparison. The Box also shows that the 14 countries co-ordinated by the OECD are divided into two groups: one covering mainly its non-European Member Countries with the OECD as group leader, the other covering the countries of the Western Balkan Region with Slovenia as group leader. This second group is to all intents and purposes a subgroup of the Central group of which Slovenia is a member.

2.30. Group leaders are only responsible for the six price surveys dealing with consumer goods and services. Details of the coverage of each of these surveys can be found in Annex III. All other surveys are the responsibility of the "Centre" – that is, Eurostat and/or the OECD.

Linking groups

2.31 The country groups are organised by the group leaders to conduct their own surveys of consumer prices. Although prices are collected according to a common set of guidelines and following a common timetable, the products selected for pricing are not common to all groups. Each group is, essentially, a separate comparison. Their data sets need to be combined before a comparison covering all participating countries can be made. There are two standard means of doing this. Either they can be combined using "bridge countries" – that is, when groups of countries conducting separate comparisons are linked through countries that have participated in more than one of the comparisons. Or they can be combined using "core products" – that is,

Box 2.3: Countries participating in the 2005 round of price surveys

EUROSTAT (31 countries)	15 EU Member States (pre-May 2004) ⁽¹⁾	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom
	10 EU Member States (post-May 2004)	Cyprus, Czech Republic ⁽¹⁾ , Estonia, Hungary ⁽¹⁾ , Latvia, Lithuania, Malta, Poland ⁽¹⁾ , Slovak Republic ⁽¹⁾ , Slovenia
	3 Members of EFTA ⁽¹⁾⁽²⁾	Iceland, Norway, Switzerland
	3 EU Candidate Countries ⁽²⁾	Bulgaria, Romania, Turkey ⁽¹⁾
OECD (14 countries)	7 Non-European OECD Member Countries ⁽¹⁾	Australia, Canada, Japan, Korea, Mexico, New Zealand, United States
	7 Other countries	Albania, Bosnia and Herzegovina, Croatia ⁽²⁾⁽³⁾ , Israel, FYROM, Russian Federation, Serbia and Montenegro

⁽¹⁾ OECD Member Countries. ⁽²⁾ Referred to in the text as "EU associated countries". ⁽³⁾ Became an EU Candidate Country in June 2004.

when groups of countries conducting separate comparisons are linked through a compulsory minimum list of products common to all comparisons. Both these approaches have been employed by other comparisons programmes with varying degrees of success, but they are not without their limitations. Results of comparisons that have been linked by a bridge country are not “bridge country invariant” – in other words, they are influenced by the choice of bridge country. Results of comparisons that have been combined by a set of core products can be biased if the products are not equally representative of all countries participating in the comparisons.

- 2.32. Eurostat-OECD comparisons do not use the bridge country approach. Nor do they strictly apply the core product approach. A variant, one that allows the representativity of products to be taken into account, is used instead. As with the core product approach, the country groups are linked at the product level through products that “overlap” the groups, but with two important differences. First, an “overlap product” is not necessarily common to all groups. It is common to two groups as a minimum. Second, it is not compulsory for participating countries to price overlap products. Countries are free to choose which products they price. They are of course encouraged to price overlap products. For them to do so, it is essential that product lists include a sufficient number of representative and comparable products that overlap the country groups. This requires close collaboration between group leaders as discussed in Chapter 4.

Responsibilities

- 2.33. Eurostat-OECD comparisons are a co-operative endeavour between three parties: Eurostat and the OECD as the Centre, the national statistical institutes of the group leaders and the national statistical institutes of participating countries. Each party has its own set of tasks and responsibilities, but tasks and responsibilities are often shared. For example, the preparation of product lists for the price surveys covering consumer goods and services involves all three parties, while the validation of the prices collected by these surveys is an iterative process between group leaders and group members.
- 2.34. The responsibilities of the three parties are listed in Box 2.5. With one exception, the list does not distinguish between tasks that are actually carried out by the parties and tasks, such as the pricing of capital goods or the calculation of comparison results, that parties outsource (because it is the task and not the responsibility that is outsourced). The exception to this is the division of responsibilities between the Centre and the group leaders or, more specifically, between Eurostat and the leaders of the Northern, Central and Southern groups. Ultimately, it is Eurostat that is accountable for the tasks and responsibilities delegated to these group leaders. To a lesser degree, this also holds for the OECD and the leader of OECD group II. But not for OECD group I for which the OECD is both the Centre and group leader.

Box 2.4: Country groups and group leaders for 2005 comparison

EUROSTAT			OECD	
<u>Northern group</u>	<u>Central group</u>	<u>Southern group</u>	<u>Group I</u>	<u>Group II</u>
Denmark	Austria	Bulgaria	Australia	Albania
Estonia	Belgium	Cyprus	Canada	Bosnia and Herzegovina
Finland	Czech Republic	France	Israel	Croatia
Iceland	Germany	Greece	Japan	FYROM
Ireland	Hungary	Italy	Korea	Serbia and Montenegro
Latvia	Luxembourg	Malta	Mexico	
Lithuania	Netherlands	Portugal	New Zealand	
Norway	Poland	Romania	Russian Federation	
Sweden	Slovak Republic	Spain	United States	
United Kingdom	Slovenia	Turkey		
	Switzerland			
<u>Group leader</u>	<u>Group leader</u>	<u>Group leader</u>	<u>Group leader</u>	<u>Group leader</u>
Finland	Austria	Portugal ⁽¹⁾	OECD	Slovenia

⁽¹⁾ Italy was the leader of the Southern group from 1999 to 2003. Portugal took over from Italy in 2004.

Box 2.5: Division of responsibilities

Centre
<p>1. General:</p> <ul style="list-style-type: none"> • Plan, organise and realise the Eurostat-OECD PPP Programme. • Ensure the accuracy, relevance and timeliness of the price and volume comparisons. • Prepare and update documentation on methods and procedures. • Initiate and carry out methodological development. • Develop and update the information technology tools used by the Centre, group leaders and participating countries. • Calculate, aggregate and validate PPPs for GDP and its component expenditures for reference years. • Disseminate comparison results (PPPs and volume and price level indices) through print and electronic media. • Explain results, and the use and abuse of results, to users and potential users. • Convene annual meetings with participating countries to discuss methodology, work programme, etc. <p>2. Price surveys for consumer goods and services (other than rents):</p> <ul style="list-style-type: none"> • Convene planning meetings with group leaders to ensure they follow a common approach to the surveys. • Participate in group meetings convened by group leaders to ensure a uniform approach by country groups to the surveys. • Convene overlap meetings with group leaders to ensure a sufficient number of overlap products on the final product lists. • Prepare and dispatch to participating countries booklets with pictures of products specified in the final product lists. • Validate average survey prices received from group leaders across country groups. • Adjust average survey prices to national annual prices using the spatial and temporal adjustment factors supplied by participating countries. • Calculate PPPs from the national annual prices and validate the PPPs calculated. <p>3. Prices surveys for capital goods:</p> <ul style="list-style-type: none"> • Convene meetings with participating countries to plan and organise the pre-surveys and the surveys. • Prepare and dispatch to participating countries draft product lists for the pre-surveys. • Prepare and dispatch to participating countries final product lists for the price surveys • Validate national annual (April) average prices supplied by participating countries. • Calculate PPPs from the national annual prices and, in consultation with participating countries, validate the PPPs calculated. <p>4. Other surveys (actual and imputed rents, government services, final expenditure on GDP):</p> <ul style="list-style-type: none"> • Prepare questionnaires and supporting documentation and send to participating countries. • Validate the national annual average prices supplied by participating countries (housing services and government services). • Calculate PPPs from the national annual prices and validate the PPPs calculated. • Validate the detailed estimated of final expenditure on GDP supplied by participating countries. • Extract data on exchange rates and mid-year resident population from in-house data bases
Group leaders
<p>1. Preparation of the price surveys of consumer goods and services (other than rents):</p> <ul style="list-style-type: none"> • Participate in planning meetings convened by the Centre for group leaders. • Prepare and dispatch to group members pre-survey questionnaires. • Visit group members either before or during their pre-surveys to ensure uniformity of approach and understanding. • Prepare draft group product lists for discussion, modification and approval at group meetings. <p>2. Finalisation of product lists:</p> <ul style="list-style-type: none"> • Convene group meetings with group members, other group leaders and the Centre. • Prepare provisional group product lists as agreed at group meetings for review at overlap meetings. • Participate in the group meetings convened by other group leaders. • Participate in overlap meetings convened by the Centre for group leaders. • Prepare final product lists for the group on the basis of discussions at overlap meetings. <p>3. Co-ordination of price surveys:</p> <ul style="list-style-type: none"> • Dispatch final group product list to group members together with survey-specific guidelines and survey timetables. • Visit group members during their price surveys to ensure uniformity in price collecting procedures. <p>4. Validation of survey results:</p> <ul style="list-style-type: none"> • Together with the group members edit the individual price observations. • Obtain written approval from group members of the edited individual price observations. • Calculate average survey prices from the edited individual price observations. • Submit validated individual price observations and the average survey prices to the Centre

Box 2.5: Division of responsibilities, contd.

Participating countries
<p>1. Price surveys for consumer goods and services (other than rents):</p> <ul style="list-style-type: none"> • Participate in the preparation of product lists for the surveys: <ul style="list-style-type: none"> ○ Conduct pre-surveys, ○ Complete pre-survey questionnaires, ○ Attend group meetings. • Conduct the surveys in the capital city (and other pricing locations if national prices are reported). • Carry out intra-country editing of the prices collected. • Submit the individual price observed and their averages to the Group leader for validation. • Participate in the validation of the price data at the country level, at the group level and at the overall level. • Provide the Group leader with a summary report on each consumer price survey. • Provide the Centre with spatial adjustment factors after each survey if capital city prices reported. • Provide the Centre with temporal adjustment factor for all surveys after the close of each year. <p>2. Price survey for actual and imputed rents:</p> <ul style="list-style-type: none"> • Conduct national price surveys if rent market large and representative. • Submit the national annual average prices collected to the Centre for validation. • Participate in the validation of the price data at the country level and at the overall level. • Provide quantitative and qualitative data on housing stock if rent market small and unrepresentative. <p>3. Price survey for compensation of employees paid to producers of government services:</p> <ul style="list-style-type: none"> • Conduct national price surveys. • Submit the national annual average prices collected to the Centre for validation. • Participate in the validation of the price data at the country level and at the overall level. <p>4. Prices surveys for capital goods:</p> <ul style="list-style-type: none"> • Participate in the preparation of product lists for the price surveys: <ul style="list-style-type: none"> ○ Conduct pre-surveys, ○ Attend meetings convened by the Centre. • Conduct national price surveys. • Submit the average prices collected to the centre for validation. • Participate in the validation of the price data at the country level and at the overall level <p>5. Final expenditure on GDP:</p> <ul style="list-style-type: none"> • Provide the Centre with detailed expenditures for reference year t in t+1 (preliminary estimates) and t+2 (final estimates). <p>6. Other:</p> <ul style="list-style-type: none"> • Participate in the annual meetings convened by the Centre to discuss methodology, work programme, etc.

- ¹ *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.
- ² *European System of Accounts 1995*, Eurostat, Luxembourg, 1996.
- ³ The PPPs for basic headings are unweighted averages, there being no expenditure weights below the basic heading level.
- ⁴ Prices are not collected for exports and imports of goods and services, nor are they collected for purchases made by households abroad.
- ⁵ From the seller's point of view, the market price is the basic price because that is the amount he will actually receive. From the buyer's point of view, the market price is the purchaser's price because that is the amount he will actually pay. The prices required for Eurostat-OECD comparisons are those from the buyers' viewpoint – that is, purchasers' prices.
- ⁶ For completeness it should be noted that market prices do not include the cost of, or interest on, any credit obtained by the purchaser to facilitate the purchase. This is still so even when the credit is provided by the seller.
- ⁷ Actual or real price differences arise when identical or equivalent products are sold in the same market or in different markets at different prices. They are the differences in price that, among other things, are due to imperfections in the market with purchasers having neither the knowledge nor the mobility to buy at the lowest price.
- ⁸ Apparent or false price differences arise when products that are neither identical nor equivalent are considered to be comparable and the differences in their prices are treated as actual price differences and not, as they should be, as price differences caused by differences in quality.
- ⁹ Countries participating in Eurostat-OECD comparisons may treat specified bands and models as indicative when they price equipment goods. Otherwise, as a general rule, they are expected to price the brand and model specified.
- ¹⁰ When matching products and deciding whether or not the one observed is a close substitute to the one specified, it is not just the number of parameters not matching that needs to be taken into account, but also the degree to which they differ.
- ¹¹ The common list of well-defined goods and services from which participating countries make a selection of products to price. The "common basket of precisely-defined goods and services" referred to in paragraph 2.4.
- ¹² The OECD follows a similar procedure for motor vehicles. Otherwise countries participating in OECD comparisons are required to report purchasers' prices that take account of discounts, tips and non-reimbursable VAT.
- ¹³ All goods and services that households actually consume to satisfy their individual needs irrespective of purchaser. See paragraph 3.12 of Chapter 3.
- ¹⁴ Except actual and imputed rents for which countries have to report either national annual purchasers' prices or, if their rent market is small or unrepresentative, details of their housing stock. The data on the quantity and quality of the housing stock are used to estimate volumes for housing services directly as explained in the Annex to Chapter 4.
- ¹⁵ Consumer price index.
- ¹⁶ Once every three years in OECD comparisons.
- ¹⁷ See paragraph 6.48 in Chapter 6 for a fuller explanation. Mid-year (July) prices are collected for OECD comparisons.
- ¹⁸ Once every three years in OECD comparisons.
- ¹⁹ Since 1990, eight OECD Member Countries have left OECD comparisons for Eurostat comparisons, either because they became candidates for EU Membership - Finland, Sweden, Czech Republic, Hungary, Slovak Republic and Turkey - or because they decided to harmonise their statistics with those of the European Union – Norway and Iceland. Currently, 23 of the 30 Member Countries of OECD are co-ordinated by Eurostat. All but four – Iceland, Norway, Switzerland and Turkey - are EU Member States.
- ²⁰ The approach also has advantages for new countries joining the Programme. Either they can ease themselves in gradually over three years or they can adopt a "catch up" strategy by completing the survey cycle over a shorter period.
- ²¹ Countries participating in OECD comparisons conduct the price surveys for capital goods, actual and imputed rents and compensation of employees paid to the producers of government services once every three years, in the last year of the survey cycle.