REVIEW OF TIME SERIES DATA

3rd Meeting of the ICP Task Force on PPP Compilation and Computation
September 27, 2018
Washington, DC

International Comparison Program

Outline

- **Background**
- **Data Availability and Observed Issues**
- **Data Comparisons and Assessment**
- **Suggestions and Next Steps**

BACKGROUND

Background

TASK FORCE ON PPP COMPILATION AND COMPUTATION

- Concluded at its meetings in October 2017 and March 2018, that a Task Team on the quality assurance for the data and metadata used for building PPP time series is needed

TASK TEAM ON DATA AND METADATA QUALITY ASSURANCE FOR THE PPP TIME SERIES

- The first meeting held on June 13, 2018, to discuss the Terms of Reference and the tasks assigned to the Task Team
- Data review after the ICP regional submissions in August
- The second meeting on September 26, 2018, as a joint meeting with IACG for data review

Task team on Data and Metadata Quality Assurance for the PPP Time Series

TASK TEAM MEMBERS

Task Team on Data Quality Assurance for the PPP Time Series – UNSD + IMF + WB ICP GIU + WB WDI

EXPECTED DELIVERABLES

Presenting the results of the Task Team quality assessment and proposed approach for improvements to the ICP IACG and the Task Force for PPP Compilation and Computation, including:

- Quarterly quality assessment of data and metadata submitted by countries and/or collected from international organizations' databases; and

- Recommendations on the improvements on data and metadata compilation methods for building PPP time series within the ICP.

Data for PPP Time Series

DATA FOR PPP TIME SERIES (2011-2017)

- Fill gap between ICP global benchmarks (2011 and 2017)

- Data requirements (time series): expenditures, deflators, CPIs, population and market exchange rates

- Biannual submission of data requirements agreed at the 2nd IACG meeting

DATA AVAILABILITY AND OBSERVED ISSUES

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Status of Regional Submissions

STATUS OF SUBMISSIONS (AS OF SEPTEMBER 2018**)**

- All six regions (AFR, ASI, CIS, EUO, LAC, WAS) have reported or provided updated extrapolation data

- Not all regions sent PPP time series data over the summer; and some regions only submitted data for a subset of countries

DATE OF LATEST EXTRAPOLATION DATA SUBMISSION (AS OF SEPTEMBER 2018)

AFR	ASI	CIS	EUO	LAC	WAS
Aug. 2018	Mar. 2018	Jul. 2018	Aug. 2018	Aug. 2018	Aug. 2018

Data Availability: Expenditures (1)

Gross Domestic Product

Region	2011	2012	2013	2014	2015	2016	2017
AFR [50]	46	46	46	45	39	22	7
ASI [22]	18	18	18	18	19	22	0
CIS [8]	8	8	8	8	8	8	8
EUO [50]	48	50	50	50	50	50	44
LA [14]	14	14	14	14	14	14	13
CAR [23]	21	21	21	20	19	18	8
WAS [12]	12	12	12	12	12	12	7

Main Aggregates (6)

# of Complete Country Submissions

Region	2011	2012	2013	2014	2015	2016	2017
AFR [50]	42	42	42	41	34	18	5
ASI [22]	14	14	14	14	14	17	0
CIS [8]	8	8	8	8	8	8	7
EUO [50]	44	47	48	50	49	47	34
LA [14]	12	12	12	12	12	11	10
CAR [23]	6	5	6	5	5	5	2
WAS [12]	12	12	12	12	12	12	3

Data Availability: Expenditures (2)

Household Consumption Categories (13)						# of <u>Complete</u> Country Submissions	
Region	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
AFR [50]	38	38	38	38	32	15	3
ASI [22]	11	11	11	11	12	20	0
CIS [8]	6	3	2	8	2	2	0
EUO [50]	46	48	48	50	50	49	11
LA [14]	0	0	0	0	0	0	0
CAR [23]	0	0	0	0	0	0	0
WAS [12]	12	12	12	12	12	12	2

Full Classification

Region	**2011**	**2012**	**2013**	**2014**	**2015**	**2016***	**2017**
AFR [50]	50	-	-	-	-	-	-
ASI [22]	23	-	-	-	-	20	-
CIS [8]	9	-	-	8	-	-	-
EUO [50]	47	-	-	47	47	47	-
LA [14]	17	-	-	-	-	-	-
CAR [23]	22	-	-	-	-	-	-
WAS [12]	12	12	12	12	12	12	-

*Iran submitted full classification data for 2016

Data Availability: Deflators

Gross Domestic Product

Region	2011	2012	2013	2014	2015	2016	2017
AFR [50]	39	39	39	38	32	14	39
ASI [22]	12	12	12	12	12	12	12
CIS [8]	7	7	7	7	7	7	7
EUO [50]	50	50	50	50	50	50	50
LA [14]	14	14	14	14	13	13	14
CAR [23]	13	13	13	13	12	12	13
WAS [12]	6	6	6	6	6	6	6

Main Aggregates (5)

# of Complete Country Submissions

Region	2011	2012	2013	2014	2015	2016	2017
AFR [50]	25	21	20	15	12	7	25
ASI [22]	2	2	2	2	2	2	2
CIS [8]	0	0	0	0	0	0	0
EUO [50]	48	48	48	48	48	49	48
LA [14]	0	0	0	0	0	0	0
CAR [23]	0	0	0	0	0	0	0
WAS [12]	2	2	2	2	2	1	2

Data Availability: Exchange Rates and Population

Exchange Rate

Region	2011	2012	2013	2014	2015	2016	2017
AFR [50]	48	48	48	48	48	14	10
ASI [22]	20	20	20	20	20	20	22
CIS [8]	8	8	8	8	8	8	8
EUO [50]	49	49	49	49	49	49	50
LA [14]	14	14	14	14	14	14	14
CAR [23]	19	19	19	19	19	19	23
WAS [12]	12	12	12	12	11	11	11

Population

Region	2011	2012	2013	2014	2015	2016	2017
AFR [50]	49	49	49	49	49	15	10
ASI [22]	20	20	20	20	20	20	22
CIS [8]	8	8	8	8	8	8	8
EUO [50]	48	49	49	49	48	48	50
LA [14]	14	14	14	14	14	14	14
CAR [23]	20	20	20	20	20	20	23
WAS [12]	12	12	12	12	11	11	9

Observed Issues

REPORTING ISSUES

- Chained series reported; we require fixed-based series (DEF)
- Scale of unit inconsistent or reported incorrectly (EXP, DEF and POP)
- Reported in classification different from ICP's (EXP)
- Fiscal year data reported instead of calendar year (EXP)
- Different currencies used in different submissions (EXP and XR)
- Data reported using a non-ICP classification (EXP)
- Metadata incomplete or missing (DEF)
- Discrepancies in benchmark and time series data (EXP, XR, POP)
- Metadata incomplete or missing (DEF)

COVERAGE & DATA QUALITY ISSUES

- Sparse coverage of detailed time-series data (EXP and DEF)
- Lower aggregates not adding up to higher aggregate (EXP)
- Possible breaks in series (DEF)

DATA COMPARISONS AND ASSESSMENT

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Data Comparisons with Other Databases

DATA COMPARISONS

- To identify any potential issues with the input data to ensure data quality
- To better understand differences between databases
- With NO short-term objective of harmonizing the data

PERIOD OF COMPARISONS

- 2011-2017

Data Comparisons: Expenditures (e.g. 2013 data)

Local Currency Unit, in billions

Country name	ICP RIA[1]	WDI[2]	UNSD[3]	WEO[4]	IFS[5]	CV	Notes
Belarus	670,689	67.1	670,689	67.1	67.1	122.44	ICP RIA and UNSD: Reported in the previous currency for time series
West Bank and Gaza	45.0	12.5	12.5		12.5	68.39	Reported in Shekel for ICP to be in line with price data, but in USD for other databases.
Comoros	229.2	229.2	466.8	243.6	243.6	32.70	Recent National Accounts revision
Liberia	1.9	1.9		3.1	2.0	21.75	Two series are officially published
Paraguay	166,715	125,152	125,152	125,152	125,152	12.46	GIU will contact with RIA for confirmation
Bahamas, The	10.5	10.6	8.5	10.7	8.5	10.47	
Maldives		50.6	41.6	50.6	50.6	8.10	Recent National Accounts revision
Nepal	1695.0/ 1,964.5	1,695.0	1,695.0	1,695.0	1,695.0	6.16	Fiscal year data submitted
Iraq	241,506	273,600	241,506	273,587	273,587	6.03	
El Salvador	22.0	22.0	24.4	24.4	24.4	4.97	Series different (UNSD&IMF under SNA08; ICP seems under SNA93)
Sudan (AFR)	304.1	342.8	304.0	331.8	311.6	4.92	

1 ICP Regional Implementing Agency's submission, 2 World Bank: World Development Indicators (WDI), 3 United Nations Statistics Division (UNSD): National Accounts Official Country Data, 4 International Monetary Fund (IMF): World Economic Outlook (WEO), 5 IMF: International Financial Statistics (IFS)

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Assessment: Expenditures

OBSERVED DIFFERENCES

- Versioning or vintage issues (different SNA series, or different series reported)
- Fiscal year reporting
- Different currencies used
- Recent currency change/redenomination

SUMMARY FINDINGS

- Most of the differences appear due to 'versioning' or 'vintage' issues which arise due to the ongoing revisions common in national accounts data → Metadata are crucial
- In the case of GDP, not so many cases with large discrepancies without identified reasons
- In the case of IHCE and other main aggregates, comparisons are not straightforward due to different treatments of statistical discrepancies, NPISH etc. between databases

Data Comparisons: Exchange Rate(e.g. 2013 data)

Country name	ICP RIA[1]	WDI (alt conv)[2]	IMF-IFS[3]	CV	Comments
Belarus	8,971	0.9	0.9	141	ICP RIA reported XR and EXP in the previous currency used for 2011-2015. IMF has reflected the redenomination of July 2016, (10,000:1)
São Tomé and Principe	18,450	18,450	18.4	71	IMF has incorporated the redenomination of redenomination, January 2018, (1000:1)
Liberia	77.5	1.0	77.5	69	WDI-DEC Alt. conversion factor reported in USD
Lithuania	0.8	0.8	2.6	64	Lithuania moved to Euro in 2014. ICP and WDI are in Euro, while IFS shows the previous LCU XR.
Mauritania	302.1	296.2	30.1	61	IMF has incorporated the redenomination (First Ouguiya to Second Ouguiya) of January 2018, (10:1)
Latvia	0.8	0.8	0.5	16	Latvia moved to Euro in 2014. ICP and WDI are in Euro, while IFS shows the previous LCU XR.
Iran, Islamic Rep.	..	21,253	18,414	7.2	WDI Alt. conversion factor is adjusted for fiscal year (Mar. 20 FY)
Argentina	5.5	6.1	5.5	5.1	DEC alt conversion factor adjusted for foreign exchange controls 2011-2015.
Nauru	..	1.0	1.0	3.0	WDI Alt. conversion factor is adjusted for fiscal year (Jun. 30 FY)
Australia	1.0	1.0	1.0	2.8	WDI Alt. conversion factor is adjusted for fiscal year (Jun. 30 FY)
Iraq	1,233	1,166	1,166	2.7	
Nepal	93.0	88.0	93.0	2.6	WDI Alt. conversion factor is adjusted for fiscal year
Pakistan	101.6	96.8	101.6	2.3	WDI Alt. conversion factor is adjusted for fiscal year (Jun. 30 FY)
India	58.6	60.5	58.6	1.52	WDI Alt. conversion factor is adjusted for fiscal year (Mar. 31 FY)
Myanmar	933.6	962.5	933.6	1.45	WDI Alt. conversion factor is adjusted for fiscal year

1 ICP Regional Implementing Agency's submission, 2 World Bank: World Development Indicators (WDI): DEC alternative conversion factor,
3 IMF: International Financial Statistics (IFS)

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Assessment: Exchange Rate

OBSERVED DIFFERENCES

- Different currencies used (USD vs LCU)
- Recent currency change/redenomination
- Dual exchange rate or revision of official rates
- Fiscal year reporting (the WDI conversion factor is adjusted for fiscal year to match their national account data)

SUMMARY OF FINDINGS

- No concern on data availability
- There are only a few cases that need special attention that can have impact on results. Other cases have nominal differences with identified reasons.

Data Comparisons: Population (e.g. 2013 data)

In thousands

Country name	ICP RIA[1]	WDI[2]	IMF/IFS[3]	UNPD[4]	UNSD defacto[5]	UNSD dejure[5]	CV	Notes
Bahrain	615	1,315	1,315	1,315		1,253	26.6	GIU will contact with RIA for confirmation
Equatorial Guinea	797	1,084	1,084	1,084			12.3	GIU will contact with RIA for confirmation
Cyprus	862	1,144	1,144	1,144		862	11.4	Exclusion of Northern Cyprus in line with GDP
Serbia	7,167	7,167	8,920	8,920		7,167		Exclusion of Kosovo in line with GDP
Somalia	10,268	13,132	13,132	13,132			10.0	GIU will contact with RIA for confirmation
Sint Maarten	45	37	36	36		37	9.8	GIU will contact with RIA for confirmation
Moldova	3,559	3,559	4,072	4,072		3,559	6.7	Exclusion of Transnistria
Qatar	2,004	2,250	2,250	2,250	2,004		4.9	Census data
Sierra Leone	6,179	6,922	6,922	6,922			4.8	
Lesotho	1,909	2,117	2,117	2,117	1,909		4.4	Census data
Angola	23,448	25,998	25,998	25,998	19,184		4.4	
Maldives	435	397	397	397	336		4.0	GIU will contact with RIA for confirmation

1 ICP Regional Implementing Agency's submission, 2 World Bank: World Development Indicators (WDI), 3 IMF: International Financial Statistics (IFS), 4 UN Population Division (UNPD): World Population Prospects, 5 UNSD: Population Censuses' Datasets (June/July) for de-facto or de-jure

Assessment: Population

OBSERVED DIFFERENCES

- Versioning or vintage issues
- Difference in definitions and concepts
- Methodology
- Data source (agency that provided data)
- Territorial inclusion/exclusion

SUMMARY FINDINGS

- No concern on data availability
- Currently ICP has no metadata for population. Metadata accompanying the value are crucial to verify that the population data is suitable for ICP purposes:

SUGGESTIONS AND NEXT STEPS

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Suggestions and Next Steps (1)

ALL INDICATORS

- GIU will follow-up with RIAs regarding any data gaps or inconsistencies to improve data quality
- If data gaps persist, GIU will discuss with Task Force suitable gap-filling methods

EXPENDITURES

- In order to improve consistency of data, RIAs agreed at the IACG meeting to submit time series data in ICP 2017 classification in the next submission
- Metadata are crucial to ensure the quality and relevance of data → Review of the ICP country practice questionnaires

Suggestions and Next Steps (2)

DEFLATORS

- Concerns about availability of deflator data, especially for the main aggregate level
- Inconsistency of data also observed, especially for main aggregate level
- There are regions that do not publish GDP deflators (and thus "implicit" deflators were drawn from constant and current expenditure series for this purpose)

POPULATION

- Submission of the following metadata accompanying population data were discussed and agreed at the IACG meeting
  - Data source (agency and link to the source report)
  - Underlying survey, if any, and its related year
  - Definition of the population (to distinguish whether de-facto/de-jure)
  - Any special considerations, such as territorial inclusion/exclusion

THANK YOU