

# Reference PPP Mapping



**Inter Agency Coordination Group meeting**

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**Washington, DC**

# Purpose of the Session

*The purpose of this session is to provide an overview to the reference PPP approach of the ICP and present the current global mapping of reference PPPs, ensuring a shared understanding of these mappings.*

# Outline

- 1. Background and rationale for reference PPPs in ICP**
- 2. Reference PPPs mapping**
- 3. Considerations**

# **1. Background and Rationale for Reference PPPs in ICP**

## Challenges in price data collection

- Collecting prices for all 155 basic headings can be very costly for some items leading to missing data for some headings.

## Use of reference PPPs

- Reference PPPs are used to estimate prices for missing basic headings to ensure full GDP coverage in calculations.

## Types of reference PPPs

- i. Price-based
  - *Specific* – PPP values for BHs that are thought to be similar to heading with no price information.
  - *Neutral* – PPPs for a large group of BHs, such as all BHs under HHC. Use of ref. PPP will have no impact.
- ii. Market exchange rate
- iii. Volume-based (exclusively for housing volumes)

**Why are  
reference PPPs  
used?**

## Reference PPPs are estimated in two ways

- i. **1:1 assignment** of PPP of *similar* BH to the missing BH.
- ii. **GEKS aggregation** of PPPs from a selected group of basic headings to fill missing BH.

## The computation process follow two stages

- i. **Stage 1**- Reference PPPs are calculated on the basis of BH for which prices are collected (43 BHs).
- ii. **Stage 2** - Reference PPPs are calculated including reference PPP BHs from stage 1 (12 BHs).

**Current  
estimation  
approach**

## **2. Review of Reference PPP Mapping**

Survey	Number of headings		
	Total	1:1 assignment	GEKS aggregation
HHC	21	6	15
NPISH	5	1	4
IndGOV	19	8	11
ColGOV	4	0	4
GFC	4	2	2
Imp/Exp	2	2	0

## Reference PPPs ICP 2021 – summary table



Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1102311	Narcotics	HHC	Stage 1	GEKS aggregate of PPPs for tobacco (1102211) and pharmaceutical products (1106111)	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.
1104211	Imputed rentals for housing	HHC	Stage 1	PPP of Actual rentals for housing (1104111)	
1104421	Miscellaneous dwelling services	HHC	Stage 1	GEKS aggregate of PPPs for maintenance and repair of the dwelling (1104311) and water supply (1104411)	

## Reference PPPs ICP 2021 (1)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
<b>1105131</b>	Repair of furniture, furnishings and floor coverings	HHC	Stage 1	PPPs for maintenance and repair of the dwelling (1104311)	
<b>1104421</b>	Repair of household appliances	HHC	Stage 1	PPPs for maintenance and repair of the dwelling (1104311)	
<b>1106311</b>	Hospital services	HHC	Stage 1	GEKS aggregate of PPPs for medical services (1106211), dental services (1106221) and paramedical services (1106231)	

## Reference PPPs ICP 2021 (2)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1107141	Animal-drawn vehicles	HHC	Stage 1	PPPs for bicycles (1107131)	
1107341	Passenger transport by sea and inland waterway	HHC	Stage 1	GEKS aggregate of PPP for passenger by railway (1107311), by road (107321) and by air (107331)	This reference PPP would apply to regions where the product lists do not specify services under this basic heading.
1107351	Combined passenger transport	HHC	Stage 1	GEKS aggregate of PPP for passenger by railway (1107311) and by road (107321)	This reference PPP would apply to regions where the product lists do not specify services under this basic heading.

## Reference PPPs ICP 2021 (3)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1107361	Other purchased transport services	HHC	Stage 1	GEKS aggregate of PPP for passenger transport by railway (1107311) and by road (107321)	This reference PPP would apply to regions where the product lists do not specify services under this basic heading.
1109211	Major durables for outdoor and indoor recreation	HHC	Stage 1	GEKS aggregate of PPPs for furniture and furnishing (1105111), carpets and other floor coverings (1105121), major household appliances (1105311), major tools and equipment (1105511), therapeutic appliances and equipment (1106131), motor cars, (110711), motor cycles (1107121) and bicycles (1107131), telephone and telefax equipment (1108211), audio visual, photographic and information processing equipment (1109111), jewellery, clocks and watches (1112311)	
1109231	Maintenance of other major durables	HHC	Stage 1	GEKS aggregate of PPPs for maintenance and (specific) repair of personal transport equipment (110723.1) and repair of audiovisual, photographic, and information processing equipment (110915.1)	

## Reference PPPs ICP 2021 (4)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1109431	Games of chance	HHC	Stage 1	PPP for recreational and sporting services (1109411).	
1109611	Package holidays	HHC	Stage 1	GEKS aggregate of PPPs for passenger transport by railway (1107311), by road (1107321), by air (1107331), catering (1111111) and accommodation services (1111211).	
111221.1	Prostitution	HHC	Stage 1	PPP for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs.	

## Reference PPPs ICP 2021 (5)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1112511	Insurance	HHC	Stage 1	PPP for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	
1112611	Financial Intermediation Services Indirectly Measured (FISIM)	HHC	Stage 1	PPP for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	
1112621	Other financial services n.e.c.	HHC	Stage 1	PPP for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	
1112711	Other services n.e.c.	HHC	Stage 1	PPP for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	

## Reference PPPs ICP 2021 (6)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1113111	Net purchases abroad	HHC	Stage 1	Exchange rate to USD	
1201111	Housing NPISH	NPISH	Stage 1	PPP for actual rentals for housing (1104111)	
1203111	Recreation and culture NPISH	NPISH	Stage 1	GEKS aggregate of PPPs for recreational and sporting services (1109411) and cultural services (1109421).	
1301111	Housing	IndGov	Stage 1	PPP for actual rentals for housing (1104111)	

## Reference PPPs ICP 2021 (7)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1302111	Pharmaceutical products	IndGov	Stage 1	PPP for pharmaceutical products – HHC (1106111)	
1302112	Other medical products	IndGov	Stage 1	PPP for other medical products – HHC (1106121)	
1302113	Therapeutic appliances and equipment	IndGov	Stage 1	PPP for therapeutic appliances and equipment – HHC (1106131)	
1302121	Out-patient medical services	IndGov	Stage 1	PPP for medical services (1106211)	
1302122	Out-patient dental services	IndGov	Stage 1	PPP for dental services (1106221)	
1302123	Out-patient pharmaceutical services	IndGov	Stage 1	PPP for pharmaceutical services (1106231)	

## Reference PPPs ICP 2021 (8)



Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1302221	Intermediate consumption	IndGov	Stage 1	PPP for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	
1302231	Gross operating surplus	IndGov	Stage 1	PPPs for gross fixed capital formation (150000), excluding reference PPP BHs.	
1303111	Recreation and culture	IndGov	Stage 1	GEKS aggregate of PPPs for recreational and sporting services (1109411) and cultural services (1109421).	
1304111	Education benefits and reimbursements	IndGov	Stage 1	PPP for education (1110111)	

## Reference PPPs ICP 2021 (9)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1304221	Intermediate consumption	IndGov	Stage 1	PPP for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	
1304231	Gross operating surplus	IndGov	Stage 1	PPPs for gross fixed capital formation (150000), excluding reference PPP BHs.	
1401121	Intermediate consumption - Coll. Govt	ColGov	Stage 1	PPP for individual consumption expenditure by households (110000), excluding health and education BHs and reference PPP BHs	
1401131	Gross operating surplus - Coll. Govt	ColGov	Stage 1	PPPs for gross fixed capital formation (150000), excluding reference PPP BHs.	

## Reference PPPs ICP 2021 (10)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1501122	Other transport equipment	GCF	Stage 1	PPP for road transport equipment (1501121)	
1501311	Other products	GCF	Stage 1	PPPs for machinery and equipment (150100), excluding reference PPP BHs	
1502111	Change in inventories	GCF	Stage 1	GEKS aggregate of PPPs for goods (67 BHs), excluding ref BH PPPs	Definition of goods discussed in session on aggregation
1503111	Acquisitions less disposals of valuables	GCF	Stage 1	Exchange rate to USD	
1601111	Exports of goods and services		Stage 1	Exchange rate to USD	
1601112	Imports of goods and services		Stage 1	Exchange rate to USD	

## Reference PPPs ICP 2021 (11)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1112411	Social protection	HHC	Stage 2	GEKS of PPPs for compensation of employees - Ind. Hth. Govt (1302211), intermediate consumption - Ind. Hth. Govt (ref PPP, 1302221), gross operating surplus - Ind. Hth. Govt (ref PPP, 1302231), compensation of employees - Ind. Edu. Govt (1304211), intermediate consumption - Ind. Edu. Govt (ref PPP, 1304221), gross operating surplus - Ind. Edu. Govt (ref PPP, 1304231).	
1202111	Health	NPISH	Stage 2	GEKS of PPPs for compensation of employees - Ind. Hth. Govt (1302211), intermediate consumption - Ind. Hth. Govt (ref PPP, 1302221), gross operating surplus - Ind. Hth. Govt (ref PPP, 1302231).	
1204111	Education	NPISH	Stage 2	GEKS of PPPs for compensation of employees - Ind. Edu. Govt (1304211), intermediate consumption - Ind. Edu. Govt (ref PPP, 1304221), gross operating surplus - Ind. Edu. Govt (ref PPP, 1304231).	

## Reference PPPs ICP 2021 (12)

Basic heading (BH)			Ref PPP type	Reference PPP, ICP 2021	Comments
1205111	Social protection and other services	NPISH	Stage 2	GEKS of PPPs for compensation of employees - Ind. Hth. Govt (1302211), intermediate consumption - Ind. Hth. Govt (ref PPP, 1302221), gross operating surplus - Ind. Hth. Govt (ref PPP, 1302231), compensation of employees - Ind. Edu. Govt (1304211), intermediate consumption - Ind. Edu. Govt (ref PPP, 1304221), gross operating surplus - Ind. Edu. Govt (ref PPP, 1304231).	
1302124	Hospital services	Ind.Gov	Stage 2	PPP for hospital services – HHC (ref. PPP, 1106311).	
1302241	Net taxes on production	Ind.Gov	Stage 2	GEKS of PPPs for compensation of employees - Ind. Hth. Govt (1302211), intermediate consumption - Ind. Hth. Govt (ref PPP, 1302221), gross operating surplus - Ind. Hth. Govt (ref PPP, 1302231).	
1302251	Receipts from sales	Ind.Gov	Stage 2	GEKS of PPPs for compensation of employees - Ind. Hth. Govt (1302211), intermediate consumption - Ind. Hth. Govt (ref PPP, 1302221), gross operating surplus - Ind. Hth. Govt (ref PPP, 1302231).	

## Reference PPPs ICP 2021 (13)

Basic heading (BH)			Ref PPP type	Reference PPP, ICP 2021	Comments
1304241	Net taxes on production	IndGov	Stage 2	GEKS of PPPs for compensation of employees - Ind. Edu. Govt (1304211), intermediate consumption - Ind. Edu. Govt (ref PPP, 1304221), gross operating surplus - Ind. Edu. Govt (ref PPP, 1304231).	
1304251	Receipt from sales	IndGov	Stage 2	GEKS of PPPs for compensation of employees - Ind. Edu. Govt (1304211), intermediate consumption - Ind. Edu. Govt (ref PPP, 1304221), gross operating surplus - Ind. Edu. Govt (ref PPP, 1304231).	
1305111	Social protection	IndGov	Stage 2	GEKS of PPPs for compensation of employees - Ind. Hth. Govt (1302211), intermediate consumption - Ind. Hth. Govt (ref PPP, 1302221), gross operating surplus - Ind. Hth. Govt (ref PPP, 1302231), compensation of employees - Ind. Edu. Govt (1304211), intermediate consumption - Ind. Edu. Govt (ref PPP, 1304221), gross operating surplus - Ind. Edu. Govt (ref PPP, 1304231).	

## Reference PPPs ICP 2021 (14)

Basic heading (BH)		Survey	Ref PPP type	Reference PPP, ICP 2021	Comments
1401141	Net taxes on production	ColGov	Stage 2	GEKS of PPPs for compensation of employees - Ind. Edu. Govt (1304211), intermediate consumption - Ind. Edu. Govt (ref PPP, 1304221), gross operating surplus - Ind. Edu. Govt (ref PPP, 1304231).	
1401151	Receipts from sales	ColGov	Stage 2	GEKS of PPPs for compensation of employees – Coll. Govt (1401111), intermediate consumption – Coll. Govt (ref PPP, 1401121), gross operating surplus - Coll. Govt (ref PPP, 1401131).	

The full reference PPP mapping matrix is included in the Data Submission Format.

## Reference PPPs ICP 2021 (15)

# 3. Considerations





- The ICP 2017 cycle established the same computational approach to the estimation of regional and global reference PPPs.
- **ICP Computational Task Team identified a few issues in 2021 regional reference PPPs.**
  1. **Unweighted GeoMean** used for the calculation of all ref PPPs (with more than 1 ref. BH) instead of the using the aggregated EKS PPPs (with expenditure weights).
  2. **Incorrect mapping of reference PPPs for BH "1304111 Education benefits and reimbursements", "1201111 Housing - NPISH" and "1301111 Housing - GG".**
- Ensure the files for estimating regional PPPs use correct mapping and aggregation approach.
- Future revised classification requires a review of reference PPPs.

**Thank you!**

