

March 2019 PovcalNet Update

What's New

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Abstract

The March 2019 update to PovcalNet involves several changes to the data underlying the global poverty estimates. Some welfare aggregates have been changed for improved harmonization, and the national accounts and population input data have been updated. This document explains these changes in detail and the reasoning behind them. Emphasis is given to the update of the CPIs series released by the IMF on November 2018 and the changes to the national inequality measures in China, India, and Indonesia. In addition to the changes listed here, 50 new country-years have been added, bringing the total number of surveys to 1657.

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1. Introduction

The March 2019 global poverty update from the World Bank presents an update of the poverty estimates for 2015 and revises the previously published global and regional estimates from 1981 to 2013. The update includes 51 new surveys that have been received and processed, the adoption of an updated series of consumer price index (CPI) values released by the IMF in November 2018, and several changes to the existing data. 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, such as national accounts data and CPI, to most recent vintages. Some of the changes also involve corrections of minor errors in the construction of the welfare aggregate.

Table 1 illustrates the impact of the 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. With the present update, the estimate of the global \$1.90 headcount ratio decreases slightly from 9.98% to 9.94%, whereas the number of poor decreased from 734 million to 731 million people. Compared with recent updates this is a relatively small change (e.g. in September 2018, the estimate for the 2013 reference year changed by 21 million, see Chen et al., 2018). The reduction of the estimated poor population by 3 million people (or 0.04 percentage points) at the global level can be largely explained by changes in Middle East and North Africa (decline by 3.0 million). A change to the national accounts series for Yemen explains the decline in reference year estimates for the Middle East and North Africa. At the country level there are many other smaller changes, due to revisions of welfare aggregates and CPI series.

Table 1. Poverty headcount and number of poor differences between September 2018* and March 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 (%)	
	Sep 2018	Mar 2019	Sep 2018	Mar 2019	Sep 2018	Mar 2019	Sep 2018	Mar 2019	Sep 2018	Mar 2019	Sep 2018	Mar 2019
East Asia and Pacific	47.2	47.0	2.3	2.3	254.2	253.8	12.5	12.4	710.4	710.3	34.9	34.8
Europe and Central Asia	7.1	7.1	1.5	1.5	26.2	26.2	5.4	5.4	68.2	68.1	14.0	14.0
Latin America and the Caribbean	24.3	24.3	3.9	3.9	66.3	66.3	10.6	10.6	164.8	164.6	26.3	26.3
Middle East and North Africa	18.6	15.7	5.0	4.2	60.6	58.1	16.3	15.6	157.9	156.6	42.5	42.1
Other high Income	7.3	7.4	0.7	0.7	9.8	10.0	0.9	0.9	16.1	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	413.3	413.0	41.1	41.0	667.0	667.4	66.3	66.3	849.5	850.1	84.5	84.5
World less Other High Income	726.9	723.7	11.6	11.5	1921.7	1919.3	30.6	30.6	3369.7	3368.6	53.7	53.7
World Total	734.3	731.0	10.0	9.9	1931.5	1929.3	26.3	26.2	3385.8	3384.8	46.0	46.0

*Note: the September 2018 numbers include minor revisions for LAC made to the estimates in February 2019 and are therefore not exactly the same as the numbers presented in Chen et al, 2018. See “What’s New” on PovcalNet website for details.

The new surveys added have helped improve availability of country estimates for many countries, and slightly improved the overall measure of population coverage of household surveys, compared with the update of September 2018 (Table 2).

Table 2. Population coverage of household surveys by region

Region	Coverage	
	Sep 2018	Mar 2019
East Asia and Pacific	97.6	97.6
Europe and Central Asia	89.9	89.9
Latin America and the Caribbean	89.8	89.9
Middle East and North Africa	64.6	67.7
Other high Income	71.7	74.7
South Asia	21.4	21.4
Sub-Saharan Africa	52.7	54.7
World Total	66.7	67.6

Note: The criterion for estimating survey population coverage is whether at least one survey used in the reference year estimate was conducted less than three years of the reference year, which means the South Asia coverage for 2015 is below the threshold.

2. Changes to the welfare aggregates

2.1. Azerbaijan (2002-2005)

The welfare aggregate has been revised to a new version (including consumption items that were missed and correcting some minor mistakes). These changes result in substantial changes in inequality (Table 3).

Table 3 Gini index in Azerbaijan: Comparison of September 2018 and March 2019 versions

Year	September 2018	March 2019	Difference
2002	17.36	25.28	7.91
2003	18.81	26.83	8.03
2004	16.23	26.62	10.39
2005	16.64	26.55	9.92

2.2. Belarus (2015, 2016)

For the 2015 and 2016 surveys, purchase of real estate was removed from the welfare aggregate. The item “Expenditures for construction and purchase of real estate” was mistakenly included as rent. The effects on the poverty headcount at \$5.5 are small, while the impact on inequality is somewhat larger (Table 4).

Table 4. Poverty and Inequality in Belarus: Comparison of September 2018 and March 2019 versions

Year	Poverty headcount at \$5.5 (%)		Gini index	
	Sep-2018	Mar-2019	Sep-2018	Mar-2019
2015	0.72	0.87	26.73	25.63
2016	0.67	0.71	26.99	25.31

2.3. Brazil (2001-2015)

The labor income aggregate has been revised to include some earnings from the non-primary occupation that were previously excluded. This has a very small impact on poverty. In addition, the variables for education and availability of water have been revised, which results in a (small) change in the hedonic model for imputing rents, which in turn affects poverty. The overall changes to the poverty headcount and the Gini index are in the second decimal or smaller (Table 5).

Table 5. Poverty and Inequality in Brazil: Comparison of September 2018 and March 2019 versions

Year	Poverty headcount at \$1.9 (%)		Gini index	
	Sep-2018	Mar-2019	Sep-2018	Mar-2019
2001	11.60	11.59	58.41	58.41
2002	10.31	10.31	58.11	58.11
2003	11.09	11.09	57.56	57.56
2004	9.73	9.73	56.48	56.48
2005	8.64	8.64	56.32	56.32
2006	7.20	7.20	55.65	55.65
2007	6.81	6.81	54.93	54.93
2008	5.59	5.59	54.05	54.04
2009	5.41	5.41	53.67	53.69
2011	4.73	4.72	52.94	52.95
2012	3.77	3.77	52.60	52.69
2013	3.83	3.82	52.77	52.77
2014	2.76	2.76	51.46	51.47
2015	3.36	3.37	51.33	51.32

2.4. Colombia (2001-2005, 2008-2015)

The urban/rural price deflation was changed from the method applied to all SEDLAC (Socio-Economic Database for Latin America and the Caribbean) surveys (rural incomes inflated by 15%, see Ferreira et al., 2016) to the spatial price deflator used by the national statistics office (NSO) at

the department level (Spanish *departamentos*).¹ The revision was first mentioned in Atamanov et al., 2018, but was first implemented with this update. This results in a small change in the poverty rates. In addition, the new income aggregate includes a few new items. From 2001 to 2005 changes in poverty and inequality are negligible, but from 2008 to 2015 changes in the poverty headcount are around 0.2 percentage points (Table 6).

Table 6. Poverty and Inequality in Colombia: Comparison of September 2018 and March 2019 versions

Year	Poverty headcount at \$1.9 (%)		Gini index	
	Sep-2018	Mar-2019	Sep-2018	Mar-2019
2008	10.40	10.35	55.39	55.54
2009	9.02	8.87	54.47	54.39
2010	7.85	7.72	54.78	54.73
2011	6.36	6.26	53.62	53.52
2012	6.35	6.20	52.85	52.75
2013	5.74	5.68	52.85	52.82
2014	5.03	5.03	52.80	52.73
2015	4.53	4.54	51.14	51.10

2.5. Dominican Republic (2000-2016)

The NSO adjusted the sampling weights in the household survey to match the official population projections of the NSO. The changes in poverty and inequality are small (Table 7).

Table 7. Poverty and Inequality in the Dominican Republic: Comparison of September 2018 and March 2019 versions

Year	Poverty headcount at \$1.9 (%)		Gini index	
	Sep-2018	Mar-2019	Sep-2018	Mar-2019
2000	5.52	5.46	51.98	51.52
2001	4.01	3.92	50.37	50.00
2002	5.99	5.62	49.96	49.68
2003	6.95	6.65	52.03	52.13
2004	8.80	8.47	51.99	52.06
2005	5.80	5.64	49.93	49.97
2006	4.54	4.34	51.82	51.96
2007	4.52	4.35	48.60	48.86
2008	3.85	3.68	47.82	48.11

¹ Therefore, among the SEDLAC countries, only for Colombia and Peru a spatial price index (provided by the NSO) is used; for the other countries rural incomes are inflated by 15%.

2009	3.29	3.14	48.51	48.88
2010	2.64	2.49	46.95	47.33
2011	2.90	2.89	47.35	47.71
2012	2.68	2.60	45.61	46.13
2013	2.37	2.17	46.97	47.66
2014	2.27	2.08	44.06	44.28
2015	1.92	1.78	44.69	45.18
2016	1.60	1.64	45.28	45.72

2.6. El Salvador (2008)

There was a small change in the rent imputation. The effect on the poverty headcount or inequality measures is minimal; in the fifth decimal.

2.7. Georgia (2002-2016)

As a result of the Population Census conducted in 2014, all survey weights were revised going back to 2002. Additionally, the welfare vector was modified to use the most up to date COICOP (Classification of Individual Consumption According to Purpose) item classifications from the NSO of Georgia (GEOSTAT). Changes in poverty and inequality are small (Table 8).

Table 8. Poverty and Inequality in Georgia: Comparison of September 2018 and March 2019 versions

Year	Poverty headcount at \$1.9 (%)		Gini index	
	Sep-2018	Mar-2019	Sep-2018	Mar-2019
2002	11.49	10.51	37.28	37.25
2003	11.60	10.75	36.73	36.66
2004	11.30	10.14	36.34	36.18
2005	12.06	10.86	37.31	37.38
2006	11.64	10.54	36.90	36.87
2007	13.26	11.83	38.26	38.11
2008	12.40	10.41	38.21	38.53
2009	10.40	10.25	38.06	38.24
2010	13.33	12.18	40.06	39.46
2011	11.65	11.28	39.55	39.62
2012	8.95	8.62	38.84	38.95
2013	6.88	6.61	38.35	38.59
2014	5.28	4.99	37.29	37.55
2015	3.97	3.76	36.43	36.50
2016	4.19	3.93	36.49	36.64

2.8. Guatemala (2000, 2014)

Because of the general changes in the SEDLAC project explained in 2.19 below, poverty headcount and inequality in Guatemala changed slightly in 2000 and 2014 (Table 9).

Table 9. Poverty and Inequality in Guatemala: Comparison of September 2018 and March 2019 versions

Year	Poverty headcount at \$1.9 (%)		Gini index	
	Sep-18	Mar-19	Sep-18	Mar-19
2000	9.23	9.23	54.24	54.18
2014	8.65	8.66	48.31	48.28

2.9. Honduras (2001)

The raw data had been merged incorrectly. The merge was corrected and a new harmonized version was created. The changes are summarized in the table below (Table 10).

Table 10. Poverty and Inequality in Honduras 2001: Comparison of September 2018 and March 2019 versions

Indicator	Sep-2018	Mar-2019	Difference
Poverty headcount at \$1.9 (%)	20.56	21.29	0.73
Gini index	55.24	55.58	0.33

2.10. Kazakhstan (2001-2015)

The rent component (actual rents) was removed for the whole series starting in 2001, as there are only about 3-5% households with actual rent reporting in the welfare aggregates. The welfare aggregate already excluded imputed rents, so this change ensures that renters and owner-occupiers are treated similarly. This change has only a small impact on poverty and inequality. For instance, the largest change in the poverty headcount is an increase of 0.27 percentage points from 8.90% to 9.17% at \$5.5 a day in 2012.

2.11. Kosovo (2015)

Some mismatches between COICOP items for 2015 and 2016 were fixed. The outlier adjustment for the welfare vector now uses individual weights rather than household weights. The resulting changes in poverty and inequality are very small. For instance, in 2015 the poverty headcount at

\$5.5 a day changes from 21.50% to 21.37%, whereas the Gini index changes from 26.37 to 26.45 for the same year.

2.12. Latvia (1997)

The wrong distribution was provided for Latvia 1997. The correct distribution replaces previous 1997 survey.

2.13. Macedonia, FYR (2010-2016)

New microdata, previously unavailable, were added to the PovcalNet repository, replacing old group-data files.

2.14. Malawi (1997, 2004, 2010)

A new datapoint for Malawi 2016 has been added. Similar to the method used between the 2004 and 2010 surveys, the inflation rate in Malawi does not use the IFS CPIs but uses prices observed in the surveys. With this approach, the inflation from 2010 to 2016 is estimated to be 271.1 percent (National Statistics Office of Malawi and the World Bank (2018), p. 11). Since Malawi now has a survey on each side of 2011, the entire CPI series is rebased according to formula 2 in Lakner et al. (2018). This has caused slight changes to the 1997, 2004 and 2010 poverty estimates, while leaving inequality unchanged (Table 11).

Table 11. Poverty and Inequality in Malawi: Comparison of September 2018 and March 2019 versions

Year	Poverty headcount at \$1.9 (%)		Gini index	
	Sep-18	Mar-19	Sep-18	Mar-19
1997	62.78	63.28	65.76	65.76
2004	72.83	73.41	39.87	39.87
2010	71.38	71.72	45.48	45.48

2.15. Panama (2000-2015).

Because of the general changes in the SEDLAC project explained in 2.19 below, the poverty headcount and inequality in Panama changed slightly from 2004 to 2015. From 2000 to 2003 both series remain unchanged (Table 12).

Table 12. Poverty and Inequality in Panama: Comparison of September 2018 and March 2019 versions

Year	Poverty headcount at \$1.9 (%)		Gini index	
	Sep-18	Mar-19	Sep-18	Mar-19
2000	12.37	12.37	56.84	56.84
2001	15.55	15.55	56.88	56.88
2002	11.22	11.22	56.24	56.24
2003	11.17	11.17	55.77	55.77
2004	10.24	10.12	54.88	54.78
2005	10.01	9.96	53.87	53.81
2006	10.53	10.51	54.68	54.65
2007	7.80	7.77	52.82	52.69
2008	6.97	5.21	53.43	52.69
2009	3.18	3.17	51.87	51.77
2010	4.48	4.49	51.71	51.61
2011	3.04	3.04	51.38	51.35
2012	4.15	4.12	51.83	51.74
2013	2.81	2.79	51.50	51.46
2014	3.53	3.51	50.58	50.47
2015	1.98	1.98	50.81	50.81

2.16. Peru (2000-2016)

Because of the general changes in the SEDLAC project explained in 2.19 below, poverty headcount and inequality in Peru changed slightly from 2000 to 2016 (Table 13).

Table 13. Poverty and Inequality in Peru: Comparison of September 2018 and March 2019 versions

Year	Poverty headcount at \$1.9 (%)		Gini index	
	Sep-18	Mar-19	Sep-18	Mar-19
2000	16.39	16.27	49.36	49.08
2001	17.14	17.18	51.55	51.32
2002	15.10	15.01	53.77	53.59
2003	11.89	11.75	53.46	53.08
2004	13.58	13.46	50.26	49.88
2005	15.49	15.34	50.78	50.45
2006	13.54	13.34	50.55	50.33
2007	11.11	11.01	50.41	50.03
2008	8.94	8.96	47.82	47.47
2009	7.04	6.99	47.31	47.02
2010	5.50	5.46	45.73	45.54
2011	5.20	5.19	44.91	44.66
2012	4.72	4.73	44.66	44.45
2013	4.32	4.31	44.11	43.89

2014	3.72	3.68	43.36	43.15
2015	3.55	3.55	43.50	43.36
2016	3.49	3.47	43.78	43.65

2.17. Romania (2006, 2007, 2016)

Observations with a missing value in the weight variable caused issues in merging the individual data to the household level data. The estimation code has now been modified to address this problem. For 2006 and 2007, this change has no effect on poverty and inequality. However, for 2016, the poverty headcount at \$5.5 slightly declines from 18.49% to 18.37%, whereas the Gini coefficient increases from 28.32 to 28.34 for the same year.

2.18. Rwanda (2010, 2013)

The welfare vectors originally provided by the NSO were in January 2011 and January 2014 prices, respectively. Prior to this update, the welfare aggregate had been adjusted to decimal year prices using an outdated inflation rate. With this update, the original welfare aggregates in January 2011 and January 2014 prices are used. As a result, the poverty headcount changes slightly from 62.63% to 62.29% in 2010 and from 56.0% to 56.84% in 2013 at \$1.9 a day. The Gini index remains unchanged.

2.19. SEDLAC (household members)

The PovcalNet data for Latin America and the Caribbean are taken from the Socio-Economic Database for Latin America and the Caribbean (SEDLAC). SEDLAC has been developed by the Center for Distributional, Labor and Social Studies (CEDLAS) of the Universidad Nacional de La Plata in Argentina, in partnership with World Bank's Poverty and Equity Group's Latin America team. The SEDLAC harmonization has been revised such that *only* domestic workers and individuals who pay rent (tenants) are excluded as members of the household. This change directly affects the per capita welfare aggregate of some households, which in turn affects the poverty rate. The country/years affected by this change are Panama (2000-2015), Guatemala (2000, 2014), and Peru (2000-2016).

2.20. Tonga (2009)

Gifts given were removed since it is considered double counting. This change also makes the welfare aggregate more consistent with the 2015 survey. The effects on the estimates are minimal.

3. Changes to CPI data

The baseline source of CPI data has been updated to the IMF's International Financial Statistics (IFS) as of December 2018. Lakner et al. (2018) provide an overview of the various CPI series that are used in PovcalNet. Table A.1 in the Appendix to this note gives the up-to-date source of the deflator for all countries included in PovcalNet as of the current update.

3.1. Revisions of China CPI Series

Urban and rural CPIs for China have been revised based on the most recent data from the National Bureau of Statistics (NBS) and China's poverty estimates have been updated accordingly. The changes in the rural poverty headcount ratio were larger than those in the urban headcount, and they are concentrated before 2010. The rural headcount is adjusted downward by 0.66 percentage point at most before 2008, with no changes after that point (at two decimal points). For urban China, the biggest (downward) change in headcount is 0.28 percentage point in 1981 and there are changes only in the second decimal after the 1980s and 1990s. Table 14 shows the impact of these revisions on the poverty headcount ratio, for urban, rural and national China.

Table 14. Revisions of China CPIs: Comparison of poverty headcount ratio (in %, at \$1.90)

Year	Rural		Urban		National	
	Sep-18	Mar-19	Sep-18	Mar-19	Sep-18	Mar-19
1981	95.59	95.36	59.42	59.14	88.32	88.07
1984	85.22	84.56	42.59	42.36	75.75	75.19
1987	72.55	72.06	24.27	24.08	60.84	60.42
1990	78.95	78.53	32.16	31.99	66.58	66.22
1993	71.83	71.40	20.86	20.71	57.00	56.64
1996	55.26	54.77	13.85	13.74	42.05	41.67
1999	56.38	55.91	10.96	10.87	40.54	40.21
2002	48.80	48.36	4.95	4.90	31.95	31.66
2005	30.63	30.24	2.69	2.66	18.75	18.51
2008	26.25	26.58	1.33	1.34	14.65	14.83
2010	21.30	21.30	0.74	0.75	11.18	11.18
2011	15.44	15.44	0.54	0.54	7.90	7.91

2012	12.98	12.98	0.42	0.42	6.47	6.48
2013	3.38	3.38	0.51	0.51	1.85	1.86
2014	2.39	2.39	0.49	0.49	1.36	1.36
2015	1.25	1.25	0.32	0.31	0.73	0.73

Methodology

From 1981 to 2005, both rural and urban CPIs adopted by PovcalNet are from the China Statistical Yearbook. Due to high food price inflation in the mid-2000s, alternative CPIs were used over this period in an attempt to capture price changes for the poor: From 2006 to 2010, the rural CPI is computed as the weighted average of food and non-food rural CPIs, using the expenditure shares of the poorest 5 percent of households within rural areas. The urban CPI between 2006 and 2011 is estimated with a similar methodology, using urban CPIs and expenditure shares of the poorest 5 percent of households within urban areas. From 2010 onwards, the rural CPI series is derived from changes in the rural poverty line. Starting in 2012, the urban series is directly taken from the official urban price indices by the NBS. For more information on the CPI source, see Lakner et al. (2018).

4. Changes to National Accounts Data

The national accounts data used to adjust survey data to reference years have been updated. Methodological details and choice of data sources are available in a new technical note with this update (see Prydz et al, 2019). The primary series is national accounts data from WDI December 2018, supplemented with historical data from the Maddison Project Database.² Some special country series are used in a few cases. A full overview of national accounts data used in the update, including special series, is available in Appendix 2.

5. National inequality measures for China, India and Indonesia

PovcalNet uses separate rural and urban distributions for China, India and Indonesia, the three most populous developing countries. By having separate distributions, PovcalNet is able to control for spatial price differences between rural and urban areas in a flexible manner (e.g. users can

² We use Maddison Project Database, version 2018. See Bolt et al (2018) and Prydz et al (2019) for details.

easily apply alternative assumptions about rural-urban price differences). In the case of China, the urban and rural areas used to be surveyed separately until 2012 when the nationally integrated survey began.

In every survey year, PovcalNet reports distributional estimates (e.g. mean, median, poverty headcount, Gini) separately for rural and urban areas. Furthermore, the mean and poverty measures are also reported nationally, by simply re-weighting the rural and urban estimates. National inequality estimates, however, were previously only reported in selected years. With this update, national inequality measures for China, India and Indonesia are provided in *all survey years* available in PovcalNet, and the existing estimates have been revised. Full details of the methodology and comparisons with estimates published in the literature are given in the Appendix to Ferreira et al. (forthcoming).

It is important to note that these are estimates produced by the PovcalNet team. They may differ from the series produced by National Statistical Offices due to different methodological choices, such as the choice of spatial price deflator and whether to adjust the WDI population totals. In the case of China, for example, the NSO reports a Gini based on income, while our series uses consumption expenditure – inequality in consumption tends to be lower than in terms of income, and may also show a different trend (e.g. see Alvaredo and Gasparini, 2015, and World Bank, 2016).

In addition to the distributional data, the estimation of the national inequality measures uses the following data: Welfare aggregates are deflated into 2011 constant local currency using the CPI. Both China and India use separate CPI series for rural and urban, while in Indonesia a national deflator is used (see Lakner et al (2018) for more information on the CPIs used). In addition, the welfare aggregate is adjusted for price level differences using 2011 purchasing power parity (PPP) exchange rates. To capture rural-urban price differences, different PPPs are used for the rural and urban areas in China, India and Indonesia (see the online Appendix of Ferreira et al. (2016) for the urban/rural adjustment factors being used). Finally, in the construction of the national distribution, urban and rural distributions are weighted using the urban and rural population from the World Development Indicators (WDI).³

³ In India, the survey fieldwork does not coincide with a calendar year. For example, the fieldwork for the 2011.5 survey is split half-half across 2011 and 2012. From WDI, we average the population values reported in 2011 and 2012.

5.1. Methodology for micro data

Among these three countries, microdata are available in PovcalNet for India in 1993.5, 2004.5, 2009.5, and 2011.5, and for Indonesia in 1993, 1996 and annually from 1998 to 2017. The sampling weights are post-stratified by the ratio of the census population to the sum of sampling weights for rural and urban separately. The formula is as follows:

$$\widetilde{w}_{i,a} = w_{i,a} * \frac{P_{c,a}}{\sum w_{i,a}} \quad (1)$$

where $\widetilde{w}_{i,a}$ is the rescaled weight, $w_{i,a}$ is the original survey weight, $P_{c,a}$ is total census population (from WDI) for subsample a (either urban or rural). $\widetilde{w}_{i,a}$ is the rescaled weight which is used to compute the national estimates. The main reason for rescaling survey weights in this way is to preserve consistency with the national estimates of poverty and the mean that are derived as a weighted average of the rural and urban estimates (where the weights are taken from the WDI). The survey weights and WDI may imply different urban/rural weights for several reasons, such as sampling frames based on an older census. Furthermore, for the grouped data (see below), only the WDI weights can be used, so we use them throughout for consistency.

5.2. Methodology for grouped data

Due to the absence of micro data, we rely on grouped data for China, and for India and Indonesia in earlier years to derive the national distribution. Based on the grouped data, PovcalNet fits two parametric Lorenz curves, the general quadratic (GQ) and beta Lorenz curves, and reports the corresponding parameter estimates in the detailed output page.⁴ We extract these parameter estimates and create a distribution of 100,000 quantiles (separately for urban and rural areas) using the following formula:

$$x(p) = \mu \times L'(p, \pi) \quad (2)$$

⁴ For example, the relevant URL for rural China in 2015: http://iresearch.worldbank.org/PovcalNet/Detail.aspx?Format=Detail&C0=CHN_1&PPP0=3.69611&PL0=1.90&Y0=2015&NumOfCountries=1

where μ is mean consumption, $L'(p, \pi)$ is the slope of the Lorenz curve with a vector of parameters π and $x(p)$ is p th quantile of the consumption distribution (e.g. $x(0.5)$ is the median). The expressions for the slopes of the Lorenz curve for the beta and GQ functional forms are given in Datt (1992). These simulated data, weighted by the urban and rural WDI population numbers, are then used to calculate the national inequality measures.

5.3. Overview of the estimates

For the years for which national inequality measures were published in September 2018, Table 15 compares the Gini estimates across the two vintages. The differences for China are in the second decimal, while they are around half a Gini point for India and Indonesia. For India and Indonesia, the revision can be explained by a mistake in the way the survey weights had been rescaled (essentially the fraction in equation 1 above was reversed). Furthermore, for India, the welfare aggregate is now adjusted by the half-year urban and rural CPI (from 2011.5 to 2011, the base year for the PPP), such that the aggregate is identical to what is used for estimating poverty. For Indonesia, there was also an update to the WDI population data.

Table 15. National Gini for China, India and Indonesia: Comparison of September 2018 and March 2019 versions

Country	Year	Type	Gini		
			Sep-2018	Mar-2019	Difference
China	2008	grouped	42.83	42.91	0.08
China	2012	grouped	42.16	42.21	0.05
India	2011.5	micro	35.15	35.71	0.56
Indonesia	2013	micro	39.47	39.94	0.47

6. Country-years added/removed

50 New country-years have been added to PovcalNet. These surveys are listed in Table 16.

Table 16. New Country-years added

Economy	Years	Survey Name
Argentina	2017	EPHC-S2: Encuesta Permanente de Hogares Continua - Semester 2.
Armenia	2017	ILCS: Integrated Living Conditions Survey
Australia	2004,2014	SIH: Survey of Income and Housing [400 bins extracted from LIS]

Belarus	2017	HHS: Household Sample Survey
Bolivia	2017	EH: Encuesta de Hogares
Brazil	2016, 2017	PNADC: Pesquisa Nacional por Amostra de Domicílios Continua ⁵
Botswana	2017	BMTHS: Botswana Multi-Topic Household Survey
Chile	2017	CASEN: Encuesta de Caracterización Socioeconómica Nacional
Colombia	2017	GEIH: Gran Encuesta Integrada de Hogares
Costa Rica	2017	ENAH0: Encuesta Nacional de Hogares
Germany	1995, 1998, 2002, 2003, 2005, 2008, 2009	GSOEP: German Social Economic Panel Study [400 bins extracted from LIS]
Djibouti	2017	EDAM: Enquete Djiboutienne Aupres de Menages
Ecuador	2017	ENEMDU: Encuesta Nacional de Empleo, Desempleo y Subempleo
El Salvador	2017	EHPM: Encuesta de Hogares de Propósitos Múltiples
Georgia	2017	HIS: Household Integrated Survey
Ghana	2016	GLSS-VII: Ghana Living Standards Survey
Honduras	2017	EPHPM: Encuesta Permanente de Hogares de Propósitos Múltiples
Iran, Islamic Rep.	2015-2016	HIES: Household Income and Expenditure Survey
Israel	2014, 2016	Household Expenditure Survey [400 bins extracted from LIS]
Kazakhstan	2016-2017	HBS: Household Budget Survey
Kosovo	2017	HBS: Household Budget Survey
Kyrgyz Republic	2017	KIHS: Kyrgys Integrated Household Survey
Liberia	2016	HIES: Household Income and Expenditure Survey
St. Lucia	2016	HBS: Household Budget Survey
Moldova	2017	HBS: Household Budget Survey
Macedonia	2015	SILC-C: Survey of Income and Living Conditions
Malawi	2016	IHS-IV: Integrated Household Survey
Panama	2017	EH: Encuesta de Hogares
Paraguay	2017	EPH: Encuesta Permanente de Hogares
Peru	2017	ENAH0: Encuesta Nacional de Hogares
Rwanda	2016	EICV-V: Enquête Intégrale sur les Conditions de Vie des ménages
Sudan	2014	NBHS: National Baseline Household Survey
Thailand	2016, 2017	SES: Standardization of Socio-Economic Status
Tonga	2015	HIES: Household Income and Expenditure Survey
Tunisia	2015	NSHBCSL: National Survey of Household Budget, Consumption and Standard of Living
Uruguay	2017	ECH: Encuesta Continua de Hogares
Samoa	2002, 2013	HIES: Household Income and Expenditure Survey

⁵ The new PNADC survey is not comparable with the previous survey PNAD (available from 1981 to 2015).

Note: One country-year has been removed with this update. The 2015 survey for Bosnia and Herzegovina has been removed until further revisions of the methodology used to construct the consumption aggregate for international comparisons are complete. Analyses conducted by the regional statistical team found that the current welfare aggregate may be unsuitable for regional comparisons due to a very different method for construction of the consumption aggregate; particularly the use of imputed rents, compared with methods generally used in the region.

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Appendix 1 – CPI Data sources

Table A1. 1 lists the source of CPI used for each country-year reported in PovcalNet. The columns in the table are defined as follows:

- **Code:** The 3-letter country code used by the World Bank: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>
- **Country name:** Name of country
- **Year(s):** Welfare reporting year, i.e. the year for which the welfare has been reported. If the survey collects income for the previous year, it is the year prior to the survey. This is identical to the year variable used in PovcalNet.
- **CPI period:** Common time period to which the welfare aggregates in the survey have been deflated. The letter Y denotes that the CPI period is identical to the year column. When the welfare aggregate has been deflated to a particular month within the welfare reporting year, the month is indicated by a number between 1 and 12, preceded by an M, and similarly with a Q for quarters. The letter W indicates that a weighted CPI is used, as described in equation 1 in Lakner et al. (2018).
- **CPI source:** Source of the deflator used. The source is given by the abbreviation, the frequency of the CPI, and the vintage; e.g. IFS-M-201712 denotes the monthly IFS database version December 2017. For country-specific deflators, the description is given in the text or further details are available upon request.

Table A1. 1. Source of temporal deflator used in PovcalNet

Code	Country Name	Survey	Year(s)	CPI period	Source
AGO	Angola - urban	HBS	2000	W	IFS-M-201811
	Angola	IBEP-MICS	2008	W	IFS-M-201811
ALB	Albania	EWS	1996	Y	IFS-M-201811
		LSMS	2002-2012	Y	IFS-M-201811
ARG	Argentina - urban	EPH	1980-1987	Y	CEDLAS May 25 18
			1991-2002	M9	NSO
		EPHC	2003-2006	M7-M12	NSO
			2007-2014	M7-M12	Private estimates
		EPHC-S2	2007-2014	M7-M12	Private estimates
	2016	M7-M12	NSO		

			2017	M7-M12	NSO
ARM	Armenia	ILCS	ALL	Y	IFS-M-201811
AUS	Australia	IHS	1981-1985	Y	IFS-A-201811
		SIHCA	1989	Y	IFS-A-201811
		SIH	1995-2008	Y	IFS-A-201811
		HES	2010-2014	Y	IFS-A-201811
AUT	Austria	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
AZE	Azerbaijan	ASLC	1995	Y	IFS-M-201811
		HBS	2001-2005	Y	IFS-M-201811
		HSMTSA	2008	Y	IFS-M-201811
BDI	Burundi	EDCM	1992	Y	IFS-M-201811
		EPENCVP	1998	W	IFS-M-201811
		QUIBB	2006	Y	IFS-M-201811
		ECVMB	2013	W	IFS-M-201811
BEL	Belgium	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
BEN	Benin	QUIBB	2003	Y	IFS-M-201811
		EMICOV	2011	W	IFS-M-201811
			2015	Y	IFS-M-201811
BFA	Burkina Faso	EP-I	1994	W	IFS-M-201811
		EP-II	1998	Y	IFS-M-201811
		ECVM	2003-2009	Y	IFS-M-201811
		EMC	2014	Y	IFS-M-201811
BGD	Bangladesh	HHES	1983-1985	W	WEO-A-201810
			1988-1991	W	IFS-A-201811
			1995	W	Survey
		HIES	2000-2016	Y	Survey
BGR	Bulgaria	HBS	1989	Y	IFS-A-201811
			1992-1994	Y	IFS-M-201811
		IHS	1995-2001	Y	IFS-M-201811
		MTHS	2003	Y	IFS-M-201811
		EU-SILC	2007	(prev. year)Y	IFS-M-201811
		MTHS	2007	Y	IFS-M-201811
		EU-SILC	2008-2017	(prev. year)Y	IFS-M-201811
BIH	Bosnia and Herzegovina	LSMS	2001-2004	Y	WEO-A-201810
		HBS	2007-2015	Y	IFS-M-201811
BLR	Belarus	FBS	1993-1995	Y	IFS-M-201811
		HBS	1998-1999	Y	IFS-M-201811
		HHS	2000-2017	Y	IFS-M-201811
BLZ	Belize	LFS	1993-1999	Y	WEO-A-201810
		HBS	1995	Y	WEO-A-201810
		SLC	1996	Y	WEO-A-201810

BOL	Bolivia - urban	EPF	1990	W	IFS-M-201806
		Bolivia	EIH	1992	M11
		ENE	1997	M11	IFS-M-201806
		ECH	1999	M10	IFS-M-201806
			2000	M11	IFS-M-201806
		EH	2001-2002	M11	IFS-M-201806
		ECH	2004	M10	IFS-M-201806
		EH	2005	M11	IFS-M-201806
			2006-2015	M10	IFS-M-201806
		EPF	2016	M10	IFS-M-201806
		EH	2017	M11	IFS-M-201806
BRA	Brazil	PNAD	1981-2015	M9	IFS-M-201811
		PNADC	2016-2017	Y	IFS-M-201811
BTN	Bhutan	BLSS	ALL	Y	Previous WDI/IFS
BWA	Botswana	HIES	1985-2002	W	IFS-M-201811
		CWIS	2009	W	IFS-M-201811
		BMTHS	2015	W	IFS-M-201811
CAF	Central African Republic	EPI	1992	W	IFS-M-201811
	Central African Republic - rural	ESCVM	2003	Y	IFS-M-201811
	Central African Republic	ECASEB	2008	Y	IFS-M-201811
CAN	Canada	SCF	1981-1997	Y	IFS-M-201811
		SLID	1998-2010	Y	IFS-M-201811
		CIS	2013	Y	IFS-M-201811
CHE	Switzerland	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
CHL	Chile	CASEN	1987	Y	IFS-M-201806
			1990-2017	M11	IFS-M-201806
CHN	China - rural	CRHS	1981-2011	Y	NSO
	China - urban		1981-2011	Y	NSO
	China - rural	CNIHS	2012-2015	Y	NSO
	China - urban		2012-2015	Y	NSO
CIV	Côte d'Ivoire	EPAM	1985-1988	W	IFS-M-201811
		EP	1992	W	IFS-M-201811
		ENV	1995-2015	Y	IFS-M-201811
CMR	Cameroon	ECAM-I	1996	Y	IFS-M-201811
		ECAM-II	2001	Y	IFS-M-201811
		ECAM-III	2007	Y	IFS-M-201811
		ECAM-IV	2014	Y	IFS-M-201811
COD	Congo, Dem. Rep.	E123	ALL	W	IFS-M-201811
COG	Congo, Rep.	ECOM	ALL	Y	IFS-M-201811

COL	Colombia - urban	ENH	1980	Y	IFS-M-201811
			Colombia	1988	Y
	Colombia - urban		1989	M11	IFS-M-201811
			Colombia	1991-2000	M11
		ECH	2001-2005	M11	IFS-M-201811
		GEIH	2008-2017	M11	IFS-M-201811
COM	Comoros	EIM	2004	Y	IFS-M-201811
		EDMC	2013	Y	IFS-M-201811
CPV	Cabo Verde	IDRF	2001	W	IFS-M-201811
		QUIBB	2007	W	IFS-M-201811
CRI	Costa Rica	ENH	1981-1986	Y	IFS-M-201811
		EHPM	1989	Y	IFS-M-201811
			1990-2009	M7	IFS-M-201811
		ENAH0	2010-2017	M7	IFS-M-201811
CYP	Cyprus	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
CZE	Czech Republic	CMC	1993-1996	Y	IFS-M-201811
		EU-SILC	2005-2017	(prev. year)Y	IFS-M-201811
DEU	Germany	LIS	1991-2006	Y	IFS-M-201811
			2007-2012	(prev. year)Y	IFS-M-201811
			2013-2015	Y	IFS-M-201811
DJI	Djibouti	EDAM	2002-2013	Y	IFS-M-201811
			2017	M5	IFS-M-201811
DNK	Denmark	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
DOM	Dominican Republic	ENGSF	1986-1989	Y	IFS-M-201806
		ENIGH	1992	M6	IFS-M-201806
		ENFT	1996	M2	IFS-M-201806
			1997	M4	IFS-M-201806
			2000-2016	M9	IFS-M-201806
	2017	Y	IFS-M-201806		
DZA	Algeria	EDCM	1988	Y	IFS-M-201811
		ENMNV	1995	Y	IFS-M-201811
		ENCNVM	2011	W	IFS-M-201811
ECU	Ecuador - urban	EPED	1987	Y	IFS-M-201806
		Ecuador	ECV	1994	M6-M10
	EPED		1995	M11	IFS-M-201806
		1998	M6	IFS-M-201806	
		ECV	1999	(prev. year)M10-M9	IFS-M-201806
		EPED	2000	M11	IFS-M-201806
	ENEMDU	2003-2017	M11	IFS-M-201806	
EGY	Egypt, Arab Rep.	HIES	1990-1999	W	IFS-M-201811
		HIECS	2004-2012	W	IFS-M-201811

			2015	Y	IFS-M-201811
ESP	Spain	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
EST	Estonia	HIES	1993-1998	Y	IFS-M-201811
		HBS	2000-2003	Y	IFS-M-201811
		EU-SILC	2004	(prev. year)Y	IFS-M-201811
		HBS	2004	Y	IFS-M-201811
		EU-SILC	2005-2017	(prev. year)Y	IFS-M-201811
ETH	Ethiopia	HICES	ALL	W	IFS-M-201811
FIN	Finland	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
FJI	Fiji	HIES	ALL	W	IFS-M-201811
FRA	France	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
FSM	Micronesia, Fed. Sts. - urban	CPH	2000	Y	IFS-A-201811
	Micronesia, Fed. Sts.	HIES	2005-2013	Y	IFS-A-201811
GAB	Gabon	EGEP	2005	Y	IFS-M-201811
			2017	Y	WEO-A-201810
GBR	United Kingdom	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
GEO	Georgia	SGH	1996-1997	Y	IFS-M-201811
		HIS	1998-2017	Y	IFS-M-201811
GHA	Ghana	GLSS-I	1987	W	IFS-M-201811
		GLSS-II	1988	W	IFS-M-201811
		GLSS-III	1991	W	IFS-M-201811
		GLSS-IV	1998	W	IFS-M-201811
		GLSS-V	2005	W	Survey
		GLSS-VI	2012	W	Survey
		GLSS-VII	2016	W	Survey
GIN	Guinea	ESIP	1991	Y	WEO-A-201810
		EIBC	1994	W	WEO-A-201810
		EIBEP	2002	W	WEO-A-201810
		ELEP	2007-2012	Y	IFS-M-201811
GMB	Gambia, The	HPS	1998	Y	IFS-M-201811
		HIS	2003	W	IFS-M-201811
		IHS	2010-2015	W	IFS-M-201811
GNB	Guinea-Bissau	ILJF	1991	Y	IFS-M-201811
		ICOF	1993	Y	IFS-M-201811
		ILAP-I	2002	Y	IFS-M-201811
		ILAP-II	2010	Y	IFS-M-201811
GRC	Greece	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
GTM	Guatemala	ENSD	1986	W	IFS-M-201811
			1989	Y	IFS-M-201811
		ENIGF	1998	M8	IFS-M-201811
		ENCOVI	2000	M6-M11	IFS-M-201811

			2006-2014	M7	IFS-M-201811
GUY	Guyana	GLSMS	1992	W	WEO-A-201810
			1998	Y	IFS-M-201811
HND	Honduras - urban	ECSFT	1986	Y	IFS-M-201811
	Honduras	EPHPM	1989	Y	IFS-M-201811
			1990-1993	M5	IFS-M-201811
			1994	M9	IFS-M-201811
			1995-2017	M5	IFS-M-201811
HRV	Croatia	HBS	1988-2010	Y	IFS-M-201811
		EU-SILC	2010-2017	(prev. year)Y	IFS-M-201811
HTI	Haiti	ECVH	2001	M5	IFS-M-201811
		ECVMAS	2012	M10	IFS-M-201811
HUN	Hungary	HBS	1987-2007	Y	IFS-M-201811
		EU-SILC	2005-2017	(prev. year)Y	IFS-M-201811
IDN	Indonesia	SUSENAS	1984-1999	Y	IFS-M-201811
			2000-2007	M2	IFS-M-201811
			2008-2017	M3	IFS-M-201811
IND	India - rural	NSS	1983	Y	NSO
	India - urban		1983	Y	NSO
	India - rural	NSS-SCH1	1987-2011	W	NSO
	India - urban		1987-2011	W	NSO
IRL	Ireland	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
IRN	Iran, Islamic Rep.	SECH	1986-1998	Y	CBI
		HEIS	2005-2016	Y	CBI
IRQ	Iraq	IHSES	2006	M11-(next year)M12	COSIT
			2012	Y	COSIT
ISL	Iceland	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
ISR	Israel	HES	ALL	Y	IFS-M-201811
ITA	Italy	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
JAM	Jamaica	JSLC	1988	M9	IFS-M-201811
			1990-1993	M11-(next year)M3	IFS-M-201811
			1996	M5-M8	IFS-M-201811
			1999	M6-M8	IFS-M-201811
			2002-2004	M6	IFS-M-201811
JOR	Jordan	HEIS	1986	W	IFS-M-201811
			1992-1997	Y	IFS-M-201811
			2002-2010	W	IFS-M-201811
JPN	Japan	JHPS	2008	Y	IFS-M-201811
KAZ	Kazakhstan	HBS	1993-2017	Y	IFS-M-201811
		LSMS	1996	Y	IFS-M-201811

KEN	Kenya	WMS-I	1992	Y	NSO
		WMS-II	1994	Y	NSO
		WMS-III	1997	Y	NSO
		IHBS	2005-2015	W	NSO
KGZ	Kyrgyz Republic	PMS	1998	Y	IFS-M-201811
		HBS	2000-2003	Y	IFS-M-201811
		KIHS	2004-2017	Y	IFS-M-201811
KHM	Cambodia	CSES	ALL	Y	IFS-M-201811
KIR	Kiribati	HIES	2006	Y	IFS-M-201811
KOR	Korea, Rep.	FHES	ALL	Y	IFS-M-201811
LAO	Lao PDR	LECS	1997	W	IFS-M-201811
			2002-2012	W	Survey
LBN	Lebanon	HBS	2011	(next year)M5	IFS-M-201811
LBR	Liberia	CWIQ	2007	Y	IFS-M-201811
		HIES	2014-2016	Y	IFS-M-201811
LCA	St. Lucia	LSMS	1995	Y	IFS-M-201811
		SLCHB	2016	M1	IFS-M-201811
LKA	Sri Lanka	LFSS	1985	Y	IFS-M-201811
		HIES	1990	W	IFS-M-201811
		SES	1995	W	IFS-M-201811
		HIES	2002	Y	IFS-M-201811
		2006-2012	W	IFS-M-201811	
2016	Y	IFS-M-201811			
LSO	Lesotho	HBS	1986	W	WEO-A-201810
		NHECS	1994	W	WEO-A-201810
		HBS	2002	W	IFS-M-201811
		CMSHBS	2010	Y	IFS-M-201811
		2017	W	IFS-M-201811	
LTU	Lithuania	HBS	1993-2004	Y	IFS-M-201811
		EU-SILC	2005-2008	(prev. year)Y	IFS-M-201811
		HBS	2008	Y	IFS-M-201811
		EU-SILC	2009-2017	(prev. year)Y	IFS-M-201811
LUX	Luxembourg	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
LVA	Latvia	HBS	1993-2009	Y	IFS-M-201811
		EU-SILC	2005-2017	(prev. year)Y	IFS-M-201811
MAR	Morocco	ECDM	1984	W	IFS-M-201811
		ENCV	1990	W	IFS-M-201811
		ENNVN	1998-2006	W	IFS-M-201811
		ENCDM	2013	W	IFS-M-201811
MDA	Moldova	HBS	1997-2017	Y	IFS-M-201811
MDG	Madagascar	EBMR	1980	Y	IFS-M-201811

		EPM	1993	W	IFS-M-201811
			1997-2010	Y	IFS-M-201811
		ENSOMD	2012	Y	IFS-M-201811
MDV	Maldives	HIES	ALL	W	IFS-M-201811
MEX	Mexico	ENIGH	1984-2014	M8	IFS-M-201811
		NSENIGH	2016	M8	IFS-M-201811
MKD	Macedonia, FYR	HBS	1998-2008	Y	IFS-M-201811
		EU-SILC	2009	Y	IFS-M-201811
		SILC-C	2010-2016	(prev. year)Y	IFS-M-201811
MLI	Mali - rural	EMCES	1994	Y	IFS-A-201811
	Mali	EMEP	2001	W	IFS-M-201811
		ELIM	2006	Y	IFS-M-201811
			2009	W	IFS-M-201811
MLT	Malta	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
MMR	Myanmar	MPLCS	2015	M1	IFS-M-201811
MNE	Montenegro	HBS	ALL	Y	IFS-M-201811
MNG	Mongolia	LSMS	1995-1998	Y	IFS-M-201811
		LFS	2002	Y	IFS-M-201811
		LSS	2007	W	IFS-M-201811
		HSES	2010-2016	Y	IFS-M-201811
MOZ	Mozambique	NHS	1996	W	WEO-A-201810
		IAF	2002	W	WEO-A-201810
		IOF	2008-2014	W	WEO-A-201810
MRT	Mauritania	EPCV	1987-1993	Y	IFS-M-201811
			1995	W	IFS-M-201811
			2000-2014	Y	IFS-M-201811
MUS	Mauritius	HBS	2006	W	IFS-M-201811
			2012-2017	Y	IFS-M-201811
MWI	Malawi	IHS-I	1997	W	IFS-M-201811
		IHS-II	2004	W	Survey
		IHS-III	2010	W	Survey
		IHS-IV	2016	M04	Survey
MYS	Malaysia	HIBAS	1984-2007	Y	IFS-M-201811
		HIS	1987	Y	IFS-M-201811
NAM	Namibia	NHIES	1993	W	WEO-A-201810
			2003-2015	W	IFS-M-201811
NER	Niger	ENBC	1992	W	IFS-M-201811
		EPCES	1994	W	IFS-M-201811
		ENCVM	2005	Y	IFS-M-201811
		ENBCM	2007	W	IFS-M-201811
		ECVMA	2011-2014	Y	IFS-M-201811

NGA	Nigeria	NCS	1985	W	IFS-M-201811	
			1992-1996	Y	IFS-M-201811	
		LSS	2003-2009	W	IFS-M-201811	
NIC	Nicaragua	EMNV	1993	M2	NSO	
			1998	M6	NSO	
			2001	M6	IFS-M-201811	
			2005-2009	M8	IFS-M-201811	
			2014	M8-M10	IFS-M-201811	
NLD	Netherlands	EU-SILC	ALL	(prev. year)Y	IFS-M-201811	
NOR	Norway	EU-SILC	ALL	(prev. year)Y	IFS-M-201811	
NPL	Nepal	MHBS	1984	W	IFS-M-201806	
			LSS-I	1995	W	IFS-M-201806
			LSS-II	2003	W	IFS-M-201806
			LSS-III	2010	W	IFS-M-201806
PAK	Pakistan	HIES	1987	Y	IFS-M-201811	
			1990-1998	W	IFS-M-201811	
		IHS	1996	W	IFS-M-201811	
		PIHS	2001	W	IFS-M-201811	
		PSLM	2004-2015	W	IFS-M-201811	
PAN	Panama	EMO	1989	Y	IFS-M-201806	
			1991	M7	IFS-M-201806	
		EH	1995-2017	M7	IFS-M-201806	
PER	Peru	ENNIV	1985	W	IFS-M-201811	
			1994	Y	IFS-M-201811	
		ENAHO	1997-2002	Q4	IFS-M-201811	
			2003	M5-M12	IFS-M-201811	
			2004-2017	Y	IFS-M-201811	
PHL	Philippines	FIES	ALL	Y	IFS-M-201811	
PNG	Papua New Guinea	HIES	1996	Y	IFS-A-201811	
			2009	W	IFS-A-201811	
POL	Poland	HBS	1985-1987	Y	IFS-A-201811	
			1989-2016	Y	IFS-M-201811	
		EU-SILC	2005-2017	(prev. year)Y	IFS-M-201811	
PRT	Portugal	EU-SILC	ALL	(prev. year)Y	IFS-M-201811	
PRY	Paraguay	EH	1990	M7	IFS-M-201811	
			1995	M8-M11	IFS-M-201811	
		EIH	1997	(next year)M2	IFS-M-201811	
		EPH	1999	M9	IFS-M-201811	
		EIH	2001	M3	IFS-M-201811	
		EPH	2002	M11	IFS-M-201811	
			2003	M9	IFS-M-201811	

			2004	M10	IFS-M-201811
			2005	M11	IFS-M-201811
			2006	M12	IFS-M-201811
			2007-2008	M10	IFS-M-201811
			2009	M11	IFS-M-201811
			2010-2017	M10	IFS-M-201811
PSE	West Bank and Gaza	PECS	2004-2011	Y	IFS-M-201811
			2016	W	IFS-M-201811
ROU	Romania	HBS	1989	Y	Milanovic (1998)
		IHS	1994-2000	Y	IFS-M-201811
		HBS	1999-2006	Y	IFS-M-201811
		EU-SILC	2007-2017	(prev. year)Y	IFS-M-201811
RUS	Russian Federation	RLMS	1993-2001	Y	IFS-M-201811
		HBS	1996-2015	Y	IFS-M-201811
RWA	Rwanda - urban	ENBCM	1984	W	IFS-M-201811
	Rwanda	EICV-I	2000	W	IFS-M-201811
		EICV-II	2005	W	IFS-M-201811
		EICV-III	2010	(next year)M1	IFS-M-201811
		EICV-IV	2013	(next year)M1	IFS-M-201811
		EICV-V	2016	(next year)M1	IFS-M-201811
SDN	Sudan	NBHS	2009	Y	IFS-M-201811
			2014	M11	IFS-M-201811
SEN	Senegal	EP	1991	W	IFS-M-201811
		ESAM	1994	W	IFS-M-201811
		ESAM-II	2001	Y	IFS-M-201811
		ESPS-I	2005	W	IFS-M-201811
		ESPS-II	2011	W	IFS-M-201811
SLB	Solomon Islands	HIES	ALL	Y	IFS-M-201811
SLE	Sierra Leone	HEEAS	1989	W	WEO-A-201810
		SLIHS	2003	W	WEO-A-201810
			2011	Y	IFS-M-201806
SLV	El Salvador - urban	EHPM	1989	Y	IFS-M-201811
	El Salvador		1991	M10-(next year)M4	IFS-M-201811
			1995-1999	Y	IFS-M-201811
			2000-2007	M12	IFS-M-201811
			2008-2016	M11	IFS-M-201811
			2017	M12	IFS-M-201811
SRB	Serbia	LSMS	2002	Y	IFS-M-201811
		HBS	2003-2015	Y	IFS-M-201811
		EU-SILC	2013-2017	(prev. year)Y	IFS-M-201811
SSD	South Sudan	NBHS	2009	Y	IFS-M-201811

STP	São Tomé and Príncipe	IOF	2000	W	IFS-M-201811
			2010	Y	IFS-M-201811
SUR	Suriname - urban	EHS	1999	Y	IFS-M-201811
SVK	Slovak Republic	SMC	1996	Y	IFS-M-201811
		HBS	2004-2009	Y	IFS-M-201811
		EU-SILC	2005-2017	(prev. year)Y	IFS-M-201811
SVN	Slovenia	IES	1993	Y	IFS-M-201811
		HBS	1998-2003	Y	IFS-M-201811
		EU-SILC	2005-2017	(prev. year)Y	IFS-M-201811
SWE	Sweden	EU-SILC	ALL	(prev. year)Y	IFS-M-201811
SWZ	Swaziland	SHIES	1994	W	WEO-A-201810
		HIES	2000	W	WEO-A-201810
			2001	Y	WEO-A-201810
			2009-2016	W	WEO-A-201810
SYC	Seychelles	HBS	1999-2006	W	IFS-M-201811
			2013	Y	IFS-M-201811
SYR	Syrian Arab Republic	HBS	2004	Y	IFS-M-201811
TCD	Chad	ECOSIT-II	2003	Y	IFS-M-201811
		ECOSIT-III	2011	Y	IFS-M-201811
TGO	Togo	QUIBB	ALL	Y	IFS-M-201806
THA	Thailand	SES	ALL	Y	IFS-M-201811
TJK	Tajikistan	TLSS	1999	Y	WEO-A-201810
			2003-2007	Y	Survey
		HBS	2004	Y	Survey
		TLSS	2009	Y	IFS-M-201811
		HSITAFIEN	2015	Y	IFS-M-201811
TKM	Turkmenistan	LSMS	1998	Y	WEO-A-201810
TLS	Timor-Leste	TLSS	2001	Y	WEO-A-201810
		TLSLS	2007-2014	Y	IFS-M-201811
TON	Tonga	HIES	ALL	Y	IFS-M-201811
TTO	Trinidad and Tobago	PHC	1988	Y	IFS-M-201811
		SLC	1992	Y	IFS-M-201811
TUN	Tunisia	HBCS	1985	Y	IFS-A-201811
			1990	Y	IFS-M-201811
		LSS	1995-2000	Y	IFS-M-201811
		NSHBCSL	2005-2015	W	IFS-M-201811
TUR	Turkey	HICES	ALL	Y	IFS-M-201811
TUV	Tuvalu	HIES	2010	Y	WEO-A-201810
TZA	Tanzania	HBS	1991	W	IFS-A-201811
			2000	W	IFS-M-201811
			2007	Y	IFS-M-201811

			2011	W	IFS-M-201811	
UGA	Uganda	HBS	1989	Y	WEO-A-201810	
		NIHS	1992	W	WEO-A-201810	
			1996-1999	W	IFS-M-201811	
		UNHS	2002-2016	W	IFS-M-201811	
UKR	Ukraine	HS	1992-1993	Y	IFS-M-201811	
		HIES	1995-1996	Y	IFS-M-201811	
		HBS	1999	Y	IFS-M-201811	
		HLCS	2002-2016	Y	IFS-M-201811	
URY	Uruguay - urban	ENH	1981-1989	Y	IFS-M-201811	
	Uruguay	ECH	1992-2017	(prev. year)M12	IFS-M-201811	
USA	United States	CPS	ALL	Y	IFS-M-201811	
UZB	Uzbekistan	HBS	ALL	Y	WEO-A-201810	
VEN	Venezuela, RB	EHM	1981-1989	Y	NSO	
			1992-2006	M12	NSO	
VNM	Vietnam	VLSS	1992	W	WEO-A-201810	
			1998	W	IFS-M-201811	
			VHLSS	2002-2016	M1	IFS-M-201811
VUT	Vanuatu	HIES	2010	Y	IFS-A-201811	
WSM	Samoa	HIES	2002-2008	Y	IFS-M-201811	
			2013	W	IFS-M-201811	
XKX	Kosovo	HBS	ALL	Y	IFS-M-201811	
YEM	Yemen, Rep.	HBS	1998	Y	IFS-M-201811	
			2005	W	IFS-M-201811	
			2014	Y	IFS-M-201811	
ZAF	South Africa	KIDS	1993	Y	IFS-M-201811	
			HIES	1996	Y	IFS-M-201811
				2000	W	IFS-M-201811
		IES	2005	(next year)M6	IFS-M-201811	
		LCS	2008	W	IFS-M-201811	
		IES	2010	(next year)M6	IFS-M-201811	
		LCS	2014	(next year)M6	IFS-M-201811	
ZMB	Zambia	HBS	1991-1993	Y	IFS-M-201811	
		LCMS-I	1996	Y	IFS-M-201811	
		LCMS-II	1998	Y	IFS-M-201811	
		LCMS-III	2002	W	IFS-M-201811	
		LCMS-IV	2004	W	IFS-M-201811	
		LCMS-V	2006	W	IFS-M-201811	
		LCMS-VI	2010	Y	IFS-M-201811	
		LCMS	2015	Y	IFS-M-201811	
ZWE	Zimbabwe	ICES	2011	Y	IFS-M-201811	

Appendix 2 – National Accounts Data Sources

This appendix provides details of national accounts data used in aligning estimates to reference years (see Prydz et al, 2019 for methodological details). The primary source of national accounts data in this update is the December 2018 version of the World Development Indicators. For historical data this is supplemented with the Madison Project Database (MDP), 2018 version, for years prior to 2000.

In addition, the following special country series are used:

- **Djibouti** GDP data from the WDI 2017 December edition is used up to 2015. From 2015 until 2017, annualized survey growth between the 2013 and 2017 surveys are used. Data is not available in the most recent WDI edition (December 2018).
- **Liberia and South Sudan** GDP from the WDI 2017 December edition is used.
- **Syrian Arab Republic:** WDI 2017 is used up to 2009 and linked with national accounts growth rates from Gobat and Kostial (2016), as described in Atamanov et al (2018) for recent years.
- **India 2011-2015:** The reference year estimates for India from 2012 to 2015 are based on a method which adjusts HFCE growth by incorporating findings of a poverty imputation for 2014.5. Growth rates in national accounts are adjusted to match the results from the poverty imputation. The method is described in greater detail in Chen et al (2018) and Newhouse and Vyas (2018).

A complete overview is available in Table A2. 1 (GDP per capita) and Table A2. 2 (HFCE per capita).

Legend Tables A2.1 and A2.2

Code – World Bank economy/country code	Sources (See beginning of Appendix for details)
Cov – Coverage	- M – Madison Project Dataset
N – National	- W – World Development Indicators, December 2018
U – Urban	- S – Special Country Series
R – Rural	

Table A2. 1. Gross Domestic Product (GDP) per capita

GDP Code	Cov	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		
AGO	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
ALB	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
ARG	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
ARM	N	M	M	M	M	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
AUS	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
AUT	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
AZE	N	M	M	M	M	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BDI	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BEL	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BEN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BFA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BGD	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BGR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BIH	N	M	M	M	M	M	M	M	M	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BLR	N	M	M	M	M	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BLZ	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BOL	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BRA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BTN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
BWA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CAF	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CAN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CHE	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CHL	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CHN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CHN	R	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CHN	U	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CIV	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CMR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
COD	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
COG	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
COL	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
COM	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CPV	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CRI	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CYP	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
CZE	N	M	M	M	M	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
DEU	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
DJI	N	M	M	M	M	M	M	M	M	M	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
DNK	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
DOM	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
DZA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W

GDP Code	Cov	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017			
SEN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
SLB	N										W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SLE	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SLV	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SRB	N	M	M	M	M	M	M	M	M	M	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SSD	N																												S	S	S	S	S	S	S	S	S	S			
STP	N																					W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
SUR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SVK	N					M	M	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SVN	N	M	M	M	M	M	M	M	M	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SWE	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SWZ	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SYC	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SYR	N	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
TCD	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
TGO	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
THA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
TJK	N	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
TKM	N	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
TLS	N																				W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
TON	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
TTO	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
TUN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
TUR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
TUV	N										W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
TZA	N	M	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
UGA	N	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
UKR	N	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
URY	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
USA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
UZB	N	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
VEN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
VNM	N	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
VUT	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
WSM	N		W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
XXK	N																				W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
YEM	N	M	M	M	M	M	M	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
ZAF	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
ZMB	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
ZWE	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W

Table A2. 2. Household Final Consumption Expenditures (HFCE) per capita

HFCE Code	Cov	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017				
AGO	N																						W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W			
ALB	N																W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
ARG	N													W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
ARM	N													W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
AUS	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
AUT	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
AZE	N													W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
BDI	N																	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
BEL	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
BEN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
BFA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
BGD	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
BGR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
BIH	N																											W	W	W	W	W	W	W	W	W	W	W	W	W	W	
BLR	N										W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
BLZ	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
BOL	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
BRA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
BTN	N																					W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
BWA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
CAF	N																												W	W	W	W	W	W	W	W	W	W	W	W	W	W
CAN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
CHE	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
CHL	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
CHN	N																W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
CHN	R																W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
CHN	U																W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
CIV	N																												W	W	W	W	W	W	W	W	W	W	W	W	W	W
CMR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
COD	N													W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
COG	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
COL	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
COM	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
CPV	N																												W	W	W	W	W	W	W	W	W	W	W	W	W	W
CRI	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
CYP	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
CZE	N										W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
DEU	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
DJI	N																																									
DNK	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
DOM	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
DZA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	

HFCE Code	Cov	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017			
ECU	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
EGY	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
ESP	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
EST	N													W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
ETH	N																																								
FIN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
FJI	N																																								
FRA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
FSM	N																																								
GAB	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
GBR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
GEO	N																																								
GHA	N																																								
GIN	N																																								
GMB	N																																								
GNB	N																																								
GRC	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
GTM	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
GUY	N																																								
HND	N																																								
HRV	N																																								
HTI	N																																								
HUN	N																																								
IDN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
IDN	R	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
IDN	U	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
IND	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
IND	R	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
IND	U	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
IRL	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
IRN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
IRQ	N																																								
ISL	N																																								
ISR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
ITA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
JAM	N																																								
JOR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
JPN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
KAZ	N																																								
KEN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
KGZ	N																																								
KIR	N																																								
KOR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
LAO	N																																								

HFCE Code	Cov	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017					
LBN	N										W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W			
LBR	N																					S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
LCA	N																																								W		
LKA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
LSO	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
LTU	N															W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
LUX	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
LVA	N															W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
MAR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
MDA	N															W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
MDG	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
MDV	N																																										
MEX	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
MKD	N										W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
MLI	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
MLT	N																					W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
MMR	N																																									W	
MNE	N																						W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
MNG	N																																									W	
MOZ	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
MRT	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
MUS	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
MWI	N																						W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
MYS	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
NAM	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
NER	N																												W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
NGA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
NIC	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
NLD	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
NOR	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
NPL	N																						W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
PAK	N						W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
PAN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
PER	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
PHL	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
PNG	N																																										
POL	N																																									W	
PRT	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
PRY	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
PSE	N																																										W
ROU	N											W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
RUS	N											W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
RWA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
SDN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	

HFCE Code	Cov	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017					
SEN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W				
SLB	N																																										
SLE	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W			
SLV	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W			
SRB	N														W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W			
SSD	N																											S	S	S	S	S	S	S	S	S	S						
STP	N																																										
SUR	N																																							W			
SVK	N														W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W			
SVN	N										W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W			
SWE	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
SWZ	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
SYC	N																																								W		
SYR	N																																										
TCD	N																												W	W	W	W	W	W	W	W	W	W	W	W	W	W	
TGO	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
THA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
TJK	N														W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
TKM	N																																								W		
TLS	N																					W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
TON	N																																								W		
TTO	N																																										
TUN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
TUR	N																																									W	
TUV	N																																										
TZA	N																																									W	
UGA	N		W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
UKR	N																																									W	
URY	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
USA	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
UZB	N																																									W	
VEN	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
VNM	N																																									W	
VUT	N																																									W	
WSM	N																																										
XKX	N																																									W	
YEM	N																																										W
ZAF	N	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W		
ZMB	N																																									W	
ZWE	N																																									W	