Poverty and Inclusion from a World Perspective[1]

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Abstract:

This paper adopts a world approach to the definition of economic poverty and exclusion, seeking to provide a framework which unifies the measurement of poverty in developing and developed countries. Defining poverty as inadequate command over resources, it relates the poverty standard to more fundamental concerns in terms of capabilities, which in turn are connected to inclusion in a particular society. Implementation of this approach means that we have to confront the tension between absolute definitions of poverty, such as $1 a day, and the relativity adopted in many OECD countries. We consider two possible resolutions of this tension. The first sees a hierarchy of capabilities, with absolute poverty having lexicographic priority. The second consists of making relative and absolute poverty two dimensions of the capability space to be evaluated jointly through an aggregate index.

Introduction: A World Perspective

`Poverty' and `Inclusion' are terms which are used in many different ways and we are not alone in seeking to provide clarification as to their meaning. The particular focus of the present paper is that it seeks to adopt a world perspective. We take it as axiomatic that such a world viewpoint must embrace an approach to the measurement of poverty in which all citizens of the world enter with equal standing. National boundaries have no intrinsic status: it is a world, rather than an international, approach. In other words, any measure must be `globally inclusive'.

The adoption of a world perspective is not, we appreciate, uncontroversial, but neither is it new. Rothschild (1999) has shown how 18th century thinkers gave a lot of consideration to the implications of shrinking distances. She points out how Adam Smith, in *The Theory of Moral Sentiments*, discussed the moral relationships between people in different parts of the world, with his well-known example of a hypothetical Chinese earthquake. He argues that conscience

> "calls to us ... that we are but one of the multitude, in no respects better than any other in it" (1976 edition, page 235).

Rothschild quotes René de Chateaubriand asking in 1841

> "What would a universal society be like which would have

no particular country, which would be neither French nor English, ..., nor Chinese, nor American, or rather would be all of these societies at the same time?" (quoted in Rothschild 1999, page 1).

In his 1841 writing, de Chateaubriand goes on to address the issue we are concerned with in this paper, saying that

"The too great disproportion of conditions and fortunes could be sustained as long as it was hidden; but as soon as this disproportion has been generally noticed, the death blow has been dealt" (quoted in Rothschild, 1999, page 2).

The resulting tensions are ones with which the world is still grappling. However, in this paper, we take the straightforward view that the World Bank, the International Monetary Fund, the International Labour Office and other such bodies would find difficult any position other than global inclusion.

We are therefore concerned with poverty world-wide, embracing developing and developed countries.[2] What this implies is more open to question; and the paper addresses the conceptual problems of designing and implementing a measure of global poverty. The first section sets out the way in which we conceive of poverty in this paper, in terms of inadequate command over economic resources.

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[2]   In this respect, we differ from Lipton and Ravallion (1995), who provide a thorough survey of the issues, but whose "global" poverty measure is confined to developing countries.

Such a definition is both too general and too limited. Moreover, it is an intermediate objective which needs to be related to more fundamental concerns, which we take here to be capabilities in the sense of Sen (for example, 1983). This approach is closely attuned to the concept of poverty as exclusion from participation in a particular society. Implementation of this conceptual approach, the subject of the second section, means that we have to confront the tension between `absolute' definitions, such as the $1 a day (or $2 a day) standard applied in many World Bank studies, and the thoroughgoing relativity adopted in many OECD countries when measuring poverty. We consider in the third and fourth sections two possible resolutions of this tension. The conclusions are summarised in the final part of the paper.

The Concepts of Poverty and Inclusion

In this section, we address some of the conceptual issues which are relevant to the central subject of the paper.

Poverty and command over resources

The term `poverty' is often used in a very general sense, as in `the poverty of nations'. The World Development Reports on

Poverty rightly interpret their brief widely. Here, however, we limit the term to `inadequacy of command over economic resources'. People are poor when their command over resources falls short of an agreed standard, and the severity of their poverty depends on the extent of that shortfall. In adopting this definition, we are not making any claim for its superiority; we are simply stating the way in which this paper should be interpreted.

In choosing this definition, we are aware that it is too limited. Many legitimate concerns are excluded. People may not be classified as poor in terms of command over resources but be illiterate or racked by untreated disease. Economic resources are not the sole ones that are relevant, and may well not be the most important. The variables discussed in this paper are not the only ones which should enter any social evaluation, and we support those who have sought to extend the scope of analysis beyond income or consumption. At the same time, we insist that economic resources are part of the picture. We are concerned whether person i, or household i, has resources y_i, which are below the specified poverty line, z, and the determination of z is a central issue in the economics of poverty.

Command over resources is not the same as *use of* resources. We have deliberately referred to `command' in order to concentrate on those resources over which the individual has control. A person

may benefit from publicly-provided goods and services; he or she may receive benefits by virtue of employment. These benefits undoubtedly affect the level of economic welfare, and their prevalence affects the weight which we attach to individual command over resources. Income poverty is less significant in a society where housing is provided by the state at low rents, where education and health care are free, and where public transport is subsidised. Cutbacks in public provision increase the salience of low incomes, but are not here equated with a reduction in money incomes.

Command over resources is, therefore, a limited concept. It may also be regarded as too broad, in that it does not distinguish between different uses of resources. Following the distinction between general and specific egalitarianism (Tobin 1970), we may distinguish between a general lack of resources and a specific lack. Lack of food is a clear example where it is the consumption of a specific good j, x_j, with which we are concerned, not the general capacity to buy goods. Specific shortages, such as those of food or housing, are very important, but not the concerns about which we are writing here.

Capabilities

Resources are a means to an end, and the elimination of

resource poverty is an intermediate objective. For the purposes of this paper, we take the ultimate objective to be the ensuring of capabilities, in the sense that the target level of resources is sufficient to allow people to achieve a specified set of functionings. For instance, the capability of feeding one's family requires the input of resources (food, fuel, etc) and of time. A person who is physically disabled may depend on others to supply the time, so that the resources have to encompass the ability to secure that time. The level of resources required is therefore higher for a disabled person. To take a second example, the capability of entering the labour market requires goods, such as appropriate clothing, in addition to time. The goods required to compete for jobs are influenced by those available to others in the same labour market. A century ago in Britain one might have needed a bicycle; today one might need a mobile phone.

Specification of the underlying capabilities provides a basis for specifying the needed level of resources. It is not taken to mean that we should require that people actually *possess* the goods in question. Poverty is not being defined by the absence of a mobile phone; rather it is that the level of resources should permit the purchase of a phone, if that is deemed necessary to compete in the labour market. The procedure being examined here can therefore be summarised as follows: we are asking whether a

person's resources, y_i, which are broadly cash income plus home production, are greater or less than the poverty line z, which varies with the characteristics of the person or household.[3]   The poverty line is determined by the value of goods required for a specified level of capabilities. There is a vector of capability levels, c, and a matrix A which converts these capability levels into goods requirements, so that the value at prices given by the vector p is

$$z = \quad p\ A\ c \tag{1}$$

It is important to stress that the matrix A, relating capabilities to goods, depends on the particular society. In this way, as Sen (1983) has emphasised, an absolute level of capabilities, c, may translate into a set of goods requirements which is relative to the standard of living of a particular country. It should also be stressed that re-stating the choice of z in this way does not eliminate the difficulties of determining the poverty level: it pushes the problem one stage back to the determination of the specified level of capabilities. We return to

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[3]   There are other important issues, such as the definition of the unit, and the weighting of units, which are not discussed here - see Atkinson (1998).

the central problem of implementation below.

Inclusion and participation

Social inclusion is a more recent entrant into political vocabulary but, like poverty, it has acquired a variety of meanings. Our aim here is not to elucidate its different interpretations, but to see how it contributes to understanding the issues already evoked.

In one sense, the notion of inclusion has already formed part of our discussion. The capability approach is close to the concept of poverty based on participation in customary social activities. Such ideas of participation have been developed in the work of Townsend (1979), and the broad notion is embodied in the European Council of Ministers definition of poverty as

> "persons whose resources (material, cultural and social) are so limited as to exclude them from the minimum acceptable way of life in the Member State in which they live." (Council Decision, 19 December 1984).

The European definition has been implemented by taking a poverty criterion of 50% of average income, although the choice of this percentage - or indeed of a proportionate measure - is justified only by its transparency and political acceptability. What the capability approach offers is a way of providing a firmer

9

foundation in theoretical terms. This has been explored in Atkinson (1995), where the capability of being included in the labour market is assumed to depend on the input of a specified, indivisible commodity (such as a means of transport). The price of this input is determined by a supplier with monopoly power, and the resulting price depends on the willingness to pay of other members of the society. A person in one society may have the capacity to take part in the labour market, but in another be excluded because the existence of people with greater resources leads the monopoly supplier to price the good out of his or her reach. Depending on the form of the distribution, rising living standards may increase the income necessary to ensure the specified capacity.

It should be noted that we are here using capabilities as a means of identifying the standard to be applied when judging the adequacy of resources; we are not asking directly about those capabilities, as in studies of deprivation, such as Nolan and Whelan (1996), or in the non-income components of the Human Development Index.

Implementation of Global Poverty Measures

It may be helpful to begin with two concrete ways in which the measurement of poverty has been implemented.

Two approaches

The first approach is that of the $1 a day poverty line applied in the 1990 World Development Report ($1 a day per person in 1985 prices, adjusted for purchasing power).[4] This standard was applied to all developing countries and in 1985 more than 1 billion people were below this line. The second implementation of poverty measurement is that applied in the European Union (EU), taking as a poverty line 50% of mean expenditure or income. The results of this approach indicate that some 50 million were living below this EU poverty line in the late 1980s (see Atkinson 1998). Taking the lower poverty cut-off of 40% of the mean leads to a figure of 25 million. These numbers are small in relation to 1 billion, but still of considerable significance in a European context. This relative approach adopted in Europe contrasts with the official poverty line in the United States which started from the US Department of Agriculture's `economy food plan' for households of different composition, and set out with the intention to adjust the poverty line solely in relation to prices. Nonetheless, there were expected to be periodic adjustments for rising real incomes. Lampman, for example, argued that the poverty line should be

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[4] They also applied the lower line of $275 per year per person, which was broadly the poverty line applied in India. See Ravallion, Datt and Van de Walle (1991) for discussion of the underlying methods and data.

11

"a goal unique to this generation. That goal should be achieved before 1980, at which time the next generation will have set new economic and social goals" (Lampman 1971, page 53).

These new goals would, it is assumed, reflect rising average living standards. Such a relative poverty line has been applied to the United States in, for example, the study of poverty in developed countries by Smeeding (1997).

These two approaches to the measurement of poverty are not aligned. According to the $1 a day approach in the 1990 World Development Report, there are no poor people in OECD countries and the problem of world poverty is a problem of developing and transition countries. This may be a reasonable perspective, but it leaves no space for genuine concerns about poverty in rich countries. On the other hand, the EU approach applies a poverty standard which is at once both much higher in rich countries and lower than $1 a day in poor countries. To apply a purely relative poverty standard seems to tilt the balance too far in the opposite direction. Certainly a globally inclusive approach needs more in the way of justification for treating a particular level of resources in one country as meriting more concern than the same level of resources in another country.

The EU approach is an example of using *national* poverty lines.

Ravallion, Datt and van de Walle (1991) have carried out an interesting study of national poverty lines, and their data for 33 countries is shown in Figure 1. Ravallion (1998) fitted the logarithm of the poverty line to a quadratic in the logarithm of mean consumption. An alternative description of the data in Figure 1 would set the poverty line as constant in purchasing power, **B**, until this is equal to a fraction, **8**, of mean income or consumption, μ. On a simple diagram, as in Figure 1, this generates a kinked line, with slope first zero and then **8**. Such a representation has a clearer logic; it avoids problems when mean consumption rises, causing the poverty line eventually to become inoperative; and, judged by eye, values of **B** = $30 a month in 1985 prices and **8** = 0.37 provide a reasonable fit to the data (the fitted points are shown by crosses). The kink is at a level of mean consumption (some $85 a month in 1985 purchasing power) close to that for Morocco.

Implications of the two approaches

The two approaches identified at the start of this section may therefore be seen as corresponding to the two segments of the dashed lines in Figure 1. It is a formalisation of the statement in the 1990 World Development Report that a

"poverty line can be thought of as comprising two

13

elements: the expenditure necessary to buy a minimum standard of nutrition and other basic necessities and a further amount that varies from country to country, reflecting the cost of participating in the everyday life of society" (World Bank 1990, page 26).

In the Report, the Bank applies the second "when discussing poverty within countries" and the first poverty line when discussing global poverty and making cross-country comparisons. Such a two-level procedure is understandable, but it avoids the crucial question as to what happens if we seek to combine them, so that the two standards "cohabit". It assumes that the two kinds of analysis can proceed in parallel without being brought into conjunction.

The implications can be set out formally in a simplified model where we have two regions: the North and the South. They differ in their resources (referred to as `income'). Poverty is measured according to a measure of the Foster-Greer-Thorbecke (1984) kind, and we allow for the possibility of different poverty lines, z_N in the North and z_S in the South. World poverty is then

$$1/(1+\varepsilon)\mathbf{E}_N\{(1 - y_i/z_N)^{1+\varepsilon}\} + 1/(1+\varepsilon)\mathbf{E}_S\{(1 - y_i/z_S)^{1+\varepsilon}\} \qquad (2)$$

where we consider non-negative values of the 'poverty aversion' parameter ε, $\varepsilon = 0$ corresponding to the poverty gap. Both summations in (2) are taken over individuals whose income falls

14

below z_N and z_S respectively. The marginal valuation of income, for y_i below both poverty lines, is[5]

$$(1 - y_i/z_N)^{"} / z_N \quad \text{and} \quad (1 - y_i/z_S)^{"} / z_S \tag{3}$$

The marginal valuation is different where $z_N > z_S$. Where poverty is measured by the poverty gap, then the marginal valuation is higher at any income in the region with the lower poverty line. On the other hand, where " is greater than zero, the marginal valuation can be lower in the South. For example, where " = 1 (poverty is measured by the square of the relative poverty gap), it may be seen by differentiating (3) with respect to z that an increase in the poverty standard raises the marginal valuation of an extra dollar where incomes are more than 50% of the poverty line. We have then to ask why a marginal dollar going to a person with a given income should be valued more highly if he or she is in the North than in the South.

World versus International Approaches

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[5] Where z_N is a function of mean income, then the marginal valuations in the North are interdependent: the value of a marginal $1 to person i, where $y_i \rho z_N$, is an increasing function of y_j where j … i. This generalised interdependence is different from the case where the evaluation of income y_i depends on specific income levels (eg those of people close to i in the distribution).

At this point, we should address the difference between a world approach and an international approach to poverty measurement. It could be argued that the existence of the international agencies presupposes that all member countries be taken into account, but that this is consistent with nation states being treated as entities, as in the two level approach just outlined. In our view, however, the country in which one lives has no *intrinsic* claim on our attention; a case has to be made for different treatment. In support of this view, we would point to the implications of changing national boundaries or the formation of supra-national communities, such as the European Union.[6] These developments may affect our evaluation of global poverty, but we need to know on what basis a different poverty standard is being applied.

A Hierarchy of Capabilities

How can we bring together the two approaches described above in terms of the concepts of poverty and inclusion? The answer explored in this section is to suppose that there is a hierarchy of two levels of capability. The first capability concerns physical survival, and requires a bundle of goods that is broadly fixed in

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[6]   The implications of adopting a Europe-wide approach are discussed in Atkinson (1990 and 1998).

absolute terms; such as nutrients or shelter. These have priority.
A second capability concerns social functioning and requires a
basket of goods which depends on the mean level of income.

On this basis, we have two (or more) measures of poverty. The
first applies an absolute standard, such as $1 a day, and measured
poverty is largely found in developing countries. The second
applies a relative measure, identifying those who are below the
relative poverty line applicable to their country. Surviving in a
society requires first the physical satisfaction of basic needs for
an absolute amount B and then the satisfaction of some socially
defined minimum consumption standards summarized by a proportion of
the mean income in a country, $\theta\mu$. We have therefore both absolute
and relative poverty measures, with a lexicographic relationship
between them. Physical survival has priority, and this is the
first criterion by which policy should be evaluated, but relative
poverty legitimately comes next on our list of concerns.

If we are willing to work with multiple numbers, then this
approach represents an obvious way forward. There remains however
the problem of providing a justification for the hierarchy of
capabilities. For a critic it may appear too much like working
back from the answer to the question.

Economic Structure

17

There are a number of ways in which we might seek to provide a deeper justification. Here we simply sketch one approach which links the functioning of households to the rest of the economy, or more specifically the labour market, building on the link between resources and the capability to work referred to in the second section.

The working of the labour market provides the main explanation of poverty and social exclusion in developed countries (although one should not lose sight of exclusion from the consumption of some goods or of exclusion operating in the capital market). Things may be different in developing countries where access to the formal labour market is in any case more limited and the availability of productive resources (land, physical and human capital) and demographic characteristics like family size appear as stronger determinants of relative poverty. Because of this, it may be reasonable to posit that at low levels of development the main requirement for capability to work is nutritional. A fixed bundle of goods may be the appropriate basis for the poverty line. On the other hand, as the economy industrialises, and the formal labour market becomes more important, so the goods requirements begin to depend on average living standards. The nature of work changes, and with it the appropriate poverty line in terms of resources.

This approach might be taken to apply at an individual level,

but this is not the interpretation made here. Rather, we see it as a metaphor, explaining why a societal property - the poverty standard - should evolve with the development of the economy.

Poverty and Inclusion in a Two-dimensional Framework

A second rationalisation of the two approaches is to regard absolute and relative poverty as distinct dimensions in the space of capabilities. Drawing on previous work on multi-dimensional poverty measurement (see Anand and Sen 1997, and Bourguignon and Chakravarty 1998), it is then possible to provide an alternative justification for the general world poverty measure (2) above and also to generalise it in an interesting manner.

Suppose that, at any level of development, the simultaneous satisfaction of both physical basic needs and socially defined minimum consumption standards is necessary. Any individual whose resources would fall short of either one of these two limits would then be considered as poor. In the space of capabilities, one dimension would thus correspond to functioning satisfactorily in purely physical terms and the other to functioning satisfactorily in social terms. The first dimension would be represented by some absolute poverty line - $1 a day - whereas the second one would be measured by a relative poverty line indicating how a given

19

individual compares with other people in the country where he or she lives.

In this two-dimension space of capabilities, poor individuals are those who fall short of at least one of the two poverty lines. Of course, it will be the case in poor countries that some proportion of the population falls short of both poverty lines - see Figure 2, where people are located according to their own income (vertical axis) and the mean income of the country in which they live (horizontal axis). People can be in four different situations: poor on both accounts (area BOPD), poor in absolute but not relative terms (area OAP), poor in relative but not absolute terms (open triangle PCD), and not poor (remainder). The point P is where the relative poverty line $\theta\mu$ cuts the absolute level B, or broadly a mean income per head of $3 a day (in 1985 purchasing power, if θ is taken to be around 1/3. Countries with a mean below this may be referred to as "poorer" and countries above this as "richer". However, these definitions must be taken in relative terms since we saw above that the siwtching income B corresponded to a country at the development level of Morocco.

This approach is a headcount version of equation (2). It involves in effect adding to those identified by the $1 a day absolute poverty line those in richer countries with incomes below, say, 33% of the mean. On the basis of the figures for developed

20

countries given by Smeeding (1997, Table 2) for those below 40% of the *median*, we may estimate that this means adding some 60 million, plus those in middle-income and transition countries.

If it is felt that this procedure gives too much weight to richer countries (even though the number added is likely to be much smaller than 1 billion), then we could weight the number added by a factor, $, less than 1. The same weighting may be relevant if we consider a second objection, which is that simple addition takes no account of the multiple deprivation of those who are below both lines. Somebody at M in figure 2 suffers an absolute deprivation measured by MJ and a relative deprivation measured by MH. This multiplicity would be allowed for in a "double-counting" measure which added to those below the $1 a day line $ times those below the relative line. More generally, with a measure of the Foster-Greer-Thorbecke (1984) type, we could add the weighted poverty shortfalls in the two dimensions for those who fell below both poverty lines. World poverty would appear as the sum of three distinct terms: (a) poverty among those people in all countries below *both* the absolute poverty line, B, and the relative poverty line in their country, 8µ (BOPD in figure 2); (b) poverty among people (in poorer countries) below the absolute but above their relative poverty line (OAP); (c) poverty among people (in richer

21

countries) below their relative poverty line $8\mu_N$ but above the absolute line (DPC).

The formulation just described assumes that less relative poverty may compensate more absolute poverty on a fixed trade-off. Following Bourguignon and Chakravarty (1998), we may allow for less than perfect substitutability in the "double-counting" measure, introducing the additional parameter 2 (greater than unity)[7] for the possible substitutability between the two dimensions of poverty. A general measure of poverty is then the sum over all individuals i of:

$$1/(1+")[\{max[0,(1- y_i/B)]^{1+"}\}^2 + \$.\{max[0,(1- y_i/8\mu)]^{1+"}\}^2]^{1/2} \qquad (4)$$

World poverty is then given by the sum of three terms corresponding to the situations a)-c) identified above.

$$\frac{1}{1+\alpha} \cdot \sum_{y<Min(\pi,\lambda.\mu)} [(1-\frac{y_i}{\pi})^{(1+\alpha).\theta} + \beta(1-\frac{y_i}{\lambda.\mu})^{(1+\alpha).\theta}]^{\frac{1}{\theta}} +$$
$$\frac{1}{1+\alpha} \cdot \sum_{\lambda.\mu<y<\pi} (1-\frac{y_i}{\pi})^{1+\alpha} + \frac{\beta}{1+\alpha} \cdot \sum_{\pi<y<\lambda.\mu} (1-\frac{y_i}{\lambda.\mu})^{1+\alpha} \qquad (5)$$

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[7]   This approach is proposed at an aggregate level (i.e. with society characteristics such as literacy rates) by Anand and Sen (1997).

One important consequence of adopting this measure, or the simpler "double-counting" measure, is that the evaluation of world poverty is sensitive to changing inequality within developing countries. If the mean income of a poorer country increases without any change in absolute poverty (a person below the absolute poverty line moves to the right in Figure 2), expression (4) will record an increase in world poverty. The $ parameter can be taken to represent the extent to which national governments and international agencies may want to allow for this factor in the evaluation of anti-poverty policies. The 2 parameter is meant to control for the extent of double counting of absolute and relative poverty. Double counting or perfect substitutability between absolute and relative poverty occurs when 2=1. On the contrary, when 2 ∨ % it may be seen that what matters is the poverty dimension which yields the largest shortfall - after weighting the shortfall with respect to the relative poverty line by $. In the case where $=1, (5) is then identical to (2).

Illustration

Figure 3 illustrates the possible implications of the preceding argument in favor of world inclusive poverty measures. It is based

on observed PPP corrected GDP per capita figures for 122 countries as given for 1997 in the 1998 World Development Report and on hypothetical distributions within countries. GDP per capita data for 1980 and 1990 are obtained using the growth rates available in the same source. In each country it was assumed that the distribution of income was lognormal with a mean equal to the mean GDP per capita and some hypothetical variance for the logarithm of income. This variance was supposed to be constant over time. Three values were used depending on whether a country was known to be strongly inegalitarian - as for many Latin American countries-strongly egalitarian or in the middle. Practically, however, the results would be similar if the same variance were used for all countries. For the ease of computation the Lognormal distribution was approximated by a set 20 vintiles of individuals assumed to have identical incomes. Computing the world distribution of income and poverty measures could then be done easily by manipulating these 122*20 supposedly homogeneous groups of individuals.[8]

Poverty measures were then computed on the basis of this

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[8] This type of methodology has actually been used with real distribution data on deciles or vintiles by Atkinson (1996) in Europe and by Berry et al. (1983) for the world distribution. Milanovic (1999) uses a much richer information on national distributions to estimate the world distribution of income and its evolution.

hypothetical evolution of the world distribution of income between 1980 and 1997. The physical poverty limit of 1$ a day at 1985 ppp prices was taken to be equivalent to a little less than an annual income of 750$ at 1997 prices. There are two types of correction behind this figure. On one hand, prices have increased between 1985 and 1997. On the other hand, the income figures in our hypothetical distribution are based on GDP per capita whereas consumption expenditures would be more appropriate to measure poverty. The 750$ 1997 figure thus includes a correction for switching from consumption to GDP. The relative poverty limit is taken to be 40 per cent of the mean income - i.e. GDP per capita - in each country.

Figure 3 shows the evolution of world poverty when measured in absolute terms or when measured by combining both absolute and relative poverty as in (2) above - this is denoted 'mixed' in figure 3.[9] In both cases the figure shows the evolution of poverty headcount, and the FGT measures with " = 0 (poverty gap) and " = 1 - denoted FGT(2).

The interesting feature in figure 3 is that, under the very crude and arbitrary assumptions used here, the evolution of poverty appears to be different when one uses the 'absolute' or the 'mixed'

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[9] Attempts with expression (5) led to results similar to those obtained with (2).

definition. With the absolute definition, poverty falls throughout the period at a rate which slightly slows down in the 1990s. With the 'mixed' definition there is a very clear inflexion in the evolution of world poverty after 1990. All curves almost flatten out after this date.

The reason for that difference is simple and has probably not very much to do with the very crude assumptions made to represent the distribution of income within countries. It simply happens that many countries are close to the switching point P of Figure 2 during the period under analysis. Before 1990 most of them are below that income level and income growth thus corresponds to a drop of both 'absolute' and 'mixed' poverty. After 1990, however, many countries are above P. Income growth keeps driving absolute poverty down but this is not the case any more for 'mixed' poverty. This is because the 'relative poverty' component has become much more important and can fall only with some equalizing of the distribution of income, a possibility that is ruled out by the assumptions behind this exercise.

Of course, these calculations are essentially illustrative of the theoretical argument in this paper. Applying seriously the various concepts developed here to the world distribution of income is a task that goes much beyond the present paper. It is nevertheless interesting that the elementary calculation reported

here leads to different conclusions when using the various definitions of world poverty discussed in this paper.

Conclusions

This paper may appear to the reader to be ending in complexity, but its concern is a straightforward one: how to provide a framework which unifies the measurement of poverty in developing and developed countries. It attempts to reconcile the use of absolute poverty lines in the South with relative poverty lines in the North, so as to be able to define poverty on a world inclusive basis. It is a *world* and not just an *international* approach.

Our first line of reasoning is to recognize a hierarchy - or lexicographic order - in the field of poverty. Poverty is first defined on an absolute basis as referring to people whose income is insufficient to cover physical basic needs. When this is achieved, poverty is then defined on a relative basis as referring to people whose income does not allow them to function properly in their social environment, and in particular to be employed in the formal labour market. A second line of reasoning consists of making relative and absolute poverty two dimensions of the capability space to be evaluated jointly through some aggregate index. Such a

view leads to defining poverty in developing countries as some combination of the absolute and relative poverty concepts. It may modify substantially the evaluation of both national and world poverty and the way they may change due to the effects of economic growth. Our discussion has been purely theoretical, but there is clearly need for an ambitious empirical project, building on the foundations laid by Ravallion, Datt and van de Walle (1991) and Chen, Datt and Ravallion (1994), examining the quantitative implications of the different approaches described in this paper.

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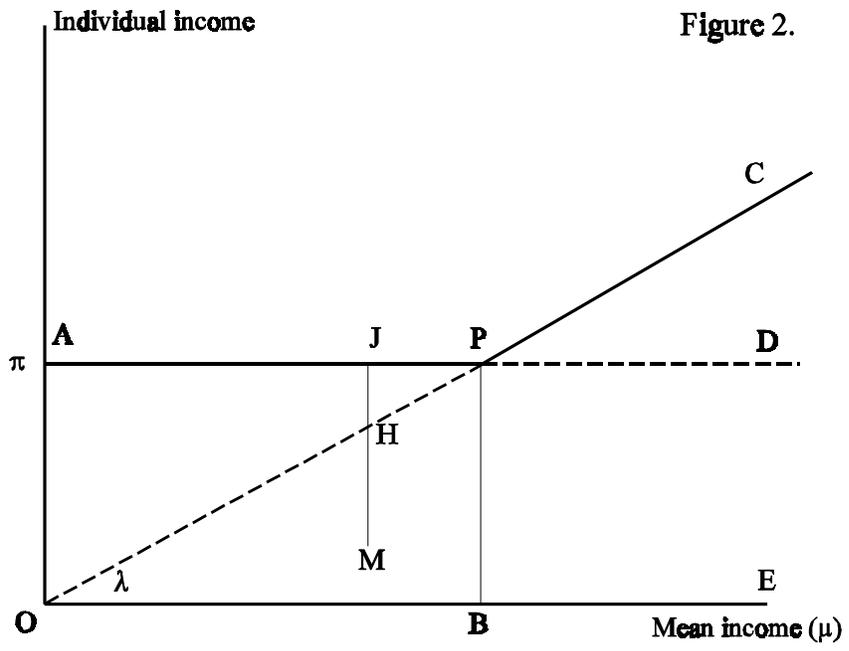
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Figure 1 Poverty lines across countries
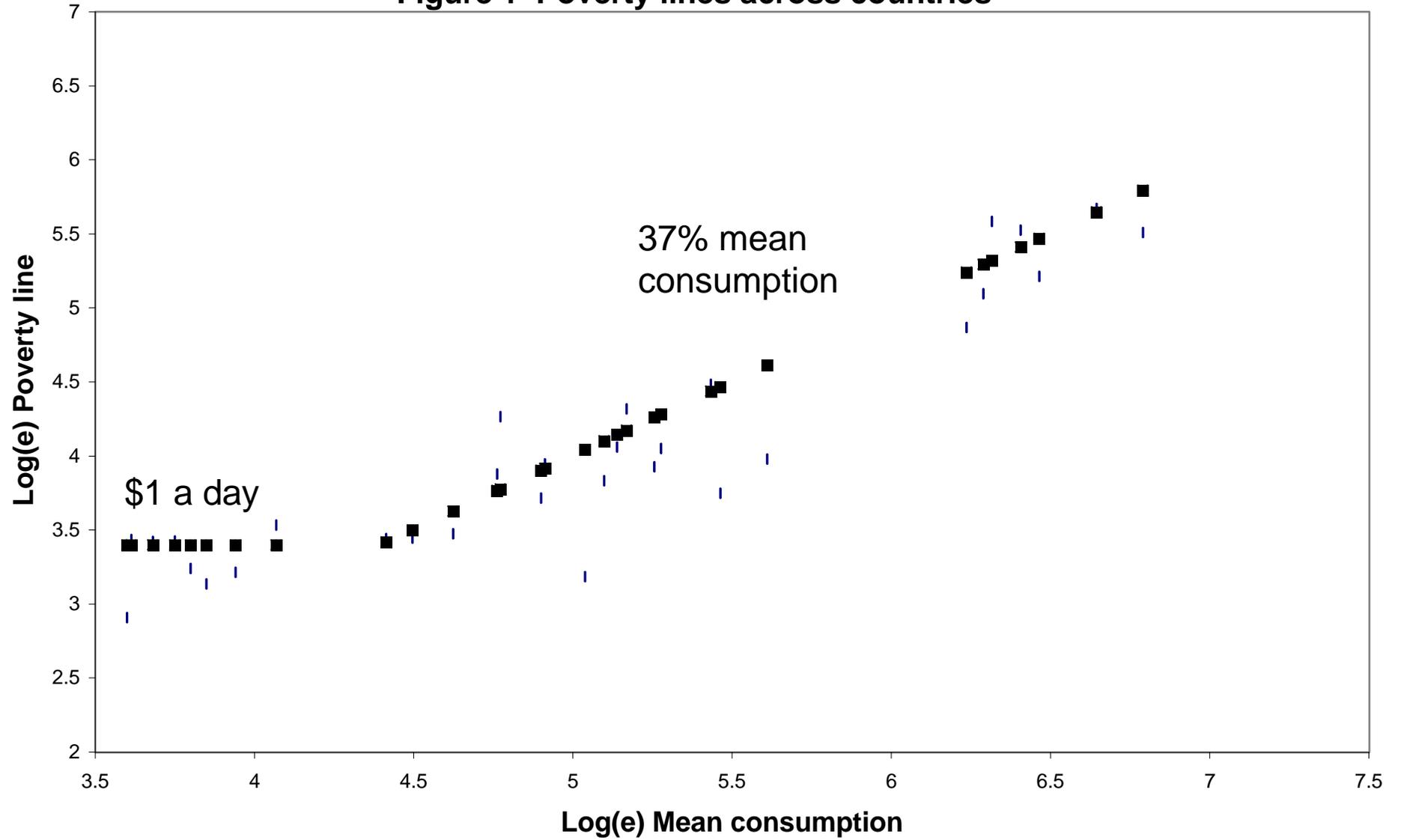
Figure 2.

Figure 3. Illustration: hypothetical evolution of world poverty with absolute or mixed definition of (extreme) poverty: 1980-1997

Mixed (1$, 40%)

Absolute (1$)

Headcount

Mixed (1$, 40%)

Absolute (1$)

Mixed (1$, 40%)

Absolute (1$)

Poverty Gap

FGT (2)

Year