Measuring Poverty

1. Background

The analysis of poverty, as Sen (1976) observed, involves two steps: the ***identification*** of the poor; and the ***aggregation*** of their individual poverty levels into a composite poverty measure. Identification involves the following issues:

1. **Choice of income unit**. This could be the *household* or the *family*. Once the income unit is chosen, an important assumption which is made is that resources are shared equally within the unit. This assumption is questionable and intra-household sharing of resources is an important area of research with important implications for female poverty and child poverty.
2. **Choice of resources**. This is usually taken to be income but there are strong arguments for using consumption.
3. **Adjustment of resources** for family size and composition. There are two points here. First, there are economies of scale - particularly with respect to housing and food - from living together rather than living separately. So, the resources required to maintain a given standard for two adults living together are less than that required to maintain them at that standard if they were living separately. Second, children do not require the same resources as adults. To reflect these two points, *equivalence scales* are used to establish the number of *adult equivalents* in a household of given size and composition.
4. **Choice of Poverty Line**. The poverty line establishes a cut-off point such that households at, or below, the line are regarded as "poor". There are three main types of poverty line:

(i) *Absolute poverty line*. This establishes the cost of buying a "minimal" basket of goods. All those with resources less than this are poor.

(ii) *Relative poverty line*. This establishes the poverty line as a percentage of mean (or median) income.

(iii) *Social Security poverty line*. This establishes the poverty line in terms of the income threshold for income support.

2. The Axiomatic Approach to Poverty Measurement

With these prefatory comments on the identification of the poor, the remainder of this paper addresses the question of the measurement of poverty. If $\mathbf{y} = (y_1, y_2, ..., y_N)$ is a vector whose components are the incomes of N households,

arranged in ascending order, and if z is the poverty line, then a household is "poor" if $y_i \leq z$. Suppose that M households (i=1…M) are poor. Then a poverty measure/index, denoted $P(\mathbf{y};z)$, is a *real valued* function which associates a "level of poverty" with **y** and z.

Sen (1976) pioneered the *axiomatic* approach to the measurement of poverty by explicitly setting out the axioms against which a poverty measure should be judged. These were:

1. ***Focus Axiom***. The poverty measure should focus entirely on the incomes of the poor.
2. ***Monotonicity Axiom***. A reduction in the income of a poor household should cause the value of the poverty index to rise.
3. ***Weak Transfer Axiom***. Poverty should rise with a regressive transfer of income - and fall with a progressive transfer - between two poor households, *provided both continued to be poor after the transfer*. With this axiom, Sen (1976) proposed that the poverty measure should be sensitive to the degree of inequality between the incomes of the poor. It should rise when inequality among the poor increased (through a regressive transfer) and it should fall when inequality among the poor decreased (through a progressive transfer). Sen (1976) justified this axiom on the grounds of relative deprivation: relative deprivation would increase when inequality among the poor rose and decrease when it fell.[1]

3. Three Conventional Measures of Poverty

Three commonly used poverty measures can be evaluated against these axioms. The *Headcount Ratio* (H), which is the proportion of households who are poor violates the monotonicity and the weak transfer axiom. Since

$$H = M / N \tag{1}$$

it is invariant with respect to changes in the incomes of the poor.

The *Income Gap Ratio* (I) is the mean distance of the incomes *of the poor* from the poverty line, expressed as a proportion of the poverty line:

$$I = \frac{\sum_{i=1}^{M}(z_i - y_i)}{Mz} = 1 - \frac{\mu^P}{z} \tag{2}$$

[1] For a detailed discussion of the axioms underlying the measurement poverty see Foster (1984) and Zheng (1997).

where: μ^P is the mean income of the poor.

The *Poverty Gap Ratio* (R) is the mean distance of the incomes *of the entire population* - the non-poor being assigned a distance of zero - from the poverty line, expressed as a proportion of the poverty line:

$$R = \frac{\sum_{i=1}^{M}(z_i - y_i)}{Nz} = \frac{\sum_{i=1}^{M}(z - y_i)}{Mz}\frac{M}{N} = I \times H \tag{3}$$

The Income Gap Ratio and the Poverty Gap Ratio fail the weak transfer axiom since any mean preserving redistribution of income among the poor would leave *R* unchanged. Thus both Ratios are insensitive to the distribution of income among the poor.

4. "Sen-type" Poverty Measures

It was the failure of conventional measures of poverty to satisfy all the axioms for poverty measurement that led Sen (1976) to propose his measure and others to refine it. The generic form of a "Sen-type" measure is to argue that a poverty measure should be a weighted sum of the individual poverty gaps:

$$P(\mathbf{y};z) = \sum_{i=1}^{M}(z - y_i) \times w_i = A\sum_{i=1}^{M}(z - y_i)(M + 1 - i) \tag{4}$$

where Sen (1976) took the weights w_i in equation (4) as given by the *rank* of a person in the hierarchy of poor persons: the poorest person receives the highest weight ($w_1 = M$); the next poorest person receives the second highest weight ($w_2 = M - 1$) and so on with the least poor person getting the lowest weight ($w_M = 1$). Such a "rank weighting" scheme was originally devised by the French mathematician Jean-Charles de Borda (1733-1799) as the basis for the voting method known as the *Borda count* and Sen (1976) justified his use of such a scheme, for the analysis of poverty, by reference to Borda's work. The term A, in equation (4), is a normalisation factor

From equation (4), Sen (1976) derived his poverty measure as:

$$S(\mathbf{y};z) = H \times \left[I + (1 - I) \times G^P \right] \tag{5}$$

where: G^P is the Gini coefficient computed over the incomes of the poor[2].

It is important to emphasise three aspects of Sen's measure:

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[2] Strictly speaking, the Sen index is the asymptotic value of $S(\mathbf{y};z) = HI + H \times \frac{M}{M+1}(1 - I) \times G^P$

1. It takes account of the *number* of poor persons, relative to the population, through *H*, the headcount ratio.
2. It takes account of the *depth* of their poverty through *I*, the income gap ratio
3. It takes account of *relative deprivation* through *G*, the Gini coefficient calculated on poor incomes.

As a consequence, it satisfies the three poverty axioms: focus; monotonicity; and weak transfer.

Generalising the Sen Measure

Following Atkinson (1970), we can think of the "equally distributed equivalent income" of the poor, denoted y^P, as the level of income which, *if equally distributed among the poor*, would yield the same level of welfare as the existing mean (μ^P) and distribution ($y_1,..,y_M$) of poor incomes. That is,

$$y^P = U^{-1}\left(\frac{1}{M}\sum_{i=1}^{M} U(y_i)\right) \tag{6}$$

and the *general form* of an inequality measure (computed over the incomes of the poor) can be defined as:

$$I^P = 1 - \frac{y^P}{\mu^p} \tag{7}$$

which yields:

$$y^P = \mu^P(1 - I^P) \tag{8}$$

If the inequality index is specified as the Gini coefficent, (so that the equally-distributed equivalent income is: then the Sen (1976) measure can be written as:

$$S = H(1 - \frac{y_G^P}{\mu}) \tag{9}$$

However, the evaluation of inequality among poor incomes can be done using *any* inequality measure, I^P, and the Sen (1976) index can be generalised to (Anand, 1977; Blackorby and Donaldson, 1980):

$$Q = H\left[I + (1 - I) \times I^P\right] \text{ or, equivalently, } Q = H \times \left(1 - \frac{y^P}{\mu^P}\right) \tag{10}$$

The important point here is that an inequality measure with unattractive properties (for example, violation of the Pigou-Dalton condition) carries its problems over to poverty measurement. However, even perfectly reasonable inequality measures may

lead to poverty measures which violate the monotonicity or the weak transfer axioms (Foster, 1984 and Sen (1998, Annex A.6).

Modifying the Sen Measure

A stronger version of the Weak Transfer Axiom (known as the ***Strong Transfer Axiom***) says that a regressive transfer from a poor person to a rich person must always cause the value of the poverty index to fall *even if, in the process, the beneficiary crosses the poverty line*. While the Sen measure (and the generalisation of the Sen measure in equation (10)) satisfies the Weak Transfer Axiom, it does not necessarily satisfy the Strong Transfer Axiom. Had the poverty measure been an inequality index, this would have violated the Pigou-Dalton condition. The Sen measure (and its generalisation) gives too much importance to the poverty line and in the presence of measurement errors in income this importance may be largely spurious (Shorrocks, 1995).

The fact that the Sen index violates the Strong Transfer Axiom means that it is not continuous at the poverty line. To overcome this problem, define the *censored* income distribution $\mathbf{y}^* = (y_1,..,y_M,z,..,z)$ obtained from $\mathbf{y}$ by replacing *all non-poor incomes* with the poverty line income, z (Takayama, 1979). The *continuous* version $P^*(\mathbf{y};z)$ of a (non-continuous) poverty measure $P(\mathbf{y};z)$, is given by: $P^*(\mathbf{y};z) = P(\mathbf{y}^*;z)$. Consequently, the *continuous* version of the Sen (1976) index is given by:

$$S^* = H \times I + (1 - H \times I)G^* \tag{11}$$

where: G^* is the Gini index computed over the censored distribution, $\mathbf{y}^*$. Such a version also satisfies the *Strong Transfer Axiom*.

5. The Decomposition of Poverty

An important aspect of poverty analysis is to identify groups which make a particularly large contribution to poverty and whose members are especially at risk of being poor. In order to do this, we need a poverty index which *decomposes* aggregate poverty as the sum of subgroup poverty. The decomposition of poverty introduces a fourth axiom into poverty analysis:

4. ***Subgroup consistency axiom*:** A poverty measure is subgroup consistent if the value of the index, computed over the entire population, rises/falls whenever *ceteris paribus* its value, computed over a subgroup of the population, rises/falls.

Subgroup consistency may thus be viewed as the extension of monotonicity to groups: monotonoicity requires that aggregate poverty rise when a poor person's poverty level is increased; subgroup consistency requires that aggregate poverty rise when a subgroup's poverty level is increased.

The Sen (1976) measure (equation (5)) is not *subgroup* consistent. Foster, Greer and Thorbecke (1984) proposed a measure (*FGT(**y**;z)*) which, like Sen's, was a weighted sum of the individual poverty gaps:

$$FGT(\mathbf{y};z) = \frac{1}{N}\sum_{i=1}^{M}\frac{z-y_i}{z}w_i = \frac{1}{N}\sum_{i=1}^{M}\left(\frac{z-y_i}{z}\right)^{\alpha} \qquad (12)$$

for weights:

$$w_i = \left(\frac{z-y_i}{z}\right)^{\alpha-1}$$

where: $\alpha \geq 0$ is a parameter.

The difference between the Sen and the FGT measure is that Sen (1976) used "rank weights" which were determined by the number of households between a given poor household and the poverty line. The FGT index, on the other hand, used the actual proportionate income shortfall of a poor household, raised to the power of α-

Interpretation of α

(i) When α=0, $FGT(\mathbf{y};z) = H$

(ii) When α=1, $FGT(\mathbf{y};z) = R = H \times I$

(iii) When α=2, $FGT(\mathbf{y};z) = H\left[I^2 - (1-I)^2\rho^2\right]$ where ρ is the *coefficient of variation* computed over the incomes of poor persons.

So, when *α=2*, the FGT index takes account of all three aspects of poverty: the number of poor in the population, the depth of their poverty, and their relative deprivation.

In order to analyse the decomposition of poverty, suppose that, given a poverty line *z,* there are *M* poor households in the total of *N* households and that, in group *k*, M_k , of the N_k , households in the group, are poor (*k=1...K*). Let $\mathbf{y} = \{y_i\}$ and $\mathbf{y_k} = \{y_i\}$ now represent the vector of incomes of, respectively, all the *poor* households in the population *(i=1...M)* and the *poor* households in group *k (k=1...M_k)*.

An attractive feature of the *FGT* poverty index is that it is decomposable in the sense that the value of the overall index can be expressed as the weighted average of the subgroup values:

$$FGT(\mathbf{y};\alpha) = \sum_{k=1}^{K} v_k \times FGT(\mathbf{y_k};\alpha) \tag{13}$$

where: $v_k = N_k / N$ is the population share of group *k*.

The proportionate contribution made by group *k* to overall poverty is then:

$$C_k = \frac{v_k \times FGT(\mathbf{y_k};\alpha)}{FGT(\mathbf{y};\alpha)} \tag{14}$$

and the *poverty risk* of a group is:

$$\rho_k = \frac{FGT(\mathbf{y_k};\alpha)}{FGT(\mathbf{y};\alpha)} = \frac{FGT(\mathbf{y_k};\alpha)C_k}{v_k FGT(\mathbf{y_k};\alpha)} = \frac{C_k}{v_k} \tag{15}$$

The poverty risk is the ratio of a group's contribution to poverty to its contribution to the population: $\rho_k > 1$ ($\rho_k < 1$) means that it contributes more (less) to poverty than its population share warrants. If the norm for poverty risk is taken to be unity, then, say, $\rho_k = 1.3$ means that the poverty risk for members of group *k* is 30% above the norm; similarly, $\rho_k = 0.82$ means that the poverty risk for members of group *k* is 18% below the norm.

In the analysis of inequality, only a single class of inequality measures - the family of *Generalised Entropy measures* - are decomposable. However, in the analysis of poverty, several different classes of poverty measures are decomposable[3]. The problem with decomposability, and *a fortiori* subgroup consistency, is that the poverty of each person depends only upon his/her income, y_i, relative to some externally given poverty line, *z*, without any explicit interdependence. However, while the Sen (1976) measure may not be subgroup consistent, it does take into account interdependence through its use of the Gini coefficient: this measure of inequality compares pair-wise differences in poor incomes, not just - as with other inequality measures - differences of poor incomes from mean poor income.

6. An Application: Poverty in India and China

Borooah, Gustaffson and Shi (1994) compared poverty in rural India and rural China using decomposition analysis based on the FGT index. Table 1 shows levels of mean household per-capita income (in PPP dollars) for (rural) India and (rural) China

[3] For example, the family of measures explored by Clark, Hemming and Ulph (1981).

and for their respective regions. It is clear from the tables that mean household per-capita income in China, at $904, was nearly one third higher than the corresponding Indian level of $680. The prosperous Eastern region of China, with 36% of the households in the sample, received 53% of total income and enjoyed a mean household per-capita income that was 47% above the Chinese average; conversely, the poor Western region of China, with 26% of the households in the sample, received 17% of total income and enjoyed a mean household per-capita income that was only 64% of the Chinese average. By contrast, the prosperous Western, Northern and Southern regions in India, with 45% of the households in the sample, received 62% of total income and enjoyed a mean household per-capita income that was 16% above the Indian average.

Comparing the richest regions of India and of China, mean household per-capita income in the Eastern region of China, at $1352, was 60% higher than the $850 in Western India; however, comparing the poorest regions of India and of China, mean household per-capita income in the Western region of China, at $555, was almost identical to the $536 in Eastern India. In this sense the western region of China is more similar to India than to the prosperous eastern part of China.

Overall income inequality in China (Gini coefficient=0.42) was slightly lower than in India (Gini coefficient=0.45) and inequality in the most prosperous regions of China (the Eastern region) and in India (the Western region) - with Gini coefficients of, respectively, 0.44 and 0.49 - was higher than in the other regions of the respective countries.

<Table 1>

Table 2 shows that on *all* measures of poverty, and for *every* poverty line, the incidence of poverty was greater in rural India than in rural China: with a poverty line of $1 per day, one fourth of Chinese households compared to over one-third of Indian households were poor; the mean income shortfall of poor households, on the $1 per day poverty line, was 7.6% in China and 13.1% in India; when relative deprivation was taken into account, using the Sen index or the FGT (2) index, China continued to show a lower level of poverty than India.

These conclusions were not altered when the focus was on selected subgroups of the population in, respectively, India and China. On a $1 per day poverty line, over half of all landless households in India were poor as were: 40% of all households in

the Central region and 46% of households in the Eastern region; 41% of all minority households; and 43% of all households in which the head was illiterate. By contrast, in China, just over a third of minority households were poor and, in the poorest Western region, just over one third of households were poor.

<Table 2>

The poverty decompositions for India and China are shown in Tables 3 and 4, respectively. The subgroups for which the decompositions were done are: region; majority/minority groups; land owners/landless; and educational level of head. For India, using a $1 per day poverty, with the Head Count Ratio as the poverty measure, the "poverty risk", as defined by equation (6), was highest in the Central and the Eastern region: their respective poverty risks were 8% and 26% above the norm; by contrast, the poverty risk, at 24% below the norm, was lowest in the North. In China, as Table 7 shows, the poverty risk, calculated using the Head Count Measure, in the poorest (Western) region was 75%.

Households from the minority group and landless households made, relative to their share in the sample, a disproportionate contribution to poverty in India: on a $1 per day poverty line, using the Head Count Ratio, the respective poverty risks of minority group households and of households with illiterate heads were both 20% above the norm and the poverty risk of landless households was 40% above the norm. In China, the poverty risk of minority households was 73% above the norm and that of households with an illiterate head was 13% above the norm.

<Tables 3 and 4>

7. Globalisation and Poverty

A major issue of contemporary economic debate is the effects of globalisation on inequality and poverty in the world[4]. Critics of globalisation argue that the dismantling of economic barriers between nations has exacerbated inequality, both between and within countries, and that economic liberalisation has not done anything to alleviate poverty in developing countries. The evidence shows that, over the post-globalisation period 1980-2000, poorer countries grew more slowly than richer countries so that the income gap between poor and rich countries has widened. In addition, inequality has increased within countries partly because - in response to globalisation's imperative to governments to reduce their deficits - traditional

publicly-funded safety nets have been dismantled; and partly because it has been the more privileged groups in counties that have been able to benefit from globalisation.

Defenders of globalisation, on the other hand, point out that it has created the conditions for countries, like China and India, to grow at much faster rates after globalisation than they managed before it and, indeed, over 1980-2000, to grow considerably more rapidly than the industrialised countries of the world. Because India and China account for a large proportion of the world's poor population, adjusting growth rates by population size would show that the gap between the poor and rich *populations* of the world has, post-globalisation, narrowed.

However, when it comes to the effects of globalisation, the results are much more contentious. Bhalla (2002), Bourguignon and Morrison (2002), and Sala-i-Martin (2002), *using national accounts data* for countries, show an unprecedented fall in poverty over 1980-2000: on a $1 per day poverty line, the proportion of poor persons fell from 17% in 1970 to 7% in 1998, a fall of 200 million persons, and, on a $2 per day poverty line, the corresponding fall was from 41% to 19%, a fall of 350 million persons (Sala-i-Martin, 2002).

However, the analysis of poverty based on Household Survey data tell a very different story. This shows, on the basis of a $1 poverty line, a fall in the Head Count ratio from 28% in 1987 to 24% - compared to Sala-i-Martin' estimate of 7% - in 1998 (Chen and Ravallion, 2001). The important question of why two different data sources - National Accounts and Household Surveys - for the same countries should yield such differing results is analysed by Deaton (2004).

Deaton (2004) found that for most countries consumption estimated by surveys was less (about 86%) than consumption as reported in the National Accounts. One reason for this is that the National Accounts include items not included in surveys (for example, imputed rent) and also include expenditure on items that do not enter the budgets of the poor. A major cause of difference between poverty estimates based on the two different sets of data - National accounts and Surveys - is that poverty estimates based on National Accounts data use GDP per head as the assessment variable. GDP, as is well known, includes many items other than personal consumption - *inter alia* private investment and government consumption. So a poverty line of $1 per head, which is relevant for private consumption may be too low

[4] For a review of the issues involved, see "Global Economic Inequality The Economist, 11 March 2004,

when poverty is being assessed by per-capita GDP

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Table 1
Per-Capita Household Income in China and in India, by Region

	Central	*South*	*West*	*East*	*North*	*National*
India:						
Mean Income (PPP $)	606	769	850	536	774	680
Population Share	40	20	13	14	12	100
Income Share	36	23	16	11	13	100
Relative Mean	0.89	1.13	1.25	0.79	1.14	1.0
GE(0)	0.31	0.40	0.41	0.29	0.30	0.35
GE(1)	0.33	0.46	0.47	0.28	0.30	0.39
Gini	0.42	0.48	0.49	0.41	0.41	0.45
China:						
Mean Income (PPP $)	706		555	1352		904
Population Share	38		26	36		100
Income Share	30		17	53		100
Relative Mean	0.79		0.64	1.47		1.0
GE(0)	0.20		0.23	0.34		0.32
GE(1)	0.21		0.30	0.37		0.37
Gini	0.33		0.37	0.44		0.42

1US$=6.64 rupees on PPP basis for India and 1US$=2.56 yuan for China

Table 2
Poverty in rural India and rural China

	Poverty Line is ½ Median Income in Country		*Poverty Line is 2/3 Median Income in Country*		*Poverty Line is $1 per day at PPP*	
	India	China	India	China	India	China
Head Count Ratio	17.2	14.3	29.4	27.1	36.7	25.5
Poverty Gap Ratio	5.5	4.5	9.9	8.5	13.1	8.0
Income Gap Ratio	31.6	31.5	33.8	31.4	35.7	31.3
Sen Index	7.6	6.6	13.7	12.1	17.8	11.4
FGT(2) index	2.6	5.1	4.8	5.7	6.5	5.6

Table 3
The Decomposition of Poverty in India
FGT(α)*100

	α=0			α=1			α=2		
	½ median	2/3 median	$1 per day	½ median	2/3 median	$1 per day	½ median	2/3 median	$1 per day
Overall Poverty	17.2	29.4	36.7	5.5	9.9	13.1	2.6	4.8	6.5
Contribution to Overall Poverty by Region (%):									
Central	42.1	43.7	43.7	41.0	42.2	42.7	40.7	41.4	41.9
[40.5]	(17.9)	(31.9)	(39.5)	(5.5)	(10.5)	(13.8)	(2.6)	(50.0)	(6.8)
South	19.8	18.5	18.3	20.5	19.5	19.1	20.9	20.2	19.8
[20.3]	(16.8)	(26.9)	(33.0)	(5.5)	(9.6)	(12.3)	(2.7)	(48.6)	(6.4)
West	11.1	11.0	11.2	10.3	10.8	10.9	9.4	10.2	10.5
[13.0]	(14.6)	(25.1)	(31.6)	(4.3)	(8.3)	(11.0)	(1.9)	(38.5)	(5.3)
East	18.9	18.0	17.8	20.4	19.2	18.8	21.3	20.2	19.6
[14.3]	(22.8)	(37.2)	(45.7)	(7.8)	(13.5)	(17.2)	(3.9)	(6.9)	(9.0)
North	8.1	8.8	9.0	7.8	8.3	8.5	7.7	8.0	8.2
[11.8]	(11.9)	(21.9)	(27.9)	(3.6)	(7.0)	(9.4)	(1.7)	(3.3)	(4.5)
Contribution to Overall Poverty by Majority/Minority (%):									
Majority	43.1	43.6	43.9	44.4	43.8	43.7	45.2	44.3	44.1
[53.8]	(13.8)	(23.9)	(29.9)	(4.5)	(8.2)	(10.6)	(2.2)	(4.0)	(5.4)
Minority	56.9	56.4	56.1	55.6	56.2	56.3	54.8	55.7	55.9
[46.2]	(21.2)	(36.1)	(44.5)	(6.6)	(12.2)	(15.9)	(3.1)	(5.9)	(7.9)

Figures in [ ] represent the proportion of the sample in that subgroup
Figures in ( ) represent the FGT value for the subgroup

Table 3 (continued)
The Decomposition of Poverty in India
FGT(α)*100

	α=0			α=1			α=2		
	½ median	2/3 median	$1 per day	½ median	2/3 median	$1 per day	½ median	2/3 median	$1 per day
Overall Poverty	17.2	29.4	36.7	5.5	9.9	13.1	2.6	4.8	6.5
Contribution to Overall Poverty by Education of HoH (%) :									
Low	60.7	60.6	59.9	59.8	60.4	60.4	59.4	60.0	60.2
[50.0]	(20.9)	(35.8)	(43.9)	(6.5)	(12.1)	(15.8)	(3.1)	(5.9)	(7.9)
Medium	33.4	33.8	34.2	34.2	33.7	33.8	34.5	34.1	33.9
[37.4]	(15.4)	(26.8)	(33.6)	(5.0)	(9.1)	(11.8)	(2.4)	(4.4)	(5.9)
High	5.9	5.6	5.9	5.8	5.8	5.8	6.1	5.9	5.9
[12.6]	(8.1)	(13.2)	(17.0)	(2.6)	(4.6)	(6.0)	(1.2)	(2.3)	(3.1)
Contribution to Overall Poverty by Land-Owner /Landless:									
Land-owner	56.0	57.3	58.1	54.2	55.7	56.4	53.1	54.5	55.1
[70.0]	(13.8)	(24.3)	(30.4)	(4.2)	(8.0)	(10.1)	(4.0)	(3.8)	(5.2)
Landless	44.0	42.7	41.9	45.8	44.3	43.6	46.9	45.5	44.8
[30.0]	(25.2)	(42.0)	(51.1)	(8.3)	(14.8)	(18.9)	(2.0)	(7.4)	(9.8)

Figures in [ ] represent the proportion of the sample in that subgroup
Figures in ( ) represent the FGT value for the subgroup

Table 4
The Decomposition of Poverty in China
FGT(α)*100

	α=0			α=1			α=2		
	½ median	2/3 median	$1 per day	½ median	2/3 median	$1 per day	½ median	2/3 median	$1 per day
Overall Poverty	14.3	27.1	25.5	4.5	8.5	8.0	5.1	5.7	5.6
Contribution to Overall Poverty by Region (%):									
Central	35.5	35.3	35.0	37.9	36.2	36.6	31.3	34.0	33.3
[38.0]	(13.3)	(25.2)	(23.5)	(4.5)	(8.1)	(7.7)	(4.2)	(5.1)	(4.9)
West	44.9	44.2	44.9	38.1	42.3	42.1	15.2	28.0	26.8
[25.7]	(25.0)	(46.6)	(44.6)	(6.7)	(14.0)	(13.1)	(3.0)	(6.2)	(5.8)
East	19.5	20.4	20.1	24.0	21.4	21.3	53.5	38.0	39.9
[36.3]	(7.7)	(15.2)	(14.2)	(3.0)	(5.0)	(4.7)	(7.5)	(6.0)	(6.0)
Contribution to Overall Poverty by Majority/Minority (%):									
Majority	86.5	86.9	86.7	89.4	87.7	87.8	96.2	92.3	92.7
[92.3]	(13.4)	(25.5)	(24.0)	(4.4)	(8.1)	(7.6)	(5.3)	(5.7)	(5.6)
Minority	13.5	13.1	13.3	10.6	12.3	12.2	3.8	7.7	7.3
[7.7]	(25.3)	(46.0)	(44.1)	(6.2)	(13.6)	(12.7)	(2.5)	(5.7)	(5.3)

Figures in [ ] represent the proportion of the sample in that subgroup
Figures in ( ) represent the FGT value for the subgroup

Table 4 (continued)
The Decomposition of Poverty in China
FGT(α)*100

	α=0			α=1			α=2		
	½ median	2/3 median	$1 per day	½ median	2/3 median	$1 per day	½ median	2/3 median	$1 per day
Overall Poverty	14.3	27.1	25.5	4.5	8.5	8.0	5.1	5.7	5.6
Contribution to Overall Poverty by Education of HoH (%) :									
Low	49.7	49.1	49.8	46.1	48.3	48.3	19.9	34.0	32.5
[44.1]	(16.0)	(30.2)	(28.8)	(4.7)	(9.3)	(8.7)	(2.3)	(4.4)	(4.1)
Medium	48.9	48.8	48.5	52.0	50.0	49.8	78.2	64.3	65.8
[53.8]	(13.0)	(24.6)	(23.0)	(4.3)	(7.9)	(7.4)	(7.4)	(6.8)	(6.8)
High	1.4	2.1	1.7	1.9	1.7	1.9	1.9	1.7	1.7
[2.1]	(12.0)	(24.9)	(22.9)	(4.1)	(7.5)	(7.0)	(4.2)	(4.3)	(4.2)

Figures in [ ] represent the proportion of the sample in that subgroup
Figures in ( ) represent the FGT value for the subgroup