

## Reference PPPs

In the 2005 round of the International Comparison Program (ICP), prices were not collected for goods and services representing all 155 basic headings. This decision was based on the realization that it would have been too expensive and time-consuming to collect prices for all 155 basic headings and that for some basic headings, such as gross operating surplus of government, no prices were available. For those basic headings for which no price data were collected, purchasing power parities (PPPs) were calculated using reference PPPs.

Another option was to calculate overall PPPs without taking into account the basic headings for which no prices were collected. The expenditure shares of these PPPs would be dropped, and the PPPs would be calculated only for the remaining basic headings for which prices were actually collected. However, this was not a preferred option because one of the main objectives of the program is to obtain results that reflect the full gross domestic product (GDP).

The use of reference PPPs continued into the 2011 round of the ICP.

### KINDS OF REFERENCE PPPs

Reference PPPs can be categorized as

- Price-based reference PPPs, specific or neutral
- Volume-based reference PPPs
- Exchange rate reference PPPs.

Virtually all of the reference PPPs used for the ICP are price-based rather than volume-based. They are price relatives (PPPs) that have already been calculated by comparing the prices of goods and services classified under other basic headings. Some are PPPs of basic headings that are thought to be similar to the basic headings for which no prices have been collected. "Similar" means that if the missing prices were available, their price relatives vis-à-vis other countries would be close to the PPPs of the basic headings selected. Here these PPPs are referred to as *specific* reference PPPs. They may be the PPPs for a single basic heading or an average of the PPPs for several basic headings, and in this case they will be geometric averages of the selected PPPs weighted by expenditure shares.

In other cases, the reference PPPs are the PPPs of a large group of basic headings such as all the basic headings under gross fixed capital formation for which prices have been collected. The purpose here is to ensure that the use of reference PPPs will not change the PPP for that larger group. These are known as *neutral* reference PPPs because they should have no impact on the PPPs of the larger group of basic headings.

In previous rounds of the ICP, reference PPPs were mostly based on PPPs—that is, on price relatives. In ICP 2005, Asia and Africa used reference volume relatives for the basic heading actual and imputed rentals for housing.

Exchange rate reference PPPs were used for the basic headings exports of goods and services

and imports of goods and services, as well as for the basic headings final consumption expenditure of resident households in the rest of the world and final consumption expenditure of nonresident households in the economic territory.

For exports and imports, it would be very expensive to collect prices in order to calculate PPPs in the same way as for the other items of final expenditure, and the use of exchange rates can be justified on practical grounds. For net purchases by residents abroad, however, there may be better alternatives to the use of exchange rates. In any event, it appears to be correct to regard exchange rates as reference PPPs rather than as true measured PPPs.

### REFERENCE PPPs FOR ICP 2011

The annex to this chapter lists the reference PPPs recommended by the Global Office for use

for each basic heading during the 2011 round of the ICP. It also lists the reference PPPs used in the 2005 round. Specific reference PPPs are highlighted in the table.

The distinction between specific and neutral reference PPPs is usually obvious, but there are some borderline cases. For example, the PPPs for production of education services by government are used as reference PPPs for the basic heading net taxes on production: education. Here they are shown as specific PPPs on the assumption that they have been selected because their price relatives are similar to those of the production of education services. However, it is just as likely that the PPPs for production of education services by government were selected as reference PPPs because that would have a neutral effect on the overall PPP for government education services.

## Annex

### Reference PPPs, ICP 2005 and ICP 2011

Basic heading (BH)	Reference PPP, ICP 2005	Reference PPP, ICP 2011	2005/2011	Comments	
110231.1	Narcotics	PPPs for individual consumption expenditure by households, excluding health and education BHs and reference PPP BHs	Unweighted geometric average of PPPs for tobacco (110221.1) and pharmaceutical products (110611.1)	Change (specific)	Narcotics usually include drugs similar to marijuana and qat, which can be compared to tobacco, as well as opium, cocaine, morphine, and heroin, which in turn can be compared to pharmaceuticals. If the national accounts expenditure data for this basic heading include all these forms of narcotics, then the reference PPP would be the unweighted geometric average of PPPs for tobacco (110221.1) and pharmaceutical products (110611.1). If the national accounts expenditure data include expenditures on qat only, for example, then a more suitable reference PPP would be the PPP for tobacco (110221.1).
110442.1	Miscellaneous dwelling services	PPPs for actual and imputed rents	Weighted geometric average of PPPs for maintenance and repair of the dwelling (110431.1) and water supply (110441.1)	Change (specific)	
110631.1	Hospital services	PPPs for production of health services by government without net taxes on production and receipts from sales	PPPs for outpatient health services (110620.0)	Change (specific)	
110714.1	Animal-drawn vehicles	PPPs for individual consumption expenditure by households, excluding health and education BHs and reference PPP BHs	PPPs for bicycles (110713.1)	Change (specific)	
110734.1	Passenger transport by sea and inland waterway		PPPs for transport services (110730.0), excluding reference PPP BHs	New (neutral)	This reference PPP would apply to regions where the product lists do not specify services under this basic heading.
110735.1	Combined passenger transport		Weighted geometric average of PPPs for passenger transport by railway (110731.1) and passenger transport by road (110732.1)	New (specific)	This reference PPP would apply to regions where the product lists do not specify services under this basic heading.
110736.1	Other purchased transport services		Weighted geometric average of PPPs for passenger transport by railway (110731.1) and passenger transport by road (110732.1)	New (specific)	This reference PPP would apply to regions where the product lists do not specify services under this basic heading.
110923.1	Maintenance of other major durables		Weighted geometric average of PPPs for maintenance and repair of personal transport equipment (110723.1) and repair of audiovisual, photographic, and information processing equipment (110915.1)	New (specific)	

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**Annex (Continued)**

Basic heading (BH)		Reference PPP, ICP 2005	Reference PPP, ICP 2011	2005/2011	Comments
110943.1	Games of chance	PPPs for individual consumption expenditure by households, excluding health and education BHs and reference PPP BHs	PPPs for recreational and sporting services (110941.1)	Change (specific)	
110961.1	Package holidays	Weighted average of PPPs for transport services and restaurants and hotels	Weighted geometric average of PPPs for transport services (110730) and restaurants and hotels (111100), excluding reference PPP BHs	Same	
111221.1	Prostitution	PPPs for individual consumption expenditure by households, excluding health and education BHs and reference PPP BHs	PPPs for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	Same	
111241.1	Social protection	PPPs for government final consumption expenditure, excluding social protection, recreation and culture, and housing	PPPs for collective consumption expenditure by government (140000), excluding reference BHs	Change (specific)	
111251.1	Insurance	PPPs for individual consumption expenditure by households, excluding health and education BHs and reference PPP BHs	PPPs for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	Same	
111261.1	Financial intermediation services indirectly measured (FISIM)	PPPs for individual consumption expenditure by households, excluding health and education BHs and reference PPP BHs	PPPs for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	Same	
111311.1	Purchases by residential households in the rest of the world	Exchange rates	Exchange rates	Same	
111311.2	Purchases by nonresidential households in the economic territory	Exchange rates	Exchange rates	Same	
120111.1	NPISH (nonprofit institution serving households) consumption	PPPs for government final consumption expenditure, excluding social protection, recreation and culture, and housing	PPPs for individual consumption expenditure by government (130000), excluding reference PPP BHs	Change (specific)	The proposed reference PPP should be applied only when all countries are reporting expenditures on NPISH consumption. If some countries fail to report expenditures on NPISH consumption, the NPISH expenditures for countries that have reported would be reallocated to the relevant BHs under individual household consumption, and then there would be no need for reference PPPs for NPISH consumption.
130111.1	Housing (government)	PPPs for actual and imputed rents	PPPs for actual and imputed rents (110411.1)	Same	

**Annex (Continued)**

Basic heading (BH)		Reference PPP, ICP 2005	Reference PPP, ICP 2011	2005/2011	Comments
130212.4	Hospital services (government)	PPPs for production of health services by government without net taxes on production and receipts from sales	PPPs for production of health services by government without net taxes on production and receipts from sales	Same	The proposed reference PPP should be applied only when all countries are reporting expenditures on hospital services (government). If some countries fail to report expenditures on hospital services (government), the hospital services (government) expenditures for countries that have reported would be reallocated to the relevant BHs under individual household consumption, and then there would be no need for reference PPPs for hospital services (government).
130222.1	Intermediate consumption: health services	PPPs for individual consumption expenditure by households, excluding health and education BHs and reference PPP BHs	PPPs for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	Same	
130223.1	Gross operating surplus: health services	PPPs for gross fixed capital formation	PPPs for gross fixed capital formation (150000), excluding reference PPP BHs	Same	
130224.1	Net taxes on production: health services	PPPs for production of health services by government without net taxes on production and receipts from sales	PPPs for production of health services by government without net taxes on production and receipts from sales	Same	
130225.1	Receipts from sales: health services	PPPs for production of health services by government without net taxes on production and receipts from sales	PPPs for production of health services by government without net taxes on production and receipts from sales	Same	
130311.1	Recreation and culture (government)	PPPs for government final consumption expenditure, excluding social protection, recreation and culture, and housing	Weighted geometric average of PPPs for recreational and sporting services (110941.1) and cultural services (110942.1)	Same	The proposed reference PPP should be applied only when all countries are reporting expenditures on recreation and culture (government). If some countries fail to report expenditures on recreation and culture (government), the recreation and culture (government) expenditures for countries that have reported would be reallocated to the relevant BHs under individual household consumption, and then there would be no need for reference PPPs for recreation and culture (government).
130411.1	Education benefits and reimbursements	PPPs for production of education services by government without net taxes on production and receipts from sales	PPPs for production of education services by government without net taxes on production and receipts from sales	Same	The proposed reference PPP should be applied only when all countries are reporting expenditures on education benefits and reimbursements. If some countries fail to report expenditures on education benefits and reimbursements, the education benefits and reimbursements expenditures for countries that have reported would be reallocated to the relevant BHs under individual household consumption, and then there would be no need for reference PPPs for education benefits and reimbursements.

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Annex (Continued)

Basic heading (BH)		Reference PPP, ICP 2005	Reference PPP, ICP 2011	2005/2011	Comments
130422.1	Intermediate consumption: education	PPPs for individual consumption expenditure by households, excluding health and education basic headings and reference PPP basic headings	PPPs for individual consumption expenditures by households (110000), excluding health and education BHs and reference PPP BHs	Same	
130423.1	Gross operating surplus: education	PPPs for gross fixed capital formation	PPPs for gross fixed capital formation (150000), excluding reference PPP BHs	Same	
130424.1	Net taxes on production: education	PPPs for production of education services by government without net taxes on production and receipts from sales	PPPs for production of education services by government without net taxes on production and receipts from sales	Same	
130425.1	Receipt from sales: education	PPPs for production of education services by government without net taxes on production and receipts from sales	PPPs for production of education services by government without net taxes on production and receipts from sales	Same	
130511.1	Social protection (government)	PPPs for government final consumption expenditure, excluding social protection, recreation and culture, and housing	PPPs for individual consumption expenditure by government, excluding social protection, recreation and culture, and housing	Change (specific)	
140112.1	Intermediate consumption: collective services	PPPs for individual consumption expenditure by households, excluding health and education BHs and reference PPP BHs	PPPs for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	Same	
140113.1	Gross operating surplus: collective services	PPPs for gross fixed capital formation	PPPs for gross fixed capital formation (150000), excluding reference PPP BHs	Same	
140114.1	Net taxes on production: collective services	PPPs for production of collective services by government without net taxes on production and receipts from sales	PPPs for production of collective services by government without net taxes on production and receipts from sales	Same	
140115.1	Receipts from sales: collective services	PPPs for production of collective services by government without net taxes on production and receipts from sales	PPPs for production of collective services by government without net taxes on production and receipts from sales	Same	
150121.2	Other road transport		PPPs for motor vehicles, trailers, and semitrailers (150121.1)	New (specific)	
150122.1	Other transport equipment	PPPs for gross fixed capital formation	PPPs for machinery and equipment (150100), excluding reference PPP BHs	Change (neutral)	
160111.1	Opening value of inventories	Weighted average of PPPs for consumer goods and equipment goods	PPPs for goods	Same	Refer to the ICP Classification for goods BHs
160111.2	Closing value of inventories	Weighted average of PPPs for consumer goods and equipment goods	PPPs for goods	Same	Refer to the ICP Classification for goods BHs
160211.1	Acquisitions of valuables	PPPs for jewelry, clocks, and watches	Exchange rates	Change (specific)	

## Annex (Continued)

Basic heading (BH)		Reference PPP, ICP 2005	Reference PPP, ICP 2011	2005/2011	Comments
160211.2	Disposals of valuables	PPPs for jewelry, clocks, and watches	Exchange rates	Change (specific)	
170111.1	Exports of goods and services	Exchange rates	Exchange rates	Same	
170111.2	Imports of goods and services	Exchange rates	Exchange rates	Same	

Source: ICP, <http://icp.worldbank.org/>.

Note: The number in parentheses is the basic heading (BH) code. *Specific* stands for specific price-based reference PPPs, which are the PPPs for a single basic heading or an average of the PPPs for several basic headings. *Neutral* stands for neutral price-based reference PPPs, which would not affect the PPPs for higher aggregates.

