

The myth of the global middle class, globalisation's fallback success story

Steven Knauss

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Data appendix

The notion that the world's population can be arranged along a continuous axis according to a common metric, based on PPP conversions of consumption or income levels, is referred to as a "money-metric" approach by Reddy and Pogge (2005, 5). As we saw in the previous section, the actual distribution is heavily concentrated along the lower end, with even the new supposed "middle class" remaining concentrated narrowly above the \$10 PPP threshold. The question naturally emerges therefore as to whether the measurement itself is sufficiently precise to capture a meaningful difference in the lives of individuals and families that fall on the different sides of the chosen thresholds.

While there are various sources of concern about the reliability of PPP measurements (see Deaton and Aten 2014), the most serious limitation of the approach is that the same PPP converter is both calculated and applied across an entire country's population without distinguishing between the very different consumption patterns of the poor, for example, versus wealthier individuals in the country, the prices of whose consumption goods may be totally irrelevant for the poor despite potentially entering into PPP calculations. For this reason, Reddy and Pogge (2005, 12) note that "whether a household in India lives in absolute poverty by the \$1 PPP per day standard cannot reasonably depend on information about Japanese real estate prices, but under the current methodology of poverty assessment it may." They suspect that such a use of an overly abstract money-metric measure may not just produce large measurement errors, but that these errors will likely be in the direction of systematically overstating incomes among the developing country poor, though others disagree with the latter contention (Ravallion 2010).

The question remains an open one. Starting in the 2005 round, "poverty-specific" PPPs were developed by the Asian Development Bank for a handful of Asian countries, and neither these estimates (Himanshu 2008) nor later poverty-specific calculations by Deaton and Dupriez (2011) resulted in a higher poverty count. Yet thus far, such a discussion remains concentrated on the issue of poverty and the poverty line and not the impact on other dividing lines, for example that of \$10 PPP. Furthermore, the development of a global distribution of income along a continuous axis through using PPP converters has yet to make use of poverty-specific PPPs (Lakner and Milanovic 2014, 10-11), making the impact of the potential bias of the abstract money-metric measure unknown at this level.

The global income distribution throughout the globalisation era: Methodology

With these caveats to be kept in mind, the methodology for constructing the global income distribution figures and tables displayed the main article follows that of the Pew Research Center's 2015 study (Kochhar 2015), with the difference that I took data for the years from 1991-2011 whereas the Pew study only covered the years from 2001 to 2011. Other than this difference, the Pew methodology was followed in combining the microdata provided by the Luxembourg Income Study (LIS) (for the countries listed in the OECD region in Appendix Table A1 below) with the data provided by the World Bank's PovcalNet database (for countries in all other regions). Other researchers (Hellebrandt and Mauro 2015) have also combined these precise two datasets for similar purposes, and more generally the combination of income with consumption data is standard in the literature (Lakner and Milanovic 2014 – for a different approach see Jayadev, Lahoti and Reddy 2015).

The main data adjustments made in the Pew study and detailed in Kochhar (2015) were also adopted in this article. These are as follows: transforming nearby survey years to the benchmark year through an assumed annual rate of change equal to 70 percent of the change in real household consumption expenditures; individualizing the LIS data (provided at the level of households) before dividing the population into 10,000 equal sized groups for the purposes of compatibility with the PovcalNet data; and transforming the local currency units (in LIS data) or the 2005 PPP units (in the PovcalNet data) into \$PPP using the 2011 ICP convertors (for LIS data this process includes converting no longer existent European currencies into Euros where necessary before using the 2011 ICP convertors).

The global growth incidence curve (Figure 2, main article) was constructed on the basis of the same data, calculating the rate of change for each of the 100 percentiles of the global income distribution between 1991 and 2011. The chart starts showing the rate of change at the 2nd percentile rather than the first due to the skewed effects of some negative incomes reported in developed countries that do not give reliable results for an overall average of the poorest percentile. This problem does not exist in any other percentile. The chart also splits the final percentile between the 99th through the 99.99th percentile, and the super-rich of the global 0.01th percentile, in order to demonstrate the more spectacular gains concentrated among the super-rich. The resulting Figure 2 does confirm both the elephant shape of the Lakner and Milanovic curve as well as the main trends seen in the Lakner and Milanovic chart, most importantly the range from around the 40th to the 70th percentile of the income distribution seeing the greatest rate of growth throughout the period.

Table A1: Full list of countries used to calculate the global income distributions.

Year	1991			2001			2011		
	Country	Survey year	Data type	Country	Survey year	Data type	Country	Survey year	Data type
Latin America	Argentina (urban only)	1991	Income	Argentina (urban only)	2001	Income	Argentina (urban only)	2010	Income
	Bolivia	1990	Income	Bolivia	2001	Income	Bolivia	2008	Income
	Brazil	1992	Income	Brazil	2001	Income	Brazil	2009	Income
	Chile	1992	Income	Chile	2000	Income	Chile	2009	Income
	Colombia	1992	Income	Colombia	2001	Income	Colombia	2010	Income
	Costa Rica	1991	Income	Costa Rica	2001	Income	Costa Rica	2009	Income
	Dominican Republic	1992	Income	Dominican Republic	2001	Income	Dominican Republic	2010	Income
	Ecuador	1994	Income	Ecuador	2000	Income	Ecuador	2010	Income
	El Salvador	1991	Income	El Salvador	2001	Income	El Salvador	2009	Income
	Guatemala	1989	Income	Guatemala	2002	Income	Guatemala	2006	Income
	Honduras	1991	Income	Honduras	2001	Income	Honduras	2009	Income
	Mexico	1992	Consumption	Mexico	2002	Consumption	Mexico	2010	Consumption
	Nicaragua	1993	Consumption	Nicaragua	2001	Income	Nicaragua	2005	Consumption
	Panama	1991	Income	Panama	2001	Income	Panama	2010	Income
	Paraguay	1990	Income	Paraguay	2001	Income	Paraguay	2010	Income
	Peru	1994	Consumption	Peru	2001	Income	Peru	2010	Income
Uruguay	1989	Income	Uruguay	2006	Income	Uruguay	2010	Income	
Venezuela	1992	Income	Venezuela	2001	Income	Venezuela	2006	Income	
Sub-Saharan Africa	Burkina Faso	1994	Consumption	Angola	2000	Consumption	Angola	2008	Consumption
	Burundi	1992	Consumption	Burkina Faso	2003	Consumption	Burkina Faso	2009	Consumption
	Cameroon	1996	Consumption	Burundi	1998	Consumption	Burundi	2006	Consumption
	Central African Republic	1992	Consumption	Cameroon	2001	Consumption	Cameroon	2007	Consumption
	Ethiopia	1995	Consumption	Central African Republic	2003	Consumption	Central African Republic	2008	Consumption
	Ghana	1991	Consumption	Ethiopia	1999	Consumption	Ethiopia	2010	Consumption
	Guinea	1991	Consumption	Ghana	1998	Consumption	Ghana	2005	Consumption
	Ivory Coast	1993	Consumption	Guinea	2003	Consumption	Guinea	2007	Consumption
	Kenya	1992	Consumption	Ivory Coast	2002	Consumption	Ivory Coast	2008	Consumption
	Madagascar	1993	Consumption	Kenya	1997	Consumption	Kenya	2005	Consumption
	Malawi	1997	Consumption	Madagascar	2001	Consumption	Madagascar	2010	Consumption
	Mali	1994	Consumption	Malawi	2004	Consumption	Malawi	2010	Consumption
	Mauritania	1996	Consumption	Mali	2001	Consumption	Mali	2010	Consumption
	Mozambique	1993	Consumption	Mauritania	2000	Consumption	Mauritania	2008	Consumption
	Niger	1992	Consumption	Mozambique	2002	Consumption	Mozambique	2007	Consumption
	Nigeria	1992	Consumption	Niger	2005	Consumption	Niger	2007	Consumption
	Rwanda	1984	Consumption	Nigeria	2003	Consumption	Nigeria	2011	Consumption
	Senegal	1991	Consumption	Rwanda	2000	Consumption	Rwanda	2010	Consumption
	Sierra Leone	1989	Consumption	Senegal	2001	Consumption	Senegal	2011	Consumption
	South Africa	1993	Consumption	Seychelles	1999	Consumption	Seychelles	2006	Consumption
Swaziland	1994	Consumption	Sierra Leone	2003	Consumption	Sierra Leone	2011	Consumption	
Tanzania	1991	Consumption	South Africa	2000	Consumption	South Africa	2008	Consumption	
Uganda	1992	Consumption	Swaziland	2000	Consumption	Swaziland	2009	Consumption	
Zambia	1991	Consumption	Tanzania	2004	Consumption	Tanzania	2007	Consumption	
			Togo	2006	Consumption	Togo	2011	Consumption	
			Uganda	1999	Consumption	Uganda	2009	Consumption	
			Zambia	2002	Consumption	Zambia	2010	Consumption	
East Asia	Cambodia	1994	Consumption	Cambodia	2004	Consumption	Cambodia	2009	Consumption
	China	1990	Consumption	China	1999	Consumption	China	2009	Consumption
	Indonesia	1990	Consumption	East Timor	2001	Consumption	East Timor	2007	Consumption
	Laos	1992	Consumption	Fiji	2002	Consumption	Fiji	2008	Consumption
	Malaysia	1992	Income	Indonesia	1999	Consumption	Indonesia	2010	Consumption
	Philippines	1991	Consumption	Laos	2002	Consumption	Laos	2008	Consumption
	Thailand	1992	Consumption	Malaysia	2004	Income	Malaysia	2009	Income
	Vietnam	1992	Consumption	Philippines	2000	Consumption	Philippines	2009	Consumption
				Thailand	2000	Consumption	Thailand	2010	Consumption
			Vietnam	2002	Consumption	Vietnam	2008	Consumption	
South Asia	Bangladesh	1991	Consumption	Bangladesh	2000	Consumption	Bangladesh	2010	Consumption
	India	1993	Consumption	Bhutan	2003	Consumption	Bhutan	2012	Consumption
	Nepal	1995	Consumption	India	2004	Consumption	India	2009	Consumption
	Pakistan	1990	Consumption	Nepal	2003	Consumption	Nepal	2010	Consumption
	Sri Lanka	1990	Consumption	Pakistan	2001	Consumption	Pakistan	2007	Consumption
			Sri Lanka	2002	Consumption	Sri Lanka	2009	Consumption	

(table continued next page)

(Table A1, continued)

Year	1991			2001			2011		
	Country	Survey year	Data type	Country	Survey year	Data type	Country	Survey year	Data type
Middle East / North Africa	Egypt	1990	Consumption	Egypt	1999	Consumption	Egypt	2008	Consumption
	Iran	1994	Consumption	Iran	1998	Consumption	Iran	2005	Consumption
	Jordan	1992	Consumption	Jordan	2002	Consumption	Jordan	2010	Consumption
	Morocco	1990	Consumption	Morocco	2000	Consumption	Morocco	2007	Consumption
	Tunisia	1990	Consumption	Tunisia	2000	Consumption	Tunisia	2010	Consumption
				Yemen	1998	Consumption	Yemen	2005	Consumption
Eastern Europe / Central Asia	Albania	1996	Consumption	Albania	2002	Consumption	Albania	2008	Consumption
	Armenia	1996	Income	Armenia	2001	Consumption	Armenia	2010	Consumption
	Azerbaijan	1995	Consumption	Azerbaijan	2001	Consumption	Azerbaijan	2008	Consumption
	Belarus	1993	Income	Belarus	2001	Consumption	Belarus	2011	Consumption
	Bulgaria	1992	Income	Bosnia and Herzegovina	2001	Consumption	Bosnia and Herzegovina	2007	Consumption
	Georgia	1996	Consumption	Bulgaria	2001	Consumption	Bulgaria	2007	Consumption
	Hungary	1993	Income	Croatia	2001	Consumption	Croatia	2008	Consumption
	Kazakhstan	1993	Income	Georgia	2001	Consumption	Georgia	2010	Consumption
	Kyrgyz Republic	1993	Consumption	Hungary	2001	Consumption	Hungary	2007	Consumption
	Moldova	1992	Income	Kazakhstan	2001	Consumption	Kazakhstan	2009	Consumption
	Poland	1992	Consumption	Kyrgyz Republic	2002	Consumption	Kyrgyz Republic	2011	Consumption
	Romania	1992	Income	Latvia	2002	Consumption	Latvia	2009	Consumption
	Russia	1993	Consumption	Lithuania	2001	Consumption	Lithuania	2008	Consumption
	Turkey	1994	Consumption	Macedonia	2000	Consumption	Macedonia	2010	Consumption
	Ukraine	1992	Income	Moldova	2001	Consumption	Moldova	2010	Consumption
				Montenegro	2005	Consumption	Montenegro	2010	Consumption
				Poland	2001	Consumption	Poland	2011	Consumption
				Romania	2001	Consumption	Romania	2011	Consumption
				Russia	2001	Consumption	Russia	2009	Consumption
				Serbia	2002	Consumption	Serbia	2010	Consumption
			Slovak Republic	2004	Consumption	Slovak Republic	2009	Consumption	
			Tajikistan	1999	Consumption	Tajikistan	2009	Consumption	
			Turkey	2002	Consumption	Turkey	2010	Consumption	
			Ukraine	2002	Consumption	Ukraine	2010	Consumption	
OECD	Australia	1989	Income	Australia	2001	Income	Australia	2010	Income
	Canada	1991	Income	Canada	2000	Income	Canada	2010	Income
	Denmark	1992	Income	Czech Republic	2002	Income	Czech Republic	2010	Income
	Finland	1991	Income	Denmark	2000	Income	Denmark	2010	Income
	France	1989	Income	Estonia	2000	Income	Estonia	2010	Income
	Germany	1994	Income	Finland	2000	Income	Finland	2010	Income
	Greece	1995	Income	France	2000	Income	France	2010	Income
	Ireland	1994	Income	Germany	2000	Income	Germany	2010	Income
	Israel	1992	Income	Greece	2000	Income	Greece	2010	Income
	Italy	1991	Income	Ireland	2000	Income	Iceland	2010	Income
	Luxembourg	1991	Income	Israel	2001	Income	Ireland	2010	Income
	Netherlands	1990	Income	Italy	2000	Income	Israel	2010	Income
	Norway	1991	Income	Luxembourg	2000	Income	Italy	2010	Income
	Spain	1990	Income	Netherlands	1999	Income	Luxembourg	2010	Income
	Taiwan	1991	Income	Norway	2000	Income	Netherlands	2010	Income
	United Kingdom	1991	Income	Slovenia	1999	Income	Norway	2010	Income
	United States	1991	Income	Spain	2000	Income	Slovenia	2010	Income
				Taiwan	2000	Income	Spain	2010	Income
				United Kingdom	1999	Income	Taiwan	2010	Income
				United States	2000	Income	United Kingdom	2010	Income
						United States	2010	Income	

Finally, Tables A2 and A3 below demonstrate the contrasting performances from the more redistribution-oriented South American “pink tide” governments and more economically orthodox Mexico during the period, alluded to in the main article but not presented there due to space considerations.

Table A2. Income distribution, 1991-2011, for Argentina, Brazil, Bolivia, Ecuador and Venezuela.

(scores are percentages except where indicated)	1991	2001	2011
PPP below \$2 (“Poverty”)	12.47	19.35	8.07
PPP \$2-4 (“Vulnerable”)	20.57	21.63	12.69
PPP \$4-7 (Low “strugglers”)	24.99	21.60	19.54
PPP \$7-15 (High “strugglers”)	27.85	23.09	31.58
PPP above \$15 (“Secure”)	14.08	14.29	28.08
50th percentile (in \$PPP per day)	5.90	5.01	8.80
75th percentile (in \$PPP per day)	10.49	9.87	16.34
90th percentile (in \$PPP per day)	18.04	19.06	29.10
population (in millions)	224	262	297

Table A3. Mexican income distribution, 1991-2011.

(scores are percentages except where indicated)	1991	2001	2011
PPP below \$2 (“Poverty”)	13.33	11.21	3.06
PPP \$2-4 (“Vulnerable”)	23.31	23.71	16.49
PPP \$4-7 (Low “strugglers”)	24.74	26.02	24.49
PPP \$7-15 (High “strugglers”)	25.66	26.80	35.52
PPP above \$15 (“Secure”)	12.92	12.22	20.40
50th percentile (in \$PPP per day)	5.42	5.55	7.86
75th percentile (in \$PPP per day)	9.84	9.75	13.27
90th percentile (in \$PPP per day)	17.40	16.75	22.08
population (in millions)	87	104	120

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