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## The Role of Assets: Insights into How The Chronically Poor Cope with HIV/AIDS

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**Abstract.** The paper extends the combined research methods literature with an investigation of the impact of ill health on assets and consumption behaviour of the chronically poor. Focusing on Uganda, and using national household panel data for 1992-99, the study extends the survey by visiting the same households and collecting both life history and further quantitative data. By adopting such an approach we are able to further explain a number of important issues that underly the role ill health plays in the lives of the chronically poor. In particular we find a clear association between sickness and descents into poverty. Asset smoothing seems to be very common amongst households that encounter general sickness, with food consumption almost always reduced, for a period of time, before selling assets. In contrast households suffering from HIV/AIDS, or at least severely physically debilitating sickness, often consumption smooth.

**Keywords.** Poverty dynamics, Q-Squared, Asset Smoothing, HIV/AIDS, Uganda; *JEL Classification:* I32, D10

### 1 Introduction

When poor families experience shocks, such as ill health, and downward trends, access to physical assets is often seen as one the first coping mechanisms through which a family might avoid (further) decline into poverty. However, selling assets in response to shocks today risks permanently lowering future consumption, and therefore one possibility is that households may choose to smooth assets rather than smooth consumption (Hoddinott, 2006). There is a steadily growing developing country literature that looks at this question, i.e. whether low-wealth agents can accumulate assets over time or whether they are trapped in poverty.

Some evidence suggests that poorer agents acquire a less remunerative portfolio and pursue asset smoothing, rather than consumption smoothing (Zimmerman and Carter, 2003;

Moser, 1998), i.e. during bad times the preservation of assets often takes priority over meeting immediate food needs. This view is also supported by Dreze and Sen (1989) who found this to be an early response to the threat of entitlement failure. However, the processes that underpin this are complex and not fully understood.

Given the high levels of extreme poverty, and pandemic level proportions of HIV/AIDS, in several sub-Saharan African (SSA) countries, understanding the ill health component to the aforementioned process is very important. For this research we are extremely fortunate to be able to focus on Uganda, a country that has significantly reduced the HIV/AIDS incidence, from a peak of more than 25% in the early 1990's to approximately 7% today, but where morbidity levels remain at more than 30%.

There is a rich series of household data for Uganda, a country that has received much acclaim, and research attention, for the reduction in monetary-based poverty from 56% in 1992 to 31% in 2005. However, despite such impressive poverty static based poverty figures, approximately 20% of Uganda's population remain in chronic poverty and 10% moved into poverty in 1999<sup>3</sup>; and despite the number of poverty related papers being produced over the last two decades, still relatively little is known about the factors and processes that truly underpin chronic poverty. For Uganda, we have both national level panel data, and a follow up 'local level' sample that considered ill health – and in particular, how ill health and HIV/AIDS impact on asset changes – of the chronic and transiently poor.

We aim to add value to the previous literature by complementing the national level panel data with qualitative and

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<sup>3</sup>Chronic Poverty refers to being persistently beneath the poverty line. In this case a household would have been monetarily poor for both the 1992 and 1999 household surveys.

quantitative data collected from a sub sample of the same households. This type of methodological approach follows on from the increased focus on combining qualitative and quantitative ('Q-squared') research methodologies to further our understanding of poverty (see for example, Barahona et al. 2004, for Malawi; Lawson et al. 2006, for Uganda). Given the relative infancy of applying 'Q-squared' approaches within a chronic poverty context, here we also explain a few examples of how these methods are combined to further our knowledge of health and HIV/AIDS and chronic poverty before then providing explicit examples of key findings.

This paper is structured as follows. The next section provides a background to the methodological approach in combining quantitative and qualitative research, before providing a descriptive analysis of the 1992/99 quantitative data and outlining the main findings in the first part of section four, before summarising in the final section.

## 2 Methodology

This study uses quantitative data from a matched panel dataset of 1,103 households complemented with local interviews, undertaken by the author in both 2005 and 2006. The qualitative data comes from the life history interviews (see below) and discussions with key informants.

### 2.1 Qualitative Data

Specifically, life history interviews were carried out on the households that were in a nationally representative sample of 1,103 households that had been interviewed for quantitative data in both the 1992 and 1999 national household surveys, therefore forming a two wave panel<sup>4</sup>. Based on the country's accepted monetary based poverty measures, a sample of households that are chronically poor (poor in both periods), never poor, moving into poverty, and moved out of poverty were selected (see Appendix for a summary of the national figures of households defined as chronically poor, moved into poverty, moved out of poverty, and never poor).

The sampling of households to be selected for further interview was based on the proportions in the panel, with 92 households interviewed (comprising roughly equal proportions of households, across several districts and 3 regions, that were persistently poor, moved into poverty, moved out of poverty and have never been poor). For logistical and budgetary reasons, the majority of the interviews took place in the Central Region of Uganda.

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<sup>4</sup>To ensure that the panel households were the same in both periods, a two part matching process was undertaken. The first stage matched the sex and age of the household head, allowing for an acceptable error range given uncertainty about precise ages etc. A second stage focused on those households whose head had changed over the period, for example where a household head had died and another member of the family had become the new head. See Lawson et al. (2006) for further details.

### 2.2 Quantitative Data

The main qualitative methodology used was detailed life histories of selected households from the household survey. This followed a semi-structured format that provided comparative information about households as well as recording responses to open-ended questions that arise during the course of interviews (see Lawson et al. 2008, for a further review of the methodological considerations associated with 'Q-squared' research). The latter focused on critical incidents, events and factors identified by households, and information that households identified as important but were not part of the questionnaire design. The life histories adopted a "best practice" approach drawing from the work of others, an extensive review of life history literature, advice from life history experts, and experience of the research team. Specifically, the life histories traced an individual's life from childhood to the present day, focusing on key events. In many instances the interviewee also drew a timeline at the end of the interview to triangulate the details of the interview, clarify any inconsistencies, and identify incidents or processes not captured in the previous discussion. Interviews took from one to two and a half hours.

We circumvent qualitative referencing problems of determining welfare levels as we 'anchor' to the money metric measure calculated in the national household surveys. However, self judgement of welfare status was also asked for. By interviewing the chronic, transiently poor and non-poor, we hoped to identify the factors causing their poverty or the advantages which protected them from falling into poverty, and to show in what way the experiences of the severely and persistently poor differed from those of the transiently poor. As previously done (Bird and Shinyekwa 2003), by conversing with a person about their life, we also hoped to learn more about path-determination in individuals' lives and to pinpoint key moments of choice – or the absence of choice –, but with the advantage of also having robust quantitative panel data to underpin this.

More specifically, and given that the last quantitative data collection (the final wave of this panel) was 6 years prior to this life history, the data collection around the first phase in the data collection involved establishing if the households were in fact the same ones from the panel. To assess the characteristics of the household, the former heads were cross checked, along with certain asset details. However, in addition, it was also necessary to observe at least a 'rough' monetary poverty measure for the current wave of data. Once this was established, the interviewee was then asked about changes over the period 2000-2005 and then 1992-99, followed by life history.

For the households that had 3 waves of panel data (1992/1999/2004), the same approach was adopted as above, which also allowed us to test the reliability of nationally based quantitative data<sup>5</sup>. We also collected data on new households

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<sup>5</sup>Approximately 200 households of the 1992/99 two wave panel were also interviewed in the 2004 Household Survey.

**Table 1.** Chronic and Transient Poverty By Health Status

	Chronic Poor	Moving out of Poverty	Moving into Poverty	Never in Poverty	All
Household Head Health Status					
Proportion of households with head who has a long term sickness (>10 days), in 1992	6.84%	6.44%	8.08%	6.92%	6.87%
Proportion of households with head sick, in 1992	21.8%	15.6%	28.3%	18.9%	17.9%

**Table 2.** Asset and Poverty Dynamics

	Poverty status 1992/1999				
	Chronic Poor	Moving out of Poverty	Moving into Poverty	Never in Poverty	All
Average land area (acres) cultivated 1992	2.71	2.75	2.47	2.76	2.72
Average land area (acres) cultivated 1999	3.27	4.90	2.41	5.56	4.60
Average number of cattle owned 1992	0.85	0.98	1.02	1.01	0.98
Average number of cattle owned 1999	0.72	0.96	0.82	1.56	1.14

(i.e. households that were not members of the original panel dataset). This was undertaken to gain an idea of the degree to which the poverty/non-poverty of more recently established and younger households was similar or dissimilar to the panel dataset. One potential problem of the panel dataset is that it shows what life is like in the middle and later life stage households but does not cover young households.

### 3 Empirical Analysis

This section first gives an overview of the general ill health/chronic poverty ‘story’, providing a background for the analysis that follows on asset and consumption behaviour of individuals, and particularly the chronically poor.

#### 3.1 Quantitative Insights

Using the panel data for 1992/1999, we can see from a series of fairly detailed descriptive and econometric analyses that ill health appears to be associated with both chronic and transient poverty. For example, Table 1 indicates that the initial health status of the household head appears to be associated with households that move into poverty – above average proportions (28.3%) of households who are headed by somebody who is sick moved into poverty during the period 1992 to 1999. In addition, above average proportions (8.08%) of households that were headed by somebody who was suffering from a long term sickness moved into poverty<sup>3</sup>.

The above finding has also been supported econometrically (see Lawson 2004) where it was found that if a household head is sick in 1992, then the household is significantly associated with an increased probability of moving into poverty (by 3.5 percentage points) and significantly associated with a reduced probability of never being poor (6.7 percentage points<sup>6</sup>).

Such findings are important in themselves (and supported by previous empirical evidence – e.g. Deininger 1999) and add value to our understanding – especially if we want to calculate such things as the specific costs of ill health. However, they tell us very little regarding the consequences of getting sick and the process through which ill health might then result in a household moving into poverty, i.e. the level of asset disposals etc. All the above findings imply that health and poverty are, in some way, associated with each other. ‘Q-Squared’ research allows us to understand the dynamics of such down and upward mobility in detail.

Analysing the 1992/1999 period we found that chronically poor households are less likely to own cattle, and own smaller numbers of cattle when they do (Table 2). In addition, both

<sup>6</sup>NOTE: HIV/AIDS is not accurately recorded in the UNHS 2003 survey, therefore in this instance a proxy of ‘long term sickness’ is used for HIV/AIDS and for those individuals with more severe sickness. There are obvious drawbacks to this assumption, therefore major limitations with respect to the conclusions that can be drawn about HIV, exist.

<sup>7</sup>All significant results are at or below the 5% level.

**Table 3.** Household Head Health Status and Assets

Asset Levels and Change	Chronic Poor		Moving out of Poverty		Moving into Poverty		Never in Poverty		All	
	Sick (1)	Not Sick (2)	Sick (3)	Not Sick (4)	Sick (5)	Not Sick (6)	Sick (7)	Not Sick (8)	Sick (10)	Not Sick (11)
Number of Cows at 1992	0.41	0.91	1.17	0.99	1.39	0.89	1.27	0.98	1.13	0.97
Number of Cows at 1999	0.15	0.78	0.45	1.13	1.36	0.70	1.21	1.62	0.88	1.22
% Increase in Cow Numbers	-63.6%	-14.3%	-61.5%	14.0%	-2.4%	-20.6%	-4.7%	65.6%	-22.1%	26.3%

the chronically poor households and those that moved into poverty cultivated less land, and experienced smaller increases in land area cultivated, between 1992 and 1999.

As with the descriptive data on ill health and poverty dynamics, the data for assets and poverty dynamics are enlightening but tell us little regarding the specific processes that underpin these movements – for example, they don't inform us as to why chronically poor households have experienced smaller increases in land area cultivated, or if ill health leads to asset depletion and therefore moves households into poverty.

Table 3 provides more detail that may enable us to understand the processes. We find comparing healthy and non-healthy headed households (column 11) that not only are land areas smaller for the sick than non-sick (3.54 acres and 4.59 acres respectively) but land increases for the sick are almost half that of the non-sick (65.7% compared with 36.7% for the sick). Similar trends were found to also exist for other enterprise assets such as chickens and cows (data not shown).

To inform ourselves further, some of the aforementioned panel data can also be complemented with retrospectively collected data. Table 4 highlights the incidence of major shocks for 1992-1999. More than 70% of chronically poor households that have had some type of shock over the period, have had a major illness shock, compared with a national average of 60%, although as expected asset sales appear lower for this group. This will simply be reflective of the fact that wealthier households have greater quantities to sell, and that, in absolute term, the poor will rely more heavily on other coping mechanism such as borrowing money. However, the above only provides a relatively scant coverage of ill health and chronic poverty and asset behaviour. The next section therefore complements the descriptive data with qualitative insights.

### 3.2 Qualitative Insights

Interestingly we found above that for the monetarily defined 'never poor' household<sup>8</sup>, assets clearly play a major role during 'times of crisis'. However, the life history information reveals the story to be more complex than a household that

<sup>8</sup>Using the consumption pae measure of poverty the household was not below the poverty line in either 1992 or 1999.

**Table 4.** Incidence Of Major Shocks To Households (In Past Seven Years)

	Type of Shock Suffered By Those Who Suffered Some Shock		
	Illness	Asset Loss	Sold Asset to Cope
National	61.6	25.3	8.3
Poor	64.9	25.2	7.8
Non-Poor	60.4	25.4	9.7
Chronically poor	71.2	25.3	8.5
Quintile			
1	63.7	25.5	8.6
2	65.6	27.2	10.3
3	65.1	21.4	8.2
4	63.1	22.2	9.2
5	54.4	29.2	6.2

(Source: Author's calculations, with Okidi 2004)

simply sells assets when faced with unmanageable health care, or other costs. For example, we found that there appears to be clear preferencing in relation to the types of assets sold (e.g. luxury goods such as radios were sold first), but the willingness to sell any assets were dependent upon the age and geographical location of the household head (e.g. older household heads were substantially less willing to sell any livestock – firmly believing that they were '*looking after the assets on behalf of future generations*'). It was clear that such households realised that selling such assets would substantially reduce coping strategies in the future.

In addition, however, it was noted that such a process also involves an element of 'Asset Smoothing' – e.g. in order to pay for medical bills/transport etc., food consumption was

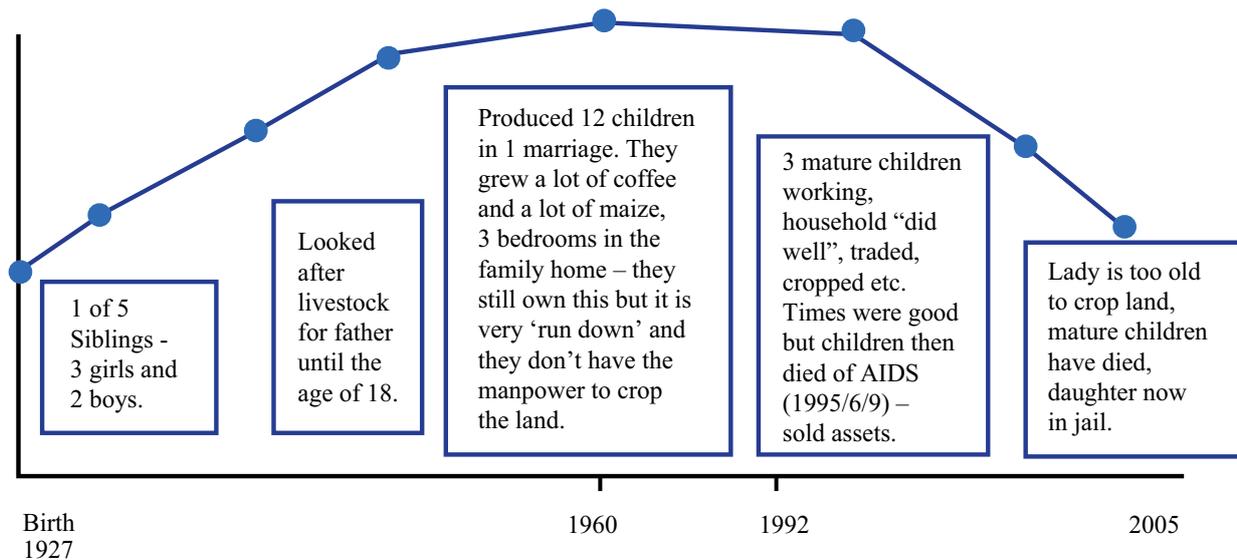


Figure 1. TIMELINE (Drawn by Interviewee)

commonly found to be reduced for a period of time. Only after experiencing reduced food consumption would assets be sold.

Therefore, by combining the aggregated national level quantitative finding with a, admittedly small but consistent, number of life histories, it appears that a significant proportion (see Table 5) of all households that resorted to ‘desperation sales’ had firstly attempted ‘asset smoothing’. In other words, all such households reduced food consumption in the first instance (many from 3 to 2 meals per day, but some from 2 to 1 meal per day) prior to selling assets. However, the extent of asset smoothing varied substantially according to both age of the household head and geographical location – it was common to find younger household heads to prefer asset smoothing by obtaining an MFI loan, rather than reducing food consumption, because they felt that they would be able to earn money to repay such loans in the future.

Furthermore it was of interest to note that, in several households, the social safety nets of Women Headed Households (WHHs) appeared substantially less developed than those of Men Headed Households (MHHs). There were several instances of this; but one example of a ‘never poor’ HIV/AIDS affected household probably highlights this better than most.

“The household was relatively comfortably off, but then her husband’s HIV/AIDS began to make him weak and he could not work much and she had to spend more and more time taking care of him. The wife became the main provider. As he got weaker and could not go out (and 8 months before his death he became bed ridden) friends visited and gave him a little money or gift – they never had a problem trying to get him sugar, milk, eggs, fruit, fish etc. because they were commonly given as gifts. He had many friends because he used to drink beer in the evening and when they did not see him they would call around.”

However after the man died, she found out that she had HIV/AIDS but she did not receive similar support because

“... being a woman, she spent more of her time at home and did not make such wide social networks, therefore limiting empowerment....”.

### III Health/Sickness/HIV/AIDS

The quantitative analysis in the first part of Section 3 clearly highlighted that ill health is associated with chronic and transient poverty; however, it was unclear as to the direction of causality. For example, are households more likely to be chronically poor/move into poverty and as a result of being unable to eat then fall sick, or vice versa. The quantitative data analysis is also unable to clarify how AIDS relates to poverty – primarily because large scale data on such issues tend to be very poor.

A number of households highlighted ill health to be a major influence in their deteriorating welfare status. We provide a timeline example, from a household that moved into poverty, to highlight some common findings regarding the impact of HIV/AIDS on welfare status (Figure 1).

For this example household, the panel data correctly suggest that the household moved into poverty after the mid 1990’s coffee boom ended. In fact, when originally interviewed, the household head identified the 1990’s as ‘very good times’. She explains the primary reason for this as being that she ‘... could work for labour and brew beer’. In addition she used to dig, produce, collect and sell maize. ‘Somebody next door used to buy the maize’. Several of her children used to crop the land and trade coffee. ‘We could choose what to eat whenever we wanted’, and ‘we even owned a radio’.

However, in the mid to late 1990’s, all of the adult working children died, with this appearing to be the major cause of the downturn and subsequent ‘movement into poverty’.

- Male children died of AIDS in 1999, malaria in 1996, and malaria in 1992, and a female child died in 1995 of

**Table 5.** Consumption Reduction<sup>9</sup>

	Ill Health affected head of household	AIDS affected head of household	Chronically poor	Non- poor
When faced with shock to household % that reduce food consumption	43.4%	69.0%	83.2%	45.3%
Coping mechanism is to reduce meals: From 3 to 2 meals per day	19.3	14.9	45.3	8.3
From 2 to 1.5 meals per day (i.e. tea in the morning, mid/late afternoon meal)	5.3	5.1	9.2	0.2

AIDS. All worked and contributed significantly to the household income.

- In addition, since 2000 though the household head thinks her old age has caused things to get worse as ‘she can’t dig and she can’t see properly’ and ‘has weakness in her hands’.
- ‘As much as there were good times we now no longer have a radio (we sold it for 80,000 Ug Sh (approx 40 US\$) when he [the son with AIDS] was sick, to pay for the health centre drugs). After this the house started falling apart etc. At the time of death, however, a local organisation did help with the funeral costs’.
- The household head currently eats 1 to 2 meals per day, compared with 3 meals in the mid 1990’s.

Although the above focuses only on one life history example of how HIV/AIDS and general sickness can impact on a household that moved into poverty, the processes underpinning such a movement were commonly observed throughout the life history data collection. A number of households identified themselves as having done ‘extremely well’ – increasing their welfare levels, sometimes acquiring both productive (livestock etc.) and non-productive assets (radios etc.) during the coffee boom of the mid 1990’s. It was common for such periods of increased wealth to be accompanied by an increase in family size (through both adoption of other family members and having additional offspring), then for serious sickness of the main ‘breadwinners’ to follow, with the main income earners being unable to work but also draining finances and selling assets to pay for health bills or food consumption. The increased household size that had previously resulted then commonly accentuated a households’ reduction in welfare, per capita levels – particularly when the offspring were of a schooling age and extra resourcing demands resulted (e.g. school fees).

<sup>9</sup>For succinctness, further disaggregated tables that associate other socio economic characteristics (i.e. age of head) with reduced food consumption, are not shown. Please contact author for more information.

Such a process supports the descriptive data that found an association between ill health and poverty, but it would seem to suggest that ill health is the major cause of welfare deterioration, at least during the high (but declining) period of HIV/AIDS prevalence in Uganda, and many households at last initially refrain from selling assets. We can see in Table 5, for example that, perhaps surprisingly and although not nationally representative, the lack of household based assets leaves the chronically poor with few options to cope other than to reduce consumption. Commonly this is from 3 to 2 meals per day – in 20% of the cases in which households are affected by ill health. More dramatically, in 10% of chronically poor households that are affected by a shock, they have reduced consumption from 2 to 1.5 meals per day. However, it is not just the reduction in meals that is important, but for how long this coping mechanism is adopted before alternative mechanisms are sought. On average those that reduced from 3 to 2 meals per day reduced food intake for 2-3 weeks, but worryingly, the chronically poor who reduced to 1.5 meals per day reduced for longer periods of 4 weeks or longer.

#### 4. Summary

In summary, regardless of however sophisticated the quantitative analysis may be, we are sometimes restricted by what panel data and cross section data can inform us (particularly when there are only 2 waves of panel data), not because the data is lacking but because of insufficient detail that underpin the data.” For example, in the aforementioned analysis, we found ill health was associated with chronic and transient poverty – but this does not provide a full of the issues behind such an interaction. In addition, although we were able to quantify the probability that a household is likely to be chronically poor as a result of the main productive income earner of the household being sick, two wave panel data tell us little regarding causality – i.e. does ill health, whether this be due to long or short term sickness, lead to asset sales or chronic poverty? And are assets sold immediately or are other coping mechanism first adopted. Only when we have the answers to such questions will we start to truly understand some of the

drivers, maintainers and interrupters of poverty. ‘Q-Squared’ research can help in this regard, as can national household surveys that are designed to elicit greater information.

In particular, the ‘Q-Squared’ approach adopted here has helped to further explain a number of important issues that underly poverty dynamics and in particular the role played by ill health. For example, there appears to be a clear association between sickness and poverty, and a direct causality between sickness and descent into poverty. There also appears to be clear preferencing in relation to the types of assets sold ‘in times of crisis’ (e.g. luxury goods such as radios were commonly sold first), but the willingness to sell any assets was dependent upon the age and geographical location of the household/head (e.g. older household heads were substantially less willing to sell any livestock – firmly believing that they were looking after the assets on behalf of future generations) and also the severity of illness. For example, households suffering from HIV/AIDS or at least a sickness that was

severely physically debilitating often sold assets immediately, i.e. without reducing food consumption first (see below).

Asset smoothing seems to be very common amongst households that encounter general sickness – e.g. in order to pay for medical bills, transportation etc. Food consumption was virtually always reduced for a period of time, before selling assets. However, the degree of asset smoothing is highly dependent upon the age, geographical location of the household and severity of illness. For example, and in contrast to virtually all the households headed by elders, several households with younger heads were able to smooth both assets and consumption by obtaining microfinance loans. Furthermore, households where the main income earners are suffering from debilitating ill health, such as HIV/AIDS, asset smoothing occurs less often. ‘Desperation sales’ are commonly found in such situations, although the socio-economic attributes of the head and spouse are extremely important in determining the rate of asset/consumption smoothing experienced.

## Appendix

### Poverty Incidence (by Region) – 1992/1999 Panel

	Poverty Status				
	Chronic Poverty	Moving out of Poverty	Moving into Poverty	Never in Poverty	All
National	18.9%	29.6%	10.3%	40.9%	100%
Urban/Rural and Region Column percentages					
Urban	8.1%	12.2%	8.8%	21.9%	15.0%
Rural	91.9%	87.8%	91.2%	78.1%	85.0%
Central Region	23.4%	32.0%	26.3%	37.2%	31.9%
East Region	19.6%	28.0%	21.9%	19.9%	22.5%
North Region	30.1%	11.3%	25.4%	6.8%	14.5%
West Region	26.8%	28.7%	26.3%	36.1%	31.1%

(Source: Lawson, McKay, Okidi (2006))

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