

September 2019 PovcalNet Update

What's New

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Abstract

The September 2019 global poverty update from the World Bank includes revised survey data which lead to minor changes in the most recent global poverty estimates. The update includes revisions to 18 surveys from four countries. As a result of the revised data, the estimate of the global \$1.90 headcount ratio for 2015 increases slightly from 9.94% to 9.98%, whereas the number of poor increases from 731.0 million to 734.5 million people.

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1. Introduction

The September 2019 global poverty update from the World Bank include revised survey data which lead to minor changes in the most recent global poverty estimates. The update includes revisions to 18 surveys from four countries and revisions to the national distributions using grouped data for China, India and Indonesia. This document outlines the changes made to the underlying data by country and explains the reasons why the changes have been made. In general, most of the changes reflect improvements in the welfare aggregate based on new harmonization efforts and updates of supporting data. Some of the changes also reflect corrections in the construction or analysis of the welfare aggregate. We also provide new metadata on comparability of estimates over time within countries.

Table 1 illustrates the impact of the September 2019 data updates on global poverty for the reference year 2015, which were first published in September 2018, with a minor revision published in February 2019 and a larger revision in March 2019. With the present update, the estimate of the global \$1.90 headcount ratio increases slightly from 9.94% to 9.98%, whereas the number of poor increases from 731.0 million to 734.5 million people in 2015. This is a small change relative to past updates. The increase of the estimated poor population by 3.5 million people (or 0.04 percentage points) at the global level can be largely explained by changes to the household survey of Ethiopia. Changes to survey estimates are described in the next section with revised estimates available in Appendix 1.

Since no new surveys have been added or removed, country and population coverage of the estimates remain unchanged from the March 2019 update (Atamanov et al., 2019). There have been no revisions to the vintage of CPI and National Accounts Data used in the estimation. The data provided in Atamanov et al. (2019) is still valid, except for one change in Ethiopia as explained in Section 2.3.

Table 1. Poverty headcount and number of poor differences between March 2019 and September 2019

Region	\$1.90				\$3.20				\$5.50			
	number of poor (mil)		headcount ratio (%)		number of poor (mil)		headcount ratio (%)		number of poor (mil)		headcount ratio (%)	
	Mar 2019	Sep 2019	Mar 2019	Sep 2019	Mar 2019	Sep 2019	Mar 2019	Sep 2019	Mar 2019	Sep 2019	Mar 2019	Sep 2019
East Asia and Pacific	47.0	47.0	2.3	2.3	253.8	253.8	12.4	12.4	710.3	710.3	34.8	34.8
Europe and Central Asia	7.1	7.1	1.5	1.5	26.2	26.2	5.4	5.4	68.1	68.1	14.0	14.0
Latin America and the Caribbean	24.3	24.3	3.9	3.9	66.3	66.2	10.6	10.6	164.6	164.7	26.3	26.3
Middle East and North Africa	15.7	15.7	4.2	4.2	58.1	58.1	15.6	15.6	156.6	156.6	42.1	42.1
Other high Income	7.4	7.4	0.7	0.7	10.0	10.0	0.9	0.9	16.2	16.2	1.5	1.5
South Asia	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sub-Saharan Africa	413.0	416.4	41.0	41.4	667.4	673.9	66.3	67.0	850.1	854.9	84.5	85.0
World less Other High Income	723.7	727.1	11.5	11.6	1919.3	1925.8	30.6	30.7	3368.6	3373.5	53.7	53.8
World Total	731.0	734.5	9.9	10.0	1929.3	1935.8	26.2	26.3	3384.8	3389.7	46.0	46.1

2. Changes to surveys

The section summarizes changes in this update. Old and new key poverty and inequality measures from the changed distributions are summarized in Appendix 1.

2.1. Argentina (2003-2017)

Revisions to Argentina's survey data from 2003 onwards are due to two main changes: (1) changes in the sampling framework and (2) changes in the imputation methods.

INDEC (Argentina's NSO) previously used population weights based on the 2001 Census for surveys from 2003 to 2012, and for the 2013 and 2014 surveys, they used weights based on the 2010 census. Now,

due to irregularities uncovered in the 2010 census, they have reverted to using the 2001 Census for weights for the 2013-2014 surveys and for sampling *and* weights in 2016 and 2017.¹

Hot-deck imputations for income were done through 2014, and the provided database included imputed values for non-responses.² Non-responses were not imputed by the NSO in 2016-2017; instead observations with responses were re-weighted to account for non-response (missing income observations were assigned a zero weight). To make the series comparable for the whole period in the revised data, nonresponses are now imputed with the same hot-deck methodology used for the previous years.

In summary, sampling weights for all surveys from 2003 to 2017 are now based on the 2001 Census, and non-response for the income data are all imputed with hot-deck imputations ensuring that the methodology is uniform for all years.

2.2. Egypt, Arab Republic of (2010/11, 2012/13)

The Central Agency for Public Mobilization and Statistics (CAPMAS), the national statistics office, monitors welfare and poverty. CAPMAS collects detailed information on households' expenditures through its Household Income, Expenditure, and Consumption Survey (HIECS) (conducted every two years) and produces monetary poverty rates for each survey round.

The March 2019 release of PovcalNet used CAPMAS's welfare aggregates for 2010/11 and 2012/13. In 2015, CAPMAS adopted several changes to the welfare aggregate. In particular, the housing services component of the welfare aggregate in the 2015 survey was adjusted via a hedonic model to ensure the comparability across households on different rental schemes. The 2015 welfare aggregate also included a correction for the valuation of food items purchased at subsidized prices through the food subsidy system (via a smartcard). CAPMAS did not make these adjustments in the 2010/11 and 2012/13 rounds even though both the subsidized rental schemes and food subsidy programs were in place in those years.

¹ For 2016 and 2017 there are two different weights: one for income and one for all other variables.

² Hot deck imputation is a method for handling missing data where each missing value is replaced with an observed response from a "similar" unit.

The World Bank has produced an updated welfare series for 2010/11 and 2012/13 based on a methodology that closely follows that of the 2015 CAPMAS welfare aggregate, which enables analysis of welfare over time. First, a hedonic model is used to correct for the distortions of the Egyptian rental market (see Lara Ibarra, Mendiratta, and Vishwanath 2017) to obtain a valuation of housing services. Second, food items purchased with Egypt's food smartcard are revalued using a market reference price for each item as a proxy for its welfare value. As a result of these adjustments, for the years 2010/11 and 2012/13, the PovcalNet welfare aggregates will differ from the official aggregates published by CAPMAS.

Additionally, the updated series of 2010/11 incorporates households from Helwan and 6th of October governorates (governorates 5 and 6), which were inadvertently dropped in previous releases. Governorates of Helwan and 6th of October were created in 2008 and in 2011 were reincorporated into Cairo and Giza governorates respectively. The inclusion of these households does not make a qualitative difference in the results for 2010/11. See Lara Ibarra et al (2017) for further details.

2.3. Ethiopia (2015)

The previous version of the Ethiopia 2015 survey had applied survey weights incorrectly. This has now been corrected. As a result of this, the decline in poverty has been more modest than previously established. The headcount ratio at the \$1.90 line went from 33.5% in 2010 to 30.8% in 2015 instead of from 33.5% to 27.3% as previously estimated. With the revised weights the increase in the Gini coefficient was also moderated. It went from 33.2 to 35.0 rather than from 33.2 to 39.1 as previously estimated.

Since the welfare aggregate is expressed in December 2015 prices, the December 2015 CPI is used to deflate the welfare aggregate. Previously this was proxied by the average CPI of 2015 and 2016.

2.4. Mauritius (2012)

The previous version of the consumption aggregate data shared by Statistics Mauritius based on the 2012 HBS was preliminary. The consumption aggregate has then been slightly revised by Statistics Mauritius.

2.5. National inequality measures: China, India and Indonesia

Poverty estimates for China, India and Indonesia are based on an aggregation of rural and urban estimates. However, for inequality estimates we rely on a combined distribution, as described in Atamanov et al. (2019). A coding error was found in the merging of the distribution which we have corrected for this update.

The changes have no impact on the poverty estimates—since this is estimated separately for rural and urban distributions—but slightly change the national distributional estimates. However, the differences are small; the largest Gini difference is 0.17, while most are smaller than 0.1. There is no change in the Gini at the two decimal points for India and Indonesia. The years and differences in estimates are displayed in Appendix 1.

3. Other changes

The country name for Macedonia, FYR has been changed to North Macedonia, in accordance with World Bank naming practices.

4. Information about comparability

With the current update, we provide metadata on comparability of poverty estimates within countries over time. Strictly comparable poverty estimates within a country require consistent production process, including sampling frame, questionnaires, methodological construction of welfare aggregates and poverty lines, consistent deflation of prices in time and space, among many other considerations.

As countries frequently improve household surveys and measurement methodology, strict comparability of poverty estimates over time is often limited. Within a country, we assume comparability of poverty estimates over time unless there is a known change to survey methodology, measurement or data structure. Thus, the assessment of comparability is country-dependent and relies on the accumulation of knowledge from past and current Bank staff in the countries, as well as close dialogue with national data producers with knowledge of survey design and methodology.

There are number of reasons to break poverty comparability over time is large across all countries, but some of the most common are the following:

1. Geographical coverage and survey design of the household survey changed. For example, coverage is expanded from urban areas to national coverage.
2. Timing of survey fieldwork changes. For example, in one survey year, interviews take place during a specific season or time of year (e.g. post-harvest) and then in the next survey year, interviews take place throughout the entire year.
3. Questionnaire changes. For example, if a questionnaire changes to include more detailed questions on the welfare aggregate (such as questions related to housing expenditure and mortgage), whereas in previous survey years, the questionnaire did not include this detail.
4. Methodological changes in construction of welfare aggregate. For example, if the welfare aggregate is changed to include sources of non-labor income like social transfers, while the welfare aggregate from the previous survey year did not include this information. Or, as another example, if a country starts to impute values either for missing elements of the welfare aggregate or missing welfare aggregates for some observations, while in previous rounds this imputation did not take place.

The comparability metadata database is organized as follows. Each survey point (i.e., a combination of country, year, welfare and data type) has a corresponding value in the comparability column. Within the same country, all the survey points with the same value in the comparability variable are considered comparable or, at least, no substantial reason to break the series was found. The oldest comparable series in each country starts with the value zero (0) in the comparability variable. When comparability is broken, the value changes to one (1) for the year of the break and it goes on until the comparability is broken again in a subsequent year. The process repeats until the most recent surveys point available. In this way, the most recent comparable poverty series per country is such with the highest value in the comparability column.

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Appendix 1: Table of Changes in Key Estimates

Country	Survey	Poverty headcount rate							
		Gini		\$1.90		\$3.20		\$5.50	
		Mar 2019	Sep 2019	Mar 2019	Sep 2019	Mar 2019	Sep 2019	Mar 2019	Sep 2019
Argentina	2003	50.69	51.20	7.05	6.83	15.47	15.06	30.35	30.00
Argentina	2004	48.25	48.59	5.37	5.18	12.12	11.65	25.95	25.00
Argentina	2005	47.67	47.95	3.89	3.65	9.95	9.50	21.70	21.12
Argentina	2006	46.62	46.71	3.33	3.22	8.04	7.86	17.49	17.26
Argentina	2007	46.30	46.58	2.94	2.63	6.89	6.65	16.60	16.23
Argentina	2008	44.53	45.30	2.56	2.60	6.19	6.27	14.86	14.67
Argentina	2009	43.94	44.14	2.59	2.50	5.99	5.69	13.76	13.34
Argentina	2010	42.99	44.46	1.11	2.23	3.71	5.33	11.06	12.65
Argentina	2011	42.30	42.74	0.95	0.89	2.57	2.39	8.91	8.81
Argentina	2012	41.24	41.38	0.80	0.79	2.68	2.69	8.49	8.36
Argentina	2013	40.96	41.01	0.75	0.75	2.43	2.31	8.27	8.15
Argentina	2014	41.40	41.70	0.74	0.65	2.80	2.65	9.08	8.85
Argentina	2016	42.40	42.02	0.58	0.73	2.40	2.39	7.79	8.50
Argentina	2017	40.63	41.20	0.44	0.52	2.04	2.40	7.15	7.74
China	1981	28.32	28.16	88.07	88.07	99.31	99.31	99.96	99.96
China	1984	27.25	27.12	75.19	75.19	96.30	96.30	99.72	99.72
China	1987	29.48	29.41	60.42	60.42	90.17	90.17	98.86	98.86
China	1990	32.28	32.22	66.22	66.22	90.02	90.02	98.30	98.30
China	1996	35.27	35.22	41.67	41.67	72.90	72.90	92.34	92.34
China	1999	38.75	38.70	40.21	40.21	68.33	68.33	88.92	88.92
China	2002	42.07	42.01	31.66	31.66	57.70	57.70	80.61	80.61
China	2005	40.98	40.92	18.51	18.51	43.19	43.19	70.51	70.51
China	2008	42.91	42.96	14.83	14.83	34.64	34.64	60.63	60.63
China	2010	43.74	43.74	11.18	11.18	28.54	28.54	53.44	53.44
China	2011	42.40	42.40	7.91	7.91	23.51	23.51	49.18	49.18
China	2012	42.21	42.23	6.48	6.48	20.18	20.18	44.33	44.33
China	2013	39.70	39.73	1.86	1.86	12.09	12.09	36.32	36.32
China	2014	39.14	39.17	1.36	1.36	9.49	9.49	31.48	31.48
China	2015	38.56	38.59	0.73	0.73	6.96	6.96	27.18	27.18
Egypt	2010.49	31.52	30.19	3.02	1.73	26.62	21.44	72.53	68.03
Egypt	2012.49	29.82	28.29	2.29	1.29	22.66	16.85	70.34	65.09
Ethiopia	2015.5	39.07	34.99	27.34	30.80	62.19	68.89	85.01	90.20
Indonesia*	1984	32.42	32.42	71.44	71.44	91.74	91.74	98.16	98.16
Indonesia*	1987	30.57	30.57	71.36	71.36	92.68	92.68	98.34	98.34
Indonesia*	1990	31.20	31.20	58.75	58.75	87.01	87.01	96.77	96.77
India*	1983	32.12	32.12	54.80	54.80	85.45	85.45	96.37	96.37

Country	Survey	Poverty headcount rate							
		Gini		\$1.90		\$3.20		\$5.50	
		Mar 2019	Sep 2019	Mar 2019	Sep 2019	Mar 2019	Sep 2019	Mar 2019	Sep 2019
India*	1987.5	32.55	32.55	48.93	48.93	82.79	82.79	95.47	95.47
Mauritius	2012	35.84	38.47	0.53	0.54	3.16	3.04	18.13	17.20

* The changes in the Gini index for Indonesia and India are so small that they do not show in the table.