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Chronic Poverty in Developing and Transition Countries: Concepts and Evidence

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Abstract
This paper discusses the concepts and measures of chronic poverty and the available evidence in relation to chronic and transient poverty. Most evidence is based on panel data and monetary concepts of poverty, and this paper argues that it will be important in future work to consider a wider range of sources and dimensions. Currently available survey evidence suggests that poverty is much more transient than chronic. But chronic poverty is a real and important phenomenon, potentially more important quantitatively than it first appears once account is taken of different methodological approaches and inevitable measurement difficulties. The chronic poor have distinctive characteristics, such as lack of assets or high dependency rates, which may account for their persistent poverty. By contrast the transient poor are those that have difficulty in insuring themselves against the consequences of shocks such as adverse price changes. Given the apparent distinction between the characteristics associated with transient and chronic poverty it is vital to consider the impact of development policy separately, as the impact on these two types of poverty may differ.

Outline
1. Introduction
2. Concepts and Measures of Chronic Poverty
3. Evidence on Chronic and Transient Poverty Based on Panel Data
4. Quantitative Assessment of Chronic Poverty without Panel Data
5. Transient and Chronic Poverty – Policy Dimensions
6. Conclusions

1. INTRODUCTION

Measures of living conditions at a point in time do not necessarily provide a good indicator of their likely stability over time. For many purposes it is important to adopt a dynamic perspective, distinguishing between transient and chronic (persistent) deprivation. This distinction between chronic and transient poverty is important for policy purposes, given that different policy responses are likely to be appropriate for each. For instance, this distinction is relevant for questions of targeting and social protection.

In empirical work, the importance of distinguishing chronic and transient poverty has been recognized particularly in relation to income or consumption poverty. But the same point applies to some other dimensions of living conditions, though not to all. A child may currently be attending school, but that does not guarantee that she will not drop out before completing her studies, or even still be at school next year. But for some other aspects of living conditions this applies less. One example is literacy status; the fact that an adult is literate now is generally a reliable indication of future literacy status. Similar points apply to other dimensions of living conditions.

Country case studies of poverty at a point in time provide very valuable information on its nature, characteristics and distribution, information which is useful for policy purposes. But given the fluctuating aspects of many dimensions of poverty (such as school attendance, nutritional status or income), this snapshot at a point in time will be unable to capture the dynamics of these dimensions. Thus it is not possible from this to know how much mobility into and out of poverty is in fact occurring, and its converse – that is how many of the poor are suffering persistent or long term deprivation, in other words the extent of transient and chronic poverty respectively.

This distinction between transient and chronic poverty is analogous to the distinction between short term and long term unemployment and matters for the same reasons. For a given rate of unemployment, if the vast majority is made up of short term unemployment then unemployment is mostly associated with movements between

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jobs. But if the vast majority is long term unemployment, in other words there is limited mobility in or out of unemployment, then the situation of those unemployed is more severe (especially as long term unemployment will often lead to deskilling). Different policy responses are likely to be appropriate in each case, and policy action is more crucial in the latter case. In the case of poverty, chronic poverty is a more serious situation than transient poverty, its causes are likely to be different, as are the appropriate policy responses. An effective policy response is likely to require knowledge of the relative importance of chronic as opposed to transient poverty, and appropriate policy measures directed at each.

This paper reviews existing evidence on chronic and transient poverty based on quantitative studies, and builds on a review of developing countries poverty dynamics (Baulch and Hoddinott 2000). A first issue is to consider available evidence on the relative importance of these two forms of poverty. But it is also important to the characteristics of those affected by each type of poverty, to give some indication as to likely underlying factors. This can also be supplemented by information on the factors associated with poverty transitions, that is movements into and out of poverty (which also helps in understanding why the chronic poor do not make these transitions). All this can help inform appropriate responses to chronic and transient poverty.

The paper is structured as follows. The next section addresses the issue of defining chronic and transient poverty, setting out the various difficulties that arise in practice and discussing data sources. Analysis of chronic and transient poverty is generally based on longitudinal or panel data sets; section 3 reviews evidence from a number of countries on the extent and nature of chronic and transient poverty based on such data sets, as well as the factors associated with transitions. Section 4 discusses the options for assessing the extent and nature of chronic poverty in situations where standard longitudinal data sets are not available. Section 5 provides some policy dimensions for both chronic and transient poverty before section 6 concludes and identifies some priorities for future research.

2. CONCEPTS AND MEASURES OF CHRONIC POVERTY

The defining feature of chronic poverty is its extended duration (Hulme, Shepherd and Moore, 2001). Thus while many move into and out of poverty over time (the transient poor), the chronic poor suffer persistent deprivation. This chronic poverty may also be severe (in terms of depth) or the deprivation may be multidimensional in nature, but these are more potential characteristics (the importance of which needs to be demonstrated by empirical evidence) than defining features of chronic poverty.

The distinction between chronic and transient poverty has typically been made based on longitudinal or panel data, where observations of the living conditions of the same individuals or households are made at several points in time. Much of this analysis has focused on monetary measures of living standards, partly because these are among the measures that can fluctuate most over even quite short time periods (within and between years). Their measurement at a single point in time clearly fails to capture this dynamics. But as argued above the chronic-transient distinction is also relevant for several other dimensions of deprivation, for instance malnutrition (aspects of which such as weight-for-height can also fluctuate significantly in the short term). Furthermore, the necessary data is often available (e.g. from panel surveys conducted over a short period, such as the first and second rounds of the Ghana Living Standards Survey), even if it has not been widely used for this purpose.

An alternative approach for studying chronic deprivation is based on information that captures dynamic aspects of living conditions even by just observing at one point in time – such as retrospective questions or life histories, or one time indicators that have implications for duration, such as illiteracy or stunting. This approach is complementary to studying chronic poverty based on panel data and monetary measures of living conditions. Additionally, this approach offers advantages such as the ability to look over longer time horizons, and the fact that it will not be affected by short term fluctuations. This approach though has been much less commonly applied in looking at quantitative aspects of chronic poverty, so there is scope for considering it much more.

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This section discusses measurement of chronic and transient poverty based on panel data; options in the absence of panel data are discussed in section 4, along with the conclusions that can be drawn in such instances.

2.1 Panel data sets and their limitations

Given its quantitative focus, and the nature of existing work, this paper mainly discusses analysis based on panel data. Most such studies examining chronic and transient poverty have focused on income or consumption based measures of poverty, where this of course requires that comparable income or consumption information on the same households or individuals is available at two or more points in time. For this panel data is indeed required to capture poverty dynamics properly. Repeated cross sectional surveys, where the sample surveyed differs from one round to the next, can tell us about net changes in poverty for a particular group (or a cohort, which may be defined according to different criteria), but do not provide any information on the extent of movements into and out of poverty between the different rounds. In Uganda for instance the poverty headcount fell from 55.5% of the population in 1992/92 to 35.1% in 1999/2000 (Appleton, 2001), a decline of 20.4 percentage points. However, an examination of those households that were in the panel between these two rounds, among whom the decline was 17.5%, shows that between these years 29.2% of households moved out of poverty and 11.7% moved in – in other words there was substantial mobility (Deininger and Okidi, 2002).

In fact only a relatively limited number of panel data sets suitable for poverty analysis have been collected, in large measure because of the practical difficulties they involve and also due to insufficient demand to date for such data. Where panel data have been collected, the period over which they are collected, the number of waves in the panel, the sample size and their geographic coverage all vary from case to case. Some examples of panel data collected in developing or transition countries that have been used for poverty analysis are presented in Table 1. Some of these panel data sets are nationally representative (e.g. the case of Côte d'Ivoire), while others relate to specific localities of the country (e.g. Pakistan).

In most cases the repeat visits to households and their members are made a few years apart (often three to five) and there are relatively few rounds. But other cases have involved frequent repeat visits (e.g. Zimbabwe), sometimes in adjacent years (the ICRISAT panel in rural South India). Other panels though involve several visits all within the same year (e.g. Rwanda). An intra-year panel is also valuable for looking at chronic poverty in that the chronic/transient distinction can also be relevant to intra-year variations, especially where seasonal variations are important. This though is a rather different concept of chronic poverty from that considered elsewhere in this paper, and will not be considered in depth here except where it offers important methodological lessons. Finally in a very few instances the time horizon over which panel data are collected may be sufficient to look at intergenerational variations (e.g. Chile).

Table 1: Instances of panel data sets that have been used in studying chronic poverty

Country	Number of waves and time covered	Number of observations in panel
Chile (eight rural communities)	2 waves, 1968 to 1986	146 households
China (rural)	6 waves, 1985 to 1990	5854 households
Cote d'Ivoire (national)	2 waves in each of 3 panels between 1985 and 1988	Around 700 households each panel
Ethiopia (specific rural locations)	2 waves, 1994 to 1995	1411 households
Hungary	6 waves, 1992 to 1997	2600 households
India (NCAER)	3 waves, 1968 – 1971	4118 households
India (ICRISAT; rural locations in Andhra Pradesh and Maharashtra)	9 waves, 1975 to 1984	170 households
Pakistan (IFPRI survey; specific rural locations)	5 waves, 1986 to 1991	686 households
Peru	3 waves, 1991 to 1996	676 households
Poland	2 waves, 1993 and 1996	5000 households
Rwanda	4 quarters, in 1982/83	270 households
South Africa (KwaZulu Natal)	2 waves, 1993 to 1998	1200 households
Zimbabwe (specific resettlement sites)	4 waves, 1992 to 1996	385 households

Panel data are a good way of looking at intertemporal variations in living conditions of individual households and their members in ways that cannot be achieved by repeated cross section surveys.[1]   But equally they suffer from various limitations that need to be considered carefully. The impact of measurement error in looking at individual or household-level variations between two rounds can be considerable (Grosh and Glewwe, 2000, chapter 23).   In addition, because the individual or household has been surveyed in the same context before, the dynamics of a second interview may differ significantly from the first; thus data quality may improve or

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1 While cohort analysis (analysis of groups) based on repeated cross sections is also valuable, it can only provide information on the cohorts identified as a whole, and not on individual households or people within the cohort.

deteriorate between the two interviews, an issue which is particularly serious when looking at changes. An extreme instance of this may be where the household refuses to co-operate the second time around, meaning that longitudinal information is not available for that household.

This last case is a specific instance of the more general problem of attrition, which can also arise for other reasons, notably because a household may have moved away and so cannot be found or followed up, or may no longer exist (following death, household breakup etc.). In such cases a panel observation is lost (in particular it is not correct to replace the household by the one now occupying the dwelling). This attrition matters for analytic purposes because the households that remain in the panel are liable to be systematically different from those that dropped out. Thus some of those that dropped out may have been more economically dynamic, which may have led them to move to pursue new opportunities. Others may have been much poorer which itself might have been a contributory factor leading to household breakup or even to greater risk of mortality. While econometric techniques have been developed for trying to allow for this potential "attrition bias" they are necessarily imperfect and approximate. A less extreme case is where households have changed their composition or other characteristics significantly between the two rounds. This raises the issue of at what point this can no longer be considered to be the same household.
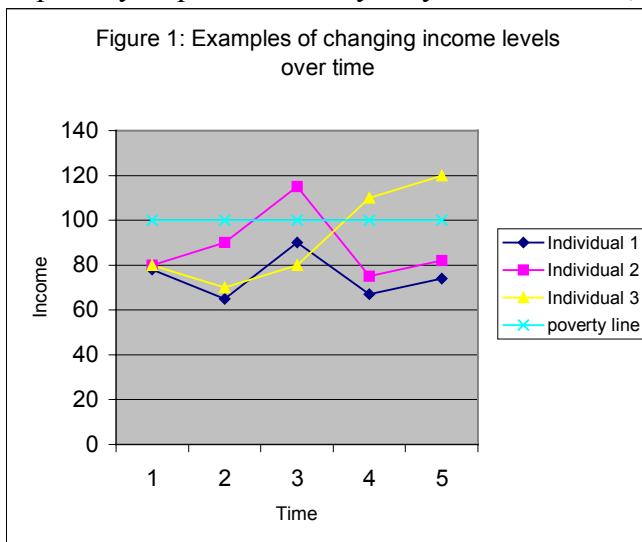
2.2   Concepts and measures of chronic poverty based on panel data

Two main methods have been adopted to identify and measure chronic poverty (in practice chiefly income or consumption poverty) based on suitable panel data: the "spells" and "components" approaches (Yaqub, 2000). In the spells approach, the chronic poor are identified based on the number or length of spells of poverty they experience – so that all poor households are classified as either chronic poor or transient poor. For instance, Baulch and McCulloch (1998), using a five round panel data set for rural Pakistan, find that only 3% of the households were income poor in all five years. 58% though were poor in at least one period, suggesting a very high degree of movement into and out of income poverty. Using the ICRISAT panel data

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set from rural South India, Gaiha and Deolalikar (1993) find that 21.8% of households were income poor in each of nine consecutive years (87.6% of all households surveyed were poor in at least one of the nine years).

The "components" approach distinguishes the permanent component of a household's income or consumption from its transitory variations, and identifies the chronic poor as those whose permanent component is below the poverty line. A common approach to identifying the permanent component is based on the intertemporal average for the household (Jalan and Ravallion, 1998; McCulloch and Baulch, 1999). An alternative procedure for identifying the permanent component is based on the predictions of a statistical (regression) model capturing the relationship between a household's income or consumption level and its characteristics; such models aim to purge the effect of transitory shocks. Thus Gaiha and Deolalikar (1993) base their concept of "innate poverty" on the predictions of a panel data regression of income on household characteristics, estimated using the fixed effects method. Their innate poverty can be interpreted as a concept of chronic poverty following the components approach, where this identification of the chronic poor takes account of the households' characteristics.

In both cases a number of issues arise. In the case of the spells approach a number of different criteria may be applied, relating to the number or length of periods of poverty experienced. By way of illustration, Figure 1 sets out income profiles of three individuals in each of five consecutive years, with reference to a poverty line. One intuitive criterion for chronic poverty is that the individual's income level must fall below the poverty line in each period in which they are observed. According to this criterion only individual 1 would be defined as

Figure 1: Examples of changing income levels over time

poor. Individuals 2 and 3 only fall below the poverty line in 4 and 3 out of the five periods respectively. However, as they are clearly very poor as well, less stringent criteria for chronic poverty would require individuals to be poor in say only four or three out of the five periods.

A different approach is to focus on the length of time for which someone is poor. For instance, a person may be considered to be in chronic poverty if he or she is poor in three consecutive periods. Based on this concept, individual one experiences chronic poverty in any three-year period that could be considered, and individual 3 over the first three years only (after which she escapes from poverty). But according to this definition individual 2 would not be identified as having been chronically poor over the period observed, because of the higher income experienced in year 3. However, a difficulty arises here because of the truncated nature of the available information; income levels before or after the five-year period are not observed, and individual 2 may well have been poor in the period immediately preceding or following this. Another important point to consider is that it is rarely the case that individuals or households are observed for several consecutive years; often there may be between two to five years between each observation (see Table 1). Therefore, even if it is known that someone is poor at two or more points in time separated by several years, this does not indicate whether or not they were poor in the years in between.

In the case of the components approach, it does not necessarily correspond to the concept of persistent poverty. A household may fluctuate in and out of poverty, but where the permanent component of its living standard is below the poverty line it is considered chronically poor. This implies that whether or not this household is considered as chronically poor will also reflect the depth of poverty it experiences. A second main issue concerns the procedure by which the permanent and transitory components of income or consumption are distinguished. Of the two approaches outlined above, that using the predictions of the regression model taking account of household characteristics is preferable in principle. However, its reliability in

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identifying permanent and transient components will depend on how well the household characteristics are able to explain the variations in income or consumption.

For both methods one major issue is measurement error, to which this article now turns.

2.3 The Importance of Measurement Issues

Measurement issues can play a large part in the quality of data and therefore the levels of confidence that can be placed on findings. Measurements of individual household income or consumption are inevitably subject to error, due to factors such as straightforward recall error, the need to impute missing data values and the inaccuracies in grossing up data collected based on short-period recall to obtain monthly or annual estimates (including the effects of seasonality). This is true in all quantitative work on poverty, but applies particularly to looking at poverty dynamics based on panel data. Measurement errors will inevitably suggest more individual/household variability in consumption or income than there actually is (and hence more movements into and out of poverty according to the spells approach).[2] Measurement error will also affect the accuracy of the identification of permanent and transitory income or consumption on which the components method relies.

Two main methods commonly adopted in assessing the effects of measurement error are to compare patterns of chronic poverty for different standard of living measures, and to attempt to adjust for the effects of measurement error. As regards the former one common approach is to compare patterns of chronic poverty obtained using consumption and income based standard of living measures, given that many surveys enable both to be computed. Consumption tends to be the preferred measure, both for theoretical reasons (the practice of consumption smoothing means that income may not be as good a measure of living conditions as consumption) and because it is generally considered to be more accurately measured. It follows that consumption

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2 This might suggest that shorter panel datasets are less reliable.

generally exhibits lower variance levels than income. Given this, it would be reasonable to assume that the extent of chronic and transient poverty may vary to some extent just by changing the welfare measure. This point notwithstanding, it is wise to test the robustness of the observed pattern of chronic poverty by undertaking sensitivity analysis on the choice of measure. Thus for example, based on a three wave panel for rural India covering the period 1969-71, Gaiha (1988) found that 86% of the income defined chronically poor were also chronically poor under the expenditure measure, in other words quite a high degree of convergence.

The second approach is to attempt to adjust for the effects of measurement error. Thus for example McCulloch and Baulch (2000) sought to allow for the effects of measurement area affecting their estimates of chronic poverty. In this case, income was the only monetary based measure available for all 5 years of the panel dataset. To allow for the effects of measurement error on the results, they constructed a simple model for the three years that they had both income and consumption expenditure observations and estimated the measurement error.[3] From this, they calculated and then used an adjusted income variable as the basis for computing the extent of chronic monetary poverty.[4] Similarly Scott (2001), working on poverty transitions work in Chile, cross checked transitory income against harvest changes, livestock output, household wealth change. The effect of measurement error can be quite substantial; in Ethiopia Dercon and Krishnan (2000 found that measurement error might account for up to a half of the household mobility across consumption quintiles.[5]

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3 They exploited the fact that consumption and income tend to be well correlated and therefore can be used as instruments for each other in econometric models (McCulloch and Baulch, 2000, p 23).

4 The adjusted income variable shared the same estimated mean as the true income variable but has the estimated variance of the true income variable, rather than that of the observed income (McCulloch and Baulch, 2000, p 23).

5 This was based on a regression of consumption on prices, wages, shocks (seasonal effect variables), and on a number of controls for changes in household size and composition, which the authors used t test for the extent of consumption smoothing.

2.4 Non-monetary dimensions of chronic and transient deprivation

While the distinction between chronic and transient deprivation has been discussed above principally with reference to income or consumption, as stressed above is relevant to other dimensions as well. One important instance is short term aspects of nutritional status; for instance the weight-for-height anthropometric measure can fluctuate quite significantly over relatively short time horizons. These fluctuations may reflect various factors such as the period of the agricultural season or the effects of disease; again it is important to separate out cases of transient weight-for-height malnutrition from chronic instances. This is less of an issue for other nutritional measures which provide information on longer term nutritional status. Height-for-age malnutrition often reflects past events and may be less easily reversed – hence the transient/chronic distinction is less relevant in this instance. This is a specific instance of a more general point highlighted above – that the chronic/transient distinction is important for some dimensions of poverty, but much less important for others. In the case of education, whether or nor a child is enrolled in school can fluctuate over time, as children may drop out temporarily or withdraw permanently; the same is clearly not true of literacy status.

The chronic-transient distinction is also potentially relevant for other dimensions of deprivation such as ill health, vulnerability or empowerment, but in each case this has not been considered in depth. In some cases (such as ill health, where this distinction is clearly important) available information generally does not enable this distinction to be made in practice. For some other dimensions (e.g. vulnerability) this may be due to difficulty in quantifying the underlying concept, let alone distinguishing any chronic or transient components.

In all instances it is important to re-emphasise that the concept of chronic poverty can be meaningfully applied over different horizons, ranging from intra-year variations (where chronic poverty is that poverty which persists over the whole agricultural season) to intra-generational (where chronic poverty implies that poverty which persists from one generation to the next). Of course the nature of chronic poverty in these two extreme cases is somewhat different, with the nature of chronic

poverty becoming much more severe as longer time horizons are considered.[6] But the principles for distinguishing chronic and transient poverty are broadly similar, even if their interpretation is different.

3. EVIDENCE ON CHRONIC AND TRANSIENT POVERTY BASED ON PANEL DATA

As outlined in section 2, different authors have adopted varying concepts in analysing chronic and transient poverty. For instance some have adopted the spells approach whilst others have used the components approach. Different authors adopt different underlying concepts of poverty. Whatever the differences, they can raise serious problems in making cross study comparisons, and more generally in forming conclusions about global patterns of chronic poverty. However, provided we keep this in mind and consider the fundamentals underlying each study, it is still worthwhile to outline the findings associated with chronic and transient poverty, including the characteristics associated with each (which may be more easily compared than the levels).

This section focuses on information from longitudinal (panel) datasets, which as highlighted in section 2 is the basis for most of the research relating to chronic poverty. By having information on the same households or individuals at more than one point in time, such datasets enable assessment of the dynamics of living conditions, and can therefore capture movements into and out of poverty, thus allowing for a chronic and transient poverty focus.

3.1 Evidence on the extent of chronic poverty

As mentioned in section 2, chronic and transient poverty represent different aspects of poverty. In particular, if an individual is classified as chronically poor this is likely to reflect long term/permanent deprivation, compared to transient poverty which is more temporary or short term. Given these fundamental differences, the

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6 At the same time though a longer time horizon may also mean longer gaps over which individuals are not observed.

characteristics associated with these poverty types are likely to differ. However, before focusing on these characteristics, we begin by providing a more general overview of the panel evidence for the extent of chronic poverty in practice.

A summary, compiled by Baulch and Hoddinott (2000), of evidence from important studies based on panel data is reproduced in table 2, and provides a useful review of income and consumption poverty dynamics. Based on this data, households can be classified as "always poor", "sometimes poor" or "never poor". Setting aside those that are never poor, in all cases only a minority of the rest of the households are classified as "always poor"; in some cases this is only a small minority, though of course this may partly reflect the number of rounds in the panel (other things being equal, a household is less likely to be always poor the greater the number of time periods observed). But the relative importance of chronic, compared to transient poverty, also varies according to the study population. For example around a quarter of the households that experienced poverty at some point in the nine years of the ICRISAT panel are classified as always poor (Gaiha and Deolalikar, 1993), whereas the corresponding figure for the five year Pakistan panel is around one twentieth (Baulch and McCulloch, 1999). Additionally because of the generally greater variance in income measures compared to consumption, transitory poverty is likely to be higher when income rather than consumption is used as the welfare measure (Baulch and Hoddinott, 2000, p.11).

Table 2: Percentage of households defined as always, sometimes or never poor: evidence from several studies

Country, years and [source]	Number of Waves	Welfare measure	% of households		
			Always poor	Sometimes poor	Never poor
South Africa, 1993-98 [Carter, 1999]	2	Expenditures per capita	22.7	31.5	45.8
Ethiopia 1994-95 [Dercon and Krishnan, 1999]	2	Expenditures per capita	24.8	30.1	45.1
India (NCAER) 1968/69 – 1970/71 [Gaiha, 1988]	3	Income per capita	33.3	36.7	30.0
India (ICRISAT) 1975/76 – 1983/84 [Gaiha and Deolalikar, 1993]	9	Income per capita	21.8	65.8	12.4
Cote d'Ivoire 1985-86 [Grootaert and Kanbur, 1995]	2	Expenditures per capita	14.5	20.2	65.3
Cote d'Ivoire 1986-87 [Grootaert and Kanbur, 1995]	2	Expenditures per capita	13.0	22.9	64.1
Cote d'Ivoire 1987-88 [Grootaert and Kanbur, 1995]	2	Expenditures per capita	25.0	22.0	53.0
Zimbabwe 1992/93 – 1995/96 [Hoddinott, Owens and Kinsey, 1998]	4	Income per capita	10.6	59.6	29.8
China 1985-90 [Jalan and Ravallion, 1999]	6	Expenditures per capita	6.2	47.8	46.0
Pakistan 1986-91 [McCulloch and Baulch, 1999]	5	Income per adult equivalent	3.0	55.3	41.7
Russia 1992-93 [Mroz and Popkin, 1995]	2	Income per capita	12.6	30.2	57.2
Chile 1967/68 – 1985/86 [Scott, 1999]	2	Income per capita	54.1	31.5	14.4
Indonesia [Skoufias, Suryahadi and Sumarto, 2000]	2	Expenditures per capita	8.6	19.8	71.6

Source: Taken from Baulch and Hoddinott (2000), Table 1.

Table 3: Some evidence on transitions across quintile groups

Country and source	Welfare measure	Time span (years)	Per cent of households that:			Per cent of households in bottom quintile that:		
			Remain on diagonal	Move up by one quintile	Move up by two or more quintiles	Remain on diagonal	Move up by one quintile	Move up by two or more quintiles
India [Swaminathan, 1991a, 1991b]	Land	8	48.2	36.5	15.3	52.9	17.6	29.5
Peru [Glewwe and Hall, 1998]	Expenditure	5	36.0	37.8	26.2	40.3	23.0	36.7
South Africa [Maluccio, Haddad and May, 1999]	Expenditure	5	34.6	41.2	24.2	40.9	30.2	28.9
Vietnam [World Bank, 1999]	Expenditure	5	40.4	39.8	19.8	48.6	27.2	24.2
India [Lanjouw and Stern, 1991, 1993]	Income	9 (1974/75 – 1983/84)	23.0	31.0	46.0	17.4	21.7	60.9
India [Lanjouw and Stern, 1991, 1993]	Income	12 (1962/63 – 1974/75)	25.7	34.3	39.0	15.8	26.3	57.9
India [Lanjouw and Stern, 1991, 1993]	Income	5 (1957/58 – 1962/63)	25.6	44.9	24.5	26.3	26.3	47.4
Chile [Scott and Litchfield, 1994]	Income	18	23.3	39.0	37.7	8.0	32.0	60.0

Source: Taken from Baulch and Hoddinott (2000), Table 4.

However, care should be adopted when interpreting some of the "poor" categories, as households in the "sometimes poor" group are likely to exhibit heterogeneity. For example, households who are poor in just one period are included in the "sometimes poor" grouping along with households who are poor in all but one of the periods. The results could therefore change significantly with slight variations in definition (or when disaggregating the "sometimes poor" group further).

Table 3, derived from the same source, reports on the proportion of households within these panel datasets that move from one quintile group to another over relatively longer periods of time. These quintile groups are defined using income or consumption based standard of living measures. Of particular relevance here is the percentage of households originally in the lowest (poorest) quintile that remain there compared to those who move over time into higher quintile groups. In several cases quite high proportions of households remain in the lowest quintile. In the studies of India, Peru, South Africa and Vietnam, more than 40% of the households in the lowest quintile remained there over periods of time ranging from five to nine years. If all those in the bottom quintile are included among the poor for that country then these households are clearly in a situation of chronic poverty over a relatively long time period. The proportions remaining in the bottom quintile are lower in some of the other studies.

3.2 Characteristics of the chronic poor

By focusing on the characteristics of individuals/households in chronic poverty, this allows us to consider now just how chronic poverty differs from transient poverty, but perhaps more importantly allows policy trying to combat chronic poverty to be based on a solid understanding of its likely underlying determinants. The characteristics most commonly associated with chronic poverty include being in a disadvantageous situation with respect to the following: human capital; demographic composition; location; physical assets; and occupational category, among others.

Human capital
General axioms and intuition tend to suggest that increasing human capital will decrease the probability of being chronically poor. Available evidence relating to education generally supports such principles in a number of cases, with various researchers finding that increased levels/years of education decrease the probability of being chronically

poor (Adam and Jane, 1995, in Pakistan; Campa and Webb, 1999, in Peru; Rodgers and Rodgers, 1993, in the U.S; and Wlodzimierz, 1999, in Poland). Some studies find that it is the higher levels of education, such as secondary schooling (McCulloch and Baulch, 2000; Jalan and Ravallion, 1999, 2000, for Pakistan and China respectively) and university (World Bank, 2001, in Hungary), that reduce the probability of chronic poverty the most. Which level is most important may vary from one country to another. In Hungary the World Bank (2001, p. 14) even suggest that the attainment of higher educational levels is a "virtual guarantee" against long term poverty there, while in poorer countries it is likely that secondary education may be most important.

Other human capital evidence is also supportive of such axioms. For example, Jalan and Ravallion (1999, 2000) for rural China, and Mehta and Shah (2001) for India, found illiteracy to be positively related to chronic poverty. However it may not be just formal education that matters; Gaiha and Deolalikar (1993) suggest for rural South India that innate disadvantages, such as the lack of management skills, are positively and significantly associated with chronic poverty.

Demographic factors

Other things being equal increased household size is likely to place extra burden on a household's asset/resource base and would generally be expected to be positively related to chronic poverty. McCulloch and Baulch (2000) for Pakistan; Jalan and Ravallion (1998, 1999, 2000) for rural China; Wlodzimierz (1999) for Poland; and Aliber (2001) for South Africa, all found this to be the case. A similar logic applies for increased dependency ratios, number of children, and the presence of a third generation in a household (McCulloch and Baulch, 2000; Jalan and Ravallion, 1999, 2000). However, while these aggregate correlations highlight an important reality, at the same time they may hide a greater complexity in some specific cases. For instance for those reliant on peasant agriculture for their livelihood, a large household size may actually be appropriate in enabling them to overcome labour shortages at critical periods.

Single parent headed households are more likely to be amongst the long term poor. For Hungary (World Bank, 2001) single parent headed household were twice as likely to be in long-term poverty, especially if headed by females. A similar result applies in South Africa (Aliber, 2001). Though households headed by a pensioner did not have

significantly higher probability than average of being in long-term poverty in Poland (Wlodzimierz, 1999), it would appear that both gender and household structure are important influences. For example, in Hungary, single elderly women face a 19% chance of being in long term poverty – nearly eight times the rate faced by single elderly men (World Bank 2001, p13).

Evidence from India (Lanjouw and Stern, 1991), Hungary (Kemeny, Havas, and Kertesi, 1994, 1995) and the United States (Rodgers and Rodgers, 1993) suggests that belonging to a disadvantaged ethnic group substantially increased the likelihood of being in chronic poverty. In the case of Hungary, more than half of those of Roma ethnicity were chronically poor. Lanjouw and Stern (1991), for Palanpur, found chronic poverty to be disproportionately high amongst marginalised groups such scheduled tribes, the elderly women, the disabled and groups living in remote rural areas.

Location

The evidence from Palanpur is one specific example of the importance of geographic location. Location in fact plays a major part in the opportunities available to households and therefore the probability of being classified as long-term poor. In Uganda (Deininger and Okidi, 2002) there is a significant rural chronic poverty bias, which could, amongst other things, be related to the inadequate supply of health. For Hungary Galasi (1998) found that nearly 60% of Hungary's long-term poor lived in rural villages, while only 9% of the chronically poor lived in Budapest.

Physical assets

Lack of physical assets is another important factor often associated with chronic poverty (McCulloch and Baulch, 2000; Adam and Jane, 1995, both for Pakistan). Among these assets land ownership is particularly important (Jalan and Ravallion, 1999, 2000; Gaiha and Deolalikar, 1993; Mehta and Shah, 2001). This is consistent with the earlier observation by Lipton (1988) that landlessness or near landlessness, at least on good or well-watered lands, is highly correlated with high poverty incidence and severity (or ultra poverty).

A number of authors though have argued that asset accumulation is far less important than the returns to endowments (Glewwe and Hall 1998; Lanjouw and Stern 1993).

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Gaiha (1992) argued for India that the low variation in endowments/returns from assets (such as arable land) might be as important, as asset quantity, in predicting chronic poverty. Gunning et al (2000) found that asset accumulation via steady investment in land quality, together with considerable learning by doing, was far more effective in raising income.

Occupational status

Economic activity status is another important correlate of chronic poverty. Okidi and Kempaka (2002) for Uganda and Wlodzimierz (1999) for Poland both found that self employed farming households are more likely to be chronically poor. In Uganda's case, this should not come as a big surprise, in view of both the predominance of agriculture as a source of employment for Uganda's poor, and the relatively limited market integration of most of the rural producers.[7] Related to this low food grain yields were found to be positively associated with chronic poverty in China (Jalan and Ravallion 1999, 2000), a result which would be expected in other economies where large proportions of the population are engaged in peasant agriculture. This of course raises the issue of what underlies the low food yields; it may for instance reflect factors identified above such as lack of physical assets of a disadvantageous location.

In contrast to this, Campa and Webb (1999) found for Peru that chronic poverty was positively associated with household heads who were employed outside of the household. This suggests that in this case there is little difficulty in obtaining employment, but problems in finding sufficiently remunerative employment. In other instances, notably industrialised and transition countries, there is a natural linkage between loss of employment, loss of income, and increased probability of long term poverty. In Hungary the probability of chronic poverty increases the larger the numbers of unemployed per household and the longer the period of unemployment (World Bank, 2001)[8]. This highlights the unsurprising fact that which occupational categories are disproportionately associated with chronic poverty will vary from one country to another, and are also likely to differ within countries.

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7 This illustrates the importance of using productive policies as a means for poverty reduction in a subsistence economy, Deininger and Okidi (2002), p19.

While various other factors have been identified as important correlates of chronic poverty, these tend to be specific to a limited number of cases and so are not reviewed here.

3.3 Characteristics of Transient Poverty

Because of the more temporary nature of transient poverty we would expect the factors associated with transient poverty to differ from those for chronic poverty. However, some factors appear to be important for both, notably human capital. Evidence from some studies suggests that increased education in general (McCulloch and Baulch, 2000) or specifically of the household head (Jalan and Ravallion, 1998)[9], reduces transient poverty. This may suggest that more educated households are better able to protect themselves against fluctuations in their long term conditions.

McCulloch and Baulch (2000) find for Pakistan that larger household size is associated with increased transient poverty. By contrast, in rural China, Jalan and Ravallion (1998) found transient poverty to be higher amongst small households. In this case this could have been reflective of seasonal labour shortages (which could limit their ability to smooth their consumption levels). Transient poverty tends to be higher for those households with lower farm yields and less wealth (Jalan and Ravallion 1998). However, it is also higher for those households using modern agricultural techniques and those experiencing large wealth fluctuations. The former would imply that modern techniques lead to higher average yields but incorporate higher risk and supports the conclusion that high uninsured income risk underlay the transient poverty. In India, Gaiha and Deolalikar (1993) found factors such as adverse price movements to be more closely associated with transient poverty than with chronic poverty. Again it is the inability of many households to insure themselves adequately against fluctuations in their living conditions which leads them temporarily into poverty.

Carter and May (1999) found for South Africa that households in receipt of non-government transfers, such as remittances from families, are by and large transitorily

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8 "The probability of being in long term poverty increases from 14% for households with one unemployed member to 22% for households with two unemployed members" (World Bank, 2001, p 12).

9 'Transient poverty levels decline with household head education levels, while the proportion of poverty that is transient varies little with the education of the head' ,p 346, Jalan and Ravallion 1998.

poor. This emanates from the relative irregularity of such transfers, compared to government transfers which are both regular and usually more reliable.

In looking at intra-year chronic and transient poverty in rural Rwanda, Muller (2000) often found the correlates to differ, but a substantial share of poverty was seasonally orientated[10]. The adoption of low risk strategies by many farm households (e.g. cultivating staple crops such as sweet potatoes with low commercial returns) was positively correlated with chronic seasonal poverty. Contrast this with the planting of cassava, which can be kept in the ground for most of the year and used in famine periods. The cultivation of cassava would therefore be expected to have a negative effect on transient poverty, and does so. Specific cultivation patterns and practices then may be important factors underlying chronic poverty, not just within, but also between years.

Many of the factors identified as important characteristics of transient poverty have also been identified as having an association with the poverty transitions. For instance, several studies emphasise the importance of assets, both physical and human, in influencing poverty transitions. Thus higher levels of education and ownership of livestock increase the likelihood of exits from poverty and reduce the likelihood of entry to poverty in rural Pakistan (Baulch and McCulloch, 1999). Also in Pakistan, Adam and Jane (1995) report that changes in assets (land ownership, education, migration) were responsible for one quarter of income changes in the poorest quintile group, but that these factors contributed relatively less to income changes in less poor groups. Higher levels of human capital in urban areas and physical capital in rural areas in Côte d'Ivoire increased the likelihood to escapes from poverty in the 1980s in a situation of general economic decline (Grootaert and Kanbur, 1995; Grootaert, Kanbur and Oh, 1997). Several factors that are good correlates of poverty status, such as dependency ratios, are poor correlates of poverty transitions. This is entirely consistent with the fact that such factors tend to be more strongly associated with chronic rather than transient poverty.

There is also quite a lot of evidence on factors influencing poverty transitions in the 1970s and 1980s in the United States (Bane and Ellwood, 1986; Stevens, 1994). Bane

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10 Confirmed to a large extent by the large household mobility across quintiles in all seasons, p. 36 Muller.

and Ellwood identify the main routes into poverty as being a reduction in the earnings of the household head, of factors associated with family structure or life cycle events (e.g. birth). They find movements out of poverty to be associated with increased earnings of all household members, and that often the earnings of secondary household members are particularly important. Marriage or remarriage is also a factor behind escapes from poverty in several cases. By contrast transfers were found only to be modestly important in escapes from poverty, with most households only receiving transfers relatively briefly. Stevens, updating Bane and Ellwood's study, finds that mobility out of poverty was lower in the 1980s than previously, and that this was particularly apparent among female-headed households.

In summary, some of the factors associated with chronic poverty (such as low educational levels) are also associated with transient poverty, but many factors differ. Empirical evidence strongly supports the view that transient poverty is associated with an inability of households to maintain their consumption levels in the face of fluctuations or shocks affecting their incomes or individual circumstances. The relatively different characteristics associated with chronic and transient poverty lead Jalan and Ravallion (1999, 2000) and Gaiha and Deolalikar (1993) to suggest that different policy responses are likely to be appropriate in each case.

4. QUANTITATIVE ASSESSMENT OF CHRONIC POVERTY WITHOUT PANEL DATA

Extensive resources are required to form panel data sets, and they are therefore relatively rare. Thus, as emphasised in section 2, panel data sets are not available in many instances, even though one off or repeated cross-sectional household survey data sets often will be. This means that it is not possible to trace the fluctuations of income, consumption or other variables over time for individual households or their members, simply because the individual or household is only observed once. In such circumstances, is it possible to say anything about poverty dynamics in general, and chronic and transient poverty in particular?

One way of doing so is to follow the second approach identified in section 2 above, that is to seek to identify the chronic poor is by looking at characteristics that, though only observed once, provide information about past living conditions. Alternatively, with

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certain assumptions and or limitations, it is possible to assess aspects of dynamics based on repeated or even one off household surveys. As stressed above these approaches offer certain advantages relative to panel data – in particular the effects of measurement error are less severe. This section briefly summarizes these different approaches, assessing their strengths and weaknesses and providing examples of the types of information they can provide.

4.1   Using repeated cross sectional surveys in assessing dynamics

As noted in section 2, instances where repeated cross sections are available (that is two or more rounds of a survey drawn from the same population, though without a panel element being built in) can be used to consider changes in poverty in aggregate and for appropriately defined cohorts or subgroups of the population (for example, according to geographic location or main activity). This identifies the direction and magnitude of the overall change in poverty experienced by the different cohorts. And because it is focusing on overall measures of poverty for a group, it has the advantage that, because of the averaging this involves, the changes are more accurately measured than those for individual households within a panel. These groups can be defined at different levels of detail, though attention needs to be paid to maintaining an adequate sample size. But these comparisons will not say anything about dynamics *within* these groups, in other words about the extent of movements into and out of poverty within the groups (which can be considerable)). While not distinguishing chronic and transient poverty at the individual or household level, this can still provide valuable information on chronic poverty.

A number of examples of this type of analysis have been conducted. Thus for instance in a study of poverty in Ghana over the 1990s based on two cross sectional surveys, Coulombe and McKay (2001) found that among falling poverty at the national level (from 51.7% in 1991/92 to 39.5% in 1998/99), poverty among those resident in rural areas in the savannah zone hardly changes. Thus this last group clearly experiences persistent poverty, strongly suggesting that many households there are also chronically poor.

4.2 Proxies for chronic poverty: depth and multidimensionality

Another approach to identifying chronic poverty without panel data is to focus on what are essentially proxies for persistent poverty – that is to identify those suffering deep or severe poverty, or those experiencing multidimensional deprivation (Hulme, Shepherd and Moore, 2001). Because each of these are assumed to indicate persistence of poverty, they can be identified based on observations made at a single point in time, through a survey or otherwise. Depth and severity of poverty are concepts generally associated with income or consumption poverty, though have also been applied to malnutrition; they focus on the extent to which income, for instance, falls short of the poverty line.

Multidimensionality of deprivation can be identified from any information source that provides information on a range of key dimensions of living standards (for instance education, health, lack of access to facilities, poor quality housing conditions, in addition to the other aspects identified above). The issue in this case is to define what multidimensional deprivation means: which dimensions, and, in each case, what constitutes deprivation? What about those that are deprived in some dimensions, but not others (as discussed above)? In other words, should different dimensions be combined, and if so how? To date there has been little attempt to do this at the household level, though it has been widely attempted at national or regional level, for example the UNDP's family of indices measuring human development.

While many studies of poverty focus only on its incidence, many others also consider its incidence or depth. In seeking to identify those suffering deep or severe poverty, this generally relates to a state where an individual or household's standard of living measure is a certain percentage below the "normal" poverty line. Many poverty studies do this, for example identifying the extreme poor (or ultra poor) in addition to those classified as poor. For instance, Mehta and Shah (2001) defined severe poverty as those with income is less than three quarters of the poverty line or below; according to this 15.3% (14.8%) of the rural (urban) population for the whole of India were defined as severely poor. This compares to 37.2% (32.3%) of people below the poverty line in rural (urban) areas. This poverty depth or severity is not the same as chronic poverty; however, the method assumes that there is a substantial overlap between these two groups. In Uganda, Okidi

and Kempaka (2002) consider the living conditions of the poorest 20% as a proxy for severity.

Many other studies have adopted a similar approach. Thus for instance in Nigeria Canagararjah and Thomas (2001) found that all extremely poor these households were headed by individuals who possessed little or no schooling, who are predominantly self employed and spend 80% of their income on food, characteristics that are quite likely associated with chronic poverty (Canagarajah and Thomas, 2001, p. 16). Indeed they find the depth and severity of poverty to be highest in households headed by a single male, compared to all other households, and to exceed those of female headed households by a factor of 3 to 5 (Canagarajah and Thomas, 2001, p. 23). In Rwanda, severe poverty (defined as those whose total consumption standard of living measure fell short of even the food poverty line; Government of Rwanda, 2002) was much greater in rural areas than urban areas. Severe poverty was particularly prevalent amongst households where the main activity of the household was working as an agricultural labour or working as an own account farmer, as well as among those households who had no member working. It was disproportionately associated with households headed by females, especially widows, and those divorced.[11]

The critical question in all this is how reliable a proxy severe poverty is for chronic poverty. This can be assessed in situations where both chronic and severe poverty can be defined, in other words cases where a panel is available. In the case of Kwa-Zulu Natal, South Africa this proxy is found not to be accurate (Aliber, 2001).

A different concept of severe poverty discussed by Mehta and Shah (2001) for India focused on the inability to consume two square meals a day. She reports that in 1993/94 84.2% of rural households and 98.5% of urban households did consume two square meals a day throughout the year. In rural areas non-availability of two square meals a day peaked between June-September in urban and rural areas, with up to 2.7% of rural households not receiving this. This measure can also be used to provide a geographic profile of severe poverty; in the case of India, the proportions of households not

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11 Based on average depth of poverty

consuming two square meals a day were highest in Orissa, Kerala, West Bengal and Assam.

To date there has been very little empirical study of multidimensionality as a proxy for chronic poverty.

4.3 Other methods of using household surveys to assess chronic and transient poverty

Two other methods have been developed which the authors argue can distinguish chronic and transient poverty without having panel data available. Suryahadi and Sumarto (2001) distinguish chronic and transient poor in a single cross section survey in Indonesia using an approach superficially similar but different in detail to the components approach. They estimate a regression model of the relationship between a household's consumption level and its characteristics. However, as some types of households may experience bigger fluctuations in their consumption levels than others, they allow the residual error term of the regression (which considers transitory fluctuations among other things) also to vary with (a potentially different set of) household characteristics. This model is used as the basis for assessing vulnerability of households to poverty. But they also use the predicted values of this model (an estimate of the permanent component) to distinguish between the transient poor (those whose current consumption falls below the poverty line, but their predicted consumption lies above it) and the chronic poor (those whose actual and predicted consumption levels both lie below the poverty line).

This is different from the components approach for panel data outlined above because it uses only information on variations between households at a point in time, and not any information on variations for each household over time. Both are used in applying the components approach using panel data, and given that the time dimension is fundamental, this is likely to result in much less accurate identification of chronic poverty. In addition the point made for the components approach above that the reliability of the identification of the chronic and transient poor will depend on the accuracy of the identification of the underlying relationship between consumption and household characteristics applies even more forcefully in this case.

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Following this method, Suryahadi and Sumarto (2001) found that most of the poverty rate increase in Indonesia since the economic crisis of 1997[12] was due to increased chronic poverty. Post-crisis, it was found that the chronically poor comprised 35% of the total poor, compared to 20% pre-crisis, and those classified as having a "high"[13] vulnerability to poverty increased dramatically from 6.8% of households to 18.4%. This suggests that a much higher proportion of households are "likely" to fall into chronic poverty, in the future. This suggests how shocks may be important in giving rise to chronic, in addition to, transient poverty.

Chronic poverty identified in this manner was also particularly prevalent amongst those households whose head had not completed primary education. Female and male headed households had an even spread of chronic poverty. By occupation sector, chronic poverty within the agricultural sector was 18.7%, compared to the services and trade sectors which had approximately 3% chronic poverty. Both the chronically poor and highly vulnerable households were more common in rural areas than urban areas.

In addition to this method, a different one has been developed by Gibson (2001) which he argues can be used to identify chronic consumption poverty in the absence of a panel. This method is based on the fact that consumption data – especially for frequently purchased items such as food – is frequently collected on a short period recall basis, to facilitate more accurate response. As observed by the late Chris Scott, because the recall period is short it will not be typical. Thus this reliance on short period recall is likely to exaggerate extremes, and so also to exaggerate levels of poverty. Assuming for purposes of illustration that the recall period is one week, Scott showed that this exaggeration can be allowed for given knowledge of the extent of correlation between the consumption levels in the recall week and in the subsequent week(s). If this information is available it is possible to construct more accurate estimates of monthly or annual consumption than by just multiplying the short period recall with the appropriate factor (30/7 or 52 respectively in this example).

To have the information to compute the necessary correlation coefficient requires that at least a subset of the households in the survey have been enumerated throughout the year,

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12 The analysis covers the period 1996-1999.
13 Greater than a 50% probability, based upon household characteristics and current consumption

collecting information on their consumption levels each time. The correlation coefficients computed using this information can then be used to estimate annual consumption for the remaining households that were surveyed only once. Gibson applies this based on household survey data for Papua New Guinea. He then compares poverty estimated in this way with poverty estimated by simply grossing up for all households ignoring the correlation issue. He identifies as the transient poor those identified as poor in the latter case but not in the former, and the chronic poor as those poor in both cases.

However, this does not correspond to a distinction between transient and chronic poverty. It is though an important demonstration of the consequences of this specific mis-measurement of poverty. What Gibson calls transient poverty is in fact those that are incorrectly identified as being poor using the commonly applied technique (where the correlation information is not available). Similarly what he calls chronic poverty are those correctly identified as poor using the commonly applied technique. In other words this does not even correspond to intra-year transient and chronic poverty (which could only be distinguished for the subset in the panel). His method and demonstration is important, but not as a way of distinguishing chronic and transient poverty.

Based on his analysis Gibson (2001) found a headcount poverty rate of 30.4%, of which roughly equal proportions of households were in what he defined as transient and chronic poverty. For the rural sector a similar transient/chronic poverty ratio applied, though in urban areas only one third of the headcount poverty was transient for the urban sector.[14]

Gibson found that three quarters of the poverty gap was due to measured expenditure variations within the year. Further disaggregation revealed that urban households actually experience greater within year instability in household expenditure than rural households. This is primarily caused by the hosting of extended family members coming from rural areas, thus creating unstable demographic compositions. Gibson subsequently concluded that if there was a moderately low level of poverty and high level of intra-year consumption variability then the transient poverty component is likely

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14 From a comparability perspective, poverty variations by sector may have important consequences for chronic poverty measurement. For instance if cross sectional estimates of poverty contain differing degrees of transient poverty and chronic poverty, this may lead to bias if such variations are not considered in a purely chronic poverty orientated analysis.

to be large (Gibson, 2001, p. 263). However, it is important to re-emphasise again that this identification of "chronic" and "transient" poverty does not correspond to the conventional understanding of these terms. This method is important as a contribution to better measurement of consumption poverty; but it is not appropriate to consider the dynamics of poverty, even on an intra-year basis.

4.4 One off measures that capture dynamics

Various examples of this have been referred to above, including height for age malnutrition or illiteracy. Also a low level of assets may be considered as a good indicator of chronic deprivation (although asset holding can fluctuate over relatively short time periods). This is an important and valuable approach, but to date there has been relatively little quantitative assessment of this potentially rich source of information.

The area where this has been considered a bit more is using anthropometric measures such as height for age, which though static in measurement, can be considered dynamic by design. Moreover, they have the advantage of being individually collected and provide insights into the distribution of intra-household resources (unlike most of the measures discussed elsewhere in this paper). Though primarily used for children under the age of five years, they are still useful in picking up an element of an individual's history. A stunted child could be indicative of previous dietary deficiencies. Evidence from China by Morgan (2000) based on anthropometric data shows that the average height of school children has increased with family incomes and the decline of poverty – in other words that there is declining chronic deprivation according to this key measure of nutritional status.

Unfortunately it is less feasible to use other anthropometric measures, such as weight for height or the Body mass index (BMI)[15] as a measure of chronic deprivation in the absence of panel data; such measures are less informative about past malnutrition.

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[15] Defined as an individual's weight in kilograms divided by the square of the individuals height in metres.

In summary, it is important to recognise that longitudinal or panel data will often not be available, and even where they do have some associated problems, for instance the effects of measurement error and possible systematic patterns of attrition. As argued in this section, it is possible to draw inferences or conclusions about poverty dynamics in general and chronic poverty specifically even in the absence of panel data. Some assumptions, or sometimes limitations, are implicit in applying some of these methods but they do offer other important advantages. In instances where panel data are available it is important to consider the extent to these alternative methods give similar conclusions to the analysis based on the panel data, in other words to assess whether the assumptions seem reasonable.

5. TRANSIENT AND CHRONIC POVERTY –POLICY DIMENSIONS

One important policy dimension to consider is the impact of development policy on transient and chronic poverty – to what extent can the chronic as well as the transient poor benefit from successful development policy? While there is an extensive literature on the effects of economic reform on poverty (see for example McKay 1999), there is very little literature specifically addressing the impact of economic reform, and contemporary development policy more widely, on chronic poverty. However, developing an understanding of the factors associated with chronic poverty, and with movements into and out of chronic poverty, is clearly of relevance to this question. Clearly though a better understanding is needed, especially of the processes leading into or out of chronic poverty (for instance, to what extent does transient poverty lead in turn to more persistent poverty, and if so, what groups are most subject to risk?).

However, a more ideal policy focus for tackling chronic poverty would be based on current evidence, with policy objectives being the specific targeting of chronic poverty rather than more general development/poverty policies. Current evidence suggests that chronic poverty is associated with different factors than transient poverty. If this is indeed so then the impact of current policy on these two types of poverty may differ; and the appropriate policy responses to their alleviation may also differ. A recent study by McCulloch and Baulch (2000) conducts simulations to consider the impact of different anti-poverty policies in rural Pakistan. Policy interventions to smooth income have a large effect on overall poverty, the majority of which is transient in nature. But they do not have a large impact on chronic poverty. Reducing chronic poverty requires sustained

income growth (modelled here as increased investment in human or physical capital). In addition, income transfers also reduce chronic and transient poverty. These findings seem to coincide with prior expectations. They are also consistent with Gaiha and Deolalikar's of chronic and transient poverty in semi-arid India (Gaiha and Deolalikar, 1993; discussed above). But as Gaiha and Deolalikar (and Gaiha 1992) emphasise, increasing asset levels for chronic poor may not by itself be sufficient to have a substantial impact on their living standards if they are unable to earn good returns on these assets.

Lipton (1998) further dis-aggregated the asset based policy options and suggests that factors, other than good asset returns, such as reviewing tenancy, remote land and land fragmentation policies are important. Although he found tenancy to be correlated with poverty (i.e. the landless are the poorest) tenancy reform has seldom helped the poorest due to unequal distribution. Contrast this to relative success of land redistribution policies (with ownership ceilings). Although such processes are commonly evaded, once implemented they usually raise overall output and benefit the poor. However, this is largely dependant upon the quality of land, as land which has bad soil and is badly watered can in some cases be equally bad for the chronically poor as no land at all. Irrigation policies which also combine the supply of clean drinking water will also benefit the chronically poor.

Furthermore, Lipton (1998) re-confirmed that the chronically poor tend to be those with big families, are child intensive and spend exceptionally high proportions of expenditure on food. Given this, he emphasised that the effect of indirect/direct tax policy and pricing policies are likely to differ substantially, dependant upon household sizes and child/adult ratios. As such it is sensible for some analysis to precede price/tax/food policy recommendations.

6. CONCLUSIONS

Most available quantitative evidence based on panel data does tend to find that the factors associated with chronic and transient poverty are indeed distinct, as might be anticipated. Chronic poverty is typically associated with lack of assets (physical and human, as suggested among others by Deininger and Okidi, 2002), being trapped in low productivity activities (itself perhaps a consequence of poverty), disadvantageous

demographic characteristics (notably a high dependency ratio), and location in remote or otherwise disadvantaged areas. Transient poverty is more typically associated with cases where households have very little ability to insure themselves against fluctuations due to either external factors such as prices, climate or job availability, or household level shocks such as serious illness or death. Of course it may also be associated with relatively low levels of asset holdings. These broad generalisations appear to hold even against the backdrop of a range of different approaches to defining chronic and transient poverty.

While evidence from a number of studies suggests that more poverty, at least in the monetary dimension, is transient rather than chronic, it is clear that chronic poverty is a real and important phenomenon. This is especially so taking account of the fact that the inevitable consequence of measurement error (certainly an important issue in using panel data) will be to show more variability in income or consumption than there really is, at least based on the spells approach. In this and other respects the components approach may be a more reliable means of identifying those suffering or likely to suffer persistent poverty, especially so when the time horizon of available panels is short.

However, there are many aspects of chronic deprivation that need to be examined in much more detail. One that relates to the monetary dimension among others is to consider further the reliability and usefulness of results of applying techniques to identifying what is considered to be chronic and transient poverty without using panel data. But a much more important priority is to separate chronic and transient deprivation in other dimensions where this distinction is meaningful, and to consider the relationships between these different dimensions.

REFERENCES

Adam, Richard H. and J.He Jane (1995), "Sources of Income Inequality and Poverty in Rural Pakistan", International Food Policy Research Institute Research Report 102.

Aliber, Michael (2001), "An Overview of the Incidence and Nature of Chronic Poverty in South Africa", Chronic Poverty Research Centre Bacground Paper No. 3, May.

Bane, Mary and David Ellwood (1986), "Slipping into and out of Poverty: The Dynamics of Spells", *Journal of Human Resources*, 21:(1), 1-23, Winter.

Baulch, Bob and John Hoddinott (2000), "Economic Mobility and Poverty Dynamics in Developing Countries", *Journal of Development Studies*, 36: (6), 1-24.

Baulch, Bob and Neil McCulloch (1998), "Being Poor and Becoming Poor: Poverty Status and Poverty Transitions in Rural Pakistan", Working Paper 79, Institute of Development Studies, University of Sussex.

Campa, M. and R. Webb (1999), "Mobility and Poverty Dynamics in the 1990's", paper presented at IDS/IFPRI Workshop on Poverty Dynamics, April 1999, Institute of Development Studies, University of Sussex.

Carter, Michael (1999), "Getting Ahead or Falling Behind? The Dynamics of Poverty in Post-Apartheid South Africa", mimeo., University of Wisconsin.

Carter, Michael R. and Julian May (1999), "One Kind of Freedom: Poverty Dynamics in Post Apartheid South Africa", Staff Paper No. 427, University of Wisconsin-Madison, December.

Canagarajah, Sudharshan and Saji Thomas (2001), "Poverty in a Wealthy Economy: The Case of Nigeria", *Journal of African Economies,* 10:(2), 143-173.

Coulombe, Harold and Andrew McKay (2002), "The Evolution of Poverty and Inequality in Ghana over the 1990s: A Study based on the Ghana Living Standards Surveys", mimeo., University of Nottingham, September.

Deininger, Klaus and John Okidi (2002), " Growth and Poverty Reduction in Uganda, 1992-2000: Panel data evidence", Economic Policy Research Council, Kampala, Uganda.

Dercan, Stefan, and Pramila Krishnan (2000), "Vulnerability, Seasonality and Poverty in Ethiopia", *Journal of Development Studies,* 36: (6), 82-100.

Gaiha, Raghav. (1988), "Income Mobility in Rural India", *Economic Development and Cultural Change*, 36(2).

----- (1992), "On the Chronically Poor in Rural India", *Journal of International Development,* 4: (3), 273-89.

Gaiha, Raghav. and Anil.B. Deolaiker (1993), "Persistent, Expected and Innate Poverty: Estimates for Semi Arid Rural South India", *Cambridge Journal of Economics*, 17 (4), 409-21.

Galasi, Peter (1998), "Income Inequality and Mobility in Hungary, 1992-96", Innocenti Occasional Papers: Economic and Social Policy Series 64, United Nations Children's Fund, International Child Development Centre, Florence.

Gibson, John (2001), "Measuring Chronic Poverty without a Panel", *Journal of Development Economics,* 65, 243-266.

Glewwe, Paul and Gillette Hall (1998), "Are some groups more vulnerable to macroeconomic shocks than others? Hypothesis tests based on panel data from Peru", *Journal of Development Economics*, 56: (1), 181-206.

Government of Rwanda (2002), "A Profile of Poverty in Rwanda ", Ministry of Finance and Economic Planning, National Poverty Reduction Programme & Statistics Department, (February).

Grootaert, Christiaan and Ravi Kanbur (1995), "The Lucky Few Amidst Economic Decline: Distributional Change in Cote d'Ivoire as Seen Through Panel Datasets, 1985-88", *Journal of Development Studies*, 31: (4) 603-19.

Grootaert, Christiaan, Ravi Kanbur and G-t Oh (1997), "The Dynamics of Welfare Gains and Losses: An Africa Case Study", *Journal of Development Studies,* 33: (5) 635-57

Gunning, Jan. W., John Hoddinott, Bill Kinsey and Trudy Owens (2000), "Revisiting

Forever Gained: Income Dynamics in the Resettlement Areas of Zimbabwe, 1983-1996", *Journal of Development Studies,* 36: (6) 131-55.

Hoddinott, John, Trudy Owens and Bill Kinsey (1998), "Relief Aid and Development Assistance in Zimbabwe", report to United States Agency for International Development, Washington D.C.

Hulme, David, Karen Moore, and Andrew Shepherd (2001), "Chronic Poverty: Meanings and analytical frameworks", CPRC Working Paper 2, IDPM, University of Manchester.

Jalan, Jyotsna and Martin Ravallion (1998), "Transient poverty in post-reform rural China", *Journal of Comparative Economics, 26: (2), 338-357.*

----- (1999), "Do Transient and Chronic Poverty in Rural China Share Common Causes?", Paper presented as IDS/IFPRI Workshop on Poverty Dynamics, IDS, April 1999.

----- (2000), "Is transient poverty different? Evidence for rural China", *Journal of Development Studies*, 36: (6), 82-99.

Lanjouw, Peter and Nick Stern (1991)," Poverty in Palanpur", *World Bank Economic Review,* 5: (1), 23-55.

Lanjouw, Peter and Nick Stern (1993), "Agricultural Change and Inequality in Palanpur, 1957-84", in K. Hoff, A. Braverman and J. Stiglitz (eds), *The Economics of Rural Organization*, Oxford: Oxford University Press.

Lipton, Michael (1988), "The Poor and the Poorest: Some Interim Findings", World Bank Discussion Papers No. 25.

McCulloch, Neil and Bob Baulch (1999), "Distinguishing the Chronically From the Transitory Poor - Evidence from Pakistan", Working Paper No. 97, Institute of Development Studies, University of Sussex.

----- (2000), "Simulating the Impact of Policy on Chronic and Transitory Poverty in Rural Pakistan", *Journal of Development Studies*, 36: (6), 100-130.

Maluccio, J., L. Haddad and J. May (1999), "Social Capital and Income Generation in South Africa", mimeo., IFPRI, September.

McKay, Andrew (1999), Methodological Issues in Assessing the Impact of Economic Reform on Poverty", chapter 5 of M. McGillivray and W.O. Morrissey (eds), *Evaluating Economic Liberalisation*, Macmillan.

Mehta, Aasha Kapur and Amita Shah (2001), "Chronic Poverty in India: Overview Study", Chronic Poverty Research Centre Working Paper No. 7.

Micklewright, John and Gyula Nagy (1994), "Living Standards and Incentives in Transition: The Implications of UI Exhaustion in Hungary", *Journal of Public Economics,* 73: September.

Morgan, Stephen L. (2000), "Richer and taller: stature and living standards in China, 1979- 1995", *China Journal,* 44: July, 1-39.

Mroz, T.A. and Barry Popkin (1995), "Poverty and the Economic Transition in the Russian Federation", Economic Development and Cultural Change, 44 (1), 1-31.

Muller, Christophe (2000), "Transient - Seasonal and Chronic Poverty of Peasants: Evidence from Rwanda", University of Nottingham, Discussion Papers in Economics No 00/9, April.

Okidi, John and Gloria Kempaka (2002), "An Overview of Chronic Poverty and Development Policy in Uganda", Chronic Poverty Research Centre Working Paper No. 11, January.

Rodgers Joan and John Rodgers (1993), "Chronic Poverty in the United States", *Journal of Human Resources*, 28: (1), 25-54 Win.

Scott, Christopher D. (2001), "Mixed Fortunes: A Study of Poverty Mobility among Small Farm Households in Chile, 1968-86", *Journal of Development Studies,* 36: (6) 155-181.

Scott, Christopher D. and Julie Litchfield (1994), "Inequality, Mobility and the Determinants of Income among the Rural Poor in Chile, 1968-1986", STICERD Working Paper No. 53, London School of Economics.

Skoufias, Emmanuel, Asep Suryahadi and Sudarno Sumarto (2000), "Changes in Household Welfare, Poverty and Inequality During the Economic Crisis in Indonesia: Evidence from a Longitudinal Household Survey", *Bulletin of Indonesian Economic Studies*, 36 (2), 97-114.

Stevens, A.H. (1994), "The Dynamics of Poverty Spells: Updating Bane & Ellwood", *American Economic Review - Papers and Proceedings*, 34-37.

Suryahadi, Asep and Sudarno Sumarto (2001), "The Chronic Poor, The Transient Poor, and The Vulnerable in Indonesia Before and After the Crisis", SMERU Research Institute Working Paper, May.

Swaminathan, M.S. (1991a), "Measuring Mobility in Wealth: Some Estimates from a South Indian Village", *Oxford Bulletin of Economics and Statistics*, 53(2), 171-83.

Swaminathan, M.S. (1991b), "Gainers and Losers: A Note on Land and Occupational Mobility in a South Indian Village, 1977-85", *Development and Change*, 22(2), 261-77.

Wlodzimierz, Okrasa (1999), "Who Avoids and Who Escapes from Poverty during the Transition? Evidence from Polish Panel Data, 1993-96", World Bank Policy Research Working Paper 2218, November.

World Bank (1999), *Vietnam: Attacking Poverty*, Hanoi: World Bank.

----- (2001), *Hungary: Long-Term Poverty, Social Protection, and the Labour Market, Volume 1: Main Report*, Poverty Reduction and Economic Management (ECSPE) Europe and Central Asia Region, April.

Yaqub, Shafin. (2000), "Poverty Dynamics in Developing Countries", IDS Development Bibliography, University of Sussex, April.

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