INTERNATIONAL POVERTY COMPARISONS ON UNIT RECORD DATA OF DEVELOPING AND DEVELOPED COUNTRIES*

by

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Abstract

Cross country poverty comparisons on unit records have, rarely, involved both developing and developed countries. The present study attempts to fill this gap by comparing poverty across fourteen nations with diverse economic and demographic characteristics and at vastly different stages of economic development. The study contains evidence on (a) cross country variation in the equivalence scales estimated in the presence of both household size economies and adult/child relativities, (b) impact of demographic adjustment of the poverty line, that incorporate household size and composition changes, on the poverty rates, and (c) sensitivity of the poverty estimates and their rankings to the 'relative' versus 'absolute' view of poverty. The study finds that country rankings based on per capita GNP bear very little resemblance with that based on the aggregate poverty rates. The latter hide substantial variation in the poverty estimates across different household types.

JEL Classifications:

C81, D63, I32, J18, O57

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Equivalence Scales, Absolute and Relative Poverty,
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1. INTRODUCTION

With the forthcoming World Development Report, 2000/2001, focussing on 'Poverty and Development', the subject is back on the main agenda of the World Bank and other multilateral agencies. The increasing availability, in recent years, of high quality micro expenditure data sets, in their original unit record form, has made possible meaningful cross country comparisons of poverty. Such comparisons are useful in keeping the poverty dimensions of a particular country in an international perspective. However, they also raise the issue of sensitivity of the poverty estimates and the poverty rankings to the poverty line used in making the comparisons. Broadly, two approaches have been used in the construction of poverty lines in cross national poverty comparisons. These are based on (a) the concept of "relative poverty" which sets the poverty line at a constant fraction of the median of the country sample, and (b) the concept of "absolute poverty" which sets country specific poverty lines based on the "subsistence expenditure" in the country concerned and denominated in that country's currency. If such information is not available for a particular country, the PPP based local currency equivalent of per capita US $1 a day has been used.

Not surprisingly, there exists a large literature on cross national poverty comparisons. Example include Buhmann, et al (1988), Ravallion, et al (1991), Hanratty and Blank (1990) and Blackburn (1998). Of these, while the study by Ravallion, et al (1991) deals only with developing countries, the others are restricted to developed countries. The present study extends these poverty comparisons to include simultaneously both developing and developed countries. The data sets involve countries spanning a wider range in the spectrum of economic development than considered in most previous studies. We build on our earlier study [Lancaster, et al (1999a)] and extend it in, principally, three respects. First, we augment the earlier data sets by including, in the poverty comparisons, three additional countries at opposite ends of the spectrum of economic development. Second, unlike before, we calculate

and report the poverty estimates under both the "relative" and the "absolute" view of poverty, and examine the sensitivity of the poverty rankings between them. In constructing poverty lines, based on the "absolute" view of subsistence expenditure, we depart from the conventional use of the US$1 (per capita) a day figure in case of several countries, and base the poverty calculations on the local currency denominated poverty lines. Third, instead of assuming identical equivalence scales across countries in adjusting for differences in family size and composition in the poverty calculations, we estimate equivalence scales separately for each of the fourteen countries considered in this study. In doing so, we depart from the framework of Lanjouw and Ravallion (1995), Dreze and Srinivasan (1997), Lancaster, et al (1999a, 1999b) in allowing for the simultaneous presence of adult/child relativities and economies of household size in the estimation of the equivalence scales. As we report later, the equivalence scales vary widely across countries, consistent with the evidence of Phipps and Garner (1994) and Lancaster, et al (1999b).

To focus our minds more concretely on the principal features of this study, let us list below the substantive questions that we seek to answer.

1) Is there much variation across countries in the estimated equivalence scales?
2) How do the poverty estimates and the poverty rankings of countries vary between the 'per capita' case which assigns identical weights to adults and children, and one where non identical needs between them are recognised via use of the estimated equivalence scales?
3) How do the poverty estimates and the poverty rankings of countries vary across household types that differ in their size and composition?
4) Are the cross national poverty comparisons sensitive to the 'relative' or 'absolute' view of poverty that one adopts in setting the poverty line?

The remainder of this paper is as follows. Section 2 describes the empirical methodology including the poverty line demographic adjustment needed to incorporate the economies of household size and adult/child relativities via the estimated equivalence scales. The data is described and its principal features are discussed in Section 3. Section 4 contains the results. We end on the concluding note of Section 5.

2. METHODOLOGY

Most of the poverty studies assume a common functional form for the equivalence scale, namely, N^{θ}, where N is household size, ie. the unweighted number of members in the household. The parameter θ is, therefore, relied upon to pick up not only the economies of household size but, also, changes in family composition between adults and children. The latter follows from the non identical consumption needs of adults and children, a fact that is central to the equivalence scale literature. The use of N^{θ} as the equivalence scale does not distinguish between the size and composition effects of the household in welfare comparisons. In developed countries, the two effects are likely to be related, since larger families will tend to be younger or, at least, will have more young children. The situation is quite different and more complex in the developing countries, especially in the Indian sub continent, due to prevalence of the joint family system, and with children staying on with their parents to a much later age than in the advanced countries. The present study explicitly introduces compositional variables in the equivalence scale specification by using N^{*} as the expenditure deflator, where $N^{*} = (n_a + \rho n_c)^{\theta}$. n_a, n_c denote the number of adults, children, respectively, in the household, and θ, ρ are the demographic parameters.

The estimates of θ and ρ were obtained by estimating the following rank three 'complete' demand system, expressed in budget share terms, w_i:

$$w_i = \alpha_i + \beta_i \left[\log\left(Y/N^{*}\right)\right] + \gamma_i \left[\log\left(Y/N^{*}\right)\right]^2 + u_i \qquad (1)$$

$$i = 1,\ldots,n$$

where Y is aggregate household expenditure, $\alpha_i, \beta_i, \gamma_i$ are the Engel curve parameters of item i, and u_i is the disturbance term. Note that when $\theta = \rho = 1$, N^{*} specialises to the conventional

treatment of household size as simply the number of members in the household. The equivalence scale parameters (θ,ρ) were estimated for each of the fourteen countries, considered here, on a five item disaggregation of consumer expenditure, namely, Food, Medical Items, Clothing, Fuel and Power, and Others. For reasons of space, we report later only the estimates of the overall equivalence scales for each country, not those of the scale parameters (θ,ρ). It is, however, worth reporting that, in nearly all the country cases, the estimates of θ and ρ were well determined, and that the restrictions $\theta = 1$, $\rho = 1$ were individually and jointly rejected almost everywhere.

Using the estimates of θ, ρ for each country, the demographically adjusted poverty lines were obtained by multiplying the per capita poverty line, PL, by N^*. In other words, a household with n_a adults and n_c children is considered 'poor' if its aggregate expenditure is less than $PL(n_a + \rho n_c)^{\theta}$.

3. DATA DESCRIPTION

Table 1 contains a list of the fourteen countries that provided the data base for this study. The data sets for Pakistan, Tanzania, South Africa, Jamaica, Russia, Bulgaria, Ghana and Peru came from the Living Standards Measurement Study (LSMS) of the World Bank.[1] The Indian data was taken from the fiftieth round (1993/94) of the National Sample Survey (NSS) for the whole country involving separate and comprehensive coverage of rural and urban areas. The Philippine data came from the Family Income and Expenditure Survey (FIES) conducted by the Philippines National Statistics Office from February 1988 to January 1989. The Thai data came from the 1988 Socio Economic Survey (SES) conducted by the National Statistics Office of Thailand from February, 1988 to January, 1989. The Australian data came from the 1993-94 Household Expenditure Survey (HES) published by the

[1] See Grosh and Glewwe (1995) for a general description of the LSMS data sets.

Australian Bureau of Statistics (ABS). The Italian data came from the 1993 annual survey of Italian households carried out by Instituto Centrale di Statistica (ISTAT). The Canadian data came from the 1992 survey of Family Expenditure (FAMEX) carried out by Statistics, Canada.

In a study of this nature, it is important to ensure, as far as possible, the comparability of the different national household surveys. This was a significant consideration in our choice of data sets. Eight out of the fourteen country surveys, used in this study, involve the LSMS that used a mutually consistent framework. Also, the remaining six data sets are not dissimilar in their scope, coverage and survey methodology. Three aspects of these surveys require special mention: (i) the treatment of food consumption out of own production, (ii) the time period of the survey used, and (iii) the proportion of households used out of the total sample size in the original survey.

With respect to (i), it is important to note that in eleven out of the fourteen countries considered here and certainly in all the LSMS data sets, the figures on food consumption in their surveys included consumption out of home production, the exceptions being Canada, Australia and Italy. Since food consumption out of home production is a significant feature only in developing countries, not in Canada, Australia and Italy, the latter are unlikely to pose a serious problem of non comparability in this regard. With respect to (ii), Table 1 shows that, though non identical, the time periods of the various surveys are quite similar, with Philippines and Thailand on the one hand, and Peru, South Africa, Jamaica and Canada, on the other, sharing identical time periods. With respect to (iii), Table 1 confirms that the figures on the proportion of total observations used in each survey are not too dissimilar. The only exception is Italy, where the expenditure information available to us was restricted to that of two adult households with varying numbers of children.

Table 2 contains the sample means of the key variables of interest for the fourteen countries. We arranged the countries in decreasing order of magnitude of their per capita GNP. The population and per capita GNP figures show that the chosen countries span a wide range in the spectrum of economic development. On per capita GNP, Canada is the richest country, Tanzania the poorest in our sample. In terms of population, Jamaica is the smallest country with only two million people, a population level that is less than 0.25% of India's population of 884 million people. In terms of geographical coverage, these fourteen countries span virtually every corner of the globe, from North America (Canada) and South America (Peru, Jamaica) through Europe (Italy, Bulgaria, Russia) and Africa (South Africa, Tanzania and Ghana), then South Asia (India, Pakistan) and South East Asia (Thailand and Philippines), and, finally, to Australia.

Table 2, also, contains information on the mean number of adults and children in the various country samples. Pakistan has the highest number of both adults and children per household, a feature that reflects both the prevalence of the joint family system in South Asia and religious/cultural practices that inhibit implementation of birth control. The affluent countries, especially Canada, register smaller sized households, in both the number of adults and children, than the poorer countries. It is interesting to note that the African countries, Tanzania and Ghana, have more children than adults in their "average household" in sharp contrast to that in the Asian countries. Tables 1, 2 confirm that the chosen countries span a wide range in terms of their geographical location, economic advancement and demographic characteristics.

While the "relative poverty" rates were based on use of half the sample median of the distribution of per adult equivalent expenditures as the poverty line[2], the "absolute poverty" rates required prior calculation of country specific poverty lines from available information on

[2] This practice is quite widespread in the poverty literature – see Buhmann, et al (1988), Coulter, et al (1992), and Blackburn (1998) for examples of studies which use half median as the poverty line.

subsistence expenditures. In case of the developed countries in our sample, namely, Canada and Italy, the poverty line was set at the per capita figure of $5479 (in 1985 US dollars) used in the Blackburn (1998) study. The Australian poverty line was set at the figure originally fixed by the Henderson poverty inquiry for the September quarter, 1973 and updated to the time period of the ABS Household Expenditure Survey by the Melbourne Institute of Applied Economic and Social Research. The South African poverty line was fixed at Rand 237.00 per month, a figure that has been used recently in Carter and May (1999). The Indian poverty line was obtained from State specific information on subsistence expenditures contained in Dubey and Gangopadhyay (1998). The Philippine poverty line was constructed from information on subsistence expenditure published by the National Statistics Office (NSO). The Jamaican poverty line was based on information contained in Ezemenari and Subbarao (1999, p.16). In the absence of exact or approximate information on subsistence expenditure in the other countries, the conventional figure of US$1 per capita per day, in 1985 international prices and converted into local currency using PPP rates, was used to set poverty lines in Ghana, Tanzania, Pakistan, Peru and Thailand.

4. RESULTS

Table 3 reports the estimated equivalence scales for the different household types in the various countries, obtained using full information maximum likelihood estimation of the complete demand system [equation (1)]. As we faced convergence problems in our demand estimation on the Bulgarian data, we used the Russian equivalence scales in the poverty calculations for Bulgaria. Table 3 shows wide variation in the estimated equivalence scales, thus, suggesting that child costs[3] do vary widely across countries, a fact that needs to be recognised in the poverty calculations. A child cost varies between the low of 20% of an adult

[3] See, however, Pollak and Wales (1979) for difficulties with this interpretation.

in Russia and the high of 78% in Peru. The affluent countries, especially Canada, have lower equivalence scales than the others, especially Peru and Philippines, which are at the other end of the development spectrum.

Table 4 presents the 'relative poverty' rates calculated, using the head count measure, under (a) per capita consumption, ie. assuming identical weights for the adult and the child $(\rho = \theta = 1)$, and (b) demographic adjustment for differences in household composition using the country specific equivalence scale estimates reported in Table 3. The figures in parenthesis indicate the poverty rankings of the countries in the alternative cases. Table 4, also, reports the household poverty rates for selected household types. Note, incidentally, that the countries in Table 4 have been arranged in decreasing order of their per capita GNP in 1992 $.

The following features are worth noting.

(i) The adjustments for household composition changes via use of the estimated equivalence scales, generally, leads to a decline in the household poverty rates, with the magnitude of revision varying between countries. The notable exceptions are Russia and Bulgaria which witness an increase in the poverty rates on the introduction of non identical weights between adults and children. However, the poverty rankings appear quite insensitive to the use of equivalence scales.

(ii) The aggregate poverty rates hide substantial variation in the poverty estimates and their rankings between different household types. The countries do not, however, reveal a consistent picture in regard to the nature of this variation. Single adult households, generally, display greater poverty than two adult households. The addition of children to two adult households leads to a sharp fall in the poverty rates in India, Bulgaria and Russia. Not all countries share this experience, however, with, for example, South Africa going in the opposite direction. Consequently, India, Bulgaria and Russia improve their poverty rankings on the addition of children to the household. In contrast, South Africa slips down the poverty ladder quite sharply as we move from single adult and childless couple households to those with two or more children. The South African experience seems quite unique in this regard. One possible explanation lies in the fact that the majority blacks, who are relatively deprived and have larger households[4], dominate the latter demographic categories, unlike the former. Consequently, increasing household size leads to a sharp increase in poverty in South Africa and a rapid deterioration in its poverty ranking. The high sensitivity of the poverty estimates and poverty rankings to household size and composition underlines the need for a disaggregated analysis, since the aggregate poverty rates may yield a misleading picture on poverty.

[4] See Ray (1999, Table 2) for more detailed evidence on the issue of household size and poverty in South Africa.

(iii) The picture on "relative poverty", depicted in Table 4, reflects the inequality in a given society. Consequently, India, Pakistan and Bulgaria register lower poverty than is implied by their per capita GNP. In contrast, South Africa, notwithstanding its affluence, registers one of the highest poverty rates – a consequence of it being one of the most unequal countries in the world [see World Development Report (1994)]. The same comment applies to another unequal but affluent country Australia, which registers much higher poverty rates than India and Pakistan.

Let us now turn to the absolute poverty rates presented in Table 5. This table also provides evidence on the variation of the absolute poverty rates with household composition. As we mentioned earlier, we did not calculate the absolute poverty rates for Bulgaria or Russia due to insufficient information for calculating local currency denominated subsistence expenditure in these countries. The following features of Table 5 are worth noting.

i) A comparison of the "per capita" and the "per adult equivalent" poverty rates shows that the demographic adjustments to the poverty line to incorporate household size and composition changes lead to a sharp reduction in the absolute poverty rates in all countries. It is interesting to note from a comparison of Tables 4 and 5 that the demographic adjustment leads to a much sharper reduction in the absolute poverty rates than in the relative poverty rates. For example, use of the estimated country specific equivalence scales has little impact on the relative poverty rates in the affluent countries, Canada, Italy and Australia (see Table 4), but leads to a sharp reduction in the absolute poverty rates in these countries (see Table 5). The magnitude of revision varies so widely in Table 5 that several countries witness a large change in their poverty rankings. For example, while Pakistan with its large household size (see Table 2) improves its poverty rankings, Italy worsens her poverty rankings on the use of the estimated equivalence scales to demographically adjust the poverty lines. In general, there is a tendency for the more affluent countries with smaller household sizes, to slip in the poverty rankings due to their inability to take advantage of economies of household size and/or lower consumption needs of children vis a vis adults.

ii) As in case of the relative poverty rates, the single adult households generally display higher absolute poverty rates than two adult households. Australia stands out in this respect since its single adult households register the highest poverty rate among the group of countries considered in this exercise. At the other end of the demographic spectrum, namely, for two adult households with two or more children, South Africa registers one of the highest absolute poverty rates, consistent with the evidence contained in Table 4, and the explanation provided earlier. In contrast, India and Pakistan do quite well in these larger household categories.

iii) There appears to be very little association between a country's overall affluence, as reflected in its per capita GNP, and its poverty estimates and rankings. For example, India and Pakistan do much better, Australia does much worse than is implied by their per capita GNP figures (see Table 2). The expenditure based poverty rates for Canada, Italy and Australia, reported in Table 5, are in line with the income based poverty rates for these countries presented in Blackburn (1998, Table 6). Further confidence in the expenditure data sets, used here, stems from the fact that the poverty rates for the

developing countries, reported in Table 5, compare favourably with those presented in the 1999 World Development Indicators (see Table 2.7), published by The World Bank. From a policy viewpoint, it is important to note from Table 5 the high level of "absolute" poverty that exists in the high income countries, Italy, Australia and South Africa. Canada, on one extreme, and Ghana on the other are the only countries whose poverty estimates and poverty rankings are consistent with their overall affluence and state of economic development.

Table 6 compares the relative and absolute poverty rates, under alternative values of α, the "poverty aversion" parameter in the poverty measure due to Foster, Greer and Thorbecke (1984). The absolute poverty rates generally exceed the relative poverty rates, the significant exceptions being Thailand and India. The estimates and country rankings are quite sensitive between the relative and absolute poverty rates. This is reflected in the estimated magnitudes of rank correlation, presented in Table 6, which are significantly different form unity at the one percent significance level.

Unlike the nutritionally determined poverty lines used for some developing countries in this study, namely, Jamaica, Philippines and India, there is an element of arbitrariness in the conventional figure of $1 a day that we have used for others. Table 7 provides evidence on the sensitivity of the poverty estimates to variation in the poverty line by presenting the corresponding poverty rates under $1.5, $2 (in 1985 international prices) a day. The rankings display only a limited amount of sensitivity to the poverty line. Thailand and Ghana are at the opposite extremes in the poverty rankings, regardless of the dollar figure used as the poverty line. Moreover, unlike in Table 4 or Table 5, which include a larger group of countries with a wider range of affluence, expenditure and demographic characteristics, Table 7 displays hardly any sensitivity in the poverty rankings between the "per capita" and the "per adult equivalent" expenditure based poverty estimates. In other words, notwithstanding the sharp fall in the poverty estimates due to incorporation of household size economies and adult/child relativities, the poverty rankings hardly change among this narrower and, demographically, more homogeneous group of developing countries. The Philippines estimates show that the

$1.5 a day poverty line yields poverty rates that are not far from comparable figures (see Table 5) obtained using the nutritionally determined poverty line based on minimum calorie needs as determined by the Philippines National Statistics Office.

5. CONCLUSION

With the increasing availability of high quality micro data sets across a range of developing and developed countries, the literature on cross country poverty comparisons has expanded quite rapidly in recent years. Most of these poverty comparisons have either focussed exclusively on developing countries [eg. Ravallion, et al (1991)] or on developed countries [eg. Blackburn (1998)]. There exists, however, only limited evidence on poverty comparisons involving both developing and developed countries, especially on unit record expenditure data sets. With uneven growth and development in the last couple of decades both within and between countries, and with some developing countries recording growth rates that are much higher than in the developed countries, the traditional distinction between "rich" and "poor" countries has now lost much of its earlier significance. While large sections of the population in the rich countries live in destitution and poverty, many in the less developed countries enjoy levels of affluence that are inconsistent with their residence in 'poor' countries.

This has prompted the need to expand the earlier cross country investigations of poverty to cover a wider range of countries in the spectrum of economic development and with vastly different demographic characteristics. That was one of the principal motivations of this study. An earlier attempt was made in Lancaster, Ray and Valenzuela (1999a). The present study extends the earlier exercise in, principally, three respects:

i) it uses an augmented collection of countries and their unit records covering a wider range of affluence and demographic characteristics;

ii) unlike before, it bases the poverty comparisons on a set of country specific equivalence scales that are estimated within a framework that simultaneously allows both household size economies and adult/child relativities in the estimation; and

iii) it investigates the sensitivity of the poverty estimates between the "relative" and "absolute" view of poverty.

Neither (ii) nor (iii) has been attempted before over such an economically and demographically diverse group of countries. With large number of households in the developed countries experiencing lower living standards than the affluent elite in the developing countries, the issue of 'relative' versus 'absolute' poverty has taken on a special policy significance in cross country poverty comparisons.

The principal results can be summarised as follows:

i) The equivalence scales vary widely, though not systematically, across countries. This reflects cross country differences in the adult/child relativities, and, also, large variation in the estimated economies of household size. The equivalence scale literature has, usually, not distinguished between the two. The present results point to the need to allow both in the estimation of the equivalence scales that are subsequently used in the poverty calculations.

ii) The incorporation of household composition changes in the poverty calculations, via use of the estimated equivalence scales, generally, leads to a decline in the household poverty rates from the "per capita" case which assumes identical weights for adults and children and absence of household size economies. The magnitude of the downward revision is much larger in case of the "absolute poverty" rates than for the "relative poverty" rates. There is a tendency for the more affluent countries with smaller sized households to slip in the absolute poverty rankings due to their inability to take advantage of household size economies and/or lower consumption needs of children vis a vis adults.

iii) There is not much association between the per capita GNP and poverty rankings of the various countries. For example, Australia and Italy have poverty rates which are inconsistent with their status as "rich" countries. In case of single adult households, Australia has the highest "absolute" poverty rate among the group of countries considered in this study. Note, incidentally, that the Australian poverty estimates are remarkably similar between the Henderson poverty line used here and those obtained by using the poverty line employed in case of the other developed countries (Canada, Italy). South Africa has one of the highest poverty rates, in both "absolute" and "relative" sense of poverty, in case of two adult households with two or more children. The aggregate poverty rates hide wide variation in the poverty estimates across different household types.

iv) The "absolute" poverty rates generally exceed the "relative poverty" rates in most countries. The magnitude of revision varies widely between the countries and, consequently, the rank correlation magnitudes establish sensitivity of the poverty rankings to the "relative" or "absolute" view one takes of poverty.

Cross country comparisons of poverty, especially of “absolute” poverty, suffer from the arbitrariness involved in setting poverty lines. The present study is no exception, our task not made any easier by the complete lack of any information on poverty lines in many developing countries. We have attempted to improve over earlier attempts by using local currency denominated poverty lines for countries where such information is available, as in the case of India, Jamaica, South Africa, Australia and Philippines. In case of other developing countries, where no such information was available, we investigated the robustness of our findings by experimenting with alternative poverty lines. What our experience does underline, however, is the need to embark on an international project aimed at providing local currency denominated poverty lines based on a common definition of “subsistence” expenditure. Such information will provide a valuable basis for extending the present study to involve a still wider group of developing and developed countries.

Table 1: Relevant Details of Unit Records Used

Country	Title/Source of Unit Record	Year of Survey	Total Sample Size (no. of H'holds)	Total Estimating Sample of Households	
				No.	%
India	National Sample Survey of Rural India (NSSO)	1993/1994	68,102	61,835	91%
Philippines	Family Income and Expenditure Survey, NSO (Phil)	1988/1989	18,500	14,006	76%
Thailand	Socio Economic Survey, NSO (Thld)	1988/1989	11,500	10,940	95%
Pakistan	Living Standards Measurement Study, WB	1991	4,793	4,793	100%
Italy	Annual Expenditure Survey, ISTAT	1993	35,000	16,383	47%
Australia	Household Expenditure Survey, ABS	1993/1994	7,225	7,218	99%
Canada	Family Expenditure Survey, Statistics Canada	1992	9,492	9,488	99%
Tanzania	Living Standards Measurement Study, WB	1993/1994	5,184	4,940	95%
Peru	Living Standards Measurement Study, WB	1994	3,624	3,621	99%
South Africa	Living Standards Measurement Study, WB	1994	8.848	8,777	99%
Jamaica	Living Standards Measurement Study, WB	1994	1,943	1,940	99%
Russia	Living Standards Measurement Study, WB	1996	3,555	3,555	100%
Ghana	Living Standards Measurement Study, WB	1989	3,157	3,155	99%
Bulgaria	Living Standards Measurement Study, WB	1995	2,468	2,468	100%

Note: NSO – National Statistics Office
ISTAT – Instituto Centrale di Statistica
NSSO – National Sample Survey Organisation
ABS – Australia Bureau of Statistics
WB – World Bank

Table 2: Sample Means of Key Variables

Country	Total Population (1000s)	Per Capita GNP (1992$)	Number of Adults	Number of Children
Canada	27400	20710	2.04	0.62
Italy	57809	20460	2.00	0.88
Australia	17483	17260	1.94	0.74
South Africa	39766	2670	2.80	2.13
Russia	148000	2510	2.10	0.72
Thailand	57992	1840	2.47	1.42
Jamaica	2376	1340	2.25	1.54
Bulgaria	8500	1330	2.37	0.47
Peru	22370	950	3.00	2.33
Philippines	64259	770	3.21	2.09
Ghana	15800	450	2.15	2.52
Pakistan	119000	420	3.69	3.83
India	884000	310	3.29	1.89
Tanzania	25000	110	2.69	3.02

Note: The figures for total population and per capita GNP are taken from the 1994 World Development Report.

Table 3: Equivalence Scales

Country	Household Composition (n_a, n_c)[1]								
	(1,0)	(1,1)	(1,2)	(1,3)	(1,4)	(2,1)	(2,2)	(2,3)	(2,4)
Canada	1.0	1.23	1.44	1.64	1.83	1.83	2.02	2.19	2.37
Italy	1.0	1.26	1.53	1.79	2.06	2.26	2.53	2.79	3.06
Australia	1.0	1.35	1.66	1.95	2.22	1.93	2.20	2.46	2.71
South Africa	1.0	1.77	2.39	2.93	3.42	2.22	2.78	3.29	3.76
Russia	1.0	1.20	1.44	1.72	2.06	1.36	1.63	1.96	2.34
Thailand	1.0	1.41	1.75	2.05	2.33	1.84	2.13	2.40	2.65
Jamaica	1.0	1.55	1.87	2.11	2.31	1.69	1.97	2.19	2.38
Bulgaria	1.0	1.20	1.44	1.72	2.06	1.36	1.63	1.96	2.34
Peru	1.0	1.78	2.24	2.59	2.89	1.95	2.36	2.69	2.98
Philippines	1.0	1.70	2.26	2.75	3.18	2.13	2.63	3.08	3.49
Ghana	1.0	1.55	1.86	2.10	2.29	1.68	1.96	2.17	2.35
Pakistan	1.0	1.42	1.73	1.99	2.22	1.71	1.97	2.20	2.41
India	1.0	1.33	1.62	1.89	2.13	1.82	2.06	2.30	2.51
Tanzania	1.0	1.51	1.82	2.05	2.24	1.66	1.93	2.14	2.32

[1]: n_a denotes the number of adults, n_c denotes the number of children in the household.

Table 4: Relative Poverty Rates

Country	Head Count Poverty Rate[1]					
	Per Capita	Per Adult Equivalent	Alternative Household Types (n_a, n_c)[2]			
			(1,0)	(2,0)	(2,1)	(2,≥ 2)
Canada	0.071 (13)	0.072 (13)	0.107 (10)	0.088 (11)	0.049 (12)	0.029 (13)
Italy	0.077 (11)	0.075 (12)	N.A.	0.113 (5)	0.032 (13)	0.045 (12)
Australia	0.106 (9)	0.104 (10)	0.209 (6)	0.099 (8)	0.051 (11)	0.056 (10)
South Africa	0.264 (1)	0.235 (1)	0.040 (12)	0.065 (13)	0.144 (3)	0.303 (2)
Russia	0.197 (3)	0.224 (2)	0.501 (1)	0.281 (1)	0.100 (6)	0.072 (9)
Thailand	0.184 (4)	0.154 (4)	0.083 (11)	0.095 (10)	0.161 (1)	0.198 (4)
Jamaica	0.166 (5)	0.148 (5)	0.255 (5)	0.147 (3)	0.113 (5)	0.169 (6)
Bulgaria	0.074 (12)	0.122 (8)	0.366 (2)	0.111 (6)	0.007 (14)	0.005 (14)
Peru	0.201 (2)	0.201 (3)	0.182 (7)	0.149 (2)	0.160 (2)	0.336 (1)
Philippines	0.141 (8)	0.129 (7)	0.160 (8)	0.098 (9)	0.097 (7)	0.209 (3)
Ghana	0.148 (7)	0.121 (9)	0.133 (9)	0.068 (12)	0.095 (9)	0.103 (8)
Pakistan	0.105 (10)	0.095 (11)	0.276 (3)	0.102 (7)	0.129 (4)	0.120 (7)
India	0.056 (14)	0.062 (14)	0.271 (4)	0.141 (4)	0.089 (10)	0.055 (11)
Tanzania	0.158 (6)	0.134 (6)	0.000 (13)	0.047 (14)	0.095 (8)	0.175 (5)

[1]: The figures, in parentheses, appearing below the poverty rates denote the country's poverty rankings.
[2]: n_a denotes the number of adults, n_c denotes the number of children in the household.

Table 5: Absolute Poverty Rates

Country	Head Count Poverty Rate[1]					
	Per Capita	Per Adult Equivalent	Alternative Household Types (n_a, n_c)[2]			
			(1,0)	(2,0)	(2,1)	(2,≥ 2)
Canada[3]	.204 (11)	.080 (10)	.131 (7)	.088 (8)	.056 (9)	.031 (10)
Italy[3]	.517 (6)	.342 (2)	N.A.	.408 (1)	.249 (2)	.307 (4)
Australia[3]	.534 (4)	.290 (4)	.521 (1)	.274 (2)	.190 (4)	.271 (6)
South Africa[3]	.475 (8)	.318 (3)	.070 (8)	.111 (7)	.225 (3)	.385 (2)
Thailand[4]	.060 (12)	.002 (12)	.005 (11)	.002 (12)	.004 (12)	.004 (12)
Jamaica[3]	.501 (7)	.171 (7)	.285 (3)	.172 (4)	.121 (8)	.193 (8)
Peru[4]	.526 (5)	.215 (5)	.182 (5)	.149 (5)	.175 (5)	.359 (3)
Philippines[3]	.469 (9)	.189 (6)	.207 (4)	.144 (6)	.156 (6)	.301 (5)
Ghana[4]	.792 (1)	.394 (1)	.336 (2)	.245 (3)	.410 (1)	.401 (1)
Pakistan[4]	.639 (3)	.098 (9)	.052 (9)	.006 (11)	.032 (11)	.104 (9)
India[3]	.331 (10)	.028 (11)	.168 (6)	.068 (9)	.036 (10)	.021 (11)
Tanzania[4]	.647 (2)	.171 (7)	.014 (10)	.062 (10)	.138 (7)	.220 (7)

[1]: The figures, in parentheses, appearing below the poverty rates denote the country's poverty rankings.
[2]: n_a denotes the number of adults, n_c denotes the number of children in the household.
[3]: The poverty rates are based on national poverty lines as explained in the text.
[4]: The poverty rates are based on $1 a day measured in 1985 international prices and converted to local currency using PPP rates.

Table 6: Comparison of Relative and Absolute Poverty Rates[1]
(Per Adult Equivalent)

Country	$\alpha = 0$[2]		$\alpha = 1$		$\alpha = 2$	
	Relative[3]	**Absolute**[3]	**Relative**[3]	**Absolute**[3]	**Relative**[3]	**Absolute**[3]
Canada	0.072 (11)	.080 (10)	.011 (11)	.014 (10)	.003 (12)	.004 (10)
Italy	0.075 (10)	.342 (2)	.014 (10)	.087 (3)	.004 (10)	.032 (4)
Australia	0.104 (8)	.290 (4)	.024 (8)	.080 (4)	.008 (8)	.032 (3)
South Africa	0.235 (1)	.318 (3)	.079 (1)	.118 (2)	.037 (1)	.059 (1)
Thailand	0.154 (3)	.002 (12)	.035 (4)	.000 (12)	.012 (4)	.000 (12)
Jamaica	0.148 (4)	.171 (8)	.047 (3)	.053 (6)	.021 (3)	.024 (6)
Peru	0.201 (2)	.215 (5)	.062 (2)	.067 (5)	.027 (2)	.030 (5)
Philippines	0.129 (6)	.189 (6)	.028 (7)	.044 (7)	.009 (6)	.016 (7)
Ghana	0.121 (7)	.394 (1)	.030 (5)	.123 (1)	.012 (4)	.054 (2)
Pakistan	0.095 (9)	.098 (9)	.022 (9)	.023 (9)	.008 (8)	.009 (9)
India	0.062 (12)	.028 (11)	.011 (11)	.005 (11)	.004 (10)	.002 (11)
Tanzania	0.134 (5)	.171 (7)	.030 (5)	.040 (8)	.009 (6)	.014 (8)
Rank Correlation (Standard Error)	-.080 (.300)		-.15 (.300)		-.14 (.300)	

[1]: The poverty rates are calculated using the poverty measure due to Foster, Greer and Thorbecke (1984) with α denoting "poverty aversion".
[2]: These ($\alpha = 0$) coincide with the head count poverty rates.
[3]: The figures in brackets, appearing below the poverty rates, denote the poverty rankings.

Table 7: Absolute Poverty Rates (Head Count) of Selected Countries[1] Under Alternative International Poverty Lines

Country	$1 a day		$1.5 a day		$2 a day	
	Per Capita	Per Adult Equivalent	Per Capita	Per Adult Equivalent	Per Capita	Per Adult Equivalent
Thailand	.060 (6)	.002 (6)	.187 (6)	.021 (6)	.314 (6)	.068 (6)
Peru	.526 (4)	.215 (2)	.711 (4)	.384 (2)	.824 (4)	.517 (3)
Philippines	.257 (5)	.053 (5)	.480 (5)	.196 (5)	.627 (5)	.354 (5)
Ghana	.792 (1)	.394 (1)	.901 (1)	.681 (1)	.951 (1)	.841 (1)
Pakistan	.639 (3)	.098 (4)	.794 (3)	.300 (4)	.864 (3)	.486 (4)
Tanzania	.647 (2)	.171 (3)	.814 (2)	.376 (3)	.892 (2)	.543 (2)

[1]: The figures, in parentheses, appearing below the poverty rates denote the country's poverty rankings.

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