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Purchasing Power Parities**

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Data requirements

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Data requirements

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2.1 Introduction

2.1 Eurostat and the OECD make international volume comparisons of GDP from the expenditure side. With the exception of education and a part of housing, the volumes are estimated indirectly with 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 and OECD comparisons start as price collecting exercises, though other data, such as data on GDP 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. It starts by defining the three principle concepts: consistency, comparability and representativity. It explains why volume comparisons are given priority over price comparisons and why the three concepts are not fully compatible in practice. It finishes by identifying the actual data that participating countries are required to supply.

2.2 The organisation of the comparisons and their data collections are not covered in this chapter. Nor are pricing guidelines included. Organisation and data collection are described in Chapter 3. Pricing guidelines are to be found in the chapters dealing with the pricing of specific types of products: Chapter 5 for consumer goods and services, Chapter 6 for housing, Chapters 7 and 8 for health and education, Chapter 9 for collective services and Chapters 10 and 11 for capital goods. Details of the expenditure classification are not presented here either. They are available in Chapter 4. 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 the component expenditures of GDP, and that it comprises 206 product groups or basic headings.³

2.3 Note that, throughout this chapter and the rest of the manual, the term *product group*, which was used in Chapter 1, will be replaced by *basic heading*. The basic heading is defined as the lowest level of aggregation in the expenditure breakdown for which PPPs are calculated.⁴ Ideally, a basic heading covers a group of similar well-defined goods or services. In practice, the coverage of a basic heading is often 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 found to indicate the relative importance of the products priced for the basic heading.

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 purchasers' prices and a detailed breakdown of national expenditure. The prices should refer to a selection of products chosen from a common basket of precisely-defined goods and services. The 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 – the *reference year*. And both should cover the whole range of final goods and services included in GDP. Annual average exchange rates and the annual average resident populations for the reference year are also required.

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 for basic headings are usually unweighted averages because there are no weights at the product level. But the PPPs at the aggregation levels are weighted averages. They are obtained using the final expenditures that participating countries have

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 By 2014, most if not all participating countries will have switched to one of the later versions of these two complementary systems of national accounts: either the SNA 2008 or the ESA 2010. The expenditure classification will be revised to take account of the changes required by the later versions as well as the changes in the classifications underlying the expenditure classification and the changes in methodology that are being introduced into the PPP Programme. The revision will affect the coverage of the basic headings as well as their number.

⁴ See PPP Regulation, article 3(e) in Annex II.

supplied for the basic headings constituting the aggregates as weights. The PPPs for basic headings and aggregates are used to convert national expenditures into real expenditures. 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.⁵ The population data are used to compute real expenditures per capita.

2.2 Consistency with national accounts

2.6 National expenditures are in national currencies at national price levels. Real 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 GDP and its component expenditures. 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. To estimate the volumes 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 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.

2.8 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 transactors⁶. 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.⁷

2.9 Adherence to the consistency rule requires countries participating in Eurostat and 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 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 collect 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

⁵ Prices are not collected for exports and imports of goods and services, nor are they collected for purchases made by households abroad.

⁶ 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 and OECD comparisons are those from the buyers' viewpoint – that is, purchasers' prices.

⁷ 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 even when the credit is provided by the seller.

non-deductible VAT in the case of capital goods. Subsequently, Eurostat adjusts the PPPs calculated with the prices reported by countries to make them consistent with the corresponding expenditure.⁸ How this is done is explained later in the manual.⁹

- 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 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 and OECD comparisons are required to report total or composite prices for all final expenditures to which they apply.

2.10 Both exceptions illustrate that it is not always possible to observe consistency and obtain both comparable volume measures and comparable price measures at the same time. In such cases, Eurostat and the OECD give primacy to comparable volume measures because achieving these are seen as the first objective. But, as explained in Chapter 1, PPPs are also used extensively to compare price levels across countries. Users should bear in mind that the data are not designed primarily for that purpose.

2.3 Comparability and representativity

2.11 Besides being consistent with their final expenditures, the prices reported by participating countries must be for items that are *representative* of their expenditures 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 can result in either an overestimation or underestimation of price levels and a corresponding underestimation or overestimation of volumes. Eurostat and OECD comparisons employ methods for selecting products and for calculating PPPs that are designed to respect both requirements.

⁸ The OECD follows a similar procedure for motor vehicles; countries provide list prices without discounts. Otherwise countries participating in OECD comparisons are required to report purchasers' prices that take account of discounts, tips and non-reimbursable VAT.

⁹ See Chapter 5, Section 5.5.1, for tips and Chapter 10, Section 10.8, and Chapter 11, Section 11.8, for non-deductible VAT. No adjustment is made for discounts on motor vehicles.

2.3.1 Comparability

2.12 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.¹⁰ 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.¹¹

2.13 Comparability is obtained in Eurostat and 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.¹²

2.14 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.¹³ 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 rematching the prices reported - an ex post refining of the specifications - or by discarding them.

2.15 Product specifications for Eurostat and OECD comparisons are defined using structured product descriptions (SPDs). These standardise the product specifications for different types of products so that all specifications for a specific product type are uniformly defined and list the same technical and transactional characteristics that price collectors have to match. SPDs can cover individual products such as refrigerators or groups of products such as vegetables. Their purpose is to improve the precision of the specifications and to simplify price collection. The principal characteristics listed in the SPDs are based on the experience of previous surveys substantiated by the pre-surveys carried out to update product lists. SPDs are described in more detail in Chapter 5, Section 5.4.4.

¹⁰ 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.

¹¹ 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.

¹² Countries participating in Eurostat and OECD comparisons may treat specified brands and models as indicative when they price equipment goods. Otherwise, as a general rule, they are expected to price the brand and model specified.

¹³ 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 their importance and the degree to which they differ.

2.3.2 Representativity

2.16 Representativity is a concept that relates to the relative importance of individual products within a basic heading where a product's importance is determined by its share of expenditure on the basic heading. It is a necessary concept because there are usually no explicit expenditure weights below the basic heading level and without such expenditure weights the relative importance of the various products priced for a basic heading has to be determined by other means. Products that are representative generally have a lower price level than products that are unrepresentative and, unless this is taken into account when calculating the PPPs for a basic heading, the PPPs can be biased. To avoid this, countries participating in Eurostat and OECD comparisons are required to do three things. The first is to ensure that there are representative products they can price in each basic heading when the product list¹⁴ is being finalised prior to price collection. The second is to price both representative products and unrepresentative products for a basic heading. The third is to identify which of the products they have priced within a basic heading are representative when reporting their prices.¹⁵

2.17 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, it is among the most important items purchased, in terms of relative total expenditure within the basic heading¹⁶. Usually, this implies that its price level is close to the average for all products within 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 considered 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.

2.18 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.

2.19 Furthermore, a distinction has to be made between the products in the universe covered by the basic heading and the products in the sample selected for its product list. The products in the sample represent a wider group of products in the universe. They have been chosen to represent the price level of the wider group. It is the wider group of products that need to have an important share of expenditures within the basic heading. It is not required that the individual products of the sample are among the volume sellers for the group, even though they often are. It is just necessary that they are sold in sufficient quantities for their price levels to be typical for the product group they represent. For this reason it is possible that they can appear to be unrepresentative when their volume of sales is compared to the volume of sales of other products in the sample.

¹⁴ 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.

¹⁵ For the history on the introduction of the representativity concept in the Eurostat-OECD exercise, see "On the estimation of purchasing power parities on the basic heading level", Hugo Krijnse Locker, Eurostat, *Review of Income and Wealth*, 1984, <http://www.roiw.org/1984/135.pdf>

¹⁶ See PPP Regulation, article 3(k) in Annex II.

2.20 For example, take the basic heading *wine*. It consists of three product groups - *still wine*, *sparkling wine* and *fortified wine*. Assume that the shares of household expenditure on these three product groups in a country are 75 per cent, 20 per cent and 5 per cent respectively. Assume as well that the country has elected to price two still wines and one sparkling wine from the sample of wines selected for the basic heading's product list. It is not inconceivable that the sparkling wine priced could have considerably larger sales than either of the two still wines priced, thereby suggesting that it, and not the still wines, should be designated as representative. Clearly this is incorrect when the universe of the basic heading is considered. Still wine accounts for 75 per cent of household expenditure on the basic heading, and providing the price levels of the still wines selected are representative of the average price level for still wine, it is the still wines and not the sparkling wine that should be identified as being representative. The sparkling wine priced could also be representative, but that is not the point being made here. Representativity should be considered within the wider perspective of the basic heading's universe and not within the narrower context of the sample selected for its product list.

2.21 Representativity is thus based on two criteria: the importance of a product in terms of its share of expenditure on the basic heading and the closeness of its price level to the average for all products within the basic heading. Identifying representative products by either one of these criteria is not easy in practice. The criterion, "its price level is close to the average for all products within the basic heading", is difficult to apply unless the average price level for the basic heading is known. Usually it is not known until the PPPs for the basic heading are calculated. But representative products have to be identified before the PPPs are available. Participating countries are required to propose representative products for the product lists, they are required to price a mixture of representative and non-representative product during price surveys and, prior to the calculation of the PPPs, they are required to indicate which of the products they priced are representative. The other criterion - that representative products are typically volume sellers and, depending on the product, generally available - appears easier to apply initially but it too has problems such as the absence of ready access to information on market shares. Moreover, defining a product as representative by one of these criteria alone is not correct. The two should be considered in parallel but with different emphasis at different phases of the comparison. Importance has priority when establishing the product list and selecting products to price. Closeness to the average price level of the basic heading has priority when prices are validated. These issues are considered in more detail in Chapter 5, Sections 5.5.6 and 5.6.2.

2.3.3 Equi-representativity

2.22 It has been mentioned already that the price levels of representative products are usually lower than the price levels of unrepresentative products. 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 expenditure classification. A comparison based on a list of products that is not equally representative of all participating countries may result in biased price relatives. There is a risk that price levels for countries pricing a smaller number of representative products will be overestimated and that price levels for countries pricing a larger number of representative products will be underestimated. 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 ensures that any imbalance between countries in the number of representative products priced does not produce biased PPPs. The method requires each country to price a minimum of one representative product per basic heading. While this produces unbiased PPPs, it is unlikely to produce reliable PPPs. For that, each country needs 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.

2.23 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

negotiations and compromises 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, use SPDs to define them precisely so that other countries can identify them correctly in their markets and price comparable products.

2.4 Actual data requirements

2.24 The range of final goods and services included in GDP covers consumer goods and services, capital goods, government services, inventories, valuables, exports and imports. Countries participating in Eurostat and OECD comparisons are required to provide detailed expenditure data on all these types of products, but they are only required to price consumer goods and services, capital goods and government services. They do not have to price inventories, valuables, exports and imports.¹⁷ There are overlaps between consumer services and government services. Hospital services and education are purchased by households as well as being provided by government. For this reason they are treated separately in Eurostat and OECD comparisons. Housing is also treated separately because the data sources are different from other consumer services. Specifically, participating countries are required to price consumer products (other than housing, hospital services and education), capital goods, government services (or, more precisely, hospital services and collective services but not education), and housing (countries also have to provide quantity and quality data on the housing stock in addition to prices). Prices are not required for education, quantity and quality indicators are needed instead.

2.25 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. This means that in addition to the prices countries have to supply additional data to enable Eurostat and the OECD to adjust the prices reported to national annual purchasers' prices.

- *Consumer goods and services* (other than housing, hospital services and education): Participating countries are required to report purchasers' prices for consumer products. The prices are to be collected from a variety of outlets - corner shops, markets, supermarkets, specialist shops and shop chains, department 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.

When reporting their prices for consumer goods and services, countries are required to indicate which of the products they priced are representative.

To reduce the response burden that national statistical institutes 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 previous year $t-1$, one third to the reference year t and one third to the subsequent year $t+1$.

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 the month they were surveyed. 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 monthly temporal adjustment factors with which to convert their survey prices to annual prices. These monthly temporal factors are subsequently

¹⁷ PPPs are not calculated for inventories, valuables, exports and imports, reference PPPs are used instead. Reference PPPs are explained in Chapter 12, Section 12.3.4.

averaged to provide yearly temporal adjustment factors with which to centre the prices collected in the years t-1 and t+1 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 special surveys usually need to be conducted to establish differences in price levels between the capital city and the country as a whole. 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 consumer price index data bases, have to be reported after the end of each year.

For the services of cafés, restaurants and hairdressers, countries are required to report the price that purchasers pay for the service specified before allowing for tips. They are also required to provide the global tipping rates that their national accountants use to estimate total expenditures on these services.¹⁸ The rates are used to adjust the PPPs calculated with the prices originally reported for these services.

- *Capital goods*: Participating countries are required to report national purchasers' prices for capital goods but without VAT. Later, after the prices have been collected, countries are required to report the global rate of VAT actually paid on capital goods during the year to which the prices refer. The global rate is to be taken from their national accounts. The rates are used to adjust the PPPs calculated with national purchasers' prices originally reported for individual capital items.

There are two price surveys: one for equipment goods, the other for construction.

Prices for equipment goods are to be collected once every two years between April and June of the survey year.¹⁹ They 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. PPPs for the non-survey year t are obtained by extrapolating the PPPs for t-1 and retropolating the PPPs for t+1 and taking the geometric mean of the two.

When reporting their prices for equipment goods, countries are required to indicate which of the items they priced are representative.

Prices for construction are to be collected every year between May and July.²⁰ Prices are to be compiled for eight standard construction projects covering different types of buildings and structures. Each project is defined by a bill of quantities and each bill of quantities has two versions: a complete version specifying all the items making up the project and a reduced version specifying only the key items. Each year, four projects are priced using the complete version of their bill of quantities and four projects are priced using the reduced version of their bill of quantities. There is a two-year pricing cycle and the version priced for a project alternates from year to year. 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.

- *Collective services*: The collective services produced by government are non-market services and have no economically-significant market price. Because there are no

¹⁸ Formerly, countries were also required to report a global rate for discounts on motor vehicles and a global rate for tips to taxi drivers. This practice was discontinued. Countries found it difficult to supply global rates for discounts on motor vehicles and, as PPPs are not calculated specifically for taxis but for passenger transport by road in general, an adjustment for tips could not be made.

¹⁹ Mid-year (July) prices are collected for OECD comparisons once every three years.

²⁰ Mid-year (July) prices are collected for OECD comparisons once every three years.

market prices, the convention is to value non-market services in the national accounts at cost. The prices that countries are to collect for collective 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 every year the annual compensation of employees that government pays to a cross-section of occupations in collective services.²¹ The compensation of employees collected for an occupation is to be the average compensation paid for the occupation for a standardised number of working hours.

- *Hospital services:* The hospital services produced by government are also non-market services. They are valued at cost in the national accounts and countries are expected to price the most important input used in their production – labour. Each year participating countries are required to provide the annual compensation of employees that government pays to a cross-section of occupations in hospitals.²² As for collective services, the compensation of employees collected for an occupation is to be the average compensation paid for the occupation for a standardised number of working hours.²³
- *Housing:* Participating countries are required to report actual rents and imputed rents for a selection of apartments and houses every year. The rents reported are to be national annual averages. If their rent market is too small or unrepresentative, countries are required to provide details of their housing stock instead. The data on the quantity and quality of the housing stock are used to estimate volumes for housing services directly.
- *Education:* Participating countries are not required to collect prices for education as volumes are estimated directly. These are obtained using student numbers per educational level that Eurostat and OECD extract from the Eurostat-OECD-UNESCO education data base each year.²⁴ There are six levels: pre-primary, primary, lower-secondary, upper-secondary, post-secondary non-tertiary, and tertiary. PISA²⁵ results are used to make quality adjustments at the primary and lower-secondary levels. No quality adjustments are made at other levels.

2.26 In addition to the prices, quantities and adjustment factors enumerated above, participating countries are required to report expenditure weights for the reference year. These are discussed in Chapter 4. Also required for the reference year are each country's annual average exchange rates and annual average resident population. These data are extracted by Eurostat or the OECD from in-house data bases. The exchange rates are the annual averages of daily market or central rates compiled by the European Central Bank or the International Monetary Fund. The average annual resident populations refer to the economic territories covered by the GDPs of the participating countries.

2.27 The complete set of data that is required for Eurostat and OECD comparisons is itemised in Box 2.1 overleaf. Nineteen surveys are identified: ten to collect prices and nine to collect a miscellany of data other than price data. The surveys have different frequencies of collection. These and other details are explained in Chapter 3.

²¹ Every three years for OECD comparisons.

²² Every three years for OECD comparisons.

²³ The PPPs calculated for government-produced hospital services are also applied to hospital services purchased by households from market producers. The input-price approach currently employed for hospital services is considered unsatisfactory and an output-price approach is under development as explained in Chapter 7, Section 7.6.

²⁴ Every three years for OECD comparisons.

²⁵ Programme of International Student Assessment, <http://www.pisa.oecd.org>

Box 2.1: Data requirements of Eurostat and OECD comparisons¹

Data	Survey	Frequency of collection	
		Eurostat	OECD
Prices	01. Food, drinks and tobacco	Every three years	Every three years
	02. Personal appearance	..	..
	03. House and garden	..	..
	04. Transport, restaurants and hotels	..	..
	05. Services	..	..
	06. Furniture and health ²	..	..
	07. Equipment goods	Every two years	..
	08. Construction projects	Every year	..
	09. Compensation of government employees ³	..	..
	10 A. Housing	..	..
Quantity and quality indicators	10 B. Housing ⁴	..	..
	11. Education	..	..
Expenditures	12. GDP expenditure weights	..	..
Other	13. Spatial adjustment factors ⁵	Every six years ⁶	
	14. Temporal adjustment factors	Every year	Every year
	15. Global rate for VAT paid on capital goods ⁵	..	
	16. Global rate for tips to waiters and hairdressers ⁵	..	
	17. Annual average exchange rates	..	Every three years
	18. Annual average resident population	..	..

¹ Eurostat comparisons are made every year while OECD comparisons are made every three years.

² Pharmaceutical products, medical goods, therapeutic appliances and out-patient medical services but not inpatient medical services.

³ Collective services and government-produced hospital services.

⁴ Countries with small or unrepresentative rent markets provide data on the housing stock instead of prices.

⁵ Not required from countries participating in OECD comparisons as they report national prices with non-deductible VAT and tips as appropriate.

⁶ Spatial adjustment factors are reported each year but only for the consumer price surveys conducted in that year. They have to be updated at least once every six years.