Cross-country income levels over time: did the developing world suddenly become much richer?
Online Appendix

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Appendix Tables and Figures

TABLE A1, HARMONIZING THE TREATMENT OF DWELLINGS FOR LINKING THE REGIONS.

		Africa	Asia-Pacific	Eurostat/OECD	Latin America	Western Asia
Dwellings/capita	(1)	0.53	0.66	1.00	0.64	0.44
Quality	(2)	0.32	0.73	1.00	0.77	0.88
Volume/capita	(3) = (1) x (2)	0.17	0.48	1.00	0.49	0.39
Expenditure/capita	(4)	0.03	0.16	1.00	0.10	0.28
Price index	(5) = (4)/(3)	0.19	0.33	1.00	0.21	0.72
ICP 2005 price	(6)	0.21	0.43	1.00	0.34	0.68
Price adjustment	(7)=(5)/(6)	0.91	0.77	1.00	0.63	1.06

Notes: The elements in lines (1) and (2) are based on an arithmetic unweighted average of the number of dwellings per capita (line (1)) and of the quality characteristics (the percentage of houses with electricity, water and a toilet; line (2). The averages are divided by the Eurostat/OECD values to arrive at the figures in the table. Expenditure per capita (line (4)) is from the basic heading 'actual and imputed rents', in exchange-rate converted US dollars, per capita. The ICP 2005 price is from Heston (2013, p333).

TABLE A2, DIFFERENCES BETWEEN ICP 2011 AND EXTRAPOLATIONS FROM ICP 2005C: COUNTERFACTUAL WITH ONLY CORRECTIONS FOR PRICE BIAS

|	Original	– Urban bias China	– Linking bias
GDP			
Mean difference	−0.165***	−0.138***	−0.081***
Root mean squared difference	0.216	0.199	0.169
Coefficient on log(expenditure/capita)	0.013*	0.013*	−0.010
	(0.007)	(0.007)	(0.008)
Consumption			
Mean difference	−0.176***	−0.153***	−0.062***
Root mean squared difference	0.227	0.218	0.153
Coefficient on log(expenditure/capita)	0.044***	0.045***	0.001
	(0.007)	(0.007)	(0.007)

Notes: Column labeled 'Original' is from Table 1. Robust standard error of the regression coefficients shown in parentheses below the coefficients. * denotes a variable significantly different from zero at a 10%-level, ** at 5%-level, *** at a 1%-level. Ring product selection bias correction is based on Deaton and Aten (2014).
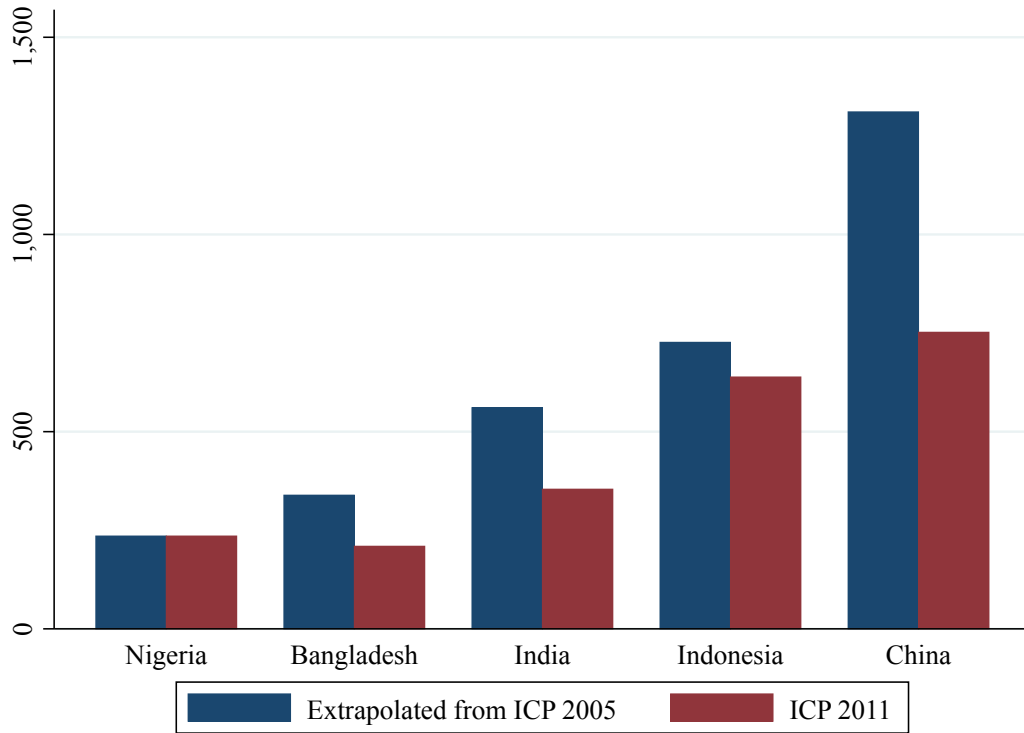
APPENDIX FIGURE A1, GDP PER CAPITA IN 2011 FOR SELECTED COUNTRIES BASED ON ALTERNATIVE RELATIVE PRICES (IN 1000S OF NIGERIAN NAIRA)

Notes: GDP per capita at current national prices and ICP 2011 relative prices from World Bank (2014); ICP 2005 relative prices (from World Bank, 2008) extrapolated using the change in the country GDP deflator relative to the NIgerian GDP deflator.

Source: computations based on World Bank (2008, 2014) and World Development Indicators.
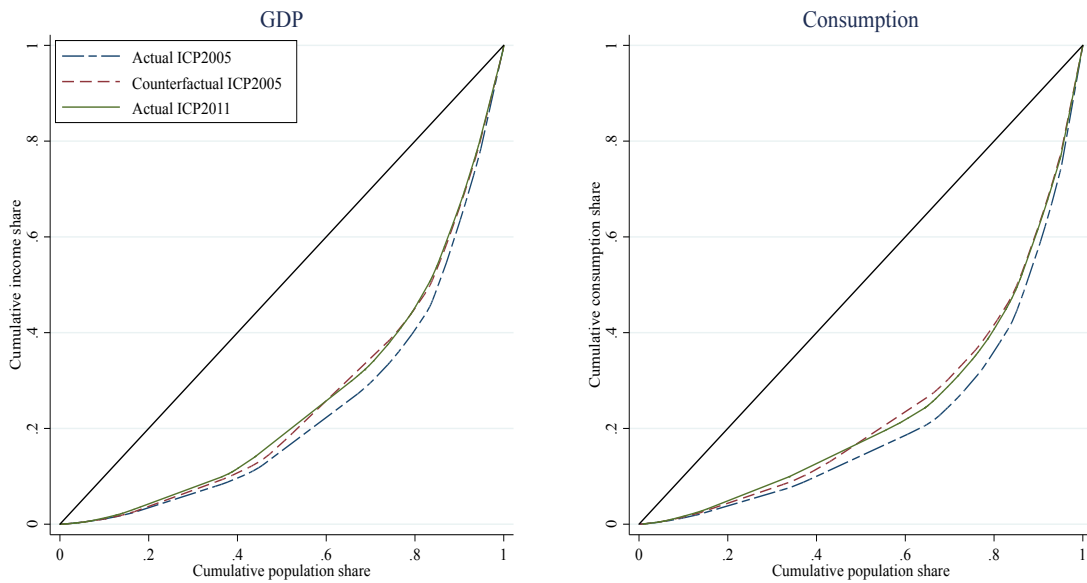
APPENDIX FIGURE A2, LORENZ CURVES FOR ICP 2011, AND EXTRAPOLATIONS FROM ICP 2005 AND ICP 2005C

An alternative counterfactual for ICP 2005

In the main text of the paper we presented a counterfactual for ICP 2005 which adjusts for the methodological innovations in ICP 2011 and also address concerns of linking bias from the selection of 18 ring countries and the products on the global ring product list. This appendix describes an alternative which may be described as a conservative counterfactual. As discussed in the main text, we use detailed item-level prices to establish the presence of product selection bias in ICP 2005. In our preferred counterfactual, ICP 2005C, we used evidence from Deaton and Aten (2014) on changes in relative prices for the 2005 ring countries compared with national inflation trends in making adjustments for product selection bias in 2005. We believe this combination of cross-country prices and national price trends allows for a more comprehensive estimate of the product selection bias.

The alternative, which we explore here, would be to directly use the biases implied by the regression coefficients reported in Tables 3–5. This approach leads to downward adjustments of 10.5 percent in the Asia-Pacific region and smaller changes in the other regions. In both the approach and results, these adjustments are more conservative than the 25 percent adjustment in all three regions suggested in the Deaton-Aten analysis. As before, these adjustments are implemented only for the low-income countries in the region. We now consider the features of this alternative counterfactual (ICP 2005C2) compared to our preferred counterfactual (ICP 2005C).

As shown in Table A3, the smaller adjustments for product selection bias in our more conservative counterfactual translates to larger mean differences and root mean squared differences compared to our preferred counterfactual. However, compared with the original ICP 2005 differences, there is still a notable decrease, especially for consumption. A similar result can be seen in Table A4, where the population-weighted Gini coefficients for the year 2011 are compared. By this measure, inequality according to ICP 2011 and our preferred counterfactual are very similar, as discussed in the main text. Inequality according to the alternative counterfactual is higher than in these other two cases, but still notably closer to the ICP 2011 Gini coefficient than to the original ICP 2005 Gini.

	ICP 2005	ICP 2005C	ICP 2005C2			
	All countries	All countries	All countries	Non-oil countries	Developing economies	All countries, population-weighted
GDP						
Mean difference	–0.165***	–0.088***	–0.143***	–0.118***	–0.177***	–0.036***
Root mean squared difference	0.216	0.168	0.204	0.174	0.224	0.170
Coefficient on log(expenditure/capita)	0.013*	-0.001	0.023***	0.032***	-0.002	0.016
	(0.007)	(0.007)	(0.007)	(0.006)	(0.012)	(0.011)
Consumption						
Mean difference	–0.176***	–0.018	–0.105***	–0.085***	–0.142***	0.052***
Root mean squared difference	0.227	0.144	0.193	0.172	0.212	0.216
Coefficient on log(expenditure/capita)	0.044***	0.000	0.046***	0.047***	0.035***	0.003
	(0.007)	(0.007)	(0.007)	(0.006)	(0.012)	(0.025)

Note: The first column (ICP 2005) is from Table 1, the second column (ICP 2005C) is from Table 6. From column three (ICP 2005C2), results are based on the more conservative counterfactual discussed in this appendix. Robust standard errors of the regression coefficients shown in parentheses below the coefficients. * denotes a variable significantly different from zero at a 10%-level, ** at 5%-level, *** at a 1%-level.

	GDP	Consumption
ICP 2005	0.527	0.565
ICP 2005C	0.487	0.510
ICP 2005C2	0.499	0.531
ICP 2011	0.479	0.513