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Income Inequality in an Era of Globalisation: The Perils of Taking a Global View[1]

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Abstract:
The period spanned by the last decade of the 20th century and the first decade of the 21st century has been characterised by political and economic developments on a scale rarely witnessed before over such a short period. This study on inequality within and between countries is based on a data set constructed from household unit records in over 80 countries collected from a variety of data sources and covering over 80 % of the world's population. The departures of this study from the recent inequality literature include its regional focus within a 'world view' of inequality leading to evidence on difference in inequality magnitudes and their movement between continents and countries. Comparison between the inequality magnitudes and trends in three of the largest economies, China, India, and the USA is a key feature of this study. The use of household unit records allowed us to go beyond the aggregated view of inequality and provide evidence on how household based country and continental representations of the income quintiles have altered in this short period. A key message of this exercise in that, in glossing over regional differences, a 'global view' of inequality gives a misleading picture of the reality affecting individual countries located in different continents and with sharp differences in their institutional and colonial history. In another significant departure, this study compares the intercountry and global inequality rates between fixed and time varying PPPs and reports that not only do the inequality magnitudes vary sharply between the two but, more significantly, the trend as well. For example, the consensus on decline in global inequality based on time invariant PPPs is not sustained once we move to time varying PPPs as suggested by the 'Penn effect'.

Keywords: PPP, Gini Coefficient, Income Inequality, Global Income Shares, Penn effect.
JEL Classification: E01, E13, E31, F15, F61, F63, I31, O15.

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1. Introduction

There has recently been a resurgence of interest in the subject of income inequality. Two significant contributions have stoked the interest in the topic of inequality. The first is the analytical work of Piketty (2013) who has predicted that if rate of return to capital is greater than the rate of economic growth, as has been the case in the USA and Europe since the 18th century, then the concentration of income and wealth will increase. The second is the methodological and empirical contribution of Milanovic (2005) who has complied a comprehensive global data base by combining household surveys from more than 100 countries. Milanovic (2005) draws a distinction between international inequality and global inequality with the former describing inequality between nations based on their per capita income while the latter refers to inequality among the world's citizens when they are pooled globally. Milanovic (2012) updates his findings and reports that while international inequality has been declining in the period since 1990 largely due to the rise of China and India, global inequality has been on the increase mainly due to sharp increase in intra-country inequalities. The resurgence of interest in inequality comes on the back of increasing concern that inequality in both income and wealth within countries has been increasing rapidly on the back of globalisation along with the realisation that rising inequality fosters social and political tensions.

The World Inequality Report, 2018, (WID) co-authored by Alvaredo, Chancel, Piketty, Saez and Zucman (2017) is the most recent manifestation of this resurgent interest on the topic of inequality. It is a comprehensive document on world inequality

that is based on an impressive compilation of data on income and wealth globally by ‘combining available sources (national accounts, fiscal and wealth data, surveys), spanning time periods as long as two hundred years for some countries in a consistent and systematic manner’ (p.26). The WID report and the studies by Milanovic (2005, 2012) add to a large literature on global inequality. Examples include: Bourguignon and Morrisson (2002), Dowrick and Akmal (2005), Chotikapanich, Griffiths, Rao and Valencia (2012), Warner, Rao, Griffiths and Chotikapanich (2014) and Lang and Tavares (2018). Anand and Segal (2008) contains a comprehensive survey of the earlier literature on global inequality.

While in the past there have been several country specific studies on inequality (recent examples include Chancel and Piketty (2017), Himanshu (2018) on India and Piketty, et al (2017) on China), the recent literature has focussed largely on global inequality [see, for example, Johnson and Papageorgiou (2019), Ravallion (2019)]. There is, however, a relative scarcity of studies that fall in between the two with a focus on the geographic regions. This study provides such a focus. The reporting of inequality estimates at both the global and regional levels along with the inequality estimates of three of the largest economies, namely, China, India and the USA is a distinctive feature of this study. The comparison between the inequality estimates of China and India over this most recent period, 1995-2011, along their individual income share of global income adds to the interest of this study. A unifying feature of the alternative sets of inequality estimates reported in this study is that they are all based on unit records of household expenditures from different countries compiled from a range of data sources as discussed below.

Studies on global and regional inequality based on household surveys face several challenges that are not encountered by single country studies on national inequality. These include the following: (i) since the various countries’ incomes or

expenditures are expressed in their local currencies, they need to be converted into a common currency, typically, the US $. Since exchange rates are not considered suitable for the currency conversions, as they are based only on tradeable items, this has necessitated the availability of Purchasing Power Parities (PPP) between currencies leading to the United Nation's International Comparison Project (ICP) which periodically produces the PPPs; (ii) the household surveys from the different countries do not synchronise perfectly in time, so care needs to be taken to make them temporally as close as possible to one another; (iii) while some countries have expenditure surveys, others provide information on household income thus presenting an added complexity in the pooling of the data into a global distribution.

Dowrick and Akmal (2005) examine the issue of sensitivity of the estimates of global inequality to currency conversions and conclude that both exchange rate conversions and the fixed price method underlying the Penn World tables lead to biased estimates of inequality leading to contradictory movements in global inequality. Warner et al (2014) also examine the sensitivity of the levels and trends in global inequality to the PPPs used and conclude that "the levels of global inequality are indeed sensitive to the choice of PPPs. However, the downward trend in global inequality is consistently evident across different choices of PPPs and real incomes" (p. S281).

The present study, which is in the tradition of Dowrick and Akmal (2005) and Warner et al (2014), is partly motivated by an examination of the sensitivity of the magnitude and trend in the inequality estimates in the recent period, 1995-2011, to alternative PPPs including the ones proposed by the ICP. Besides the ICP PPPs, this study considers several other procedures that generate alternative sets of PPPs, namely, the Country Product Dummy (CPD) Method, Gini-Elteto-Koves-Szulc (GEKS) Index, Geary Khamis (GK) Index, and the Equally Weighted Geary-Khamis (EWGK) index. Since the study

covers multiple years, the alternative sets of PPPs were generated for the various years (1995, 2000 and 2005) from the PPPs calculated for the final year, 2011, and presented in Majumder, Ray and Santra (2017). The PPPs were interpolated backwards from the 2011 values for each procedure using our own and updated estimate of Ravallion (2013)'s equation (2) which specifies changes in the (log) price index as linearly related to (log) changes in per capita GDP at market exchange rates and log changes in the market exchange rates. Ravallion (2013) interprets his equation (2) "as the time-differenced version of the double log model in the cross-country literature on the Penn effect, incorporating a year effect but common slope" (p. 600). Though Ravallion goes on to specify more sophisticated versions that incorporate the 'dynamic Penn effect', we stick to his simpler static formulation. Our approach ensures internal consistency in the PPPs from alternative procedures between the 4 years and does not suffer from the wild gyrations in the ICP PPPs between its 1993, 2005 and 2011 rounds reflecting sharp differences in data, coverage of rural and urban areas and in the ICP methodology that has been widely commented upon. As a by-product of the estimation of global and regional inequality for the most recent period, a significant contribution of this study is the production of alternative sets of PPPs in multiple years that are internally consistent within each PPP procedure.

An alternative to Ravallion (2013)'s 'Penn effect' based approach to the generation of PPPs in non-bench mark years between ICP rounds is that proposed and implemented by the UQ group of researchers- see http://uqicd.economics.uq.edu.au/ for full details. As stated on this website, these PPPs are "are predictions from an econometric model which uses information from all the benchmark international comparisons conducted by the World Bank International Comparison Program since 1970. UQICD series are in contrast to the usual approach where extrapolations are

formed from one or two benchmark comparisons." A good description of this alternative procedure to Ravallion's is available in Rao. Rambaldi and Doran (2010). Though they adopt different methodologies, both these procedures depart from the standard practice by allowing the PPPs to change over time between and beyond the ICP rounds. This raises the issue of comparison of the inequality estimates (a) between PPPs that are fixed through time at a set of PPPs from a particular ICP round (ICP 2011 in the present study) and the alternative sets of temporally changing PPPs following Ravallion (2013) and Rao, Rambaldi and Doran (2010), and (b) between the PPPs generated by these alternative procedures for generating time varying PPPs. While studies such as Milanovic (2012) provide evidence on the revision to the inequality magnitudes due to the change in the usage of PPPs from the 'old' (i.e. 1993 ICP) to the 'new' (i.e. 2005 ICP), i.e. from one ICP round to the next, there is no evidence on the sensitivity of inequality rates to temporally varying versus static PPP s with the latter fixed at the PPP estimates from a particular round, let alone comparison between the alternative sets of dynamic PPPs. As we report later, the recent evidence that global inequality rates have been declining in the era of globalisation (Lakner and Milanovic (2013, Table 3), Bourguignon (2015, Table 2), Lahoti, Jayadev and Reddy (2015, Fig. 2), Warner, Rao, Griffiths and Chotikapanich (2014, table 4)) is not robust to departure from the standard procedure in favour of the use of temporally varying PPPs between years nor are they robust between the alternative sets of temporally varying PPPs. Note, also, that the consensus[2] on declining global inequality is conditional on the adoption of 'relative inequality'. As Niño-Zarazúa , et al (2017), report "the picture that emerges using 'absolute' and even 'centrist' measures of inequality is very different from the results obtained using standard 'relative' inequality measures such as the Gini

[2] This consensus is, however, not completely unanimous even within the conventional framework. For example, Milanovic (2012, table 4) reports an increase in global inequality over 1998-2005, but Lakner and Milanovic (2015, table 3) report a decline over 1993-2008, with both studies using time invariant PPPs.

coefficient or Coefficient of Variation" (p. 661). Evidence consistent with this result was presented earlier in Atkinson and Brandolini (2010) who observed that "the two inequality versions of the new measure, the Kolm-like and the Gini-like, move in opposite directions after 1950" (p.29).

For this study, we have assembled a global data set by combining household surveys from a variety of data sources consisting of information from household level unit records covering over 80 % of the world's population. The assembled data set can be considered truly global making the inequality estimates representative of the world as a whole. The paper reports the inequality estimates both for the world as a whole, and for each of the principal regions constituting the global community of nations. This allowed an examination of regional differences in inequality over a period that witnessed several significant events that varied in nature and intensity between the regions. Another feature of this study is the reporting of the frequency distribution of regions in the 5% income quintiles and the change in that distribution over the chosen period, and extending that analysis to countries within the two poorest regions, namely, Africa and Asia. This study illustrates the wide range of uses PPPs can be put to in making cross country comparisons.

The chosen period, 1995-2011, is of particular interest since it covers several economic crises, namely, the 1997 Asian Financial Crisis, the 2007 subprime mortgage crisis in the US that led to US recession between 2007 and 2009, and the 2010 Eurozone debt crisis. At the same time, this period witnessed some of the highest growth rates recorded by the newly emerging economies, especially China and India, along with integration of the regions and their constituent national economies into the global economy. The latter was facilitated by the coming into being of the World Trade Organisation in 1995 and the various trading rules that followed leading to a sharp acceleration in the volume of international trade adding

to the interest in the inequality movements during the chosen period. This was also the period which witnessed the birth and consolidation of a new regional grouping, namely, the Commonwealth of Independent States (CIS) following the dissolution of the Soviet Union. As we report later, after an initial downward trajectory in the global income share of the CIS, this region has recorded a significant increase in this share during the most recent sub period (2005-2010) making it a powerful economic grouping comparable to the economies of China and India.

A criticism often made of household surveys is that the inequality estimates based on them are biased downwards since surveys often miss out on the affluent households. This paper therefore compares the present household survey data based inequality estimates with those from the WID data base referred to earlier which was designed to overcome the limitations of the household surveys. Since the WID is more comprehensive and has been widely used, the robustness of the inequality estimates reported later provides evidence of validation of this exercise.

Another contribution of this paper is methodological that is backed up by empirical evidence. It proposes an alternative measure of global (i.e. world) inequality that is not only distinct from the measures introduced by Milanovic (2005, 2012), that he calls Concept 3 Inequality measure, but this study provides evidence that Milanovic's measures lead to a considerable overstatement of world inequality. However, it confirms a result that has attracted much attention, namely, that while inequality between nations/regions has been declining, that within countries (regions in the present study) has been increasing. Consequently, 'world inequality' has been increasing in the most recent period, 1995-2011, when the pace of globalization accelerated. Basu (2006) provides analytical evidence that shows that globalization and global inequality are interconnected.

The rest of the paper is organised as follows. Section 2 describes the methodology including the alternative procedures for generating the PPPs and defines the measures of international and global inequality estimated in this study. Section 3 describes the global data base assembled for this study from a variety of sources including how some of the key variables were constructed from the available information, and reports some summary statistics from the assembled data set. The estimates of global and regional inequality are reported and analysed in Section 4. This section also contains results from our validation exercise of the assembled data by comparing the inequality estimates for countries in our sample with those from the WID data base. Also reported in thus section is the comparison of inequality rates between the use of dynamic and static PPPs as foreshadowed earlier. The paper concludes in Section 5. The list of countries considered and the data sources have been provided in Appendix A. The full set of PPP estimates by country and year based on Ravallion's approach have been presented in Appendices F-I.

2. Methodology and Inequality Measures

2.1 The Alternative PPP Estimation Procedures

In this study on global inequality that required PPPs for conversion of the incomes from local currency units (LCU) into a numeraire currency, namely, the US $, alternative sets of PPPs were obtained for the latest year, 2011, using 4 different PPP procedures. The 2011 PPPs were all based on a common data set containing price and expenditure information for the countries participating in the 2011 ICP round and made available to us by the ICP. As mentioned earlier and explained in detail later, the PPPs for the earlier years (1995, 2000, 2005) were calculated from the 2011 values by backcasting, i.e.

reverse forecasting, using our estimate of Ravallion (2013)'s equation (2) based on the 2005 and 2011 ICP PPPs, and data on GDP per capita for each country in each year at LCU that was converted to US $ at market exchange rates for each country's currency. The procedure is explained in more detail in Section 2.2.

Let us proceed to describe the alternative PPP procedures considered in this study.

2.1.1 The ICP Methodology

The ICP distinguishes between 'below basic headings' and 'above basic headings' in the procedures it uses to calculate the PPP. An early description of the ICP exercise when it was conducted under the auspices of the UN is contained in United Nations (1992). A more recent description of the ICP methodology is contained in World Bank (2013) – see, in particular, the contributions by Rao (Chapters 1, 4) and Diewert (Chapters 5, 6) in that volume[3]. The ICP follows a hierarchical approach for estimating the PPPs. Basic Headings (BH) is the lowest level at which the PPPs are estimated. The BH PPPs are then aggregated to calculate PPPs for different uses in cross country comparisons. In this study we will restrict ourselves to the PPP estimation procedure above the BH levels, building on the prices constructed from below the BH levels. While the unweighted CPD method is used by the ICP below the BH level to deal with the problem of missing price information, the commonly used methods of aggregation for computing PPPs for GDP or consumption and other major aggregates above the BH level are the GEKS, Iklė, GK and the Rao or weighted CPD methods. With the exception of the Iklė procedure, the others are described below and provide the basis for the sensitivity exercise that motivated this study.

[3] To save space, we have provided a brief description of the ICP exercise. The reader is referred to United Nations (1992) and World Bank (2013) for more details.

2.1.2 Gini-Elteto-Koves-Szulc (GEKS) Index

The GEKS method is a generic method, proposed independently by Eltet$\ddot{o}$ and K$\ddot{o}$ves (1964), and Szulc (1964), which generates transitive indexes from a matrix of binary indexes which satisfy the country reversal test but not transitivity. Let I_{jk} represent a price index (or PPP) for country *k* with country *j* as base such that $I_{jk}.I_{kj}$ = 1. Then the GEKS index is given by:

$$GEKS_{jk} = \prod_{l=1}^{M}(I_{jl}.I_{lk})^{\frac{1}{M}} \tag{1}$$

The GEKS index can be implemented once the binary index number formula to compute I_{jk} is chosen. The Fisher binary index is the most commonly used index.[4]

2.1.3 The Geary-Khamis (GK) Index

Let p_{ij} and q_{ij} denote the price and quantity of commodity *i* for country *j*, *i = 1,2 ..... N* and *j = 1,2 .... , M*. Let P_i and PPP_j respectively denote the international price of *i*-th commodity and the purchasing power parity of *j*-th currency. The Geary-Khamis method defines the international prices and the purchasing power parities through the following system of (*M*+*N*) equations:

[4] Note that if the Fisher index is replaced by Tornqvist formula, the GEKS index can be derived from the stochastic CPD approach of Rao described below. However, Balk (2009) recently provided an overview of various multilateral methods and endorsed the GEKS-Fisher method as a centre stage method, particularly from the economic approach to international comparisons.

$$P_i = \sum_{j=1}^{M}\left(\frac{q_{ij}}{\sum_{j=1}^{M} q_{ij}}\frac{p_{ij}}{PPP_j}\right); \qquad PPP_j = \frac{\sum_{i=1}^{N} p_{ij}q_{ij}}{\sum_{i=1}^{N} P_i q_{ij}}. \tag{2}$$

In general, the above system of equations, a set of (M + N) linear homogeneous equations in as many unknowns, has a unique positive solution for the P_i's and PPP_j's apart from an undetermined scalar multiplicative factor [see Geary (1958), Rao (1971) and Khamis (1972)]. As defined above, the GK method is multilateral since the 'international price', P_i , is defined in (3) as the quantity weighted average of prices in all the countries. It is possible, however, to define a bilateral GK with the 'international price' defined as the weighted average of only the countries being compared. While multilateral GK is transitive, bilateral GK is not. However, multilateral GK has the disadvantage of violating the 'characteristicity' requirement of Drechsler (1973) that stipulates that the PPP between two countries should depend on the prices and expenditures in those two countries alone.

2.1.4 The Equally Weighted Geary-Khamis (EWGK) Index

Given that the GK index gives greater weight to the price vectors of larger countries when determining the reference price vector resulting in the "Gershenkeron effect" explained above, an equally weighted variant of the index has been proposed[5]. The Equally Weighted Geary-Khamis method defines the international prices and the purchasing power parities through the following system of (M+N) equations:

[5] See Balk (2009), equation (43) and Hill (2000), equation (10).

$$P_i = \sum_{j=1}^{M}\left(\frac{w_{ij}}{\sum_{j=1}^{M} w_{ij}}\frac{p_{ij}}{PPP_j}\right); \qquad PPP_j = \frac{\sum_{i=1}^{N} p_{ij}q_{ij}}{\sum_{i=1}^{N} P_i q_{ij}}. \tag{3}$$

where w_{ij} denotes the share of good *i* in the expenditure of country *j*.

2.1.5 The CPD PPP

The Country-Product Dummy (CPD) model was originally proposed by Summers (1973) to calculate relative price levels between countries in the context of missing price information. The CPD model belongs to the class of stochastic index numbers. Clements and Izan (1981) provide an early introduction to stochastic index numbers and demonstrate its connection with Divisia price indices. See also Clements, Izan and Selvanathan (2006) for a comprehensive review of stochastic index numbers.

The CPD PPPs are estimated from the following equation:

$$y_{ij} \equiv \ln p_{ij} = \alpha_1 D_1 + \alpha_2 D_2 + ... + \alpha_M D_M + \eta_1 D_1^* + \eta_2 D_2^* + ... + \eta_N D_N^* + v_{ij}, \tag{4}$$

where D_j *(j=1,2,…,M)* and D_i^* *(i=1,2,.....,N)* are, respectively, country and commodity dummy variables and v_{ij}'s are random disturbance terms which are independently and identically (normally) distributed with zero mean and variance σ^2.

Under complete price information comparisons of price levels between two countries j and k, represented by PPP_{jk} can be derived as:

$$PPP_{jk} = \frac{\alpha_k}{\alpha_j} = \prod_{i=1}^{N} \left[\frac{p_{ik}}{p_{ij}} \right]^{1/N} \quad . \tag{5}$$

However, Rao (1995), in the spirit of the standard index number approach, proposed that a more appropriate procedure would be to find estimates of the parameters that are likely to track the more important commodities more closely. This is achieved by minimising a weighted residual sum of squares, with each observation weighted according to the expenditure share of the commodity in a given country.

Thus, the generalized CPD method suggests that estimation of equation (6) be conducted after weighting each observation according to its value share. This is equivalent to the application of ordinary least squares after transforming the equation pre-multiplied by $\sqrt{w_{ij}}$, where w_{ij} is the budget share of item i in country j. The equation thus becomes:

$$\sqrt{w_{ij}} lnp_{ij} = \sqrt{w_{ij}} \sum_{j=1}^{M} \alpha_j D_j + \sqrt{w_{ij}} \sum_{i=1}^{N} \eta_i D_i^* + u_{ij} \quad . \tag{6}$$

Rao (2005) has shown that *PPP*s resulting from the least squares estimation of the above weighted CPD equation are equivalent to a system of expenditure-share weighted log-change system. The Rao system is given by:

$PPP_j = \prod_{i=1}^{N} (\frac{p_{ij}}{P_i})^{w_{ij}}$, setting one country as the numeraire,

$$\text{and } P_i = \prod_{j=1}^{M} \left(\frac{p_{ij}}{PPP_j}\right)^{\frac{w_{ij}}{\sum_{j=1}^{M} w_{ij}}}. \tag{7}$$

Here P_i, $i=1,2,\ldots,N$ are the international average prices (at the numeraire country's currency) of commodities. PPP_j is the *PPP* of country *j* with respect to the numeraire country. Note that $\sum_{i=1}^{N} w_{ij} = 1$, the sum of budget shares in country *j*.

The equivalence of purchasing power parities and international prices derived from the application of the weighted-CPD method with those arising out of the Rao-system for multilateral comparisons implies that the weighted-CPD method is a natural method of aggregation at all levels of aggregation within the context of international comparisons.

The basic CPD model, given by eq. (4) above, has the advantage that, as it is based on stochastic formulation, it allows the use of a range of econometric tools and techniques that are not normally used in the computation of PPPs. In particular, the regression approach provides estimated standard errors for all the coefficients. An added advantage is that the stochastic formulation of CPD given by (5) and (7) can be extended to allow regionally correlated price movements via admitting spatially correlated errors.

The alternative sets of PPP estimates for 2011 corresponding to the ICP, CPD, GEKS, GK and EWGK procedures have been provided in Majumder, Ray and Santra (2017) and provided the starting point for this study.

2.2.1 Generating the 1995, 2000 and 2005 PPPs from the 2011 PPP estimates following Ravallion (2013)

Let us explain how the Ravallion equation was used to generate the 1995, 2000 and the 2005 PPPs were obtained from the 2011 PPPs estimated and reported in Majumder, Ray and Santra (2017). The starting point is Ravallion (2013)'s equation (2) with the year subscript altered to suit the present study.

$$\ln\left(PPP_{11i}/PPP_{05i}\right) = \alpha + \beta \ln\left(Y_{11i}/Y_{05i}\right) + \gamma \ln\left(E_{11i}/E_{05i}\right) \qquad (8)$$

PPP_{ti} denotes the purchasing power parity of country i in year t. Y_{ti}, E_{ti} denote, respectively, the per capita GDP (in LCU) of country i in year t, converted to US $ using market exchange rate, and the exchange rate itself. Ravallion (2013) goes on to propose and estimate extensions of equation (8) above, but we have left such extensions for further studies.

In order to estimate equation (8), we require information on *PPP*, *Y* and *E*, across countries and over years, 2005 and 2011. Using the *PPP* s from ICP, 2005 and ICP, 2011, equation (9) was estimated on cross country data covering 83 countries on GDP and Exchange rates for those two years. The estimated regression line is reported below (standard errors in parentheses). These are close to, but not identical, to the ones reported by Ravallion (2013, p. 602) for the earlier period. This suggests stability in the Penn equation over time. As in Ravallion's study, the fit as given by R^2 is very good. Also, the restriction $\gamma=1$ cannot be rejected.

$$\ln\left(PPP_{11i}/PPP_{05i}\right) = -.064 + .258 \ln\left(Y_{11i}/Y_{05i}\right) + 0.993 \ln\left(E_{11i}/E_{05i}\right) \qquad (9)$$

$$(.032) \quad (.051) \qquad\qquad (.009)$$

R^2 = 0.9906, n = 82

From the PPP 2011 estimates for the CPD, GEKS, GK and EWGK procedures calculated from unpublished information on prices collected by the ICP in its 2011 round and reported in Majumder, Ray and Santra (2017), the PPP estimates for these procedures in the previous years were obtained sequentially (going back in time) from the estimated regression equation (9). The ICP PPP estimates for 1995 and 2000 were similarly estimated using equation (9) and ICP PPPs for 2005. We could therefore avoid using the published ICP 1993 PPPs on which there has been considerable controversy.

2.2.2 The Alternative procedure (proposed by UQ researchers) for generating time varying PPPs

Unlike the Ravallion procedure that required us to estimate the PPPs in each year prior to 2011, the time varying PPPs in the alternative procedure are available on the UQ website: http://uqicd.economics.uq.edu.au/. This procedure is based on "an econometric framework for the construction of a consistent panel of purchasing power parities (PPPs) which makes it possible to combine all the PPP benchmark data from various phases of the International Comparison Program with the data on national price movements in the form of implicit deflators from national accounts. The method improves upon the current practice used in the construction of the Penn World Tables (PWT), and similar tables produced by the World Bank which tend to be anchored on a selected benchmark. The econometric formulation is based on a regression model for the national price levels where the disturbances are assumed to be heteroskedastic and spatially correlated across countries. The

regression model along with data on country specific price movements are combined using a state–space formulation and optimum predictions of PPPs are obtained." (Rao, Rambaldi and Doran (2010, p. S59))

The UQ website reports alternative sets of PPPs based on the procedure for generating time varying PPPs between the bench mark years. In the calculations of inequality reported below, we used (a) PPPs (unconstrained), i.e. constructed without imposing any restrictions-these PPPs have been recommended as 'preferred' by the authors and (b) PPP_ICP_CON that has been described as " constrained to coincide with PPPs from the ICP for benchmark years ".

The sensitivity of inequality estimates between fixed and temporally varying PPPs therefore involved a 4 way comparison between (i) PPPs unchanged over time, (ii) changing PPPs following Ravallion (2013), and (iii) the alternative variants of the PPP generating procedures proposed in Rao, Rambaldi and Doran (2010). While the sensitivity of the PPPs and their implied inequality estimates to the alternative PPPs procedures (ICP, CPD, GEKS, GK, EWGK) is reported in the first half of the paper, the latter sensitivity i.e. between fixed and temporally varying PPPs (within the ICP framework) is reported just before concluding this study.

2.3 The Inequality Measures Used in this Study

Following Milanovic (2005, 2012), we distinguish between international and world inequality. While the former refers to inequality between countries based on their per capita incomes, the latter refers to inequality between the world's citizens when they are pooled globally and arranged in increasing order of per capita household income. In each case, we have used the Gini index and the subgroup decomposable Generalized Entropy (GE) index (Theil, 1967; Shorrocks, 1984) (given below).

The GE index is given by

$$GE(\alpha) = \begin{cases} \frac{1}{N\alpha(\alpha-1)} \sum_{i=1}^{N} \left[\left(\frac{x_i}{\bar{x}} \right)^{\alpha} - 1 \right], \ \alpha \neq 0,1 \\ \frac{1}{N} \sum_{i=1}^{N} \frac{x_i}{\bar{x}} \ln \left(\frac{x_i}{\bar{x}} \right), \ \alpha = 1 \\ -\frac{1}{N} \sum_{i=1}^{N} \ln \left(\frac{x_i}{\bar{x}} \right), \ \alpha = 0 \, . \end{cases} \tag{10}$$

Here N is the total number of households, x_i is the per capita total expenditure of the ith household and α is the weight given to distances between expenditures at different parts of the expenditure distribution. For lower values of α, GE is more sensitive to changes in the lower tail of the distribution, and for higher values GE is more sensitive to changes that affect the upper tail. In the empirical application reported below, we have restricted the calculations to $GE\ (0)$. i.e. assumed $\alpha = 0$.

Following Milanovic (2005,2012), estimates of international inequality are based on the distribution of (i) unweighted per capita incomes in the countries, and (ii) per capita incomes in the countries weighted by the population share in the corresponding countries. (i) and (ii) are referred to as Concept 1 and Concept 2 inequalities, respectively. This is distinguished from the measure of world inequality based on the global pool that is referred to as Concept 3 inequality. Thus, while concepts 1 and 2 inequalities measure inequalities between countries, concepts 3 measures inequality between the world's citizens. Concept 2's measure of international inequality is based on the assumption that each citizen in a country has the per capita income of that country. It is therefore closer to concept 3 but assumes away inequality within the country. In this study, we introduce and estimate a fourth measure of inequality, which we call Concept 4 inequality, that is defined as the population

share weighted average of the intra-country inequalities in the 83 countries considered in this study. While Concept 1 and Concept 2 inequalities treat each country's per capita income as a single observation and do not consider intra-country inequality, Concept 3 does so but only through the prism of the world as a whole. Concept 4 recognizes intra-country inequality in the measure of world inequality in the spirit of concept 3 inequality but attempts to apportion weights to each country's inequality among its residents that are consistent with its population share. For example, in the calculations of concept 4 inequality, intra-country inequalities in the populous countries such as China, India and Indonesia get a greater weight than those in the sparsely populated countries.

More formally, Concept 1-4 inequalities can be expressed as follows.

<u>Concept 1 Inequality</u>: The unit of observation in equation (10) above is y_n which is the per capita income in country n (=1.,,,N) and N is the total number of countries in the global sample. The Theil-Shorrocks index is then given by:

$$GE(\alpha) = \begin{cases} \frac{1}{N\alpha(\alpha-1)} \sum_{n=1}^{N} \left[\left(\frac{y_n}{\bar{y}} \right)^{\alpha} - 1 \right], \ \alpha \neq 0,1 \\ \frac{1}{N} \sum_{n=1}^{N} \frac{y_n}{\bar{y}} \ln \left(\frac{y_n}{\bar{y}} \right), \ \alpha = 1 \\ -\frac{1}{N} \sum_{n=1}^{N} \ln \left(\frac{y_n}{\bar{y}} \right), \ \alpha = 0 . \end{cases} \tag{11}$$

$\bar{y}$ is the mean of the per capita incomes in the N countries. The Gini inequality is similarly defined over the per capita country incomes, y_n.

Concept 2 Inequality: In the Theil-Shorrocks index in (11), replace y_n by $y_n{}^*$ (= $s_n\, y_n$), where s_n is the population share of country n in the region or the world, as appropriate. The Gini inequality in Concept 2 is similarly defined with $y_n{}^*$ replacing y_n.

Concept 3 Inequality: The household is the unit for the inequality estimation as in equation (10) above. All the households in the various countries are pooled to form the global sample. Equation (10) and its Gini counterpart then used to calculate the Concept 3 inequality estimates.

Concept 4 Inequality: This inequality measure retains the household as the unit as in Concept 3 but calculates concept 3 inequality in each country instead of globally, then follows Concept 2 in aggregating to the global estimate using the population share of country n (s_n) as weights. Taking each country separately, let I_n denote the inequality in country n between all the per capita incomes of the households in that country. Then, Concept 4 inequality is defined as the population share weighted average of the intra-country inequalities:

$$I^* = \sum_{n=1}^{N} s_n\, I_n \qquad (12)$$

3. The Data set and the summary statistics

3.1 Assembling the Global Data Base and Constructing the Ventiles

In this subsection, we describe the construction of the data base from a variety of data sources and reports.

3.1.1 Data sources -Total Population, GDP, ER

The data for Total Population, Gross Domestic Product (GDP) and Exchange rate (ER) was obtained from the World Development Indicators (WDI), the main World Bank collection of development indicators, compiled from officially-recognized international sources, across all four years to ensure consistently defined variables. Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship where the values displayed are midyear estimates (World Development Indicators (WDI), 2019). The GDP in Local Currency Unit (LCU) at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. The official ER in LCU relative to the US$, refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages. (WDI, 2019). [6]

[6] The source; limitations and exceptions; statistical concept and methodology of the data sets can be found at the WDI, 2019.

PPPs

The ICP PPPs for 2005 and 2011 were obtained from the reports for these rounds published in ICP (2005) and ICP (2011), respectively. The non- ICP, alternative sets of PPPs (i.e. CPD, GEKS, GK and EWGK) for 2011 were obtained from Majumder, Ray and Santra (2017)[7]. The Ravallion equation was used to generate the 1995, 2000 and the 2005 alternative PPPs, using equation (8) as described in section 2.2. The five global PPPs (US $=1.000) for the years 1995, 2000, 2005 and 2011 can be found in Appendix F to I. With 83 countries, this study covers more than 80% of the global population. [8] Furthermore, this study covers approximately 80% of the world GDP in 2011.

Household surveys

The household surveys used to calculate Concept 3 and 4 inequality estimates[9] for the 83 countries come from three main data sources, namely, the Luxembourg Income Study (LIS), Living Standard Measurement Survey (LSMS) and PovcalNet.[10] PovcalNet made up the largest proportion, 49% of our sample; LIS made up 39% of our sample and LSMS made up 12% of our sample. The three data sources are described below.

LIS

[7] Refer to section 2.1 of this paper for the estimation of the alternative PPP procedures.
[8] Refer to Appendix B for the full population coverage across the four years, 1995-2011.
[9] Refer to section 2.3 of this paper for the detailed discussion on the inequality measures used in this study.

[10] The list of the 83 countries and the various data sources corresponding to each of the four years can be found in Appendix A.

The LIS Database is the largest available income database, providing public access for research purposes to harmonised microdata collected from about 50 countries in Europe, North America, Latin America, Africa, Asia, and Australasia spanning five decades. LIS datasets contain household-and person-level data labour income, capital income, social security and private transfers, taxes and contributions, demography, employment, and expenditures (LIS, 2019). LIS is a well-managed and indisputably significant global public institution for research on inequality and social policy globally.

LSMS

The World Bank established the Living Standards Measurement Study (LSMS) in 1980 to improve the accuracy, timeliness and policy relevance of household survey data collected by government statistical offices in developing countries. The objective of LSMS surveys is to collect data on many dimensions of household well-being that can be used to assess household welfare, understand household behaviour and to evaluate the result of different government policies on the living conditions of the population (LSMS, 2019).

PovcalNet

PovcalNet is a self-contained software, with a built-in database developed by the World Bank for the main purpose of replication of the World Bank's poverty measures. PovcalNet allows the researcher to calculate the poverty measures under varying assumptions of different countries (PovcalNet, 2019). PovcalNet also provides access to the distribution of the household surveys which includes the cumulative frequency of the population and income, either in 1 percentiles (i.e. for consumption data) and in 5 percentiles (i.e. for income data). Furthermore, PovcalNet provides certain significant summary

features of the data set including the mean of the data set, number of observations and PPP used in computation (i.e. 2011 ICP PPP). All of this is extremely useful for us to construct the countries income ventiles (5% of the population ranked by their household per capita income) and it is from these ventiles that our estimate of global and regional inequality is in turn derived (i.e. Concept 3 and 4).

Following this, we will discuss the conversion from the PovcalNet cumulative frequencies of population and income into the respective countries income ventiles.

3.1.2 Constructing the Ventiles

Assume, we have a given country, the Income Ventile, V_i where i = 1, …, 20 for 20 observations (i.e. 5 % of the population ranked by their household per capita income will give us 20 observations). PovcalNet provides us with cumulative frequencies over population, denoted by CP_1, …, CP_{20} and over income, denoted by CY_1, …, CY_{20}.

The first step is to convert the cumulative frequencies to relative frequencies by taking successive differences of the cumulative frequencies.

For example, relative population frequency for a country will be denoted by RP_1, …, RP_{20} where $RP_1 = RP_1$, $RP_2 = RP_2 - RP_1$, …, $RP_{20} = RP_{20} - RP_{19}$

The relative income frequency for a country will be denoted by RY_1, …, RY_{20} where

$RY_1 = RY_1, RY_2 = RY_2 - RY_1, \ldots, RY_{20} = RY_{20} - RY_{19}$. The summation of the relative frequencies which are in percentages must be 100% for both population and income.

Next, we construct the Total Population for each of the 20 observations, denoted by $TP_1, \ldots, TP_{20}$ in the sample, where $TP_1 = RP_1 \times sample\ size, \ldots, TP_{20} = RP_{20} \times sample\ size$, where the sample size is the number of households in the survey of a specific country in a given year. Now, we can construct the Total Income for each of the 20 observations, denoted by $TY_1, \ldots, TY_{20}$ in the sample, where $TY_1 = RY_1 \times AY \times sample\ size, \ldots, TY_{20} = RY_{20} \times AY \times sample\ size$, where AY denotes the mean income (in 2011 ICP PPP$) of the survey of a specific country in a given year.

Lastly, we can construct Income Ventile, $V_1, \ldots, V_{20}$ for each of the 20 observations, where $V_1 = \frac{TY_1}{TP_1}, \ldots, V_{20} = \frac{TY_{20}}{TP_{20}}$. This will give us the Income Ventile in terms of the 2011 ICP PPP$, thus it is important to convert this Income Ventile to LCU by multiplying the Income Ventile by the ICP PPP used in the computation in PovcalNet (in this case, 2011 ICP PPP). Once we obtain the Income Ventile in LCU we can convert it in terms of each of 5 PPP procedures (i.e. ICP, CPD, GEKS, GK, and EWGK) for each of the four years, 1995-2011.

The use of ventiles as an income unit is due to simplicity and entails a very insignificant or small loss of information and a negligible underestimation of global inequality as we assume that inequality within each ventile is nil. Davies and Shorrocks

([1989], pp. 102) state that a partition into twenty or more [optimally selected] groups ensures that the error does not exceed 0.001 (i.e. 0.1 Gini point).

In order to maintain consistency across the three data sources (LIS, PovcalNet, LSMS), the inequality analysis is done in terms of income rather than consumption, thus converting all consumption figures into income values. Assume, for a given country *i* where *i = 1, …, n*, Consumption is given by C_i, Income is given by Y_i and the Income Consumption Ratio at Mean for that country is given by $\overline{Y_i}$. In order to convert the consumption into income values, we take the product of consumption and mean income to consumption ratio, given by, $Y_i = C_i \times \overline{Y_i}$. f

In basing the inequality calculations on income rather than consumption, we have followed Alvaredo, et al (2017) rather than Milanovic (2005, 2012) who considers consumption. In fact, Milanovic (2012) whose data base includes both consumption and income does not adjust for this divergence because as he says (p. 11), ‘ any such adjustment would be entirely ad hoc. There is moreover nothing to guide us in that area…’[11]. There is a difference of opinion here. While the income based WID project of Alvaredo et al (2017) was conducted on the belief that consumption data available in household surveys are inappropriate in distributional comparisons as they miss out on the rich households, Milanovic (2012) asserts ‘that consumption surveys are more reliable because the underestimate of consumption by the rich is less than the underestimate of income by the rich.’ (p.11).

[11] The absence of any adjustment is difficult to justify since while income is subject to fluctuations such as windfall gains or temporary loss of employment, households smooth their consumption when such fluctuations occur. Consequently, income inequality tends to exceed consumption inequality.

Since the countries in our assembled data base includes both developed and developing countries, and the former (typically, those from the LIS data base) had no information on consumption, we took income as the variable for the inequality calculations, but unlike Milanovic (2012), we converted all the consumption figures to income as described above. This is a compromise between the two approaches. Nevertheless, as part of the robustness exercise, we have provided in table 22 below a comparison between the ICP PPP based consumption and income inequality estimates for the subset of our group of countries for which both consumption and income information are available or could be constructed.

3.2 Summary Features

3.2.1 Per Capita Median Income by Region and Global Income share of Regions

Table 1 presents the per capita median income by regions. The table also shows the sensitivity of the income estimates to the PPPs[12] used in the calculations. Based on the ICP PPPs, over the period considered (1995-2011), the world's median per capita income increased by 63.42 % (from $ 1470.89 to $ 2403.75, with the Asia-Pacific region recording an increase by 127.77 %, and the Africa region by 53.61 %). Notwithstanding the rise of China and India over this period, the other countries in Asia did not record significant income increase. Table 2 reports the per capita income share (at median) of

[12] The PPPs for each of the 83 countries estimated and used in this study corresponding to the 5 PPP procedures have been reported in Appendix F-I corresponding to 1995, 2000, 2005 and 2011, respectively.

global income[13] of the 6 regions in our sample. Over the 1995-2011 period, while the income share of the most populated regions, namely, Africa and Asia-Pacific have recorded a decline, there was a large increase in the income share of the Latin American region over 1995-2005 declining somewhat in the last sub period, 2005-2011. In contrast, the CIS region consisting of 10 post-Soviet republics, which came into existence just before the start of our sample period, recorded an impressive increase in the last sub period, 2005-2011, after a gradual decline in the earlier sub periods. To examine the robustness of this picture, Appendices C – E report the corresponding global income shares of each region at the 25th, 75th and 100th percentiles[14]. There is general agreement between the PPPs that the global income share of the Latin American region increases as we move to the higher percentiles and that the higher percentiles in this region enjoyed an increase in their income share over this period. For example, in case of the 100th percentile, the gap between the affluent Eurostat-OECD region and Latin America narrowed sharply so much so that on the GEKS, GK and EWGK figures, the most affluent households in these two regions were enjoying almost equal shares of global income in 2011.

The spread of numbers horizontally shows the sensitivity of the per capita income and income share estimates to the PPPs used. While the overall trends in each region and globally are quite robust, the magnitudes are moderately sensitive to the PPPs used. In most cases, the ICP PPPs record higher per capita income figures than the non-ICP PPPs, and of the latter, the EWGK records the smallest income estimate and out of line with the rest. Africa and Eurostat-OECD stand out as the two regions where the gap between the ICP and the EWGK per capita income estimate is considerable. The CPD, GEKS and

[13] Defined as the sum of the per capita median incomes of the 6 regions.

[14] See Appendix J for the graphical presentation of the movement in the regional income shares (all based on ICP PPPs) at the 25th, 50th, 75th and 100th percentiles. These show that the movement in the regional shares of global income varies between the percentiles.

GK based income estimates are reasonably close to one another and move in step over time with one another. Since the alternative PPP procedures revise the per capita income estimates in each region in the same direction, the income shares of the regions are robust, but not identical, to PPPs.

3.2.2 China and India- Per Capita Income and Global Income shares

Tables 3 and 4 focus exclusively on China and India by reporting their per capita median income and their share of world income, respectively. China's increase in per capita income outstripped that of India on all the PPPs, though in case of both countries the ICP PPPs overstate the income while the EWGK understates it in relation to the other PPPs. The discrepancy between the ICP and EWGK estimates is much larger in case of China than for India. As with the global estimates reported earlier, the CPD, GEKS and GK estimates are much closer to one another. On all the PPPs, China's share of world income was significantly higher than that of India by the end of our sample period. Note, however, that over the initial sub period (1995-2005), the income share of both countries fell. While China recovered from this fall by recording an increase over 2005-2011, India's share continued to decline opening up the large gap in their global income shares noted above in the final year. Note, also, that China's increase in per capita income outstripped that of the Asian continent as a whole, less so for India. Incidentally, while the new millennium has been dubbed as the 'Asian century' on the back of the rise of China and India and their high growth rates, a comparison between tables 2 and 4 shows that in 2011 these two economies together recorded a global income share that was less than that of the CIS region. The world's focus on the former has allowed the latter to fly under the ladder.

3.2.3 Income shares of Bottom 50% and Top 10% within each Region

The income shares in each region of the bottom 50 % and the top 10 % of households in that region have been reported in Tables 5 and 6, respectively. These tables present evidence of considerable inequity in most regions. In 1995, for example, the bottom 50 % of households in Africa had an income share of less than 10%, while the top 10 % had an income of over 50 %. Latin America does marginally better than Africa in recording corresponding figures of 10.21 % and 47.49 %, respectively, while Asia-Pacific and Eurostat-OECD do much better. Note, however, that in most regions the income share of the bottom 50 % has been increasing, while that of the top 10 % has been declining. This is particularly so in case of Africa where the income share of the bottom 50 % doubled over this period. The CIS also recorded a large increase in the income share of the former (from less than 8 % in 1995 to nearly 30 % in 2011) at the expense of an equally significant decrease in that of the latter (from over 40 % in 1995 to around a quarter in 2011). In contrast, there has not been much movement in the income shares in the Asia Pacific region. Notwithstanding some sensitivity of the estimated income shares to the PPPs, the movement in the income shares over this period is robust to the PPPs. Focussing on the terminal year, 2011, the CIS, Eurostat-OECD, and Western Asia recorded the lowest income shares (around a quarter) of the top 10 % of households, while Africa and the Asia-Pacific region recorded the highest (upward of 40%). Clearly, one does not get a uniform picture if one is looking at the effect of globalisation and trade liberalisation on the income shares of households at either end of the income distribution- highly progressive in Africa and CIS, less so, though still progressive, in other regions. This large variation between regions in the income shares of the bottom 50% and top 10% and in their movements is a significant feature of the data set assembled for this study. Let us now turn to the centre piece of this study namely the inequality estimates.

4. The Inequality Estimates and Regional Distribution of the Households

4.1 Global, Regional and Country Estimates of Income Inequality

The inequality estimates corresponding to Concepts 1 and 2 inequalities have been presented in Tables 7 and 8, respectively, with each table also reporting the sensitivity of the estimates to the PPP used from the 5 alternative sets of PPPs. The regionally disaggregated inequality estimates for the international inequality measures, Concepts 1 and 2, have been reported in Tables 9 and 10, respectively. In 1995, but less so in 2000, the estimated population weighted Gini measure of international inequality (Concept 2) reported in Table 8 is higher than the corresponding unweighted measure (Concept 1) reported in Table 7. However, from 2005 onwards, the reverse has been the case with the Concept 1 inequality estimate sharply exceeding the Concept 2 inequality estimate in 2011 for all the PPPs. In other words, while the concept 1 inequality measure recorded no significant movement in the inequality estimate over the period, 1995-2011, the concept 2 measure recorded a sharp and continuous decline throughout this period. The reason lies in the fact that the more populated Asia-Pacific region experienced a sharp decline in international inequality over 2005-2011, thanks largely to the high growth rates of not only China and India but also other Asian countries such as Indonesia and Vietnam which pulled the large Asian economies towards one another in per capita income. This is confirmed by the regional inequality estimates reported in tables 9 and 10 which generally record, on both concept 1 and 2 inequality measures, a drop in inequality in the Asia-Pacific region over the latter half (2005-2011) of our sample period. Note, also, from Tables 9 and 10 that in 2011 while on the unweighted measure (Concept 1), Asian inequality exceeds that in Europe, the picture is sharply reversed in case of the population share weighted measure (Concept 2). This confirms that, within the Asia- Pacific region, over 2005-2011 the

narrowing of the divergence in the per capita incomes has been the sharpest between the more populated Asian countries such as China, India and Indonesia. Tables 9 and 10 provide evidence of considerable regional heterogeneity in the income inequality magnitudes, with Latin America recording higher Concept 1 (i.e. unweighted) international inequality throughout our sample period. It is important to remember, however, that the inequality estimates in Tables 7-10 reveal a partial, if not a misleading, picture of global inequality since it treats all residents within a country as having identical incomes.

The international inequality estimates presented so far depict inequality between nations, not that within nations. The estimates of global, i.e. 'world inequality' that take into account inequality between households, measured by concepts 3 and 4 inequalities have been presented in Tables 11 and 12, respectively. Three features stand out from these two tables. First, in contrast to declining international inequality, world inequality has been increasing over the period, 1995-2011, which is consistent with the evidence reported in Milanovic (2012). The increase in world inequality was particularly sharp over the last sub period (2005-2011) with the Gini inequality coefficient of Concept 3 inequality recording an increase of over 10 %. This result is not only robust to the PPP used but also between concepts 3 and 4 inequalities. In other words, the macro based picture of international inequality is different from the micro based picture of world inequality especially over the period (2005-2011) when high growth rates accompanied an increased pace of globalisation. While nations closed their per capita income gaps between one another, income disparities between households within and between nations widened. Second, the inequality estimates diverge considerably between Tables 11 and 12. Concept 3 inequality estimate overstates world inequality considerably in relation to Concept 4 inequality and this is true of all the PPPs. The inequality magnitudes of Concept 4 inequality are closer to the intra-country inequalities of the countries in our sample reported later. This raises

the question whether it is more appropriate to pool households globally regardless of their country of residence that Concept 3 inequality measure does than pool households separately for each country that Concept 4 inequality measure does. One can argue that it is more meaningful to do the latter since comparing incomes that span the entire range of incomes in the world from the poorest household in the poorest country to the richest household in the richest country can give an exaggerated view of world inequality as confirmed by a comparison of Tables 11 and 12. Moreover, from a policy perspective, it is important to recognise that to devise effective inequality reducing strategies to attack the problem of rising world inequality, multilateral institutions such as the World Bank have to work through the nation state that concept 4 recognises but not concept 3. Even from a national policy perspective, governments should be focussed on reducing inequalities within their respective boundaries. The global picture of world inequality that concept 4 provides recognises this by respecting the national identities and aggregating the intra-country inequalities into the world inequality estimate. Third, the regionally disaggregated estimates of inequality reported in tables 13 and 14 show that, on both measures, inequality between households has been increasing in every region over the period, 1995- 2011 with Africa recording some of the sharpest increases. This is robust to PPPs. Note that the poorer regions in Africa, Asia Pacific and Latin America which include many of the emerging economies record in 2011 on both Concepts 3 and 4 much higher inequality than the affluent Eurostat-OECD region. As with the regionally disaggregated Concept 1 and Concept 2 inequality estimates between countries reported in tables 9 and 10, the intra country inequality estimates reported in Tables 13 and 14 provide evidence of regional heterogeneity.

The Theil inequality measure is decomposable into ‘between’ and ‘within region/country inequalities’. Table 15 exploits this property to decompose the ICP PPP based Concept 3 global/world inequality estimates in Table 11 into (a) ‘between and within region’ inequalities, and (b) ‘between and within country inequalities’ in the initial and terminal years of this study. Table 15 shows that (a) the ‘between region’ inequality component dominates the ‘within region’ component with the dominance increasing sharply over this period, and (b) the two components have moved in reverse direction over this period, with the sharp increase in the ‘between region’ component standing out in sharp contrast to the almost equally sharp decline in the ‘within region’ component over the period, 1995-2011. The same result holds for the country level decomposition also reported in Table 15. In other words, while geographic regions (and countries) have moved closer to one another in aggregate per capita income terms, the residents within the regions (and countries) have moved away from one another. A third feature of Table 15 is that in both years inequality between regions is much lower than inequality between countries. Note, also, that the Theil inequality measure based evidence of a sharp increase in global (i.e. concept 3) inequality over the period 1995-2011 reported in Table 11, 15 using time varying PPPs is consistent with a similar sharp increase on the Theil measure based global inequality reported over 1993-2005 in Milanovic (2012, table 4) using time invariant PPPs fixed at 2005 ICP PPPs.

Table 16 focuses on the three large economies, namely, China, India and the USA and reports the concept 3 inequality measure in each country. While India records the lowest inequality among these three countries, unlike in China and USA, inequality in India has been increasing sharply and continuously over our sample period. USA remains the most unequal country among these countries throughout our sample period.

4.2 Regional Distribution of Households by Income Quintiles and Country Distributions in Africa and Asia-Pacific Regions

The households from the individual countries were pooled into a global sample. Each household was placed in one of 20 ventiles of 5 % centiles each (i.e. 0-5 %, 5-10%, etc) based on its per capita household income. Table 17 shows the regional distribution in each ventile with the numbers in each row adding up to 100 %. This table also shows changes, if any, in the geographical distribution in each ventile over the sample period, 1995-2011. Since Africa and Asia contain the bulk of the global population, a comparison between them is of particular interest. The large majority of households in 1995 in the lowest ventile (0-5%) are from Africa (83%), followed by those from Asia (8%). These two regions contain over 90 % of the households in the poorest ventile, and around 85 % in the next two ventiles. As we move up the ventiles, the percentage of households from Africa declines, quite sharply initially, while that from Asia increases until the households are equally spread between the two regions in the middle classes (ventiles 35-40, 40-45, 45-50, 50-55, 55-60 %centiles). As one moves to the still higher ventiles, the regional trends reverse with the African share increasing while the Asian share starts to decline. It is interesting to note that in the most affluent ventiles, Africa again dominates Asia. This provides an interesting insight into the Africa-Asia comparison. While the bulk of the Asian households populate the middle classes, African households are spread right across the 20 ventiles though, of course, heavily skewed towards the lower ventiles. The 2011 figures show that the qualitative picture with respect to these two regions hasn't changed much over this period (1995-2011) except for a significant shift by the Asian households away from the lowest ventiles (0-5, 5-10, 10-15, 15-20 %centiles)

towards the upper range of the middle ventiles, but not to the three top ventiles. This could be largely explained by the rise of China, India and Indonesia, the lifting of their households from below the poverty line, and the consequent upward move of the poorest Asian households from the lowest ventiles to those up the ladder. Another region that stands out is the Eurostat-OECD region with an increase in their %ages in the upper ventiles between 1995 and 2011, with the recorded increase being particularly sharp in the most affluent ventiles. While Africa dominates the first ventile with Asia making its presence felt from the second ventile, the Eurostat-OECD region dominates exclusively the top 5 ventiles.

Tables 18, 19 focus exclusively on Africa and Asia, respectively, by presenting the country wise counterparts of Table 17 in these two regions. To allow easier reading, we have reported the results only for the initial year (1995) and the final year (2011) of our sample period. Within Africa (Table 18), households in Burkina Faso and Niger are more visible in the lower ventiles, and South Africa, Ghana and Nigeria in the upper ventiles. With the exception of Ghana losing its significant presence in the top ventiles, the qualitative picture hasn't chained much over this period. Within Asia (table 19), Indonesian households had a large presence in 1995 in the lowest ventile, but over this period they have moved upwards increasing their presence in the middle ventiles away from the lower ventiles. In contrast, Philippines has gone in the reverse direction. The experiences of households in China and India are interesting since they have moved in reverse direction. There is a distinct upward movement of the Chinese households towards the upper middle and the top ventiles, not so for the Indian households. In 2011, for example, India had the largest presence in the lowest ventile (0-5%) with a quarter of Asian households coming from India alone. This is in spite of India recording some of the highest growth rates over this period. At the other end, Malaysia stands out as a country in Asia with its households dominating the top 4 ventiles. In both 1995 and

2011, for example, half the number of Asian households in the top ventile (95-100%) came from Malaysia alone. Sri Lanka, Thailand and Vietnam also record significant presence in the middle and upper ventiles, much more than China and India, Table 19 shows that while China and India dominate 'success stories' from Asia based on their growth rates and the size of their PPP based economies, the households in the smaller economies of Malaysia, Sri Lanka, and Thailand are the ones that enjoy superior income based living standards since they dominate the upper ventiles. Clearly, the macro based figures that feature in the media tell a different story from that at the household level portrayed in Table 19.

4.3 Validation of the assembled Data by comparing with the WID data base

Before we conclude this section, we report on the validation of our assembled data set by comparing the inequality in each of the 83 countries in our sample with that from the WID inequality project reported in Alvaredo, et. al. (2017). To make the comparisons meaningful, we have reported in Table 20 for each country the Gini inequality (Concept 3 Inequality) from our study and the corresponding Gini inequality from the WID data base in the year closest to that in our study. The two sets of numbers are quite close and our data set benchmarks quite well the widely known and used WID data set. Appendix K provides visual conformation of this by showing that the graphs plotting the two sets of Gini coefficients by country track each other quite well. For most part, the two graphs are indistinguishable. Table 20 also compares for the 83 countries as a whole the Concept 4 inequality estimate between the present study and that based on the country estimates reported in Alvaredo, Chancel, Piketty, Saez and Zucman (2017). The two global estimates of world inequality are nearly identical. This should give the reader confidence in our assembled data set and in the results of this study. This also suggests that the

biases in the inequality estimates from household survey data are not that large to warrant serious concern and do not require significant correction.

4.4 Temporal Movement in the Ventile Means and Intra-ventile Inequalities

If the global sample obtained by pooling households from our chosen group of 83 countries, that provided the base for the Concept 3 inequality estimates reported in Table 11, is split into 5 %centiles, then Table 21 reports the ventile (i.e. 5 %centile) means at ICP PPP US $ over each of the sub-periods. This table also reports movement in the Gini inequality within each ventile. The last row reports the population share weighted average of the inverse of the PPPs of each currency per unit of US $. This ($\theta$) is a measure of the global strength of an averaged unit of the 82 non US economies vis the US $. The following three results are of principal interest: (a) the first period, 1995-2000, witnessed a sharp appreciation of the US $, but it stabilised over the remaining period, (b) mainly due to (a), the global ventile means initially recorded a decline at all ventiles, (c) while the means of ventiles in the 0-5%tile to 40-45 %tile continued to decline in the subsequent period,1995-2000, and recorded an increase only in the remaining periods, the higher ventiles resumed improvement after the first sub-period, and (d) the intra ventile inequalities in the bottom and top ventiles dominate those in the other ventiles, but in all the ventiles the inequality between the households has been declining over this period.

4.5 Income and Expenditure Inequality Estimates of the Poorest Countries in the Global Pool

Let us recall that the inequality estimates reported so far are based on income while economists tend to favour use of expenditure inequalities in distributional comparisons. Table 22 compares the Concept 3 and Concept 4 measures of intra-

country and intra-world inequality between income and expenditure inequalities in our final year (2011) based on the ICP PPPs only. The 'global pool' of households is now constituted only from the subset of countries (41) in the original sample of 83 countries that provided information on expenditures. As reported earlier, these are mostly the poorer developing countries[15]. During the period of our study, on both concept 3 and concept 4 inequality measures, there was a large increase in inequality for this sub-group of the poorest countries in our sample. The picture on sharply accelerating inequality within the developing world is robust between the expenditure and income inequalities. Comparing these inequality estimates with those from the original sample reported in Tables 11 and 12, we note that while the latter (i.e. the group of 83 countries) recorded only a slight increase in inequality over our chosen period, the subset of 41 poorer countries recorded a much larger increase in inequality on both measures. The divergence between the two was at its peak in the last sub-period, 2005-2011. However, the Concept 3 inequality magnitudes in the original group of countries in our sample was much larger. In other words, starting from a lower base, the pool of the poorest countries in our sample recorded an increase in inequality over this period that outstripped that in the more affluent countries. This last feature reiterates the central theme of this paper that the 'global view' of inequality hides inequality differences within and between nations based on their geographical location and economic clustering such that it depicts a misleading view of reality. Note, also, from table 22 that the income inequality estimates consistently exceed the expenditure inequality estimates as argued before.

The estimates of Concept 1 and Concept 2 inequalities between per capita incomes of countries for the subset of the 41 poorer countries in the global sample have been presented in Appendix M. These are in stark contrast to the corresponding

[15] The countries are listed in Appendix L. In 2011, the median per capita income of this subset of countries was around 60 % of that of our original sample.

estimates from the global sample presented in tables 7 and 8, respectively. The nature of the contrast is in line with that between the intra country estimates measured by Concepts 3 and 4 discussed above. The decline in inequality of per capita incomes between countries in the global sample in the new millennium (2000-2011) contrasts sharply with an increase over the same period for the developing countries. In other words, unlike the global sample, the subset fails to provide much evidence in favour of convergence in growth rates. It reiterates the central message of this study as stated in the title of this paper.

4.6 Comparison of Inequality Estimates between Time varying and Time invariant (i.e. Fixed) PPPs

This section explores the question whether the qualitative picture, portrayed in this study, of increasing global inequality in this most recent period of globalisation that is at odds with previous findings is due to our adoption of time varying PPPs (incorporating the 'Penn' effect) unlike the previous literature that fixes the PPPs at those of a particular round. Table 23-25 provide evidence on this issue by comparing, respectively, Concepts 1-3 inequality estimates between the fixed PPP based estimates with the 3 time varying PPP based inequality estimates (Ravallion's procedure, and the alternative variants proposed by the UQ researchers using forecasting models).In each table, column 2 of numbers refers to the conventional use of PPPs (i.e. time invariant) while columns 1, 3 and 4 are based on time varying PPPs. There is considerable variation between PPP procedures not only in the inequality magnitudes but also in the direction of change. For example, if we focus on the most recent period, 2005-2011, there is general agreement between the Penn effect incorporated time varying PPPs and fixed PPPs that both concept 1 and 2 inequalities reported in Tables 23 and 24, respectively, recorded a decline, but the

alternative variants of the UQICD PPPs registered a slight increase in inequality. The alternative sets of UQICD PPPs recorded near identical inequality estimates. Table 25 on global inequality is still more interesting and conclusive in establishing the non-robustness of the Concept 3 inequality estimates. Taking the period 1995-2011 as a whole, the global inequality estimates based on fixed PPPs (at 2011 ICP PPPs) are out of line with those based on the 3 variants of time varying PPPs. While there is broad agreement between the latter three that there has been an increase in global inequality, much sharper for the Ravallion based PPP procedure than for the UQICD PPP procedures, the use of fixed PPPs suggests the reverse, namely, a decline as reported in the recent literature that adopts the fixed PPP methodology. This non-robustness is illustrated in the three Figures presented in Appendix N corresponding to Concepts 1-3 inequalities. In each case, over the period, 2005-2011, the red line depicting the inequality movements based on fixed PPPs is out of line with the others based on time varying PPPs. The sharp decline in global inequality recorded by the fixed PPPs is not shared by the time varying PPPs. In other words, the near consensus in the literature on the decline in global inequality is not robust to departures from the assumption of fixed PPPs.

5. Conclusion

The period spanned by the last decade of the 20th century and the first decade of the 21st century has been characterised by political and economic developments on a scale rarely witnessed before over such a short period. For example, while this period was characterised by several economic and financial crises, it also witnessed some of the highest growth rates recorded by several emerging economies, notably China, India and Vietnam. This period was also characterised by an

acceleration in globalisation and economic integration of the world economy. This set the scene and motivation for the present study which examines changes in inequality over this period. The study is based on an a global data set constructed from household unit records in over 80 countries collected from a variety of data sources and covering over 80 % of the world's population.

The departures of this study from the recent inequality literature include its regional focus within a 'world view' of inequality that led to evidence on differences in inequality magnitudes and their movement between continents and countries. The use of household unit records allowed us to go beyond the aggregated view of inequality and provide evidence on how household based country and continental representation of the income quintiles have altered in this short period. For example, in the Asian context, while one hears of the giant economies of China and India dominating the scene in terms of growth rates and population size, it is the much smaller economy of Malaysia whose households occupy the top four ventiles. The contrasting experiences of Chinese and Indian households in this respect add to the interest of this study.

In another significant departure the study examines the sensitivity of the inequality results to the PPPs used and produces evidence of considerable non-robustness of the inequality estimates especially between the ICP PPPs and several alternative sets of PPPs estimated in this exercise. Reassuringly, the study provides evidence of robustness of the trends in inequality to PPPs from alternative procedures over this period. This includes robustness to PPP of the result recently noted by Milanovic (2012) that while inequality between nations based on per capita incomes has declined, though the present study found to have done so very marginally over our chosen period, inequality within nations has increased sharply. This last feature differs between the poorer countries in our sample and the rest with the former starting from a lower base of intra country

inequality but recording a much larger increase over this period. If one views declining inequality between per capita incomes of countries as evidence of convergence as predicted by the Solow model, then the present evidence of this study is at best weak, and at worst non-supportive on the unweighted measure of 'Concept 1 inequality' over part of the period.

This study also provides evidence on the sensitivity of inequality magnitudes and trends between time invariant (i.e. fixed) PPP based estimates and those that allow the PPPs to vary over time. This latter sensitivity is much larger than that due to adoption of alternative PPP procedures. Much of the inequality literature is based on fixed PPPs though it does report sensitivity of the inequality estimates to PPPs from different rounds of the ICP. Once a particular round of ICP PPP is decided upon, that set of PPPs is used throughout the chosen period. That overlooks the "Penn effect' articulated, for example, in Ravallion (2013) that as a country grows its PPP moves towards its exchange rate through a realignment of relative prices, and the higher the growth rate, the faster is the convergence of that country's currency towards its exchange rate. This means that in the latter years a developing country's currency may be overvalued, or alternatively, undervalued in the earlier years in using a fixed rate PPP compared to a time varying PPP over a long period. This may lead to an overstatement of the reduction in inequality between countries during globalisation as recorded for example in Milanovic (2012). This may provide a partial explanation of the consensus in the existing fixed PPP based inequality studies that the global inequality has been declining. The evidence presented in this study suggests that such a consensus may well be a reflection of the adoption of fixed PPPs. The adoption of a time varying PPP framework allows the PPPs to move smoothly between the benchmark years and no large scale revision is required every time a new set of PPPs is made available from a new round of ICP. More significantly, it leads to a different picture on global inequality.

The paper proposes an alternative measure to Milanovic's 'Concept 3' inequality measure of intra-country inequality, that we call 'Concept 4' inequality, defined as a population share weighted average of intra-country inequalities. The evidence of this study shows that Milanovic's 'Concept 3 measure' may give rise to an exaggerated estimate of global inequality that is corrected by the alternative 'Concept 4' measure which respects the national intra-country inequality estimates. In the light of the results of this study, a key advantage of the concept 4 inequality measure is that it is protected from PPP revisions since the intra-country inequalities are independent of currency conversions, and hence so is the population share weighted average of these inequalities.

A key and overall message of this exercise that, in glossing over regional differences, a 'global view' of inequality gives a misleading picture of the reality affecting individual countries located in different continents and with sharp differences in their institutional and colonial history.

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Table 1: Per capita median income (by region)

Year	Region	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Africa	74.55119	64.06942	64.3739	74.15022	48.93089
	Asia and the Pacific	112.3489	116.2045	125.4947	146.2479	119.6261
	CIS	190.054	150.6555	159.3107	167.0966	124.7827
	Eurostat-OECD	612.3333	553.4339	564.1339	563.432	484.683
	Latin America	244.1235	179.3696	179.3781	194.4075	155.2612
	Western Asia	237.4821	254.5595	243.709	264.3134	197.1354
	Total	1470.8930	1318.2924	1336.4003	1409.6476	1130.4193
2000	Africa	78.98412	67.10603	66.42458	77.77567	50.82444
	Asia and the Pacific	115.5076	117.7101	129.9266	153.5636	125.0467
	CIS	217.4377	194.5448	204.2415	217.7647	159.946
	Eurostat-OECD	768.6421	709.5717	716.0072	710.2952	626.155
	Latin America	313.3712	257.6174	257.1935	290.4542	229.6853
	Western Asia	284.9403	295.8045	283.338	307.2531	239.4134
	Total	1788.9691	1589.4269	1606.3829	1702.0890	1379.7544
2005	Africa	82.57406	73.21569	73.34794	83.52532	55.53866
	Asia and the Pacific	140.7996	147.9876	155.6902	181.8549	157.7654
	CIS	239.4235	197.2212	204.5684	220.6319	166.3293
	Eurostat-OECD	881.0064	791.339	809.0864	793.6947	658.2756
	Latin America	315.4731	222.3132	218.0674	249.7624	187.0476
	Western Asia	295.0264	242.8769	232.5895	252.2356	188.097
	Total	1961.3847	1760.4551	1776.2072	1871.6148	1480.6963
2011	Africa	114.5236	100.2171	101.8647	119.0944	76.87825

Asia and the Pacific	143.5516	130.7412	142.9821	168.332	138.2996
CIS	371.10643	305.69286	317.08102	341.97945	257.81042
Eurostat-OECD	1001.557	915.4094	933.7817	913.3261	742.0391
Latin America	470.9074	338.9367	333.1689	387.603	287.1698
Western Asia	302.108	328.3784	315.4469	342.1456	255.7397
Total	2403.7540	2119.3757	2144.3253	2272.4805	1757.9369

Table 2: Global per capita median Income share of each region.

Year	Region	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Africa	0.050684	0.0486	0.04817	0.052602	0.043286
	Asia and the Pacific	0.076381	0.088148	0.093905	0.103748	0.105825
	CIS	0.12921	0.114281	0.119209	0.118538	0.110386
	Eurostat-OECD	0.4163	0.419811	0.422129	0.399697	0.428764
	Latin America	0.16597	0.136062	0.134225	0.137912	0.137348
	Western Asia	0.161454	0.193098	0.182362	0.187503	0.174391
2000	Africa	0.05396	0.050202	0.048511	0.052483	0.044951
	Asia and the Pacific	0.072851	0.081274	0.095674	0.117881	0.120533
	CIS	0.108373	0.095109	0.095653	0.091968	0.087541
	Eurostat-OECD	0.439867	0.441104	0.440323	0.409224	0.427739
	Latin America	0.187812	0.172175	0.170083	0.175416	0.174351
	Western Asia	0.137137	0.160135	0.149756	0.153027	0.144885
2005	Africa	0.057688	0.062506	0.059174	0.063486	0.051783
	Asia and the Pacific	0.076526	0.09114	0.106969	0.132254	0.136885
	CIS	0.099014	0.093814	0.093434	0.092359	0.087013

	Eurostat-OECD	0.404856	0.443869	0.437534	0.403219	0.417805
	Latin America	0.235705	0.190057	0.19348	0.197842	0.204535
	Western Asia	0.12621	0.118614	0.10941	0.110841	0.10198
2011	Africa	0.047644	0.047286	0.047504	0.052407	0.043732
	Asia and the Pacific	0.05972	0.061689	0.066679	0.074074	0.078672
	CIS	0.154386	0.144237	0.14787	0.150487	0.146655
	Eurostat-OECD	0.416664	0.431924	0.435466	0.401907	0.422108
	Latin America	0.195905	0.159923	0.155372	0.170564	0.163356
	Western Asia	0.125682	0.154941	0.147108	0.15056	0.145477

Table 3: Per capita median income in China and India.

Year	**Country**	**PPP**				
		ICP	CPD	GEKS	GK	EWGK
1995	China	105.6937	86.25299	79.27831	82.85235	68.55614
2000		107.6375	87.83921	80.73626	92.34093	68.66829
2005		109.4037	100.1152	101.9354	120.1382	89.1935
2011		204.6539	170.0784	156.3253	157.8327	121.2195
1995	India	78.67112	76.95077	78.34988	80.04278	61.47486
2000		84.0521	77.07665	78.47805	81.51478	62.6054
2005		92.74958	82.21409	82.06105	92.49198	73.24528
2011		102.3534	89.28055	83.70889	98.6569	80.0854

Table 4: Global per capita median income share of China and India.

Year	Country	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	China	0.071857	0.065428	0.059322	0.058775	0.060647
2000		0.060167	0.055265	0.05026	0.054252	0.049768
2005		0.055779	0.056869	0.057389	0.06419	0.060238
2011		0.085139	0.080249	0.072902	0.069454	0.068956
1995	India	0.053485	0.058372	0.058628	0.056782	0.054382
2000		0.046984	0.048493	0.048854	0.047891	0.045374
2005		0.047288	0.0467	0.0462	0.049418	0.049467
2011		0.042581	0.042126	0.039037	0.043414	0.045556

Table 5: Income share of bottom 50 % in each region.

Year	Region	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Africa	0.0927616	0.085016	0.088019	0.089368	0.088912
	Asia and the Pacific	0.1784982	0.181839	0.155118	0.129706	0.136003
	CIS	0.0766343	0.095048	0.095327	0.087408	0.085945
	Eurostat-OECD	0.1474687	0.155945	0.155947	0.156232	0.156934
	Latin America	0.1021892	0.106198	0.098616	0.106152	0.098121
	Western Asia	0.2739013	0.277725	0.278591	0.278367	0.270464
2000	Africa	0.1252474	0.116309	0.118514	0.120402	0.123386
	Asia and the Pacific	0.1942086	0.198257	0.173619	0.149056	0.14763
	CIS	0.2209405	0.227869	0.230426	0.227763	0.224951
	Eurostat-OECD	0.1837495	0.175199	0.174774	0.175215	0.168385
	Latin America	0.09826	0.102924	0.093864	0.097971	0.090842
	Western Asia	0.2667669	0.269461	0.270367	0.270133	0.26427
2005	Africa	0.1516133	0.14926	0.15111	0.154085	0.152952
	Asia and the Pacific	0.1951139	0.195564	0.175649	0.153323	0.150718
	CIS	0.135667	0.132078	0.135061	0.135621	0.132072
	Eurostat-OECD	0.2053073	0.194721	0.193511	0.193822	0.189505
	Latin America	0.1534198	0.157521	0.152252	0.155309	0.153721
	Western Asia	0.2757305	0.270227	0.268409	0.268877	0.278263
2011	Africa	0.170903	0.170673	0.171378	0.17373	0.167397
	Asia and the Pacific	0.1899561	0.185973	0.169069	0.14837	0.14346
	CIS	0.2866063	0.271678	0.275809	0.286495	0.276563
	Eurostat-OECD	0.2211226	0.205399	0.203661	0.20381	0.195518
	Latin America	0.1769672	0.175028	0.172106	0.178203	0.175022
	Western Asia	0.2617308	0.273156	0.270787	0.271421	0.282275

Table 6: Income share of top 10 % in each region.

Year	Region	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Africa	0.530882	0.559787	0.555179	0.55364	0.552369
	Asia and the Pacific	0.402268	0.396893	0.442723	0.490062	0.483834
	CIS	0.462042	0.423106	0.426833	0.452263	0.449399
	Eurostat-OECD	0.459532	0.421513	0.419419	0.42179	0.411937
	Latin America	0.474867	0.471698	0.48828	0.469366	0.48674
	Western Asia	0.275034	0.275844	0.276117	0.276047	0.275506
2000	Africa	0.493989	0.523774	0.520066	0.518135	0.506268
	Asia and the Pacific	0.396924	0.389662	0.440982	0.492885	0.488209
	CIS	0.288972	0.283875	0.282917	0.285246	0.286017
	Eurostat-OECD	0.323716	0.332845	0.331235	0.331151	0.335811
	Latin America	0.480206	0.474931	0.491314	0.494019	0.505011
	Western Asia	0.288116	0.288386	0.288477	0.288453	0.287943
2005	Africa	0.4102	0.413211	0.407978	0.402575	0.412793
	Asia and the Pacific	0.385375	0.383384	0.424421	0.473468	0.468364
	CIS	0.343838	0.348031	0.345629	0.338932	0.340467
	Eurostat-OECD	0.300245	0.310637	0.310622	0.310824	0.315808
	Latin America	0.416854	0.411699	0.416705	0.41516	0.414431
	Western Asia	0.282119	0.285879	0.287121	0.286801	0.279651
2011	Africa	0.42831	0.427896	0.423301	0.417825	0.432198
	Asia and the Pacific	0.389234	0.392723	0.437229	0.487779	0.480328
	CIS	0.241627	0.252786	0.250944	0.240998	0.250648
	Eurostat-OECD	0.286912	0.299399	0.301097	0.300942	0.309608
	Latin America	0.38222	0.382321	0.385761	0.374904	0.380599
	Western Asia	0.289798	0.283705	0.285006	0.284671	0.277164

Table 7: Concept 1 Income Inequality Estimate (World)

Year	Inequality measures	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Gini coefficient	0.61616	0.62901	0.62224	0.60865	0.62995
	Standard error	2.51881	2.46412	2.64871	2.6792	2.98975
	Theil index (GE(a), a = 1)	0.6589	0.69761	0.67911	0.64671	0.6999
	Standard error	6.12477	6.09682	6.52533	6.54654	7.38685
2000	Gini coefficient	0.646968	0.660461	0.653352	0.639083	0.661448
	Standard error	2.493622	2.439479	2.622223	2.652408	2.959853
	Theil index (GE(a), a = 1)	0.691845	0.732491	0.713066	0.679046	0.734895
	Standard error	6.063522	6.035852	6.460077	6.481075	7.312982
2005	Gini coefficient	0.61841	0.62754	0.62153	0.61298	0.63915
	Standard error	2.443749	2.390689	2.569778	2.59936	2.900655
	Theil index (GE(a), a = 1)	0.66635	0.69315	0.67897	0.65913	0.72519
	Standard error	5.942252	5.915135	6.330875	6.351453	7.166722
2011	Gini coefficient	0.61462	0.627437	0.620684	0.607128	0.628375
	Standard error	2.493622	2.439479	2.622223	2.652408	2.959853
	Theil index (GE(a), a = 1)	0.657253	0.695866	0.677412	0.645093	0.69815
	Standard error	6.063522	6.035852	6.460077	6.481075	7.312982

Standard errors of Gini and Theil estimates are calculated using bootstrap method based on an implicit assumption that we are dealing with a single worldwide household survey which, is not the case.

Table 8: Concept 2 Income Inequality Estimate (World)

Year	Inequality measures	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Gini coefficient	0.739908	0.740025	0.738036	0.734859	0.745506
	Standard error	2.770691	2.710532	2.913581	2.94712	3.288725
	Theil index (GE(a), a = 1)	1.222308	1.245636	1.226493	1.198242	1.293849
	Standard error	7.043486	6.706502	7.177863	7.201194	8.125535
2000	Gini coefficient	0.656824	0.657792	0.655632	0.652128	0.662048
	Standard error	2.68757	2.629216	2.826174	2.858706	3.190063
	Theil index (GE(a), a = 1)	1.029848	1.041032	1.017112	0.994584	1.050592
	Standard error	6.832181	6.505307	6.962527	6.985158	7.881769
2005	Gini coefficient	0.585578	0.587595	0.585038	0.581228	0.590918
	Standard error	2.821949	2.760677	2.967482	3.001642	3.349566
	Theil index (GE(a), a = 1)	1.01859	1.03803	1.022078	0.998535	1.078208
	Standard error	7.17379	6.830572	7.310653	7.334416	8.275857
2011	Gini coefficient	0.522471	0.524294	0.521138	0.517881	0.524668
	Standard error	2.680851	2.622643	2.819108	2.85156	3.182088
	Theil index (GE(a), a = 1)	0.875371	0.884877	0.864545	0.845396	0.893003
	Standard error	6.8151	6.489044	6.945121	6.967695	7.862065

Standard errors of Gini and Theil estimates are calculated using bootstrap method based on an implicit assumption that we are dealing with a single worldwide household survey which, is not the case.

Table 9: Concept 1 Income Inequality Estimate (by region)

Region	Year	Inequality measures	PPP					Year	PPP				
	1995		ICP	CPD	GEKS	GK	EWGK	2000	ICP	CPD	GEKS	GK	EWGK
	Africa	Gini coefficient	0.48134	0.48655	0.51727	0.56456	0.7269		0.48024	0.48522	0.51108	0.5551	0.71367
		Theil index (GE(a), a = 1)	0.4058	0.40646	0.46889	0.63589	1.34863		0.41435	0.41344	0.46126	0.60249	1.26902
	Asia and The Pacific	Gini coefficient	0.66493	0.64609	0.60928	0.61595	0.6336		0.65405	0.64034	0.60212	0.60683	0.62355
		Theil index (GE(a), a = 1)	0.86877	0.81517	0.68287	0.70369	0.74237		0.86021	0.81149	0.67298	0.68915	0.72921
	CIS	Gini coefficient	0.400672	0.406648	0.408856	0.407856	0.41812		0.376528	0.38512	0.386656	0.383664	0.394824
		Theil index (GE(a), a = 1)	0.350464	0.363128	0.368136	0.368328	0.385952		0.30728	0.322136	0.325136	0.322832	0.341848
	Eurostat	Gini coefficient	0.50084	0.50831	0.51107	0.50982	0.52265		0.47066	0.4814	0.48332	0.47958	0.49353
		Theil index (GE(a), a = 1)	0.43808	0.45391	0.46017	0.46041	0.48244		0.3841	0.40267	0.40642	0.40354	0.42731
	Latin America	Gini coefficient	0.598437	0.581481	0.548352	0.554355	0.57024		0.588645	0.576306	0.541908	0.546147	0.561195
		Theil index (GE(a), a = 1)	0.781893	0.733653	0.614583	0.633321	0.668133		0.774189	0.730341	0.605682	0.620235	0.656289
	Western Asia	Gini coefficient	0.457273	0.462223	0.491407	0.536332	0.690555		0.456228	0.460959	0.485526	0.527345	0.677987
		Theil index (GE(a), a = 1)	0.38551	0.386137	0.445446	0.604096	1.281199		0.393633	0.392768	0.438197	0.572366	1.205569
	2005							2011					
	Africa	Gini coefficient	0.49075	0.4912	0.51698	0.55905	0.71319		0.46849	0.4828	0.51382	0.56084	0.71488
		Theil index (GE(a), a = 1)	0.43081	0.41469	0.46349	0.59869	1.24739		0.37235	0.39608	0.45757	0.60591	1.26399
	Asia and The Pacific	Gini coefficient	0.62087	0.59895	0.55964	0.5706	0.58962		0.57545	0.56491	0.51935	0.53849	0.55751
		Theil index (GE(a), a = 1)	0.74973	0.69825	0.5733	0.60245	0.64014		0.61461	0.58962	0.47847	0.5222	0.56076

	CIS	Gini coefficient	0.392659	0.398515	0.400679	0.399699	0.409758	0.357702	0.365864	0.367323	0.364481	0.375083
		Theil index (GE(a), a = 1)	0.343455	0.355865	0.360773	0.360961	0.378233	0.291916	0.306029	0.308879	0.30669	0.324756
	Eurostat	Gini coefficient	0.485815	0.493061	0.495738	0.494525	0.506971	0.447127	0.45733	0.459154	0.455601	0.468854
		Theil index (GE(a), a = 1)	0.424938	0.440293	0.446365	0.446598	0.467967	0.364895	0.382537	0.386099	0.383363	0.405945
	Latin America	Gini coefficient	0.558783	0.539055	0.503676	0.51354	0.530658	0.517905	0.508419	0.467415	0.484641	0.501759
		Theil index (GE(a), a = 1)	0.674757	0.628425	0.51597	0.542205	0.576126	0.553149	0.530658	0.430623	0.46998	0.504684
	Western Asia	Gini coefficient	0.466213	0.46664	0.491131	0.531098	0.677531	0.445066	0.45866	0.488129	0.532798	0.679136
		Theil index (GE(a), a = 1)	0.40927	0.393956	0.440316	0.568756	1.185021	0.353733	0.376276	0.434692	0.575615	1.200791

Table 10: Concept 2 Income Inequality Estimate (by region)

Region	Year	Inequality measures	PPP					Year	PPP				
	1995		ICP	CPD	GEKS	GK	EWGK	2000	ICP	CPD	GEKS	GK	EWGK
	Africa	Gini coefficient	0.671207	0.678595	0.663866	0.654249	0.676678		0.68967	0.69964	0.68394	0.67225	0.69712
		Theil index (GE(a), a = 1)	0.999464	1.025813	0.964675	0.923287	0.975194		0.93643	0.96837	0.91072	0.87039	0.92815
	Asia and The Pacific	Gini coefficient	0.71821	0.70631	0.68458	0.66132	0.64548		0.695	0.66774	0.64521	0.62147	0.60193
		Theil index (GE(a), a = 1)	1.06436	1.01695	0.92566	0.84219	0.79812		0.99061	0.87979	0.79769	0.72638	0.68118
	CIS	Gini coefficient	0.7218	0.714582	0.707436	0.77818	0.739271		0.678492	0.671707	0.66499	0.731489	0.694915
		Theil index (GE(a), a = 1)	1.25937	1.287409	1.270408	1.279421	1.344		1.183808	1.210165	1.194183	1.202656	1.26336
	Eurostat	Gini coefficient	0.6015	0.595485	0.58953	0.648483	0.616059		0.56541	0.559756	0.554158	0.609574	0.579095
		Theil index (GE(a), a = 1)	1.1994	1.226104	1.209912	1.218496	1.28		1.127436	1.152538	1.137317	1.145386	1.2032
	Latin America	Gini coefficient	0.534418	0.511627	0.49403	0.472838	0.45904		0.56853	0.544284	0.525564	0.503019	0.48834
		Theil index (GE(a), a = 1)	0.636116	0.563732	0.511297	0.468498	0.435284		0.676719	0.599715	0.543933	0.498402	0.463068
	Western Asia	Gini coefficient	0.637647	0.644666	0.630672	0.621537	0.642844		0.655187	0.664658	0.649743	0.638638	0.662264
		Theil index (GE(a), a = 1)	0.949491	0.974522	0.916441	0.877122	0.926434		0.911449	0.938866	0.878009	0.835155	0.893428
	2005							2011					
	Africa	Gini coefficient	0.69019	0.69761	0.68239	0.67084	0.69484		0.71405	0.72191	0.70624	0.69601	0.71987
		Theil index (GE(a), a = 1)	0.95942	0.98828	0.92422	0.87911	0.94045		1.06326	1.09129	1.02625	0.98222	1.03744
	Asia and The Pacific	Gini coefficient	0.6317	0.60476	0.58396	0.55891	0.5426		0.593798	0.568474	0.548922	0.525375	0.510044
		Theil index (GE(a), a = 1)	0.75191	0.66635	0.60437	0.55378	0.51452		0.706795	0.626369	0.568108	0.520553	0.483649

	CIS	Gini coefficient	0.57324	0.582128	0.578808	0.581224	0.596808	0.56244	0.568696	0.565824	0.568552	0.58392
		Theil index (GE(a), a = 1)	0.86652	0.90924	0.893416	0.899224	0.988632	0.818032	0.848184	0.834024	0.839664	0.924016
	Eurostat	Gini coefficient	0.70305	0.71087	0.70728	0.71069	0.7299	0.71655	0.72766	0.72351	0.72653	0.74601
		Theil index (GE(a), a = 1)	1.02254	1.06023	1.04253	1.04958	1.15502	1.08315	1.13655	1.11677	1.12403	1.23579
	Latin America	Gini coefficient	0.6255	0.600966	0.580689	0.559323	0.541737	0.646389	0.635679	0.616122	0.595188	0.580932
		Theil index (GE(a), a = 1)	0.891549	0.791811	0.717921	0.653742	0.613062	0.957924	0.915255	0.833094	0.757971	0.718308
	Western Asia	Gini coefficient	0.655681	0.66273	0.648271	0.637298	0.660098	0.678348	0.685815	0.670928	0.66121	0.683877
		Theil index (GE(a), a = 1)	0.889609	0.919952	0.865184	0.826871	0.881743	1.010097	1.036726	0.974938	0.933109	0.985568

Table 11: Concept 3 Income Inequality Estimate (World)

Year	Inequality measures	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Gini coefficient	0.68411	0.6821	0.68	0.681	0.6821
	Standard error	1.9556	2.05338	1.950711	2.048247	2.007282
	Theil index (GE(a), a = 1)	0.87521	0.87421	0.871	0.87519	0.874
	Standard error	6.8221	7.163205	6.805045	7.145297	7.002391
2000	Gini coefficient	0.69112	0.6941	0.6931	0.69001	0.69153
	Standard error	1.5258	1.60209	1.521986	1.598085	1.566123
	Theil index (GE(a), a = 1)	0.8945	0.8951	0.891	0.89261	0.89001
	Standard error	7.6572	8.04006	7.638057	8.01996	7.859561
2005	Gini coefficient	0.7106	0.7121	0.7165	0.7143	0.7132
	Standard error	1.4346	1.50633	1.431014	1.502564	1.472513
	Theil index (GE(a), a = 1)	0.9211	0.9222	0.923	0.9256	0.92
	Standard error	6.1699	6.478395	6.154475	6.462199	6.332955
2011	Gini coefficient	0.7234	0.72	0.7219	0.7258	0.7229
	Standard error	1.3971	1.466955	1.393607	1.463288	1.434022
	Theil index (GE(a), a = 1)	0.9543	0.9567	0.95	0.9519	0.9541
	Standard error	5.9474	6.24477	5.932532	6.229158	6.104575

Standard errors of Gini and Theil estimates are calculated using bootstrap method based on an implicit assumption that we are dealing with a single worldwide household survey which, is not the case.

Table 12: Concept 4 Income Inequality Estimate (World)

Year	Inequality measures	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Gini coefficient	0.365275	0.350664	0.357678	0.368408	0.347508
	Standard error	1.916488	2.012312	1.911697	2.007282	1.967136
	Theil index (GE(a), a = 1)	0.244978	0.235179	0.239883	0.247079	0.233063
	Standard error	6.685658	7.019941	6.668944	7.002391	6.862343
2000	Gini coefficient	0.373703	0.358755	0.36593	0.376908	0.355526
	Standard error	1.480026	1.554027	1.476326	1.550142	1.519139
	Theil index (GE(a), a = 1)	0.255613	0.245388	0.250296	0.257805	0.24318
	Standard error	7.427484	7.798858	7.408915	7.779361	7.623774
2005	Gini coefficient	0.378167	0.363041	0.370302	0.381411	0.359773
	Standard error	1.377216	1.446077	1.373773	1.442462	1.413612
	Theil index (GE(a), a = 1)	0.261594	0.251131	0.256153	0.263838	0.24887
	Standard error	5.923104	6.219259	5.908296	6.203711	6.079637
2011	Gini coefficient	0.373002	0.358082	0.365243	0.376201	0.354859
	Standard error	1.32026	1.386272	1.316959	1.382807	1.355151
	Theil index (GE(a), a = 1)	0.253564	0.243422	0.24829	0.255739	0.241231
	Standard error	5.620293	5.901308	5.606242	5.886554	5.768823

Standard errors of Gini and Theil estimates are calculated using bootstrap method based on an implicit assumption that we are dealing with a single worldwide household survey which, is not the case.

Table 13: Concept 3 Income Inequality Estimate (by region)

Year	Inequality measures	PPP					Year	Inequality measures	PPP				
		ICP	CPD	GEKS	GK	EWGK			ICP	CPD	GEKS	GK	EWGK
1995	Africa							Africa					
	Gini coefficient	0.65869	0.691625	0.638929	0.625756	0.645516	2000	Gini coefficient	0.724559	0.760787	0.702822	0.688331	0.710068
	Theil index (GE(a), a = 1)	0.85723	0.900092	0.831513	0.814369	0.840085		Theil index (GE(a), a = 1)	0.942953	0.990101	0.914664	0.895805	0.924094
	Asia							Asia					
	Gini coefficient	0.64468	0.676914	0.62534	0.612446	0.631786		Gini coefficient	0.709148	0.744605	0.687874	0.673691	0.694965
	Theil index (GE(a), a = 1)	0.75156	0.789138	0.729013	0.713982	0.736529		Theil index (GE(a), a = 1)	0.826716	0.868052	0.801915	0.78538	0.810182
	CIS							CIS					
	Gini coefficient	0.56606	0.594363	0.549078	0.537757	0.554739		Gini coefficient	0.622666	0.653799	0.603986	0.591533	0.610213
	Theil index (GE(a), a = 1)	0.71597	0.751769	0.694491	0.680172	0.701651		Theil index (GE(a), a = 1)	0.787567	0.826945	0.76394	0.748189	0.771816
	Europe							Europe					
	Gini coefficient	0.50237	0.527489	0.487299	0.477252	0.492323		Gini coefficient	0.552607	0.580237	0.536029	0.524977	0.541555
	Theil index (GE(a), a = 1)	0.50287	0.528014	0.487784	0.477727	0.492813		Theil index (GE(a), a = 1)	0.553157	0.580815	0.536562	0.525499	0.542094
	Latin America							Latin America					
	Gini coefficient	0.61943	0.650402	0.600847	0.588459	0.607041		Gini coefficient	0.681373	0.715442	0.660932	0.647304	0.667746
	Theil index (GE(a), a = 1)	0.71214	0.747747	0.690776	0.676533	0.697897		Theil index (GE(a), a = 1)	0.783354	0.822522	0.759853	0.744186	0.767687
	Western Asia							Western Asia					
	Gini coefficient	0.55682	0.584661	0.540115	0.528979	0.545684		Gini coefficient	0.612502	0.643127	0.594127	0.581877	0.600252
	Theil index (GE(a), a = 1)	0.69815	0.733058	0.677206	0.663243	0.684187		Theil index (GE(a), a = 1)	0.767965	0.806363	0.744926	0.729567	0.752606
2005	Africa						2011	Africa					
	Gini coefficient	0.797015	0.836866	0.773104	0.757164	0.781075		Gini coefficient	0.876716	0.920552	0.850415	0.832881	0.859182
	Theil index	0.990101	1.039606	0.960398	0.940596	0.970299		Theil index	1.039606	1.091586	1.008418	0.987625	1.018814

(GE(a), a = 1)						(GE(a), a = 1)					
Asia						Asia					
Gini coefficient	0.780063	0.819066	0.756661	0.74106	0.764462	Gini coefficient	0.858069	0.900973	0.832327	0.815166	0.840908
Theil index (GE(a), a = 1)	0.868052	0.911454	0.84201	0.824649	0.850691	Theil index (GE(a), a = 1)	0.911454	0.957027	0.884111	0.865882	0.893225
CIS						CIS					
Gini coefficient	0.684933	0.719179	0.664385	0.650686	0.671234	Gini coefficient	0.753426	0.791097	0.730823	0.715755	0.738357
Theil index (GE(a), a = 1)	0.826945	0.868293	0.802137	0.785598	0.810406	Theil index (GE(a), a = 1)	0.868293	0.911707	0.842244	0.824878	0.850927
Europe						Europe					
Gini coefficient	0.607868	0.638261	0.589632	0.577474	0.59571	Gini coefficient	0.668654	0.702087	0.648595	0.635222	0.655281
Theil index (GE(a), a = 1)	0.580815	0.609856	0.56339	0.551774	0.569199	Theil index (GE(a), a = 1)	0.609856	0.640348	0.59156	0.579363	0.597658
Latin America						Latin America					
Gini coefficient	0.74951	0.786986	0.727025	0.712035	0.73452	Gini coefficient	0.824461	0.865684	0.799727	0.783238	0.807972
Theil index (GE(a), a = 1)	0.822522	0.863648	0.797846	0.781396	0.806071	Theil index (GE(a), a = 1)	0.863648	0.90683	0.837738	0.820465	0.846375
Western Asia						Western Asia					
Gini coefficient	0.673752	0.70744	0.65354	0.640065	0.660277	Gini coefficient	0.741127	0.778184	0.718894	0.704071	0.726305
Theil index (GE(a), a = 1)	0.806363	0.846681	0.782172	0.766045	0.790236	Theil index (GE(a), a = 1)	0.846681	0.889015	0.821281	0.804347	0.829748

Table 14: Concept 4 Income Inequality Estimate (by region)

Year	Inequality measures	PPP					Year	Inequality measures	PPP				
		ICP	CPD	GEKS	GK	EWGK			ICP	CPD	GEKS	GK	EWGK
1995	Africa						2000	Africa					
	Gini coefficient	0.446835	0.428962	0.437541	0.450667	0.425101		Gini coefficient	0.442128	0.424442	0.432931	0.445919	0.420622
	Theil index (GE(a), a = 1)	0.35874	0.34439	0.351278	0.361817	0.341291		Theil index (GE(a), a = 1)	0.371751	0.356881	0.364019	0.374939	0.353669
	Asia							Asia					
	Gini coefficient	0.332095	0.318811	0.325188	0.334943	0.315942		Gini coefficient	0.348833	0.33488	0.341578	0.351825	0.331866
	Theil index (GE(a), a = 1)	0.204044	0.195882	0.1998	0.205794	0.19412		Theil index (GE(a), a = 1)	0.211445	0.202987	0.207047	0.213258	0.20116
	CIS							CIS					
	Gini coefficient	0.345808	0.331976	0.338615	0.348774	0.328988		Gini coefficient	0.313757	0.301206	0.30723	0.316447	0.298495
	Theil index (GE(a), a = 1)	0.161626	0.155161	0.158264	0.163012	0.153764		Theil index (GE(a), a = 1)	0.167488	0.160788	0.164004	0.168924	0.159341
	Europe							Europe					
	Gini coefficient	0.374802	0.359809	0.367006	0.378016	0.356571		Gini coefficient	0.369381	0.354606	0.361698	0.372549	0.351415
	Theil index (GE(a), a = 1)	0.23704	0.227558	0.232109	0.239073	0.22551		Theil index (GE(a), a = 1)	0.245637	0.235812	0.240528	0.247744	0.233689
	Latin America							Latin America					
	Gini coefficient	0.558971	0.536612	0.547344	0.563764	0.531782		Gini coefficient	0.559481	0.537102	0.547844	0.564279	0.532268
	Theil index (GE(a), a = 1)	0.571201	0.548353	0.55932	0.576099	0.543417		Theil index (GE(a), a = 1)	0.591918	0.568241	0.579606	0.596994	0.563127
	Western Asia							Western Asia					
	Gini coefficient	0.297051	0.285169	0.290872	0.299599	0.282602		Gini coefficient	0.320369	0.307554	0.313705	0.323116	0.304786
	Theil index (GE(a), a = 1)	0.176924	0.169847	0.173244	0.178442	0.168319		Theil index (GE(a), a = 1)	0.183341	0.176008	0.179528	0.184914	0.174424
2005	Africa						2011	Africa					
	Gini coefficient	0.419631	0.402846	0.410903	0.42323	0.39922		Gini coefficient	0.423708	0.40676	0.414895	0.427342	0.403099

Theil index (GE(a), a = 1)	0.334435	0.321057	0.327478	0.337303	0.318168	Theil index (GE(a), a = 1)	0.326361	0.313306	0.319573	0.32916	0.310487
Asia						Asia					
Gini coefficient	0.361415	0.346958	0.353897	0.364514	0.343836	Gini coefficient	0.355997	0.341757	0.348592	0.35905	0.338681
Theil index (GE(a), a = 1)	0.232298	0.223006	0.227466	0.23429	0.220999	Theil index (GE(a), a = 1)	0.227947	0.218829	0.223205	0.229901	0.216859
CIS						CIS					
Gini coefficient	0.30496	0.292762	0.298617	0.307576	0.290127	Gini coefficient	0.250086	0.240083	0.244884	0.252231	0.237922
Theil index (GE(a), a = 1)	0.161847	0.155373	0.15848	0.163235	0.153974	Theil index (GE(a), a = 1)	0.106008	0.101768	0.103803	0.106917	0.100852
Europe						Europe					
Gini coefficient	0.369278	0.354507	0.361597	0.372445	0.351316	Gini coefficient	0.370139	0.355334	0.36244	0.373313	0.352136
Theil index (GE(a), a = 1)	0.24197	0.232291	0.236937	0.244045	0.2302	Theil index (GE(a), a = 1)	0.241362	0.231708	0.236342	0.243432	0.229622
Latin America						Latin America					
Gini coefficient	0.538438	0.5169	0.527238	0.543056	0.512248	Gini coefficient	0.504264	0.484094	0.493775	0.508589	0.479737
Theil index (GE(a), a = 1)	0.54179	0.520119	0.530521	0.546437	0.515437	Theil index (GE(a), a = 1)	0.470691	0.451863	0.4609	0.474727	0.447796
Western Asia						Western Asia					
Gini coefficient	0.317181	0.304494	0.310584	0.319902	0.301754	Gini coefficient	0.298458	0.28652	0.29225	0.301018	0.283941
Theil index (GE(a), a = 1)	0.185137	0.177732	0.181286	0.186725	0.176132	Theil index (GE(a), a = 1)	0.163183	0.156656	0.159789	0.164582	0.155246

Table 15: Decomposition of Concept 3 Income Inequality into 'between' and 'within' regions, and 'between' and 'within countries'.

ICP PPP	**Year**	**Region**		**Country**		**World**
Inequality Estimate		Within	Between	Within	Between	Overall
Theil index (GE(a), a = 1)	1995	0.34231	0.5329	0.19271	0.6825	0.87521
	2011	0.3015	0.6528	0.1592	0.7951	0.9543

Table 16: Concept 3 Income Inequality Estimate in China, India and the USA.

Country	Year	Inequality measures	PPP				
			ICP	CPD	GEKS	GK	EWGK
China	1995	Gini coefficient	0.34036	0.326746	0.333281	0.343279	0.323805
		Theil index (GE(a), a = 1)	0.18699	0.17951	0.183101	0.188594	0.177895
	2000	Gini coefficient	0.3623	0.347808	0.354764	0.365407	0.344678
		Theil index (GE(a), a = 1)	0.21303	0.204509	0.208599	0.214857	0.202668
	2005	Gini coefficient	0.38354	0.368198	0.375562	0.386829	0.364885
		Theil index (GE(a), a = 1)	0.25134	0.241286	0.246112	0.253495	0.239115
	2011	Gini coefficient	0.36673	0.352061	0.359102	0.369875	0.348892
		Theil index (GE(a), a = 1)	0.2376	0.228096	0.232658	0.239638	0.226043
India	1995	Gini coefficient	0.31215	0.299664	0.305657	0.314827	0.296967
		Theil index (GE(a), a = 1)	0.1712	0.164352	0.167639	0.172668	0.162873
	2000	Gini coefficient	0.33716	0.323674	0.330147	0.340051	0.320761
		Theil index (GE(a), a = 1)	0.20627	0.198019	0.20198	0.208039	0.196237
	2005	Gini coefficient	0.34288	0.329165	0.335748	0.345821	0.326202
		Theil index (GE(a), a = 1)	0.21525	0.20664	0.210773	0.217096	0.20478
	2011	Gini coefficient	0.34891	0.334954	0.341653	0.351902	0.331939
		Theil index (GE(a), a = 1)	0.22456	0.215578	0.219889	0.226486	0.213637
USA	1995	Gini coefficient	0.4003	0.384288	0.391974	0.403733	0.380829
		Theil index (GE(a), a = 1)	0.27536	0.264346	0.269633	0.277721	0.261966

2000	Gini coefficient	0.40178	0.385709	0.393423	0.405226	0.382237
	Theil index (GE(a), a = 1)	0.2823	0.271008	0.276428	0.284721	0.268569
2005	Gini coefficient	0.40324	0.38711	0.394853	0.406698	0.383626
	Theil index (GE(a), a = 1)	0.28339	0.272054	0.277495	0.28582	0.269606
2011	Gini coefficient	0.40221	0.386122	0.393844	0.405659	0.382647
	Theil index (GE(a), a = 1)	0.27492	0.263923	0.269202	0.277278	0.261548

Table 17: Regional Distribution of Households (by ventiles)

Year		Region						
1995	Ventile	Africa	Asia and the Pacific	CIS	Eurostat-OECD	Latin America	Western Asia	Total
	0-5	83.13	8.43	0	3.61	4.82	0	99.99
	5-10	54.22	31.33	2.41	6.02	6.02	0	100
	10-15	43.37	34.94	2.41	12.05	6.02	1.2	99.99
	15-20	44.58	32.53	4.82	10.84	6.02	1.2	99.99
	20-25	39.76	27.71	7.23	16.87	7.23	1.2	100
	25-30	31.33	28.92	7.23	18.07	10.84	3.61	100
	30-35	28.92	25.3	6.02	26.51	8.43	4.82	100
	35-40	22.89	22.89	6.02	28.92	13.25	6.02	99.99
	40-45	22.89	18.07	6.02	31.33	13.25	8.43	99.99
	45-50	14.29	15.48	7.14	41.67	14.29	7.14	100.01
	50-55	15.85	13.41	3.66	51.22	12.2	3.66	100
	55-60	8.43	8.43	6.02	57.83	15.66	3.61	99.98
	60-65	12.05	4.82	3.61	66.27	9.64	3.61	100
	65-70	10.84	6.02	6.02	63.86	13.25	0	99.99
	70-75	12.05	2.41	6.02	71.08	8.43	0	99.99
	75-80	9.64	1.2	6.02	69.88	9.64	3.61	99.99
	80-85	8.43	2.41	6.02	71.08	12.05	0	99.99
	85-90	7.23	3.61	4.82	72.29	12.05	0	100
	90-95	7.23	0	8.43	71.08	13.25	0	99.99
	95-100	4.82	1.2	20.48	53.01	20.48	0	99.99

Table 17 (Continued): Regional Distribution of Households (by ventiles)

Year		Region						
2000	Ventile	Africa	Asia and the Pacific	CIS	Eurostat-OECD	Latin America	Western Asia	Total
	0-5	79.52	6.02	1.2	1.2	12.05	0	99.99
	5-10	65.06	19.28	1.2	7.23	7.23	0	100
	10-15	48.19	31.33	4.82	9.64	6.02	0	100
	15-20	43.37	32.53	4.82	13.25	6.02	0	99.99
	20-25	38.55	33.73	6.02	12.05	8.43	1.2	99.98
	25-30	33.73	33.73	8.43	16.87	6.02	1.2	99.98
	30-35	28.92	26.51	8.43	24.1	10.84	1.2	100
	35-40	26.51	22.89	8.43	24.1	13.25	4.82	100
	40-45	22.89	20.48	9.64	30.12	13.25	3.61	99.99
	45-50	18.07	14.46	13.25	36.14	13.25	4.82	99.99
	50-55	15.66	13.25	10.84	42.17	9.64	8.43	99.99
	55-60	10.84	7.23	10.84	48.19	15.66	7.23	99.99
	60-65	8.43	7.23	9.64	59.04	12.05	3.61	100
	65-70	7.23	4.82	8.43	63.86	10.84	4.82	100
	70-75	10.84	4.82	4.82	66.27	10.84	2.41	100
	75-80	7.23	3.61	3.61	75.9	8.43	1.2	99.98
	80-85	4.82	2.41	3.61	77.11	12.05	0	100
	85-90	4.82	2.41	1.2	78.31	9.64	3.61	99.99
	90-95	4.82	1.2	1.2	81.93	10.84	0	99.99
	95-100	2.41	1.2	0	75.9	20.48	0	99.99

Table 17 (Continued): Regional Distribution of Households (by ventiles)

Year		Region						
2005	Ventile	Africa	Asia and the Pacific	CIS	Eurostat-OECD	Latin America	Western Asia	Total
	0-5	66.27	0	24.1	6.02	3.61	0	100
	5-10	65.06	13.25	0	12.05	9.64	0	100
	10-15	61.45	26.51	1.2	4.82	6.02	0	100
	15-20	50.6	36.14	2.41	2.41	8.43	0	99.99
	20-25	45.78	33.73	4.82	6.02	8.43	1.2	99.98
	25-30	40.96	32.53	4.82	7.23	12.05	2.41	100
	30-35	33.73	32.53	9.64	7.23	13.25	3.61	99.99
	35-40	33.73	25.3	8.43	12.05	15.66	4.82	99.99
	40-45	24.1	20.48	9.64	18.07	19.28	8.43	100
	45-50	19.28	19.28	7.23	27.71	19.28	7.23	100.01
	50-55	10.84	12.05	12.05	37.35	19.28	8.43	100
	55-60	9.64	12.05	9.64	44.58	20.48	3.61	100
	60-65	7.23	7.23	8.43	59.04	14.46	3.61	100
	65-70	6.02	8.43	6.02	63.86	14.46	1.2	99.99
	70-75	3.61	3.61	4.82	79.52	7.23	1.2	99.99
	75-80	1.2	1.2	2.41	86.75	7.23	1.2	99.99
	80-85	1.2	2.41	3.61	86.75	4.82	1.2	99.99
	85-90	1.2	0	0	95.18	3.61	0	99.99
	90-95	0	0	1.2	96.39	2.41	0	100
	95-100	1.2	1.2	0	90.36	7.23	0	99.99

Table 17 (Continued): Regional Distribution of Households (by ventiles)

Year					Region			
2011	Ventile	Africa	Asia and the Pacific	CIS	Eurostat-OECD	Latin America	Western Asia	Total
	0-5	87.95	4.82	0	0	7.23	0	100
	5-10	78.31	15.66	2.41	1.2	2.41	0	99.99
	10-15	63.86	26.51	2.41	1.2	6.02	0	100
	15-20	54.22	32.53	4.82	2.41	6.02	0	100
	20-25	43.37	34.94	7.23	4.82	8.43	1.2	99.99
	25-30	33.73	32.53	10.84	7.23	13.25	2.41	99.99
	30-35	28.92	27.71	13.25	13.25	12.05	4.82	100
	35-40	21.69	22.89	18.07	14.46	18.07	4.82	100
	40-45	18.07	20.48	18.07	18.07	18.07	7.23	99.99
	45-50	12.05	15.66	15.66	27.71	21.69	7.23	100
	50-55	13.25	13.25	9.64	38.55	20.48	4.82	99.99
	55-60	7.23	14.46	7.23	50.6	15.66	4.82	100
	60-65	9.64	7.23	7.23	53.01	19.28	3.61	100
	65-70	0	6.02	1.2	75.9	14.46	2.41	99.99
	70-75	4.82	3.61	1.2	79.52	9.64	1.2	99.99
	75-80	0	6.02	1.2	83.13	7.23	2.41	99.99
	80-85	1.2	1.2	0	95.18	2.41	0	99.99
	85-90	1.2	2.41	0	89.16	7.23	0	100
	90-95	1.2	0	0	96.39	1.2	1.2	99.99
	95-100	1.2	1.2	0	91.57	6.02	0	99.99

Table 18: Country of Residence Distribution of Households in Africa (by ventiles)

Year	Ventiles	Countries																			
		Burkina Faso	Cameroon	Côte d'Ivoire	Ethiopia	Gambia, The	Ghana	Guinea	Kenya	Mali	Mauritania	Morocco	Mozambique	Niger	Nigeria	Rwanda	Senegal	South Africa	Tanzania	Uganda	Zambia
1995	0-5	20	0	0	0	5	0	0	0	40	0	0	0	25	0	0	5	0	0	0	5
	5-10	25	10	5	0	0	0	0	0	20	0	0	5	15	0	5	5	0	0	0	10
	10-15	15	10	5	0	5	0	0	5	10	0	0	5	20	0	0	15	0	5	0	5
	15-20	10	15	5	0	5	0	0	0	5	0	5	5	10	0	5	15	5	0	5	10
	20-25	5	10	10	5	5	0	0	5	5	0	5	5	5	5	10	10	0	5	0	10
	25-30	5	10	15	0	5	0	0	5	5	0	5	10	10	0	5	10	5	0	5	5
	30-35	5	10	5	5	10	0	0	5	5	0	5	5	0	0	10	10	5	5	5	10
	35-40	0	5	10	10	5	0	0	0	0	0	5	10	5	0	10	10	5	10	10	5
	40-45	5	5	5	5	10	0	0	10	5	0	10	5	5	5	10	0	5	5	5	5
	45-50	0	5	10	10	5	0	5	5	0	0	10	5	0	0	5	10	5	10	10	5
	50-55	5	5	5	10	5	0	0	10	0	0	5	10	0	5	10	0	5	10	10	5
	55-60	0	0	10	10	10	0	5	5	0	0	10	5	0	5	5	0	5	15	10	5
	60-65	0	5	5	10	5	0	5	15	0	0	10	5	0	5	5	0	5	10	10	5
	65-70	0	5	0	10	5	0	10	5	5	0	10	5	5	5	5	0	10	5	10	5
	70-75	0	0	5	10	5	5	10	10	0	5	5	5	0	5	5	10	5	5	5	5
	75-80	5	0	0	5	5	5	15	10	0	0	5	5	0	15	5	0	10	10	5	0
	80-85	0	5	5	5	5	15	20	5	0	5	5	5	0	15	0	0	5	0	5	0
	85-90	0	0	0	0	0	20	15	0	0	20	5	0	0	15	0	0	10	5	5	5
	90-95	0	0	0	5	5	25	5	5	0	25	0	5	0	15	5	0	5	0	0	0
	95-100	0	0	0	0	0	30	10	0	0	45	0	0	0	5	0	0	10	0	0	0

Table 18 (Continued): Country of Residence Distribution of Households in Africa (by ventiles)

Year	Ventiles	Countries																			
		Burkina Faso	Cameroon	Côte d'Ivoire	Ethiopia	Gambia, The	Ghana	Guinea	Kenya	Mali	Mauritania	Morocco	Mozambique	Niger	Nigeria	Rwanda	Senegal	South Africa	Tanzania	Uganda	Zambia
2011	0-5	5	5	5	0	0	0	5	5	5	0	0	20	0	10	10	5	0	0	5	20
	5-10	10	0	5	5	0	0	0	5	5	0	0	10	5	10	10	5	5	5	5	15
	10-15	10	5	0	5	0	5	5	5	5	5	0	10	10	5	10	5	0	10	0	5
	15-20	5	0	5	0	5	0	5	5	10	0	0	10	5	10	10	5	0	5	10	10
	20-25	10	5	5	5	0	0	10	5	5	0	0	5	10	5	5	5	5	10	5	5
	25-30	10	5	5	5	0	0	5	5	10	5	0	5	10	5	10	5	0	5	5	5
	30-35	5	5	10	5	5	5	5	5	5	0	0	10	5	5	5	5	5	5	5	5
	35-40	5	5	5	10	0	0	5	5	10	5	0	5	5	5	5	5	5	10	10	0
	40-45	5	0	0	5	5	5	10	10	5	5	0	5	10	5	5	10	0	5	5	5
	45-50	5	5	5	10	5	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5
	50-55	5	5	5	10	5	0	10	5	5	5	0	5	5	5	5	5	5	10	5	0
	55-60	5	5	5	10	5	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5
	60-65	5	5	5	5	10	10	5	5	5	10	5	0	5	5	0	5	5	5	5	0
	65-70	5	5	5	5	10	5	5	5	5	5	0	5	5	5	5	5	5	5	5	5
	70-75	0	5	10	5	10	5	10	5	5	5	5	0	5	5	0	5	5	5	10	0
	75-80	5	10	5	5	10	10	0	5	5	10	10	0	0	0	5	10	5	0	0	5
	80-85	0	5	5	5	10	10	5	5	0	15	15	5	0	5	0	0	5	5	5	0
	85-90	0	10	5	0	10	10	0	5	5	10	15	0	5	0	0	5	10	0	5	5
	90-95	5	10	5	5	5	15	5	0	0	5	20	0	0	5	5	5	5	5	0	0
	95-100	0	5	5	0	5	10	0	5	0	5	25	5	0	0	0	0	25	0	5	5

Table 19: Country of Residence Distribution of Households in Asia (by ventiles)

Year	Ventiles	Countries											
1995		Bangladesh	China	India	Indonesia	Lao PDR	Malaysia	Nepal	Pakistan	Philippines	Sri Lanka	Thailand	Vietnam
	0-5	0	8.33	8.33	41.67	25	0	16.67	0	0	0	0	0
	5-10	8.33	8.33	8.33	16.67	25	0	25	0	0	0	0	8.33
	10-15	0	33.33	8.33	16.67	16.67	0	16.67	0	8.33	0	0	0
	15-20	8.33	8.33	16.67	16.67	16.67	0	25	0	0	0	8.33	0
	20-25	16.67	8.33	16.67	16.67	0	0	25	0	8.33	0	0	8.33
	25-30	8.33	8.33	16.67	16.67	8.33	8.33	16.67	0	8.33	0	0	8.33
	30-35	16.67	8.33	16.67	8.33	8.33	0	8.33	0	8.33	0	8.33	16.67
	35-40	16.67	8.33	16.67	8.33	8.33	0	8.33	8.33	0	8.33	8.33	8.33
	40-45	16.67	8.33	8.33	8.33	8.33	0	8.33	0	16.67	0	8.33	16.67
	45-50	8.33	8.33	16.67	0	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33
	50-55	16.67	8.33	8.33	8.33	8.33	0	0	16.67	8.33	0	8.33	16.67
	55-60	8.33	8.33	8.33	0	0	8.33	0	16.67	8.33	16.67	16.67	8.33
	60-65	8.33	25	8.33	0	8.33	0	0	16.67	8.33	8.33	8.33	8.33
	65-70	8.33	8.33	0	0	0	8.33	8.33	16.67	8.33	16.67	8.33	16.67
	70-75	8.33	0	8.33	0	0	8.33	0	25	8.33	16.67	16.67	8.33
	75-80	8.33	8.33	0	8.33	0	8.33	0	16.67	16.67	16.67	8.33	8.33
	80-85	0	0	0	0	8.33	16.67	0	16.67	8.33	25	16.67	8.33
	85-90	0	8.33	8.33	0	0	16.67	0	8.33	16.67	16.67	16.67	8.33
	90-95	8.33	0	0	0	0	33.33	0	8.33	16.67	16.67	16.67	0
	95-100	0	0	0	0	0	50	0	8.33	8.33	16.67	8.33	8.33
2011	0-5	16.67	0	25	8.33	8.33	0	16.67	8.33	16.67	0	0	0
	5-10	16.67	8.33	8.33	8.33	8.33	0	16.67	8.33	8.33	8.33	0	8.33
	10-15	16.67	0	16.67	16.67	16.67	0	8.33	16.67	8.33	0	0	0
	15-20	16.67	0	16.67	8.33	8.33	0	16.67	16.67	8.33	0	0	8.33
	20-25	16.67	8.33	16.67	16.67	8.33	0	8.33	8.33	8.33	8.33	0	0

Table 19 (Continued): Country of Residence Distribution of Households in Asia (by ventiles)

Year	Ventiles	Countries											
2011		Bangladesh	China	India	Indonesia	Lao PDR	Malaysia	Nepal	Pakistan	Philippines	Sri Lanka	Thailand	Vietnam
	25-30	8.33	0	8.33	8.33	8.33	0	16.67	16.67	8.33	8.33	8.33	8.33
	30-35	16.67	8.33	8.33	8.33	16.67	0	8.33	16.67	8.33	8.33	0	0
	35-40	8.33	8.33	16.67	8.33	8.33	8.33	8.33	8.33	8.33	8.33	0	8.33
	40-45	8.33	0	8.33	8.33	16.67	0	16.67	16.67	8.33	8.33	0	8.33
	45-50	8.33	8.33	8.33	8.33	8.33	0	8.33	8.33	8.33	16.67	8.33	8.33
	50-55	8.33	16.67	16.67	0	8.33	0	8.33	8.33	8.33	8.33	8.33	8.33
	55-60	0	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33	16.67	8.33	8.33
	60-65	8.33	16.67	8.33	8.33	8.33	0	0	8.33	8.33	8.33	8.33	16.67
	65-70	8.33	8.33	0	8.33	8.33	8.33	8.33	0	8.33	16.67	8.33	16.67
	70-75	0	16.67	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33
	75-80	0	16.67	0	8.33	0	8.33	0	0	8.33	16.67	25	16.67
	80-85	0	16.67	0	0	8.33	16.67	0	0	8.33	8.33	25	16.67
	85-90	8.33	8.33	8.33	0	0	16.67	8.33	8.33	8.33	8.33	16.67	8.33
	90-95	0	8.33	0	8.33	8.33	41.67	0	0	0	0	25	8.33
	95-100	0	8.33	0	0	0	50	0	0	8.33	8.33	16.67	8.33

Table 20: Robustness Exercise- Comparison of Inequality Estimates (in %) between Our Sample and WID data base

Country	Our Gini Year 2011	WID Gini	WID Year of Data
Burkina Faso	39.398	39.76	2010/2011
Cameroon	46.275	46.64	2014
Côte d'Ivoire	43.259	43.18	2008
Ethiopia	32.858	33.17	2010/2011
Gambia, The	44.597	43.57	2010/2011
Ghana	42.06	42.37	2013
Guinea	33.501	33.73	2010/2011
Kenya	40.461	40.78	2016
Mali	32.848	33.04	2010/2011
Mauritania	35.485	35.69	2008
Morocco	39.225	39.55	2014
Mozambique	44.895	45.58	2010/2011
Niger	31.209	31.45	2010/2011
Nigeria	42.643	44.7	2010/2011
Rwanda	44.607	47.22	2010/2011
Senegal	40.04	40.29	2010/2011
South Africa	68.105	69.4	2010/2011
Tanzania	37.439	37.78	2010/2011
Uganda	43.838	44.2	2010/2011
Zambia	54.976	55.62	2010/2011
Bangladesh	31.87	32.13	2010/2011
China	36.673	35.56	2010/2011
India	34.891	36.8	2010/2011
Indonesia	34.613	34.1	2010/2011
Lao PDR	36.09	36.39	2013
Malaysia	43.583	45.48	2010/2011

Country	Our Gini Year 2011	WID Gini	WID Year of Data
Nepal	32.618	32.84	2010/2011
Pakistan	29.546	30.6	2010/2011
Philippines	41.897	41.76	2010/2011
Sri Lanka	36.059	36.39	2010/2011
Thailand	39.107	37.46	2010/2011
Vietnam	38.952	39.3	2010/2011
Armenia	29.738	29.35	2010/2011
Azerbaijan	16.537	16.64	2005
Kazakhstan	27.824	28	2010/2011
Tajikistan	30.61	30.78	2010/2011
Ukraine	24.41	24.55	2010/2011
Albania	28.785	28.96	2010/2011
Australia	34.536	34.7	2010/2011
Austria	30.632	32.9	2010/2011
Belgium	27.941	27	2010/2011
Bosnia and Herzegovina	32.832	33.03	2010/2011
Bulgaria	34.104	34.28	2010/2011
Canada	33.459	31.1	2010/2011
Croatia	32.133	32.26	2010/2011
Czech Republic	26.293	25.2	2010/2011
Denmark	27.209	26.6	2010/2011
Estonia	32.365	32.3	2010/2011
Finland	27.55	27.71	2010/2011
France	33.183	33.29	2010/2011
Germany	30.393	30.6	2010/2011
Greece	34.692	33.3	2010/2011
Hungary	29.063	29.16	2010/2011
Iceland	26.676	25.2	2010/2011

Country	Our Gini Year 2011	WID Gini	WID Year of Data
Ireland	32.744	30.7	2010/2011
Israel	41.205	41.8	2010/2011
Italy	34.891	32.7	2010/2011
Latvia	35.647	35.1	2010/2011
Luxembourg	31.964	31.6	2010/2011
Mexico	48.248	50.9	2010/2011
Netherlands	27.67	27.75	2010/2011
Norway	25.199	25	2010/2011
Poland	32.538	31.6	2010/2011
Russian Federation (EUO)	39.485	39.75	2010/2011
Slovak Republic	26.421	26.1	2010/2011
Slovenia	24.791	24.4	2010/2011
Spain	35.552	35.7	2010/2011
Sweden	27.471	27.3	2010/2011
Switzerland	31.603	31.71	2010/2011
Turkey	35.983	38.5	2010/2011
United Kingdom	33.048	33	2010/2011
United States	40.221	40.41	2010/2011
Bolivia	45.764	46.1	2010/2011
Brazil	52.412	52.8	2010/2011
Chile	47.168	47.8	2010/2011
Colombia	53.054	53.4	2010/2011
Ecuador	45.538	45.8	2010/2011
Paraguay	51.72	51	2010/2011
Peru	44.54	44.7	2010/2011
Uruguay	41.89	42.2	2010/2011
Venezuela, RB	45.96	40.5	2010/2011
Egypt, Arab Rep. (WAS)	29.565	31.52	2010/2011
Jordan	33.424	33.66	2010/2011

Table 20 (Continued): Robustness Exercise- Comparison of Inequality Estimates (in %) between Our Sample and WID data base

Concept 4 Inequality	Our Measure	WID Measure
Gini Coefficient	37.30018	37.63161274

Table 21: Ventile Means and Gini inequalities in ICP US $

Year	1995		2000		2005		2011	
Ventile	Mean	Gini	Mean	Gini	Mean	Gini	Mean	Gini
0-5	25.78663	21.077	22.33969	18.714	27.81324	16.489	29.17802	15.43
5-10	50.97612	6.779	41.5603	6.851	32.83099	9.526	49.32444	6.002
10-15	71.47407	4.97	56.95509	4.639	49.7971	5.362	66.66702	4.468
15-20	94.22469	4.085	72.58311	3.733	66.21006	4.045	85.02395	3.865
20-25	119.0378	3.771	89.68884	3.185	83.3214	3.598	106.2354	3.796
25-30	148.6728	3.709	109.0772	3.228	103.5375	3.36	131.5315	3.48
30-35	182.1089	3.174	132.2177	3.188	126.9669	3.495	160.6177	3.488
35-40	222.5533	3.359	160.6882	3.183	155.4715	3.379	194.6859	3.217
40-45	270.7586	3.378	194.1678	3.023	191.0229	3.531	237.0101	3.045
45-50	334.4696	3.435	233.9211	3.182	235.1916	3.705	290.979	3.606
50-55	408.4058	3.07	284.2146	3.064	295.209	4.221	356.1305	3.581
55-60	496.0372	3.452	345.1911	3.42	371.6204	3.708	437.412	3.535
60-65	606.6608	3.273	417.0342	3.102	471.0703	3.973	537.0858	3.362
65-70	732.4313	2.932	506.717	3.305	589.2606	3.604	666.9433	3.828
70-75	886.9092	3.097	610.713	2.962	729.7855	3.504	827.0691	3.324
75-80	1073.398	3.256	749.5088	3.625	908.7091	3.537	1010.509	3.149
80-85	1313.246	3.317	932.8017	3.778	1117.908	3.51	1237.953	3.482
85-90	1658.281	4.588	1173.37	3.976	1386.833	3.949	1544.139	3.866
90-95	2332.934	7.411	1545.875	5.721	1846.684	5.731	1995.763	5.297
95-100	6919.67	34.968	2999.675	21.717	3251.746	18.638	3452.166	16.798
$\widetilde{\vartheta}$[16]		1.06824		0.356025		0.3291980		0.327729

[16] Theta tilda is the population share weighted average of the ICP PPP of each unit of the 83 country currencies in terms of the US $, i.e. inverse of the ICP PPP s reported in Appendices F- I.

Table 22: Comparison of Income and Expenditure inequalities[17]

Concept	Unit of measure	Inequality measure	Year			
			1995	2000	2005	2011
3	Expenditure	Gini coefficient	0.453776	0.472799	0.526519	0.587982
		Standard error	1.85782	1.492995	1.327722	1.367621
		Theil index (GE(a), a = 1)	0.58899	0.670938	0.71258	0.845011
		Standard error	5.439016	5.84598	6.549216	7.323346
	Income	Gini coefficient	0.53098	0.55324	0.6161	0.68802
		Standard error	1.764929	1.460896	1.228807	1.338764
		Theil index (GE(a), a = 1)	0.6892	0.78509	0.85597	0.98878
		Standard error	6.287247	7.004048	5.539066	4.974089
4	Expenditure	Gini coefficient	0.448276	0.468712	0.490079	0.572255
		Standard error	1.811459	1.398916	1.301741	1.247906
		Theil index (GE(a), a = 1)	0.668403	0.698874	0.730734	0.853262
		Standard error	6.319265	7.020437	5.598501	5.312285
	Income	Gini coefficient	0.574969	0.601181	0.628587	0.733988
		Standard error	1.832163	1.414905	1.316618	1.262168
		Theil index (GE(a), a = 1)	0.85731	0.896393	0.937257	1.094415
		Standard error	6.391489	7.100675	5.662487	5.373

[17] The robustness exercise of Concept 3 and 4 inequalities for the subset of 41 countries where the household survey data for these countries was in expenditure figures initially. The calculations were done for ICP PPPs only for the four years.

Table 23: Comparison of Concept 1 Income Inequality Estimate (World) between keeping ICP PPP constant[18] at 2011 prices and varying PPPs (Ravallion, UQICD PPP[19])

Year	Inequality measures	PPP			
		ICP PPP, variable year, Ravallion equation[20]	ICP constant 2011	UQICD PPP[21]	UQICD PPP Constrained[22]
1995	Gini coefficient	0.61616	0.66619	0.71158	0.71311
	Standard error	2.51881	2.365555	2.542762	2.572032
	Theil index (GE(a), a = 1)	0.6589	0.80583	0.80756	0.81891
	Standard error	6.12477	5.816366	6.225165	6.245399
2000	Gini coefficient	0.646968	0.65489	0.71751	0.72046
	Standard error	2.493622	2.327263	2.501601	2.530397
	Theil index (GE(a), a = 1)	0.691845	0.84307	0.85792	0.8793
	Standard error	6.063522	5.794418	6.201674	6.221832
2005	Gini coefficient	0.61841	0.76138	0.74286	0.7426
	Standard error	2.443749	2.280717	2.451568	2.479789
	Theil index (GE(a), a = 1)	0.66635	1.17441	0.98757	0.98711
	Standard error	5.942252	5.67853	6.07764	6.097395
2011	Gini coefficient	0.61462	0.61462	0.74818	0.74851

[18] We use the ICP PPP for 2011 for all 4 years (i.e. 1995, 2000, 2005, 2011) to compute the inequality estimates in this table in column 2, keeping the ICP PPP at a constant price level.

[19] Refer to Rao et al (2015) for the UQ International Comparisons Database: UQICD Version 2.1.2. UQICD provides extrapolated Purchasing Power Parities of currencies for 181 countries covering the period 1970 to 2012. A number of panels of PPPs are available and users can download the series that is of particular interest.

[20] Using the PPPs from ICP, 2005 and ICP, 2011, equation (9) was estimated on cross country data covering 83 countries on GDP and Exchange rates for 1995 and 2000. The PPPs for each year are provided in Appendix F-I.

[21] UQICD PPP Series for GDP in current prices (LCU/US$).

[22] UQICD PPP Series for GDP in current prices which are constrained to be equal to PPPs for participating countries in different ICP benchmark years (LCU/US$).

	Standard error	2.493622	2.493622	2.3419	2.517334
	Theil index (GE(a), a = 1)	0.657253	0.657253	1.09085	1.09508
	Standard error	6.063522	6.063522	6.201674	6.221832

Standard errors of Gini and Theil estimates are calculated using bootstrap method based on an implicit assumption that we are dealing with a single worldwide household survey which, is not the case.

Table 24: Comparison of Concept 2 Income Inequality Estimate (World) between keeping ICP PPP constant at 2011 prices and varying PPP s (Ravallion, UQICD PPP)

Year	Inequality measures	PPP			
		ICP PPP, variable year, Ravallion equation	ICP constant 2011	UQICD PPP	UQICD PPP Constrained
1995	Gini coefficient	0.739908	0.75882	0.75279	0.7544
	Standard error	2.770691	2.602111	2.797038	2.829235
	Theil index (GE(a), a = 1)	1.222308	1.12522	1.05044	1.06829
	Standard error	7.043486	6.398003	6.847681	6.869939
2000	Gini coefficient	0.656824	0.75661	0.76558	0.76698
	Standard error	2.68757	2.524047	2.713127	2.744358
	Theil index (GE(a), a = 1)	1.029848	1.11002	1.20624	1.22271
	Standard error	6.832181	6.206063	6.642251	6.663841
2005	Gini coefficient	0.585578	0.73796	0.76431	0.76507
	Standard error	2.821949	2.65025	2.848783	2.881576
	Theil index (GE(a), a = 1)	1.01859	0.93005	1.183	1.19432
	Standard error	7.17379	6.557349	7.018227	7.041039
2011	Gini coefficient	0.522471	0.522471	0.77738	0.77756

	Standard error	2.680851	2.680851	2.502001	2.689429
	Theil index (GE(a), a = 1)	0.875371	0.875371	1.37709	1.3824
	Standard error	6.8151	6.8151	6.667316	6.688987

Standard errors of Gini and Theil estimates are calculated using bootstrap method based on an implicit assumption that we are dealing with a single worldwide household survey which, is not the case.

Table 25: Comparison of Concept 3 Income Inequality Estimate (World) between keeping ICP PPP constant at 2011 prices and varying PPPs (Ravallion, UQICD PPP)

Year	**Inequality measures**	**PPP**			
		ICP PPP, variable year, Ravallion equation	ICP constant 2011	UQICD PPP	UQICD PPP Constrained
1995	Gini coefficient	0.68411	0.852138	0.834057	0.835578
	Standard error	1.9556	1.9712448	1.872683	1.966317
	Theil index (GE(a), a = 1)	0.87521	1.0761065	0.896021	0.903368
	Standard error	6.8221	6.83369757	6.492013	6.816613
2000	Gini coefficient	0.69112	0.843732	0.846225	0.846729
	Standard error	1.5258	1.5380064	1.461107	1.534162
	Theil index (GE(a), a = 1)	0.8945	1.0745315	0.977662	0.980658
	Standard error	7.6572	7.67021724	7.286706	7.651042
2005	Gini coefficient	0.7106	0.836298	0.843021	0.843048
	Standard error	1.4346	1.4460768	1.373773	1.442461
	Theil index (GE(a), a = 1)	0.9211	1.0656905	0.933783	0.934626
	Standard error	6.1699	6.18038883	5.871369	6.164938
2011	Gini coefficient	0.7234	0.7234	0.851031	0.850959

Standard error	1.3971	1.3971	1.408277	1.337863
Theil index (GE(a), a = 1)	0.9543	0.9543	1.034394	1.034093
Standard error	5.9474	5.9474	5.659636	5.942617

Standard errors of Gini and Theil estimates are calculated using bootstrap method based on an implicit assumption that we are dealing with a single worldwide household survey which, is not the case.

Appendices:

Appendix A: Listing of Countries and their data sources

Country	Code	1995	2000	2005	2011
Burkina Faso	BFA	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Cameroon	CMR	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Côte d'Ivoire	CIV	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Ethiopia	ETH	PovcalNet	PovcalNet	PovcalNet	LSMS
Gambia, The	GMB	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Ghana	GHA	LSMS	PovcalNet	PovcalNet	LSMS
Guinea	GIN	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Kenya	KEN	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Mali	MLI	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Mauritania	MRT	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Morocco	MAR	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Mozambique	MOZ	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Niger	NER	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Nigeria	NGA	PovcalNet	PovcalNet	PovcalNet	LSMS
Rwanda	RWA	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Senegal	SEN	PovcalNet	PovcalNet	PovcalNet	PovcalNet
South Africa	ZAF	LSMS	PovcalNet	PovcalNet	LIS

Tanzania	TZA	LSMS	PovcalNet	LSMS	LSMS
Uganda	UGA	PovcalNet	PovcalNet	LSMS	LSMS
Zambia	ZMB	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Bangladesh	BGD	PovcalNet	PovcalNet	PovcalNet	PovcalNet
China	CHN	LSMS	LSMS	LIS	LIS
India	IND	LSMS	LSMS	LIS	LIS
Indonesia	IDN	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Lao PDR	LAO	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Malaysia	MYS	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Nepal	NPL	LSMS	LSMS	LSMS	LSMS
Pakistan	PAK	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Philippines	PHL	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Sri Lanka	LKA	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Thailand	THA	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Vietnam	VNM	LSMS	LSMS	LSMS	PovcalNet
Armenia	ARM	LSMS	PovcalNet	PovcalNet	PovcalNet
Azerbaijan	AZE	LSMS	PovcalNet	PovcalNet	PovcalNet
Kazakhstan	KAZ	LSMS	PovcalNet	PovcalNet	PovcalNet
Tajikistan	TJK	PovcalNet	LSMS	LSMS	LSMS
Ukraine	UKR	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Albania	ALB	LSMS	LSMS	LSMS	LSMS
Australia	AUS	LIS	LIS	LIS	LIS
Austria	AUT	LIS	LIS	LIS	LIS
Belgium	BEL	LIS	LIS	PovcalNet	PovcalNet
Bosnia and Herzegovina	BIH	LSMS	PovcalNet	PovcalNet	PovcalNet
Bulgaria	BGR	LSMS	LSMS	LSMS	LSMS
Canada	CAN	LIS	LIS	LIS	LIS
Croatia	HRV	PovcalNet	PovcalNet	PovcalNet	PovcalNet

Czech Republic	CZE	LIS	LIS	LIS	LIS
Denmark	DNK	LIS	LIS	LIS	LIS
Estonia	EST	Pov	LIS	LIS	LIS
Finland	FIN	LIS	LIS	LIS	LIS
France	FRA	LIS	LIS	LIS	LIS
Germany	DEU	LIS	LIS	LIS	LIS
Greece	GRC	LIS	LIS	LIS	LIS
Hungary	HUN	LIS	LIS	LIS	LIS
Iceland	ISL	PovcalNet	PovcalNet	LIS	LIS
Ireland	IRL	LIS	LIS	LIS	LIS
Israel	ISR	LIS	LIS	LIS	LIS
Italy	ITA	LIS	LIS	LIS	LIS
Latvia	LVA	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Luxembourg	LUX	LIS	LIS	LIS	LIS
Mexico	MEX	LIS	LIS	LIS	LIS
Netherlands	NLD	LIS	LIS	LIS	LIS
Norway	NOR	LIS	LIS	LIS	LIS
Poland	POL	LIS	LIS	LIS	LIS
Russian Federation (EUO)	RUS	Pov	LIS	LIS	LIS
Slovak Republic	SVK	LIS	LIS	LIS	LIS
Slovenia	SVN	LIS	LIS	LIS	LIS
Spain	ESP	LIS	LIS	LIS	LIS
Sweden	SWE	LIS	LIS	LIS	PovcalNet
Switzerland	CHE	LIS	LIS	LIS	LIS
Turkey	TUR	PovcalNet	PovcalNet	PovcalNet	PovcalNet
United Kingdom	GBR	LIS	LIS	LIS	LIS
United States	USA	LIS	LIS	LIS	LIS
Bolivia	BOL	PovcalNet	PovcalNet	PovcalNet	PovcalNet

Brazil	BRA	LSMS	PovcalNet	LIS	LIS
Chile	CHL	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Colombia	COL	PovcalNet	PovcalNet	LIS	LIS
Ecuador	ECU	LSMS	LSMS	PovcalNet	PovcalNet
Paraguay	PRY	PovcalNet	LIS	LIS	LIS
Peru	PER	LSMS	PovcalNet	LIS	LIS
Uruguay	URY	PovcalNet	LIS	LIS	LIS
Venezuela, RB	VEN	PovcalNet	PovcalNet	PovcalNet	PovcalNet
Egypt, Arab Rep. (WAS)	EGZ	PovcalNet	PovcalNet	PovcalNet	LIS
Jordan	JOR	PovcalNet	PovcalNet	PovcalNet	PovcalNet

Appendix B: Coverage of Total Population in this Study

Year	**1995**	**2000**	**2005**	**2011**
Our Population	4835553104	5.16E+09	5.4E+09	5.82E+09
World Population	5751474416	6.15E+09	6.54E+09	7.04E+09
Population coverage (%)	84.07501719	83.89706	82.52978	82.64411

Appendix C: Global Income shares of regions- 25 th percentile

Year	Region	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Africa	0.049544	0.047624	0.039648	0.05278	0.044029
	Asia and the Pacific	0.08996	0.105417	0.082375	0.120435	0.122916
	CIS	0.10727	0.090019	0.083162	0.091865	0.086511
	Eurostat-OECD	0.378011	0.367288	0.276665	0.351406	0.36114
	Latin America	0.159327	0.135565	0.422019	0.135457	0.140722
	Western Asia	0.215889	0.254086	0.096132	0.248057	0.244682
2000	Africa	0.044616	0.041673	0.044671	0.046384	0.039813
	Asia and the Pacific	0.073739	0.081973	0.039559	0.09434	0.09674
	CIS	0.13573	0.123332	0.136412	0.130599	0.124826
	Eurostat-OECD	0.407833	0.393662	0.418895	0.373926	0.410462
	Latin America	0.138389	0.114419	0.113971	0.117088	0.113796
	Western Asia	0.199692	0.24494	0.246491	0.237665	0.214362
2005	Africa	0.042708	0.041309	0.062004	0.04434	0.037835
	Asia and the Pacific	0.07332	0.088747	0.139699	0.096138	0.105609
	CIS	0.135908	0.135998	0.216591	0.145787	0.135717
	Eurostat-OECD	0.416781	0.408068	0.103279	0.384426	0.397807
	Latin America	0.150096	0.146513	0.218114	0.155436	0.152386
	Western Asia	0.181187	0.179363	0.260313	0.173873	0.170646
2011	Africa	0.04108	0.041252	0.04155	0.04593	0.039639
	Asia and the Pacific	0.068105	0.068917	0.075159	0.082097	0.085816
	CIS	0.152623	0.149519	0.156679	0.157718	0.147959
	Eurostat-OECD	0.414707	0.403166	0.408137	0.377749	0.396005

	Latin America	0.159766	0.135269	0.130299	0.142911	0.143252
	Western Asia	0.163718	0.201877	0.188176	0.193596	0.18733

Appendix D: Global income shares of regions- 75 th percentile

Year	Region	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Africa	0.053885	0.05049	0.049438	0.054719	0.043999
	Asia and the Pacific	0.074101	0.083219	0.09279	0.106912	0.113028
	CIS	0.121464	0.123927	0.127089	0.123269	0.117033
	Eurostat-OECD	0.435434	0.438481	0.438997	0.411997	0.442735
	Latin America	0.181243	0.143286	0.140442	0.147036	0.143538
	Western Asia	0.133872	0.160596	0.151243	0.156066	0.139666
2000	Africa	0.046834	0.043666	0.043202	0.047	0.038863
	Asia and the Pacific	0.066299	0.072688	0.08082	0.094737	0.098609
	CIS	0.123703	0.109945	0.1102	0.108512	0.100528
	Eurostat-OECD	0.452644	0.457345	0.461228	0.430597	0.458052
	Latin America	0.180408	0.16414	0.160981	0.171576	0.16518
	Western Asia	0.130113	0.152215	0.143569	0.147577	0.138768
2005	Africa	0.04884	0.048395	0.047173	0.052072	0.043284
	Asia and the Pacific	0.070479	0.077639	0.082546	0.094638	0.10123
	CIS	0.115217	0.103764	0.105461	0.105209	0.09836
	Eurostat-OECD	0.413975	0.439944	0.437558	0.412689	0.429529
	Latin America	0.225257	0.174825	0.181262	0.183733	0.188193
	Western Asia	0.126232	0.155433	0.146001	0.151658	0.139403
2011	Africa	0.062208	0.063885	0.062429	0.066625	0.055897
	Asia and the Pacific	0.057361	0.071796	0.081455	0.097467	0.099734
	CIS	0.132291	0.125528	0.127022	0.124753	0.116185
	Eurostat-OECD	0.365993	0.413086	0.413304	0.386075	0.400511

	Latin America	0.279752	0.229527	0.22575	0.233027	0.244018
	Western Asia	0.102394	0.096178	0.09004	0.092053	0.083655

Appendix E: Global income shares of regions- 100 th percentile

Year	Region	PPP				
		ICP	CPD	GEKS	GK	EWGK
1995	Africa	0.065058	0.069545	0.065024	0.067626	0.053687
	Asia and the Pacific	0.108401	0.117515	0.140088	0.204681	0.19644
	CIS	0.081399	0.088552	0.086852	0.077087	0.074699
	Eurostat-OECD	0.379262	0.393514	0.385365	0.344044	0.385818
	Latin America	0.265651	0.206492	0.206576	0.19199	0.192689
	Western Asia	0.100229	0.124381	0.116096	0.114573	0.096668
2000	Africa	0.076053	0.048349	0.044491	0.043871	0.039334
	Asia and the Pacific	0.090567	0.062056	0.082335	0.115421	0.116064
	CIS	0.139542	0.415424	0.420031	0.442294	0.42773
	Eurostat-OECD	0.374099	0.255723	0.254637	0.218947	0.239754
	Latin America	0.230922	0.145804	0.130968	0.115516	0.120586
	Western Asia	0.088817	0.072644	0.067538	0.06395	0.056532
2005	Africa	0.085538	0.096662	0.091366	0.096016	0.074047
	Asia and the Pacific	0.089806	0.111734	0.091883	0.177924	0.207
	CIS	0.077464	0.064527	0.063625	0.064538	0.05564
	Eurostat-OECD	0.315627	0.345347	0.340327	0.313604	0.300906
	Latin America	0.355703	0.290255	0.326751	0.262992	0.287494
	Western Asia	0.075862	0.091475	0.086048	0.084926	0.074912
2011	Africa	0.096998	0.12139	0.111115	0.113183	0.099068
	Asia and the Pacific	0.053713	0.0658	0.079092	0.112022	0.109241
	CIS	0.046153	0.05567	0.053775	0.046484	0.045345
	Eurostat-OECD	0.436572	0.412767	0.390609	0.350438	0.350029

Latin America	0.308779	0.283382	0.309168	0.324067	0.35019
Western Asia	0.057784	0.060991	0.056241	0.053804	0.046126

Appendix F: PPPs by country and for each procedure (1995)

Region	Country	Code	PPP				
			ICP	CPD	GEKS	GK	EWGK
Africa	Burkina Faso	BFA	172.6782	214.1363	232.3729	201.5096	297.8034
Africa	Cameroon	CMR	237.7835	256.4851	216.1718	183.3715	308.7431
Africa	Côte d'Ivoire	CIV	280.729	295.0361	237.4511	188.2248	284.7566
Africa	Ethiopia	ETH	1.657197	2.011622	2.097728	1.868639	3.194325
Africa	Gambia, The	GMB	3.83834	5.044677	5.034742	4.240991	6.028783
Africa	Ghana	GHA	0.052762	0.050874	0.052237	0.045286	0.059699
Africa	Guinea	GIN	394.7672	565.482	606.3974	577.1323	967.5123
Africa	Kenya	KEN	19.00021	18.56508	18.1684	16.0474	23.17854
Africa	Mali	MLI	212.4883	239.5449	243.1124	206.0592	285.6732
Africa	Mauritania	MRT	9.453211	8.805464	8.993423	7.837954	13.57383
Africa	Morocco	MAR	4.620499	4.950929	5.652459	5.242861	7.262432
Africa	Mozambique	MOZ	3.900509	4.745251	4.744995	4.181364	5.975328
Africa	Niger	NER	212.5137	281.2789	323.0537	257.5641	359.1173
Africa	Nigeria	NGA	10.77352	11.42936	12.35182	10.57848	15.00151
Africa	Rwanda	RWA	88.60024	102.9859	88.38274	65.57869	111.4072
Africa	Senegal	SEN	231.3295	303.2534	307.7524	271.6763	417.4505
Africa	South Africa	ZAF	2.166744	2.540501	2.787208	2.648125	3.280751
Africa	Tanzania	TZA	181.9381	202.9512	219.1961	172.2632	265.4488
Africa	Uganda	UGA	338.5131	436.7993	393.8111	335.0877	538.4827
Africa	Zambia	ZMB	0.472997	0.433459	0.438812	0.428434	0.68598
Asia and the Pacific	Bangladesh	BGD	13.89421	13.18391	12.94849	12.6863	17.28251

Asia and the Pacific	China	CHN	2.863368	3.508749	3.817439	3.78098	4.92299
Asia and the Pacific	India	IND	9.8235	10.04312	9.863777	8.369265	11.27289
Asia and the Pacific	Indonesia	IDN	920.808	957.6898	880.3602	902.091	1130.881
Asia and the Pacific	Lao PDR	LAO	224.3988	255.7814	246.0316	204.9727	273.7056
Asia and the Pacific	Malaysia	MYS	1.166133	1.227724	0.763674	0.477448	0.61247
Asia and the Pacific	Nepal	NPL	15.24828	10.98664	10.04069	7.917601	8.036025
Asia and the Pacific	Pakistan	PAK	9.62314	8.653607	7.074782	5.101428	7.405005
Asia and the Pacific	Philippines	PHL	10.63546	9.486045	7.149304	5.267251	5.335009
Asia and the Pacific	Sri Lanka	LKA	16.72549	17.81947	15.47655	13.84462	17.0069
Asia and the Pacific	Thailand	THA	10.67338	9.222073	9.605899	8.07886	9.628
Asia and the Pacific	Vietnam	VNM	2822.876	2824.097	2550.661	2270.407	2483.638
CIS	Armenia	ARM	119.5959	159.5327	150.7977	155.6778	222.3562
CIS	Azerbaijan	AZE	0.225736	0.235549	0.221285	0.196291	0.275887
CIS	Kazakhstan	KAZ	20.35477	19.61714	18.90452	19.93156	24.1525
CIS	Tajikistan	TJK	0.023246	0.035264	0.033363	0.027769	0.03704
CIS	Ukraine	UKR	0.40729	0.533054	0.533555	0.531354	0.721427
Eurostat-OECD	Albania	ALB	34.72393	38.02602	36.78325	35.3355	50.17179
Eurostat-OECD	Australia	AUS	1.325762	1.673316	1.643436	1.57094	1.901987
Eurostat-OECD	Austria	AUT	5.535283	5.851019	5.746537	5.617827	7.281326
Eurostat-OECD	Belgium	BEL	12.43595	12.58321	11.25997	11.4181	13.49628
Eurostat-OECD	Bosnia and Herzegovina	BIH	0.507122	0.756679	0.730129	0.674816	0.938738
Eurostat-OECD	Bulgaria	BGR	0.022303	0.032404	0.032488	0.032066	0.04016
Eurostat-OECD	Canada	CAN	1.274676	1.577564	1.505125	1.42732	1.796032
Eurostat-OECD	Croatia	HRV	3.157663	4.024188	4.176044	4.315246	5.624876
Eurostat-OECD	Czech Republic	CZE	14.01339	18.38605	17.92656	18.40089	24.31017
Eurostat-OECD	Denmark	DNK	7.853396	8.467784	8.187204	8.436422	10.45512
Eurostat-OECD	Estonia	EST	2.622856	3.443743	3.092341	3.197762	4.307189
Eurostat-OECD	Finland	FIN	3.244654	3.664296	3.860597	3.830855	4.786019

Eurostat-OECD	France	FRA	3.489923	3.627749	3.714584	3.730664	4.505151
Eurostat-OECD	Germany	DEU	1.396363	1.357669	1.333425	1.341882	1.559354
Eurostat-OECD	Greece	GRC	40.00628	52.32021	52.55379	52.5184	70.73906
Eurostat-OECD	Hungary	HUN	68.75675	76.699	74.88178	78.307	99.88047
Eurostat-OECD	Iceland	ISL	88.15673	88.14602	92.23956	89.44803	119.9025
Eurostat-OECD	Ireland	IRL	0.709199	0.701657	0.659803	0.721562	0.871359
Eurostat-OECD	Israel	ISR	2.6054	3.181156	3.10975	3.109307	3.420516
Eurostat-OECD	Italy	ITA	230.1883	260.8147	250.8207	262.6259	304.9491
Eurostat-OECD	Latvia	LVA	0.242154	0.335984	0.344331	0.377373	0.442711
Eurostat-OECD	Luxembourg	LUX	12.18168	12.30205	12.08237	12.2148	14.10221
Eurostat-OECD	Mexico	MEX	3.786683	4.118796	4.118945	4.231355	5.362467
Eurostat-OECD	Netherlands	NLD	1.437586	1.428021	1.370645	1.406384	1.566452
Eurostat-OECD	Norway	NOR	7.881173	10.93116	10.17643	10.31101	12.74926
Eurostat-OECD	Poland	POL	1.244871	1.284714	1.333194	1.383693	1.686898
Eurostat-OECD	Russian Federation (EUO)	RUS	1.742547	2.115633	1.972772	1.996865	2.553699
Eurostat-OECD	Slovak Republic	SVK	5.830896	8.06806	7.923987	8.06806	10.60844
Eurostat-OECD	Slovenia	SVN	20.65793	26.42606	25.32114	25.24441	32.55575
Eurostat-OECD	Spain	ESP	28.58723	30.68194	30.13404	32.59956	38.74377
Eurostat-OECD	Sweden	SWE	8.756743	9.085831	8.659461	8.980182	11.27643
Eurostat-OECD	Switzerland	CHE	1.753674	1.766958	1.618148	1.75104	2.036924
Eurostat-OECD	Turkey	TUR	0.027922	0.029396	0.028871	0.027947	0.036248
Eurostat-OECD	United Kingdom	GBR	0.702896	0.711984	0.73513	0.760667	0.942606
Eurostat-OECD	United States	USA	0.968465	0.985708	0.985708	0.985708	0.985708
Latin America	Bolivia	BOL	1.37717	1.980246	1.955811	1.25156	1.848108
Latin America	Brazil	BRA	0.547144	0.913651	1.156183	1.017608	1.331212
Latin America	Chile	CHL	230.5486	307.4243	295.1239	293.2572	362.3811
Latin America	Colombia	COL	436.2944	557.6996	639.1914	613.8182	765.404
Latin America	Ecuador	ECU	134.9979	173.1882	159.7867	135.5766	182.6134

Latin America	Paraguay	PRY	760.7146	1237.399	1265.568	1191.42	1633.675
Latin America	Peru	PER	1.01189	1.213429	1.24302	1.087302	1.405948
Latin America	Uruguay	URY	3.875273	5.270073	4.531001	5.21029	5.54374
Latin America	Venezuela, RB	VEN	0.097816	0.146412	0.127328	0.105348	0.124522
Western Asia	Egypt, Arab Rep. (WAS)	EGZ	0.914284	0.891917	0.945376	0.868368	1.070517
Western Asia	Jordan	JOR	0.356751	0.318413	0.327619	0.303251	0.442499

Appendix G: PPPs by country and for each procedure (2000)

Region	**Country**	**Code**	**PPP**				
			ICP	CPD	GEKS	GK	EWGK
Africa	Burkina Faso	BFA	243.2545	301.6572	327.3473	283.8697	419.5203
Africa	Cameroon	CMR	328.0333	353.833	298.219	252.9695	425.9253
Africa	Côte d'Ivoire	CIV	382.9342	402.4502	323.9001	256.752	388.4282
Africa	Ethiopia	ETH	2.150556	2.610496	2.722237	2.424946	4.145298
Africa	Gambia, The	GMB	4.939705	6.492186	6.4794	5.457892	7.758669
Africa	Ghana	GHA	0.215018	0.207325	0.212878	0.18455	0.243289
Africa	Guinea	GIN	637.63	913.3695	979.4562	932.1871	1562.731
Africa	Kenya	KEN	29.55532	28.87845	28.26142	24.96215	36.05482
Africa	Mali	MLI	298.8638	336.9188	341.9365	289.8213	401.798
Africa	Mauritania	MRT	16.2836	15.16782	15.49159	13.50124	23.38155
Africa	Morocco	MAR	5.638526	6.041759	6.897857	6.398012	8.862552
Africa	Mozambique	MOZ	7.523568	9.152965	9.152471	8.065302	11.52562
Africa	Niger	NER	285.3022	377.6203	433.7034	345.7828	482.1193
Africa	Nigeria	NGA	40.21321	42.66121	46.10437	39.4852	55.9946
Africa	Rwanda	RWA	131.0256	152.2998	130.704	96.98041	164.7534
Africa	Senegal	SEN	315.5329	413.637	419.7736	370.5659	569.4016
Africa	South Africa	ZAF	3.905719	4.579445	5.024152	4.773446	5.913801

Africa	Tanzania	TZA	289.9269	323.4123	349.2993	274.5095	423.0051
Africa	Uganda	UGA	553.7044	714.4707	644.1551	548.1014	880.7939
Africa	Zambia	ZMB	1.604195	1.470101	1.488256	1.453057	2.326541
Asia and the Pacific	Bangladesh	BGD	18.92931	17.96161	17.64086	17.28366	23.54548
Asia and the Pacific	China	CHN	3.191281	3.910571	4.254612	4.213977	5.48677
Asia and the Pacific	India	IND	14.14141	14.45756	14.19939	12.04797	16.22788
Asia and the Pacific	Indonesia	IDN	3184.578	3312.132	3044.691	3119.846	3911.109
Asia and the Pacific	Lao PDR	LAO	2103.598	2397.79	2306.392	1921.49	2565.819
Asia and the Pacific	Malaysia	MYS	1.733296	1.824843	1.135096	0.709661	0.910352
Asia and the Pacific	Nepal	NPL	21.5599	15.53427	14.19677	11.19488	11.36233
Asia and the Pacific	Pakistan	PAK	16.55414	14.88631	12.17035	8.775697	12.73841
Asia and the Pacific	Philippines	PHL	18.11146	16.15409	12.17478	8.969771	9.085157
Asia and the Pacific	Sri Lanka	LKA	26.37006	28.09488	24.40093	21.82797	26.81375
Asia and the Pacific	Thailand	THA	15.65302	13.5246	14.0875	11.84803	14.11991
Asia and the Pacific	Vietnam	VNM	3951.453	3953.162	3570.407	3178.108	3476.589
CIS	Armenia	ARM	177.8935	237.2977	224.3049	231.5637	330.7449
CIS	Azerbaijan	AZE	0.276558	0.288581	0.271105	0.240484	0.338001
CIS	Kazakhstan	KAZ	49.13168	47.35122	45.63112	48.11016	58.29852
CIS	Tajikistan	TJK	0.420854	0.638429	0.604018	0.502738	0.670583
CIS	Ukraine	UKR	1.444686	1.890783	1.89256	1.884752	2.558955
Eurostat-OECD	Albania	ALB	60.10027	65.81552	63.66454	61.15876	86.83746
Eurostat-OECD	Australia	AUS	1.68619	2.128232	2.090227	1.998023	2.41907
Eurostat-OECD	Austria	AUT	6.747168	7.132031	7.004673	6.847784	8.875487
Eurostat-OECD	Belgium	BEL	15.21127	15.39139	13.77285	13.96626	16.50823
Eurostat-OECD	Bosnia and Herzegovina	BIH	0.865761	1.291807	1.24648	1.15205	1.602618
Eurostat-OECD	Bulgaria	BGR	0.695112	1.009945	1.012575	0.999424	1.251696
Eurostat-OECD	Canada	CAN	1.436405	1.777724	1.696094	1.608417	2.023911
Eurostat-OECD	Croatia	HRV	5.014812	6.390975	6.632144	6.853215	8.933091

Eurostat-OECD	Czech Republic	CZE	20.52845	26.93404	26.26092	26.95578	35.61237
Eurostat-OECD	Denmark	DNK	10.90265	11.75559	11.36607	11.71205	14.51456
Eurostat-OECD	Estonia	EST	4.330566	5.685923	5.105727	5.279786	7.111549
Eurostat-OECD	Finland	FIN	4.078423	4.605899	4.852644	4.815258	6.015868
Eurostat-OECD	France	FRA	4.124185	4.28706	4.389676	4.408679	5.323922
Eurostat-OECD	Germany	DEU	1.667092	1.620895	1.59195	1.602047	1.861683
Eurostat-OECD	Greece	GRC	61.92117	80.98051	81.34203	81.28726	109.489
Eurostat-OECD	Hungary	HUN	154.7428	172.6175	168.5277	176.2364	224.7893
Eurostat-OECD	Iceland	ISL	112.3892	112.3755	117.5943	114.0354	152.8612
Eurostat-OECD	Ireland	IRL	0.910201	0.900521	0.846805	0.926068	1.11832
Eurostat-OECD	Israel	ISR	3.660501	4.469419	4.369096	4.368474	4.805712
Eurostat-OECD	Italy	ITA	0.820551	0.929724	0.894099	0.936181	1.08705
Eurostat-OECD	Latvia	LVA	0.310985	0.431485	0.442205	0.484639	0.56855
Eurostat-OECD	Luxembourg	LUX	15.39741	15.54955	15.27188	15.43927	17.82492
Eurostat-OECD	Mexico	MEX	6.491756	7.061118	7.061373	7.254084	9.193222
Eurostat-OECD	Netherlands	NLD	1.810068	1.798024	1.725782	1.770782	1.972323
Eurostat-OECD	Norway	NOR	11.18172	15.50901	14.43821	14.62916	18.08852
Eurostat-OECD	Poland	POL	2.339472	2.414348	2.505455	2.600359	3.170168
Eurostat-OECD	Russian Federation (EUO)	RUS	10.15009	12.32326	11.49112	11.63145	14.87493
Eurostat-OECD	Slovak Republic	SVK	9.078709	12.56197	12.33765	12.56197	16.51735
Eurostat-OECD	Slovenia	SVN	38.20658	48.87466	46.83112	46.68921	60.21144
Eurostat-OECD	Spain	ESP	35.46643	38.0652	37.38547	40.44428	48.06703
Eurostat-OECD	Sweden	SWE	11.16694	11.58661	11.04289	11.45188	14.38015
Eurostat-OECD	Switzerland	CHE	2.341917	2.359657	2.160931	2.338399	2.720178
Eurostat-OECD	Turkey	TUR	0.414853	0.436756	0.428956	0.415225	0.538569
Eurostat-OECD	United Kingdom	GBR	0.770874	0.780841	0.806225	0.834232	1.033766
Eurostat-OECD	United States	USA	1.029389	1.047718	1.047718	1.047718	1.047718
Latin America	Bolivia	BOL	1.829753	2.63102	2.598554	1.662864	2.455458

Latin America	Brazil	BRA	1.02121	1.705271	2.15794	1.8993	2.484622
Latin America	Chile	CHL	312.3057	416.443	399.7807	397.252	490.8886
Latin America	Colombia	COL	992.5649	1268.76	1454.153	1396.43	1741.286
Latin America	Ecuador	ECU	651.1855	835.4029	770.7587	653.977	880.867
Latin America	Paraguay	PRY	1275.372	2074.554	2121.781	1997.468	2738.928
Latin America	Peru	PER	1.520394	1.823212	1.867672	1.633703	2.112478
Latin America	Uruguay	URY	7.620994	10.36396	8.910528	10.2464	10.90215
Latin America	Venezuela, RB	VEN	0.407877	0.610515	0.530935	0.439284	0.519237
Western Asia	Egypt, Arab Rep. (WAS)	EGZ	1.036197	1.010848	1.071435	0.984159	1.213263
Western Asia	Jordan	JOR	0.372376	0.332359	0.341968	0.316533	0.461879

Appendix H: PPPs by country and for each procedure (2005)

Region	**Country**	**Code**	**PPP**				
			ICP	CPD	GEKS	GK	EWGK
Africa	Burkina Faso	BFA	200.22657	248.2988	269.4447	233.6576	345.3137
Africa	Cameroon	CMR	251.01530	270.7576	228.201	193.5755	325.9235
Africa	Côte d'Ivoire	CIV	287.48533	302.1368	243.1658	192.7549	291.6099
Africa	Ethiopia	ETH	2.25402	2.736083	2.8532	2.541606	4.344722
Africa	Gambia, The	GMB	7.56036	9.936476	9.916905	8.353459	11.87486
Africa	Ghana	GHA	3720.59474	3587.475	3683.568	3193.396	4209.792
Africa	Guinea	GIN	1219.34840	1746.649	1873.027	1782.634	2988.431
Africa	Kenya	KEN	29.52418	28.84802	28.23164	24.93584	36.01683
Africa	Mali	MLI	240.09236	270.6639	274.6948	232.8281	322.7846
Africa	Mauritania	MRT	98.83950	92.06688	94.03211	81.95092	141.9232
Africa	Morocco	MAR	4.87818	5.227042	5.967696	5.535255	7.667457
Africa	Mozambique	MOZ	10909.44986	13272.13	13271.42	11694.98	16712.57
Africa	Niger	NER	226.66147	300.0046	344.5605	274.711	383.025

Africa	Nigeria	NGA	60.23217	63.89884	69.05607	59.14174	83.86986
Africa	Rwanda	RWA	186.18229	216.4121	185.7253	137.8054	234.1082
Africa	Senegal	SEN	251.66756	329.9149	334.8094	295.5615	454.1519
Africa	South Africa	ZAF	3.87198	4.53988	4.980745	4.732205	5.862708
Africa	Tanzania	TZA	395.62724	441.3207	476.6454	374.589	577.2225
Africa	Uganda	UGA	619.64013	799.5507	720.8618	613.37	985.6798
Africa	Zambia	ZMB	2414.80836	2212.955	2240.283	2187.298	3502.161
Asia and the Pacific	Bangladesh	BGD	22.64162	21.48413	21.10049	20.67323	28.16309
Asia and the Pacific	China	CHN	3.44759	4.22465	4.596323	4.552424	5.927442
Asia and the Pacific	India	IND	14.66854	14.99648	14.72868	12.49707	16.83278
Asia and the Pacific	Indonesia	IDN	3934.26355	4091.845	3761.445	3854.293	4831.828
Asia and the Pacific	Lao PDR	LAO	2988.38499	3406.317	3276.476	2729.682	3645.019
Asia and the Pacific	Malaysia	MYS	1.73392	1.825501	1.135505	0.709917	0.910681
Asia and the Pacific	Nepal	NPL	22.65069	16.32019	14.91503	11.76127	11.93718
Asia and the Pacific	Pakistan	PAK	19.10228	17.17772	14.0437	10.12652	14.69921
Asia and the Pacific	Philippines	PHL	21.75489	19.40376	14.62394	10.77419	10.91279
Asia and the Pacific	Sri Lanka	LKA	35.17018	37.47059	32.54391	29.11231	35.76193
Asia and the Pacific	Thailand	THA	15.93210	13.76574	14.33867	12.05927	14.37166
Asia and the Pacific	Vietnam	VNM	4712.68821	4714.727	4258.235	3790.361	4146.343
CIS	Armenia	ARM	178.58047	238.2141	225.1711	232.4579	332.0222
CIS	Azerbaijan	AZE	1631.56164	1702.492	1599.391	1418.744	1994.046
CIS	Kazakhstan	KAZ	57.60684	55.51925	53.50244	56.40911	68.35495
CIS	Tajikistan	TJK	0.74435	1.129171	1.06831	0.889179	1.186042
CIS	Ukraine	UKR	1.67848	2.196771	2.198835	2.189763	2.973073
Eurostat-OECD	Albania	ALB	48.55754	53.17514	51.43727	49.41275	70.15965
Eurostat-OECD	Australia	AUS	1.38836	1.752319	1.721028	1.64511	1.991786
Eurostat-OECD	Austria	AUT	0.87364	0.923474	0.906983	0.886669	1.149221
Eurostat-OECD	Belgium	BEL	0.89879	0.90943	0.813795	0.825224	0.97542

Eurostat-OECD	Bosnia and Herzegovina	BIH	0.72681	1.084472	1.046421	0.967146	1.345398
Eurostat-OECD	Bulgaria	BGR	0.59277	0.861252	0.863495	0.85228	1.06741
Eurostat-OECD	Canada	CAN	1.21364	1.50203	1.43306	1.35898	1.710038
Eurostat-OECD	Croatia	HRV	3.93529	5.015215	5.204469	5.377951	7.010101
Eurostat-OECD	Czech Republic	CZE	14.39506	18.88682	18.41481	18.90206	24.97228
Eurostat-OECD	Denmark	DNK	8.51700	9.183299	8.879011	9.149287	11.33856
Eurostat-OECD	Estonia	EST	7.81281	10.25802	9.211285	9.525307	12.83
Eurostat-OECD	Finland	FIN	0.98344	1.110627	1.170125	1.16111	1.450615
Eurostat-OECD	France	FRA	0.92253	0.958959	0.981913	0.986163	1.190891
Eurostat-OECD	Germany	DEU	0.89256	0.867828	0.852331	0.857737	0.996746
Eurostat-OECD	Greece	GRC	0.70220	0.918333	0.922433	0.921812	1.241624
Eurostat-OECD	Hungary	HUN	128.50829	143.3526	139.9561	146.358	186.6794
Eurostat-OECD	Iceland	ISL	97.06372	97.05193	101.5591	98.48549	132.017
Eurostat-OECD	Ireland	IRL	1.02278	1.011901	0.951541	1.040607	1.256638
Eurostat-OECD	Israel	ISR	3.71694	4.538327	4.436457	4.435826	4.879805
Eurostat-OECD	Italy	ITA	0.87501	0.991427	0.953437	0.998312	1.159194
Eurostat-OECD	Latvia	LVA	0.29798	0.413437	0.423708	0.464367	0.544768
Eurostat-OECD	Luxembourg	LUX	0.92246	0.931571	0.914935	0.924964	1.067888
Eurostat-OECD	Mexico	MEX	7.12686	7.751927	7.752207	7.963771	10.09262
Eurostat-OECD	Netherlands	NLD	0.89828	0.892306	0.856455	0.878786	0.978805
Eurostat-OECD	Norway	NOR	8.84009	12.26117	11.41462	11.56557	14.30049
Eurostat-OECD	Poland	POL	1.89843	1.959186	2.033117	2.110129	2.572516
Eurostat-OECD	Russian Federation (EUO)	RUS	12.73613	15.46299	14.41883	14.59492	18.66477
Eurostat-OECD	Slovak Republic	SVK	17.19598	23.79363	23.36875	23.79363	31.28551
Eurostat-OECD	Slovenia	SVN	147.03550	188.0909	180.2265	179.6803	231.7197
Eurostat-OECD	Spain	ESP	0.76761	0.823856	0.809145	0.875347	1.040329
Eurostat-OECD	Sweden	SWE	9.24329	9.590659	9.140599	9.47914	11.90298

Eurostat-OECD	Switzerland	CHE	1.74122	1.754408	1.606655	1.738603	2.022456
Eurostat-OECD	Turkey	TUR	0.86834	0.914182	0.897857	0.869116	1.127289
Eurostat-OECD	United Kingdom	GBR	0.64888	0.657267	0.678634	0.702208	0.870164
Eurostat-OECD	United States	USA	1.00000	1.017805	1.017805	1.017805	1.017805
Latin America	Bolivia	BOL	2.23248	3.210097	3.170486	2.028853	2.995894
Latin America	Brazil	BRA	1.35674	2.265563	2.866964	2.523343	3.300982
Latin America	Chile	CHL	333.69033	444.9583	427.1551	424.4532	524.5015
Latin America	Colombia	COL	1081.94812	1383.016	1585.104	1522.182	1898.093
Latin America	Ecuador	ECU	0.42263	0.542187	0.500232	0.424439	0.571694
Latin America	Paraguay	PRY	2006.82677	3264.359	3338.671	3143.061	4309.767
Latin America	Peru	PER	1.48653	1.782599	1.826068	1.597311	2.06542
Latin America	Uruguay	URY	13.27825	18.05739	15.52503	17.85255	18.99509
Latin America	Venezuela, RB	VEN	1152.88146	1725.646	1500.709	1241.654	1467.645
Western Asia	Egypt, Arab Rep. (WAS)	EGZ	1.61606	1.576523	1.671014	1.534899	1.89221
Western Asia	Jordan	JOR	0.38051	0.339623	0.349442	0.323451	0.471974

Appendix I: PPPs by country and for each procedure (2011)

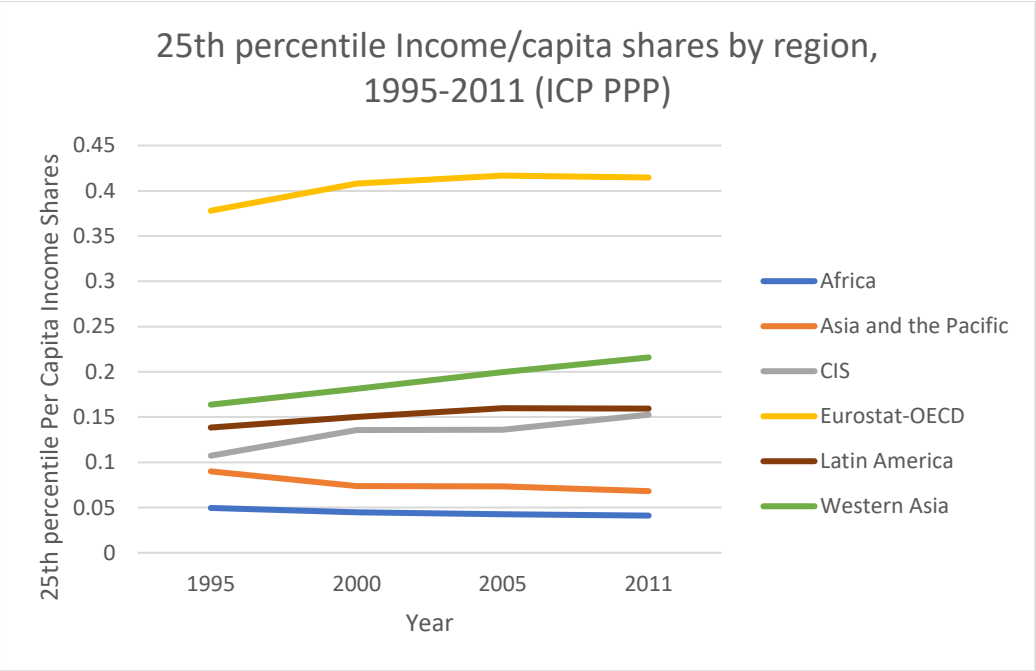
Region	**Country**	**Code**	**PPP**				
			ICP	CPD	GEKS	GK	EWGK
Africa	Burkina Faso	BFA	213.6592	227.7636	247.1607	214.3333	316.7551
Africa	Cameroon	CMR	227.2117	248.0182	209.0357	177.3182	298.551
Africa	Côte d'Ivoire	CIV	228.2285	282.0727	227.0179	179.9545	272.2449
Africa	Ethiopia	ETH	4.919337	6.181818	6.446429	5.742424	9.816327
Africa	Gambia, The	GMB	9.938787	12.36364	12.33929	10.39394	14.77551
Africa	Ghana	GHA	0.699392	0.8	0.821429	0.712121	0.938776
Africa	Guinea	GIN	2518.386	3319.564	3559.75	3387.955	5679.612
Africa	Kenya	KEN	34.2981	35.61818	34.85714	30.78788	44.46939
Africa	Mali	MLI	210.1934	249.7273	253.4464	214.8182	297.8163

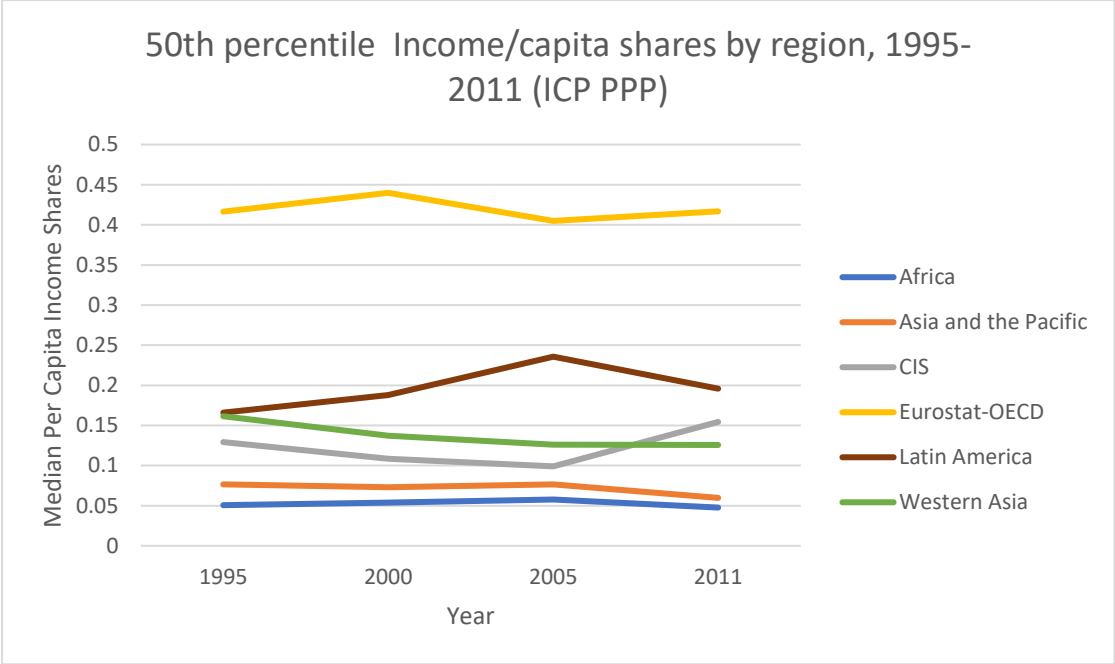
Africa	Mauritania	MRT	115.8549	112.0545	114.4464	99.74242	172.7347
Africa	Morocco	MAR	3.676904	5.036364	5.75	5.333333	7.387755
Africa	Mozambique	MOZ	16.02955	18.05455	18.05357	15.90909	22.73469
Africa	Niger	NER	221.0872	280.5636	322.2321	256.9091	358.2041
Africa	Nigeria	NGA	74.37774	81.16364	87.71429	75.12121	106.5306
Africa	Rwanda	RWA	260.751	266.4	228.625	169.6364	288.1837
Africa	Senegal	SEN	236.2871	302.6	307.0893	271.0909	416.551
Africa	South Africa	ZAF	4.773938	5.436364	5.964286	5.666667	7.020408
Africa	Tanzania	TZA	522.4832	637.1273	688.125	540.7879	833.3265
Africa	Uganda	UGA	833.5405	1183.691	1067.196	908.0606	1459.245
Africa	Zambia	ZMB	2378.38	2842.364	2877.464	2809.409	4498.245
Asia and the Pacific	Bangladesh	BGD	23.14543	27.61818	27.125	26.57576	36.20408
Asia and the Pacific	China	CHN	3.505536	4.218182	4.589286	4.545455	5.918367
Asia and the Pacific	India	IND	15.10943	18.18182	17.85714	15.15152	20.40816
Asia and the Pacific	Indonesia	IDN	3606.566	4478.709	4117.071	4218.697	5288.653
Asia and the Pacific	Lao PDR	LAO	2467.753	3053.073	2936.696	2446.606	3267.02
Asia and the Pacific	Malaysia	MYS	1.459272	1.636364	1.017857	0.636364	0.816327
Asia and the Pacific	Nepal	NPL	24.6281	19.36364	17.69643	13.95455	14.16327
Asia and the Pacific	Pakistan	PAK	24.34609	26.47273	21.64286	15.60606	22.65306
Asia and the Pacific	Philippines	PHL	17.85372	17.27273	13.01786	9.590909	9.714286
Asia and the Pacific	Sri Lanka	LKA	38.65378	48.09091	41.76786	37.36364	45.89796
Asia and the Pacific	Thailand	THA	12.37038	11.70909	12.19643	10.25758	12.22449
Asia and the Pacific	Vietnam	VNM	6709.192	7179.691	6484.536	5772.045	6314.143
CIS	Armenia	ARM	187.0953	223.6	211.3571	218.197	311.6531
CIS	Azerbaijan	AZE	0.360394	0.418182	0.392857	0.348485	0.489796
CIS	Kazakhstan	KAZ	80.1707	76.38182	73.60714	77.60606	94.04082
CIS	Tajikistan	TJK	1.739526	1.981818	1.875	1.560606	2.081633
CIS	Ukraine	UKR	3.434298	3.8	3.803571	3.787879	5.142857

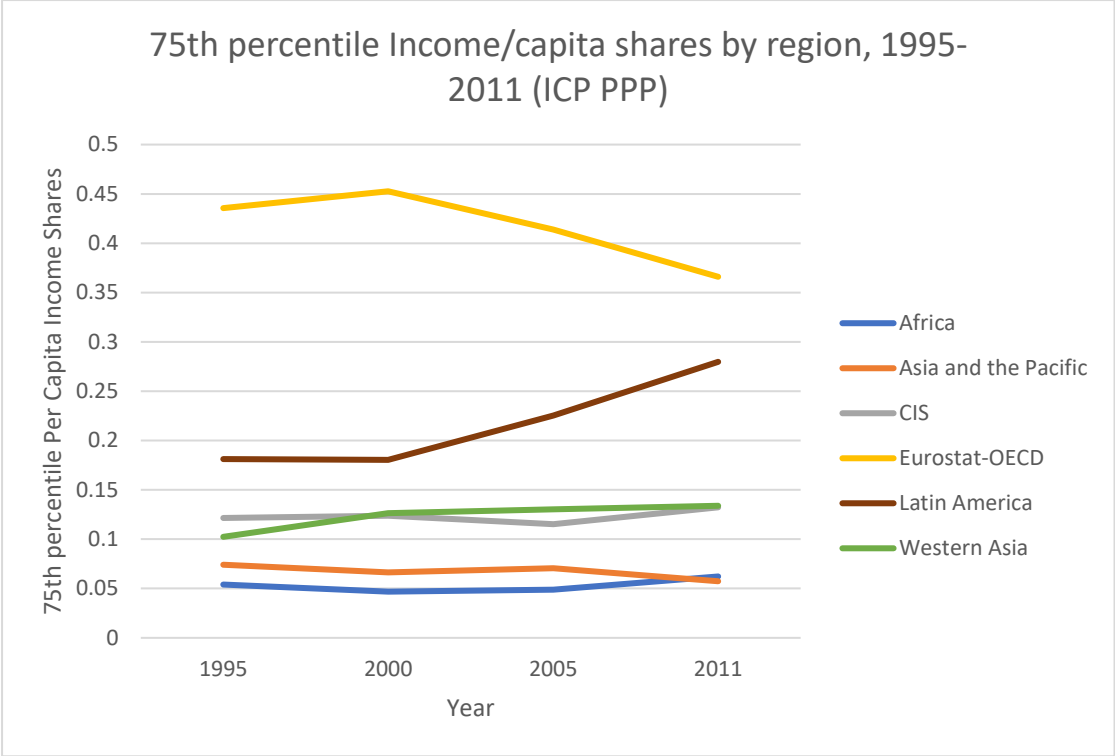
Eurostat-OECD	Albania	ALB	45.45161	57.81818	55.92857	53.72727	76.28571
Eurostat-OECD	Australia	AUS	1.511052	1.436364	1.410714	1.348485	1.632653
Eurostat-OECD	Austria	AUT	0.83002	0.836364	0.821429	0.80303	1.040816
Eurostat-OECD	Belgium	BEL	0.838962	0.818182	0.732143	0.742424	0.877551
Eurostat-OECD	Bosnia and Herzegovina	BIH	0.724255	1.036364	1	0.924242	1.285714
Eurostat-OECD	Bulgaria	BGR	0.660189	0.872727	0.875	0.863636	1.081633
Eurostat-OECD	Canada	CAN	1.242597	1.272727	1.214286	1.151515	1.44898
Eurostat-OECD	Croatia	HRV	3.802135	4.818182	5	5.166667	6.734694
Eurostat-OECD	Czech Republic	CZE	13.468	15.01818	14.64286	15.0303	19.85714
Eurostat-OECD	Denmark	DNK	7.689279	8.181818	7.910714	8.151515	10.10204
Eurostat-OECD	Estonia	EST	0.524071	0.636364	0.571429	0.590909	0.795918
Eurostat-OECD	Finland	FIN	0.907057	1	1.053571	1.045455	1.306122
Eurostat-OECD	France	FRA	0.844618	0.854545	0.875	0.878788	1.061224
Eurostat-OECD	Germany	DEU	0.778587	0.781818	0.767857	0.772727	0.897959
Eurostat-OECD	Greece	GRC	0.693179	0.8	0.803571	0.80303	1.081633
Eurostat-OECD	Hungary	HUN	123.6501	143.8182	140.4107	146.8333	187.2857
Eurostat-OECD	Iceland	ISL	133.5633	158.5818	165.9464	160.9242	215.7143
Eurostat-OECD	Ireland	IRL	0.82725	0.854545	0.803571	0.878788	1.061224
Eurostat-OECD	Israel	ISR	3.944763	3.890909	3.803571	3.80303	4.183673
Eurostat-OECD	Italy	ITA	0.768425	0.872727	0.839286	0.878788	1.020408
Eurostat-OECD	Latvia	LVA	0.347071	0.418182	0.428571	0.469697	0.55102
Eurostat-OECD	Luxembourg	LUX	0.9061	0.854545	0.839286	0.848485	0.979592
Eurostat-OECD	Mexico	MEX	7.673013	8.981818	8.982143	9.227273	11.69388
Eurostat-OECD	Netherlands	NLD	0.831693	0.8	0.767857	0.787879	0.877551
Eurostat-OECD	Norway	NOR	8.972526	11.16364	10.39286	10.5303	13.02041
Eurostat-OECD	Poland	POL	1.823435	1.927273	2	2.075758	2.530612
Eurostat-OECD	Russian Federation (EUO)	RUS	17.34557	19.05455	17.76786	17.98485	23

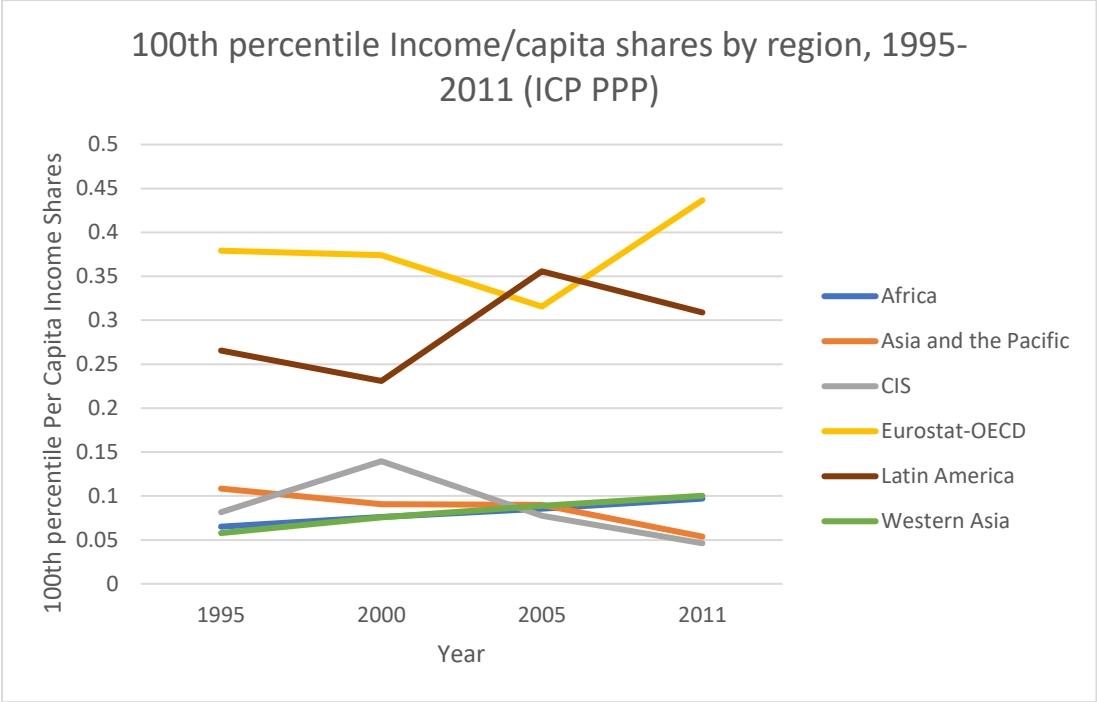
Eurostat-OECD	Slovak Republic	SVK	0.508462	0.636364	0.625	0.636364	0.836735
Eurostat-OECD	Slovenia	SVN	0.625436	0.745455	0.714286	0.712121	0.918367
Eurostat-OECD	Spain	ESP	0.705441	0.727273	0.714286	0.772727	0.918367
Eurostat-OECD	Sweden	SWE	8.819881	8.6	8.196429	8.5	10.67347
Eurostat-OECD	Switzerland	CHE	1.441417	1.345455	1.232143	1.333333	1.55102
Eurostat-OECD	Turkey	TUR	0.986932	1.290909	1.267857	1.227273	1.591837
Eurostat-OECD	United Kingdom	GBR	0.698151	0.709091	0.732143	0.757576	0.938776
Eurostat-OECD	United States	USA	1.00000	1	1	1	1
Latin America	Bolivia	BOL	2.946131	3.236364	3.196429	2.045455	3.020408
Latin America	Brazil	BRA	1.471075	1.890909	2.392857	2.106061	2.755102
Latin America	Chile	CHL	348.0168	431.2364	413.9821	411.3636	508.3265
Latin America	Colombia	COL	1161.91	1301.891	1492.125	1432.894	1786.755
Latin America	Ecuador	ECU	0.526181	0.6	0.553571	0.469697	0.632653
Latin America	Paraguay	PRY	2227.34	2764.182	2827.107	2661.47	3649.408
Latin America	Peru	PER	1.52123	1.690909	1.732143	1.515152	1.959184
Latin America	Uruguay	URY	15.28168	17.36364	14.92857	17.16667	18.26531
Latin America	Venezuela, RB	VEN	2.713205	4.127273	3.589286	2.969697	3.510204
Western Asia	Egypt, Arab Rep. (WAS)	EGZ	1.624829	1.836364	1.946429	1.787879	2.204082
Western Asia	Jordan	JOR	0.293373	0.381818	0.392857	0.363636	0.530612

Appendix J: Graphs of per capita income shares (by region) – 25 th, 50 th, 75 th and 100 percentiles

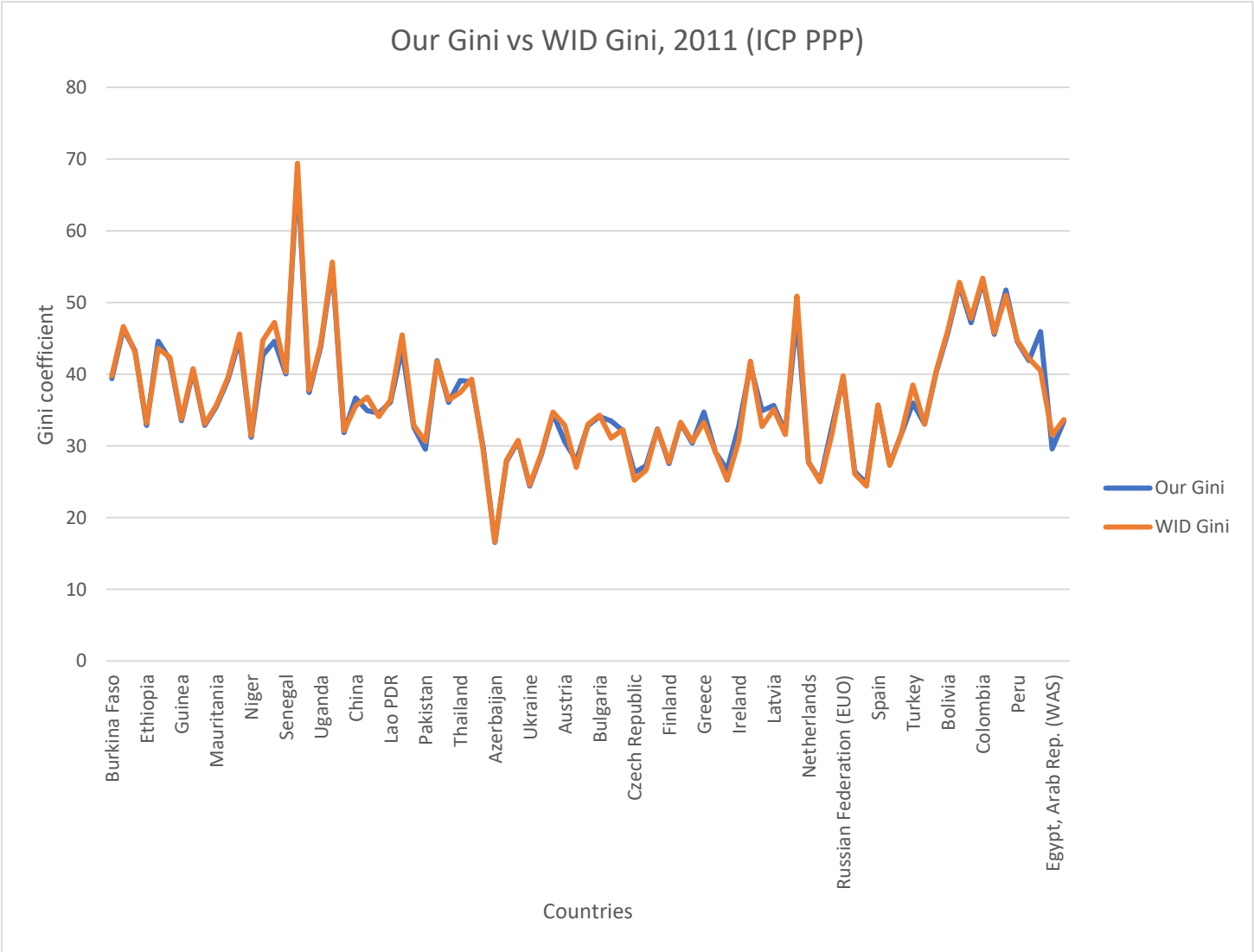



50th percentile Income/capita shares by region, 1995-2011 (ICP PPP)
Median Per Capita Income Shares
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
1995
2000
2005
2011
Year
Africa
Asia and the Pacific
CIS
Eurostat-OECD
Latin America
Western Asia


75th percentile Income/capita shares by region, 1995-2011 (ICP PPP)
75th percentile Per Capita Income Shares
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
1995
2000
2005
2011
Year
Africa
Asia and the Pacific
CIS
Eurostat-OECD
Latin America
Western Asia


100th percentile Income/capita shares by region, 1995-2011 (ICP PPP)
100th percentile Per Capita Income Shares
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
1995
2000
2005
2011
Year
Africa
Asia and the Pacific
CIS
Eurostat-OECD
Latin America
Western Asia

Appendix K: Graph of plot of Our Gini vs WID based Gini



Appendix L: List of the mostly developing countries in our sample (Considered in table 22)

Indicator	Country	Code	Year			
			1995	2000	2005	2011
0	Burkina Faso	BFA	PovcalNet	PovcalNet	PovcalNet	PovcalNet
1	Cameroon	CMR	PovcalNet	PovcalNet	PovcalNet	PovcalNet
2	Côte d'Ivoire	CIV	PovcalNet	PovcalNet	PovcalNet	PovcalNet
3	Ethiopia	ETH	PovcalNet	PovcalNet	PovcalNet	LSMS
4	Gambia, The	GMB	PovcalNet	PovcalNet	PovcalNet	PovcalNet
5	Ghana	GHA	LSMS	PovcalNet	PovcalNet	LSMS
6	Guinea	GIN	PovcalNet	PovcalNet	PovcalNet	PovcalNet
7	Kenya	KEN	PovcalNet	PovcalNet	PovcalNet	PovcalNet
8	Mali	MLI	PovcalNet	PovcalNet	PovcalNet	PovcalNet
9	Mauritania	MRT	PovcalNet	PovcalNet	PovcalNet	PovcalNet
10	Morocco	MAR	PovcalNet	PovcalNet	PovcalNet	PovcalNet
11	Mozambique	MOZ	PovcalNet	PovcalNet	PovcalNet	PovcalNet
12	Niger	NER	PovcalNet	PovcalNet	PovcalNet	PovcalNet
13	Nigeria	NGA	PovcalNet	PovcalNet	PovcalNet	LSMS
14	Rwanda	RWA	PovcalNet	PovcalNet	PovcalNet	PovcalNet
15	Senegal	SEN	PovcalNet	PovcalNet	PovcalNet	PovcalNet
17	Tanzania	TZA	LSMS	PovcalNet	LSMS	LSMS
18	Uganda	UGA	PovcalNet	PovcalNet	LSMS	LSMS
19	Zambia	ZMB	PovcalNet	PovcalNet	PovcalNet	PovcalNet
20	Bangladesh	BGD	PovcalNet	PovcalNet	PovcalNet	PovcalNet
23	Indonesia	IDN	PovcalNet	PovcalNet	PovcalNet	PovcalNet
24	Lao PDR	LAO	PovcalNet	PovcalNet	PovcalNet	PovcalNet
25	Malaysia	MYS	PovcalNet	PovcalNet	PovcalNet	PovcalNet
26	Nepal	NPL	LSMS	LSMS	LSMS	LSMS
27	Pakistan	PAK	PovcalNet	PovcalNet	PovcalNet	PovcalNet

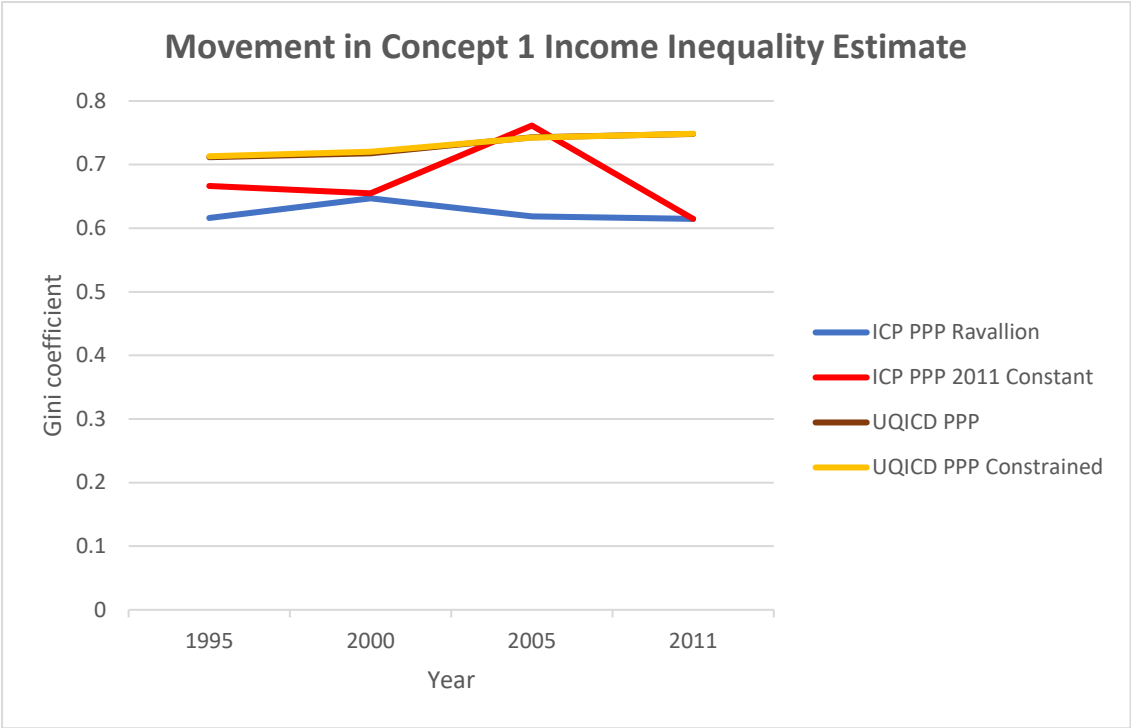
28	Philippines	PHL	PovcalNet	PovcalNet	PovcalNet	PovcalNet
29	Sri Lanka	LKA	PovcalNet	PovcalNet	PovcalNet	PovcalNet
30	Thailand	THA	PovcalNet	PovcalNet	PovcalNet	PovcalNet
31	Vietnam	VNM	LSMS	LSMS	LSMS	PovcalNet
32	Armenia	ARM	LSMS	PovcalNet	PovcalNet	PovcalNet
33	Azerbaijan	AZE	LSMS	PovcalNet	PovcalNet	PovcalNet
34	Kazakhstan	KAZ	LSMS	PovcalNet	PovcalNet	PovcalNet
35	Tajikistan	TJK	PovcalNet	LSMS	LSMS	LSMS
36	Ukraine	UKR	PovcalNet	PovcalNet	PovcalNet	PovcalNet
57	Latvia	LVA	PovcalNet	PovcalNet	PovcalNet	PovcalNet
69	Turkey	TUR	PovcalNet	PovcalNet	PovcalNet	PovcalNet
72	Bolivia	BOL	PovcalNet	PovcalNet	PovcalNet	PovcalNet
74	Chile	CHL	PovcalNet	PovcalNet	PovcalNet	PovcalNet
76	Ecuador	ECU	LSMS	LSMS	PovcalNet	PovcalNet
80	Venezuela, RB	VEN	PovcalNet	PovcalNet	PovcalNet	PovcalNet
82	Jordan	JOR	PovcalNet	PovcalNet	PovcalNet	PovcalNet

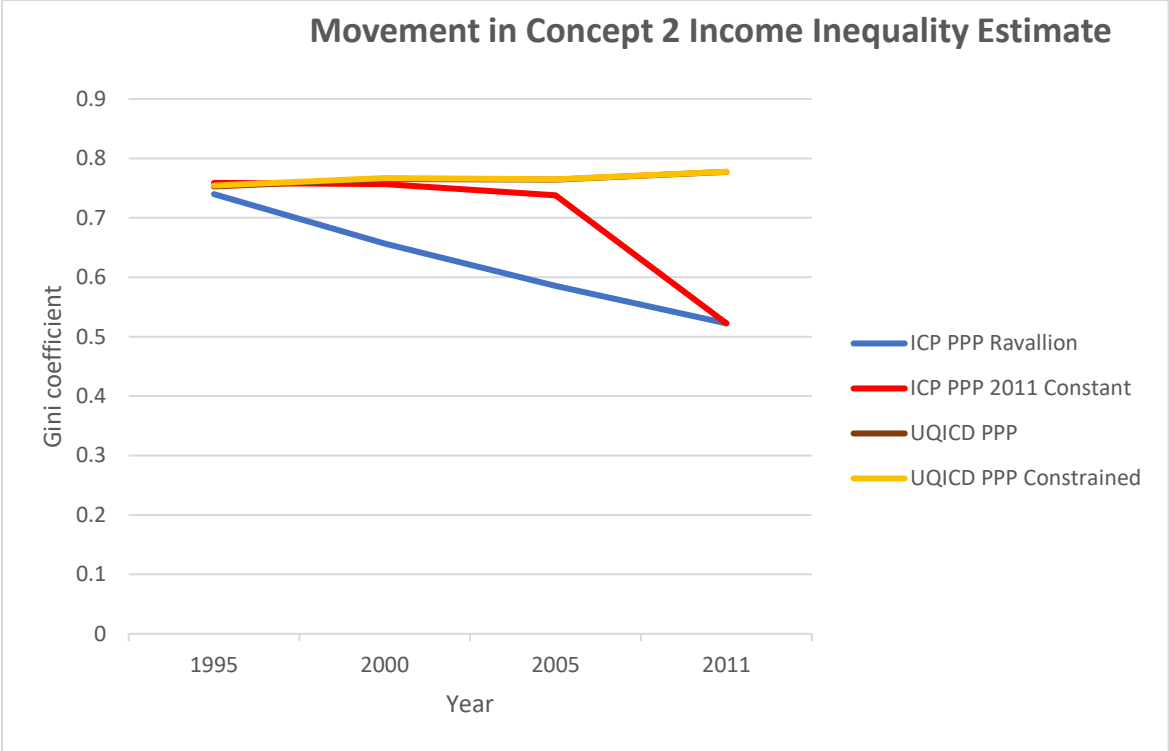
Appendix M: Concept 1 and 2 inequalities of the mostly developing countries in our sample (listed in Appendix L)[23]

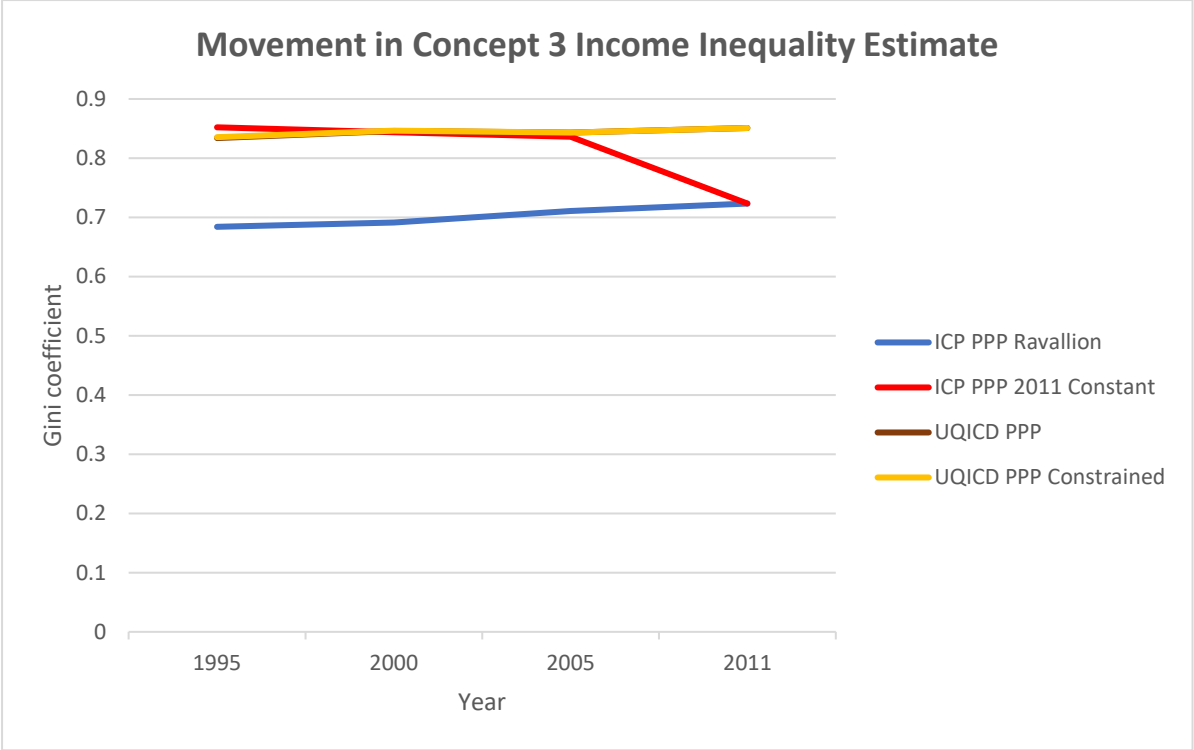
Concept	Unit of measure	Inequality measure	Year			
			1995	2000	2005	2011
1	Expenditure	Gini coefficient	0.360117	0.361677	0.362269	0.369979
		Standard error	1.626187	1.306848	1.162182	1.197106
		Theil index (GE(a), a = 1)	0.295326	0.299003	0.320434	0.369875
		Standard error	4.760879	5.117103	5.73266	6.410271
	Income	Gini coefficient	0.47658	0.4838	0.49181	0.49936
		Standard error	1.544878	1.278751	1.075599	1.171847
		Theil index (GE(a), a = 1)	0.38915	0.39931	0.42595	0.51289
		Standard error	5.503353	6.130783	4.848455	4.35392
2	Expenditure	Gini coefficient	0.48433	0.484785	0.491086	0.496625
		Standard error	1.603729	1.238495	1.152462	1.104801
		Theil index (GE(a), a = 1)	0.552608	0.580837	0.597083	0.602742
		Standard error	5.594598	6.215363	4.956488	4.703094
	Income	Gini coefficient	0.6388	0.65583	0.66016	0.6716
		Standard error	1.585606	1.224499	1.13944	1.092317
		Theil index (GE(a), a = 1)	0.72817	0.77569	0.80122	0.82795
		Standard error	5.531379	6.145129	4.90048	4.649949

[23] The robustness exercise of Concept 1 and 2 inequalities for the subset of 41 countries where the household survey data for these countries was in expenditure figures initially. The calculations were done for ICP PPPs only for the four years.

Appendix N: Graphs of Concept 1-3 Income Inequality Estimates under ICP PPP (constant) at 2011 prices, Ravallion and UQICD PPP




Movement in Concept 2 Income Inequality Estimate
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Gini coefficient
1995
2000
2005
2011
Year
ICP PPP Ravallion
ICP PPP 2011 Constant
UQICD PPP
UQICD PPP Constrained


Movement in Concept 3 Income Inequality Estimate
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Gini coefficient
1995
2000
2005
2011
Year
ICP PPP Ravallion
ICP PPP 2011 Constant
UQICD PPP
UQICD PPP Constrained