Chronic Poverty in Urban Ethiopia: Panel Data Evidence

By

Abbi M. Kedir
Department of Economics
University of Leicester

and

Andrew McKay
School of Economics,
University of Nottingham

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Abstract

In the developing world, little is known about urban chronic poverty based on quantitative evidence mainly due to lack of data tracking the same households over time. In this paper, we analyse 3 waves of a unique and rich panel data set on 1500 households collected through the Ethiopian Urban Household Surveys from 1994 to 1997. Based on real total household expenditure per month as our preferred welfare indicator, our results indicate that there is a high level chronic poverty (25.9 %) more concentrated in central and northern cities. Households that experience transitory poverty constitute 23.0% of the total. Both the descriptive and econometric evidence indicate that chronic poverty has been associated with household composition, unemployment, lack of asset ownership, casual employment, lack of education, ethnicity, age and to a certain extent to female-headedness. Among ethnic groups, the Tigre are less likely to be chronically as opposed to the Gurage.

I. Introduction

Analysis of poverty over time affords manly analytical possibilities. First, regardless of when or how often we survey households, we can identify those households that are more likely to remain poor or to escape it. For instance, examination of the characteristics of households moving out of or falling into poverty can help to identify the most vulnerable, as well as those with a better chance of escaping poverty. A finding along those lines can improve the effectiveness of policies aimed at fighting long-term poverty. Second, the welfare paths of along which households move and why they do so becomes clearer (Haddad and Ahmed, 2003; Bigsten et al, 2003). Third, by studying the welfare trajectory of households over time, we can assess the welfare impacts of recent growth strategies adopted by developing countries (Dercon, 2002).

In Africa, the analysis of poverty dynamics has been hampered by lack of panel data sets and there is little evidence on such an important dimension of poverty. Baulch and Hoddinott (2000) brings together recent studies on poverty dynamics in the developing world[1]. Teal (2001) examined dynamics of income and education using data from Ghana (check whether it is based on panel data).

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This paper adds another panel study to the small data studies from Africa by analysing three waves of the Ethiopian Urban Household Survey collected between 1994 and 1997. So far, dynamics of poverty has been investigated by Dercon, 2002 and Bigsten et al (2003) using panel data sets from rural and urban households collected in Ethiopia respectively. Neither of these studies analysed chronic poverty and they focus on assessing the poverty-impact of growth in the spirit of a series of similar studies elsewhere (Dollar and Kraay, 2000; Chen, Datt and Ravallion, 1994; Datt and Ravallion, 1992). There are few studies that explored the poverty situation of urban households in Ethiopia both in a static and dynamic context (Disney and Kedir, 2003; Kedir 1999;Taddesse 1997; Taddesse and Dercon, 1997) and there are almost non that focus on the chronic aspect of poverty particularly in urban areas.

Using both descriptive and econometric evidence, our study shows the extent of chronic and transitory poverty in urban Ethiopia; identify the characteristics of the poor and the factors that explain chronic and transitory poverty. We also examine the robustness of the pattern and trends suggested by the quantitative evidence by linking the subjective evaluation of welfare changes by households between two time periods. Even though it is not a particular focus of this study, this aspect of the study is a new dimension to the analysis of poverty dynamics in urban Ethiopia. A notable improvement over existing scanty evidence on urban poverty dynamics is our careful adjustment for temporal and spatial price differences and also for household composition.

The paper is organised as follows. Section 2 sets out the Ethiopian context and reviews the existing literature on urban poverty, while section 3 describes the panel data set used in this study. Section 4 summarises the trends in consumption-based measures of welfare and poverty, while section 5 complements this by summarising evidence from the subjective questions about directions of change in living standards. The characteristics associated with chronic and transitory poverty are then considered based on descriptive and econometric analysis in sections 6 and 7 respectively. Section 8 concludes the study.

II. Background

Ethiopia is one of the poorest countries in the world. GDP per capita is around USD 115, while life expectancy, educational enrolment, and other indicators of well-being are all extremely low. Agriculture remains the dominant economic sector contributing 45% of GDP. Over the last 30 years, life expectancy has shown little improvement, food production per capita has declined, and school enrolment has changed little (Bigsten et al 2003; IMF, 1999).

The country suffers spells of drought, with resulting famines and such conditions have a strong influence on the living standards of the whole population, particularly in the north and the dry south east part of the country. Another major growth deterrent for many years in the country had been internal conflicts, including the recent war with Eritrea. These major shocks have important implications for the welfare of both urban and rural households. In urban areas, the impact of the shocks is felt mainly through higher food prices and increased rural-urban migration, often contributing to increased urban poverty.

During the 1990s there were significant changes in the political and economic landscape of the country. Following a civil war, the socialist regime that has ruled for nearly two decades was ousted from power in 1991. In 1992/93, the government adopted an Economic Reform Programme with the support of the international financial institutions. Education and health are the investment areas that are targeted to fight long term poverty. Recently there is a huge drive to improve primary enrolment ratios and provision of primary health care in all parts of the country. With the ending of the internal armed conflict in the country, budget allocation in the 1990s for education and health sectors increased but this has been hampered by the Eritrea-Ethiopia conflict between 1998 and 2000.

Since the mid-1990s (the period coinciding with our study years) Ethiopia had been following a long-term strategy (10 year development strategy) of Agricultural-Development-Led Industrialisation (ADLI) which is inherently poverty reducing and is

the basis of the current PRSP process. Whether such a strategy has been effective in improving the living standards of the population can be judged from the empirical findings based on household surveys. The period 1994-1997 is believed to be a period of economic recovery driven by peace, good weather and much improved macroeconomic management. A study of poverty dynamics will ascertain whether such a belief is well-founded and how much of the favourable economic climate translate into better living standards for households. Given that the ADLI was also accompanied by a shift of government priority in favour of rural areas at the expense of cities, it is imperative to investigate how the urban centres perform in terms of welfare in recent years.

Poverty is widespread and multi-faceted in Ethiopia. Measured mainly in terms of food consumption, set at a minimum nutrition requirement of 2,200 calories per adult per day, and also including non-food consumption requirements, an estimate of 1995/96 shows that 45.5 percent of the population were below the poverty line. Poverty was prevalent both in rural and urban areas, with a coverage of 47 and 33 percent of the respective populations (IMF, 2000). Urban areas account for only 15 percent of the total Ethiopian population, but also have a high rate of incidence of poverty. Unlike the findings elsewhere in the developing world, urban and rural poverty levels in Ethiopia are not dramatically different from each other. Depending on the methodology adopted and the data analysed, the estimated urban overall poverty and food poverty range from 33 to 50 percent (Kedir, 2003; Bigsten et al 2003; MEDAC, 1999 Taddesse and Dercon, 1997).

There is little evidence on poverty trends in urban areas with much of the discussion focusing on cross-section evidence. Here we briefly discuss the trends in the head count indices computed by two panel studies that used the same data we are using for this study. Taddesse (1998) showed the trends in urban poverty between 1995 and 1997 using subjective and objective (consumption) poverty lines. His findings show that poverty slightly increased according to the subjective poverty lines (SPL) and decreased according to the consumption poverty lines. When we look at the disaggregated results, we observe heterogeneous trends across cities. Poverty has decreased in Addis Ababa, Awassa and Mekele while it increased in Bahar Dar, Dessie, Diredawa and Jimma; according to SPL and it has decreased in Addis Ababa,

Awassa, Bahar Dar, and Mekele, increased in Diredawa and Jimma, but remained the same in Dessie according to the consumption poverty line. Bigsten et al (2003) reported poverty trends (using consumption poverty lines based on Ravallion and Bidani, 1994) for urban Ethiopian between 1994 and 1997. For all urban areas, the study showed an increase in poverty from 1994 to 1995 and a decline in poverty from 1995 to 1997. Likewise in the case of Taddesse (1998), the trends vary by city. Between 1994 and 1995, poverty declined in Addis Ababa, Awassa, Bahar Dar and Jimma while it increased in Dessie, Diredawa and Mekele.

The most important urban issues are unemployment and underemployment, high food prices (following the abolition of food price subsidy), population explosion, homelessness, lack of sanitation, and migration from rural areas as well as from neighbouring countries such as Somalia, Sudan and Eritrea. The problem of unemployment and underemployment is worth discussing. The unemployed in urban Ethiopia are relatively well-educated. For example, most young adults who completed 12 years of schooling but fail to pursue their studies further are unemployed. In any given year, there are around 190,000 of them – a figure rising over time. In addition, since 1992, due to the recent economic reforms the Ethiopian government has stopped the automatic allocation of graduates of higher institutions of learning to employment which is currently creating a serious underemployment problem[2].

Other idiosyncratic and covariate shocks with strong implication on urban welfare relate to illness and climate. The recent alarming incidence of HIV/AIDS is eroding the income generating of households as infections are highest among the economically active population. The preponderance of HIV/AIDS in Ethiopia is among the highest in the world, estimated as high as 10.6 percent of the adult population by the end of 1999. Given the country's relatively large population, the number of people living with HIV/AIDS in Ethiopia is third largest in the world next to South Africa and India (IMF, 2000). Even if urban dwellers are not direct victims of the climate shocks, the impact of such shocks is felt through higher prices and migration which is increasingly congesting the cities. Food insecurity at a national level is the recurrent problem

[2] Before 1992 (i.e. under the socialist regime), everyone graduating from colleges and universities was guaranteed to be employed in the public sector. Now, most graduates work in the private sector and work in areas where they have not been trained.

following climate shocks and the current drought threatening the lives of about 11 million is a case in point. The country heavily depends on external food aid. According to data from the World Food Programme, Ethiopia lagged only Bangladesh in volume of food aid received over the period 1994-98 (Barrett and Clay, 2001).

III. Data

This study is based on panel data for 1994, 1995, and 1997 which was collected under the supervision of Department of Economics of Addis Ababa University in collaboration with Economics department of Goteborg university and Michigan State University. The survey covers 1500 households in each round, with the intention to resurveying the same households in subsequent rounds.

In each round, household information had been collected over a period of four successive weeks during a month considered to represent average conditions covering seven major cities in Ethiopia – Addis Ababa (the capital), Awassa, Bahar Dar, Dessie, Diredawa, Jimma and Mekele. The sample of household surveyed is intended to be representative of the main socio-economic characteristics of the country's major towns. To select the urban centres, all towns with populations of 100,000 and above were listed, and consideration was given to their relative representativeness in terms of populations and cultural diversity, the major economic activity of the towns and their administrative importance. On the basis of these criteria:- *Mekele* and *Dessie* in the north, *Bahir Dar* in the north west, *Addis Ababa* in the centre, *Diredawa* in the east, *Awassa* in the south and *Jimma* in the south west were selected. *Mekele* and *Dessie* were selected to represent areas often affected by drought and largely inhabited by ethnic groups in the north. *Bahir Dar* was included as a representative town in the main cereal producing areas of the country. *Addis Ababa* is by far the largest city and the capital, and reflect the diversity of the country's population. *Diredawa* is mainly a trading centre, while *Awassa* is the administrative centre of the south, and was chosen to represent the large *Enset (*false banana) food culture. Finally, *Jimma* was selected to represent the urban characteristics of the main coffee growing regions of the country.

The total sample was distributed over the selected urban centres proportional to their populations, based on the CSA's (Central Statistical Authority) 1992 population projections. Accordingly, the sample included 900 households in *Addis Ababa*, 125 in *Diredawa*, 75 in *Awassa*, and 100 in each of the remaining four towns. Once the sample size for each town was set, the allocated sample-size was distributed over all *weredas* (districts) in the town, in proportion to the *wereda* population. In the next stage, however, 50% of the *kebeles*[3] in each *wereda*[4] were selected randomly. For instance, in *Awassa* there are two *weredas* and 12 *kebeles*. Therefore, according to the sampling rule, both *weredas* and 6 of the *kebeles* have been covered by the survey. The sample size allocated to each *wereda* was then further distributed over the selected *kebeles*, again in proportion to population. In order to select the sampled households in each selected *kebele*, information that serve as a sampling frame was collected, by consulting officials and records of the selected *kebeles.* This information included the list of house numbers registered with the *kebele*, non-residential (business, office…etc.) house numbers, and houses demolished or abandoned after the registration by the *kebele*. A list of house numbers with potential respondents was then prepared. Households were picked from this list using a systematic sampling procedure, i.e. households were selected from the list at a fixed interval from a random start. The interval used depended on the range of house numbers available and the sample-size allocated to each *kebele*.

The sample frame used in the surveys misses an important social group (at least in urban areas from the point of view of measuring the extent of poverty in general and chronic poverty in particular). The homeless, a group whose ranks are swelling in most urban centres in Ethiopia, have not been covered by the surveys. The difficulty of interviewing this group more than once is obvious but a single cross section can provide significant information into the severity of their destitution.

However, these surveys enable researchers to answer important answers about the welfare of urban residents since they collect a rich array of information on household food and non-food expenditure; income by source; private transfers; consumption

[3] *Kebeles* are urban dwellers' associations and represent the lowest administrative units which consist of a number of households ranging from 500 to 1500.
[4] A group of kebeles form *weredas* and a city is sub-divided into different *weredas.*

habits; employment; education; demographics; credit; health; anthropometrics; dwelling conditions and subjective evaluation of welfare. We put most of the information provided by the data set into use particularly when we examine the characteristics of the chronically and the transitorily poor.

Adjustment for price differences across space and time is an essential component of poverty analysis. Therefore, in this study the household welfare indicator -total household expenditure per adult per month has been deflated over time using Laspeyres price indices constructed from city level average prices of 42 food and 14 non-food prices (see Appendix 2 for list of commodities included in the price index calculation) published by the Central Statistical Authority (CSA). We have not used unit values without appropriate econometric corrections because they are contaminated by quality effects and measurement error (Deaton, 1997)[5]. There is also a problem associated with converting quantities into standard units when households report purchases in non-metric units (Capeau and Dercon, 1998). These issues are often ignored in the poverty literature (e.g. Justino and Litchfield, 2002; Deaton and Tarozzi, 1999). In this study we use government reported prices because which are less prone to these empirical problems and give as an added advantage of compiling prices for non-food commodities. We found them to be available at a disaggregated level covering all food commodities and the some of the important non-food items collected in our survey cities for all the corresponding period.

The price indices for 1995 and 1997 are weighted aggregate price indices with 1994 as base year. City level budget shares are used as weights which are derived based on a representative basket from our survey. In the process of computing our price deflators, we have used some approximations. For instance, for some cities a price of a given commodity is not reported in the relevant month. In such instances, we take the average price of the same commodity for the region in which the city is located. For some commodities, the CSA bulletin gives the regional average price of commodities. We also used the price of the commodity in an adjacent month if it is not available for the particular month we are interested in. In cases where this regional price is missing

from CSA bulletin and the price for an adjacent month is not available, we calculate the average of the prices for the cities in which we observe the price as the price observed in the city where we have no price observation. For instance, the price of all commodities is missing in Mekele and the prices for this city are taken to be averages of the northern region prices (i.e. average of prices reported for Dessie and Bahar Dar).

We exclude commodities for which we do not observe price in any of the cities and only for some but not all periods. For instance, rice price has not been collected during the period corresponding to the first two rounds of the EUHS. During the period corresponding to the third round we have price information. We excluded such commodities from our price index calculation.

Overall, the CSA price survey collects more disaggregated price information than the EUHS when it comes to food commodities such as spices and non-food commodities. In the EUHS, households are asked to state the expenditure and the quantity of spices in general, but in the CSA price survey has price information for different spices (e.g. cinnamon, white cumin, black cumin…etc). Primarily, we decided aggregating the separate spice data of CSA and taking averages of the prices and compare them with the unit value of the category 'other prices' collected through the EUHS. We found that the CSA average price for spices is at least four times as large as the reported household-survey unit values. For example, for 1994 the average unit values of spices was 6.09 as opposed to the average price of 28.6 as reported by CSA price survey. Therefore, we decided to abandon spices from the index calculation.

As opposed to round 1, in rounds 2 and 3, the prices of teff, barley and wheat have been collected for three varieties both in our data and the CSA price data. To maintain consistency, we aggregated the prices of the three varieties of teff, barley and wheat in 1995 and 1997 to compute an average price for each good. This is because in round 1, the EUHS collects expenditure information only on each of the commodities on aggregate.

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[5] Since prices measurement and price index computation are important ingredients of poverty measurement, appropriate corrections need to be made on reported unit values (see Disney and Kedir,2003).

IV. Changes in welfare between 1994 and 1997

In this section, we look at the trends between 1994 and 1997 in the average welfare of the 1045 households in the panel as measured by real total expenditure per adult per month. We have preferred to use total household consumption expenditure to household income because we found out that, in our surveys, income has been reported by a much smaller number of households. This may not necessarily be deliberate; it could be due to the fact that households, particularly low-income households, have non-regular multiple sources of income many of which are available during peak seasons of certain types of employment and used to smoothen consumption during slack periods and therefore may not have been reported at the time of the survey. Secondly, the use of consumption expenditure can further be justified by the fact that it may a better indicator than current income even of long-term average welfare[6].

To make adjustment for price differences across time and between the different cities, we constructed Laspeyres price indices taking the 1994 as the base period and Addis Ababa the base region[7]. Differences in the size and composition of households were allowed for by expressing the consumption measure on a per adult basis based on n adult equivalence scale previously used in other empirical studies in Ethiopia (Dercon, 2002). The trends in this measure are summarised by its median values in Table 1, disaggregated into three geographical areas to examine the poverty trend by region. Households in the capital city Addis Ababa are classified as households living in the centre, while the south comprises households living in Awassa, Diredawa and Jimma, and the north those in Bahar Dar, Dessie and Mekele.

Table 1 indicates that during 1994-97, median consumption expenditure per adult declined for the total sample from 100.46 Ethiopian birr (ETB) to 73.4 birr. This decline is evident in all regions, is monotonic over the period, and is particularly pronounced in the southern and northern regions. The decline is particularly apparent between 1994 and 1995. Overall, the results suggest that household welfare

[6] See, for example, Lipton and Ravallion (1995) for this and other arguments in favour of using consumption expenditure as a proxy to income.

[7] The price indices for each region and year are based on both 45 food and 14 non-food prices (see data section for details).

deteriorated in urban Ethiopia between 1994 and 1997 even if it is believed that the period 1994-1997 was a period of economic recovery driven by peace, good whether and much improved macroeconomic management[8] (Bigsten et al, 2003).

Table 1: Median real total expenditure per adult per month (birr, 1994 prices)

Location	1994	1995	1997
Central (n=669)	84.48	80.37	74.76
South (n=220)	114.69	85.08	74.69
North (n=156)	102.22	72.37	70.75
All urban (1045)	100.46	79.27	73.40

N.B. Central = Addis Ababa; South =Awassa, Diredawa, Jimma and North = Bahar Dar; Dessie and Mekele

Computation of the poverty line

We followed the Food Energy Intake (FEI) method to derive our poverty lines for urban Ethiopia. Given information on real total expenditure per adult per month and household calorie consumption we estimated the cost of acquiring 2200 kcal per day per capita using the cost-of-calories function of Greer and Thorbecke (1986). The Recommended Daily Allowance (RDA) we used in this study is recommended by the World Health Organisation (WHO, 1985). Despite large interpersonal and intertemporal variations in nutrient needs, the RDAs can be used because they represent typical needs based on sampling large groups of people[9] (Greer and Thorbecke, 1986).

This calculation gives a consumption poverty line of 65.4 per adult per month in 1994 prices. Based on this line, Table 2 reports the incidence of poverty by region and year. As might be anticipated based on Table 1, the results show increasing urban poverty over this period, particularly between 1994 and 1995, and particular in the cities in the north and south. This is strongly suggestive of the presence of a substantial element of

[8] Except for the period between 1994 and 1995, the same trend is observed when we consider another welfare indicator – real food consumption expenditure.

[9] Being below the food poverty line in no way implies starvation or even malnutrition since the Recommended Daily Allowances (RDAs) include a safety factor which is necessary only for those individuals undergoing periods of illness, injury or stress.

chronic poverty over this period, but the extent of this can be quantified based on the panel data.

Table 2: Poverty Incidence by region and year

Region	1994	1995	1997
Central	38.1	41.6	43.2
South	25.9	35.9	40.0
North	30.1	42.3	45.5
All	34.4	40.5	42.9

Definition of chronic poverty

The identification of the chronic and transient poor is based on the following criteria. The chronically poor are defined as those households with real total expenditure per adult per month below the poverty line in all three years (i.e. 1994, 1995, and 1997). The transitory poor therefore are those with real total food expenditure per adult per month falling below the poverty line in one or two of the years. The method adopted here is less conservative in the identification of the chronic poor than the method used by Jalan and Ravallion (2000). The results of applying this criterion are summarised in Table 3, further disaggregating the transitory poor into those poor for two years and those poor for only one.

Table 3: Number of households by poverty status and by region (%)

Location	Poverty status	Number (%)
Central		
	Always poor	159 (23.8)
	Two period poor	104 (15.5)
	One period poor	137 (20.5)
	Never poor	269 (40.2)
South	Always poor	34 (15.5)
	Two period poor	42 (19.1)
	One period poor	38 (17.3)
	Never poor	106 (48.2)
North		
	Always poor	32 (20.5)
	Two period poor	30 (19.2)
	One period poor	28 (17.9)

	Never poor	66 (43.2)
All cities		
	Always poor	225 (21.5)
	Two period poor	176 (16.8)
	One period poor	203 (19.4)
	Never poor	441 (51.1)

A majority of households that experienced poverty at some point over this period were chronically poor, this also being the case in Addis Ababa and the cities of the north. But there is also a large element of transitory poverty, mainly accounted for in this instance of by previously non-poor households falling into poverty. This is confirmed by table 4 which shows the distribution of households depending on their poverty transitions over time. Many more households for instance move from having been non-poor in the first two years to being poor in the third then make the reverse transition.

Table 4: Location and poverty transition matrix between 1994 & 1997 (%)

Characteristics	**pnn**	**pnp**	**ppn**	**nnp**	**npn**	**npp**	**ppp**	**Nnn**	All
Central	43 (82.7)	24 (66.7)	29 (63.0)	55 (59.1)	39 (67.2)	51 (54.3)	159 (70.7)	269 (61.0)	669 (64.0)
South	6 (11.5)	8 (22.2)	9 (19.6)	21 (22.6)	11 (19.0)	25 (26.6)	34 (15.1)	106 (24.0)	220 (21.1)
North	3 (5.8)	4 (11.1)	8 (17.4)	17 (18.3)	8 (13.8)	18 (19.1)	32 (14.2)	66 (15.0)	156 (14.9)
All	52 (5.0)	36 (3.5)	44 (4.2)	93 (8.9)	58 (5.6)	94 (9.0)	225 (21.5)	441 (42.2)	1045 (100.0)

Note: **pnn**= Poor 94 and non-poor in 95 and 97; **pnp=** Poor in 94 and 97 and non-poor in 95; **ppn=** Poor in 94 and 95 and non-poor in 97; **nnp=** Non-poor in 94 and 95 and poor in 97; **npn=** Non-poor in 94 and 97 and poor in 95; **npp=** Non-poor in 94 and poor in 95 and 97; p **pp=** Always poor; **nnn=**never poor

In summary it is clear that around one quarter of urban households were poor throughout the period covered by the surveys, so that, based on a consumption measure, chronic poverty was clearly substantial in urban Ethiopia over this period.

V. Subjective Evaluation of welfare changes

Studies of household welfare and poverty in the developing world are mostly based on 'objective' measures derived from household budget surveys. Another important dimension we looked at this paper is an approximate comparison between the subjective evaluation of households about changes in welfare across any two periods and the welfare changes that are obtained by the quantitative analysis.

In the second and third waves, the survey included a module in which three basic qualitative questions on welfare and welfare changes were included. One of the questions asked respondents to state whether they think their general standard of living has deteriorated, improved or has remained the same compared with the previous visit and what they think is the behind the change, if any.

In this paper we will analyse the responses to this question. Since the responses will very much depend upon the way the question is posed and how the respondent understands the verbal labels, a few points are in order as to how the interviews were conducted. The questionnaires used in the survey are all in English, but the interviews were done in local languages[10] and to maintain uniformity commonly agreed translations were used. There may not however be exact correspondence between the translated verbal qualifications in the different languages given the cultural diversity of the sample. Even without the added complications of translations, the standard problem with this kind of survey is that there is no guarantee that different respondents will attach the same welfare connotations to the verbal qualifications.

In the survey, the question is posed to the head of the household and the response therefore represents an individual's evaluations about the welfare of the entire household. A possible reservation against this procedure is that other members of the household may have different evaluations. This is not likely to be a serious problem in our case since the head is usually the sole or the main bread-winner and, his or her evaluation tends to be most authentic.

Households were asked questions related to changes in household income, expenditure and living standards since last interview. The three questions asked to households are;

[10] Most of the interviews were conducted in Amharic, as it is the lingua franca in most parts of Ethiopia, particularly in urban areas. Other local languages were also used when respondents do not speak Amharic or preferred some other language.

a) ‘how has your income changed since last interview?’ ;b) ‘how has your household expenditure on basic needs changed since our last interview?’; c.)‘Has you standard of living changed since our last interview?’ The responses to these question are related to the quantitative evidence on poverty transitions between any two periods. Tables 5(a) - 5(d); and 6(a)-6(d) give the number and percentage of households who stated whether their welfare has deteriorated, increased or remained the same since the previous household survey.

Over all in 40 percent of the cases, our results indicate that there is a correspondence between the changes depicted by the quantitative analysis and the subjective evaluation responses given by households about their welfare. Given that changes in income, expenditure and standard of living mean different things, the figures for any given transition state are different. However, for households with correspondence between their subjective evaluation and the quantitative evidence, the percentages on income changes is close to the percentage on standard of living changes. This may suggest households perceive changes in standard of living as changes in income even if the former constitutes non-monetary dimensions of welfare such as security, improved access to health and education services.

Another important question posed to households is why do they think their welfare has changed. The most important reason cited relates to price changes and it is worth pursuing to investigate the link between changes in major commodities and household welfare (Justino and Litchfield, 2002).

The correspondence between the subjective evaluations and the quantitative evidence is generally higher for responses based income and standard of living as oppose to expenditure. Overall, there is a correspondence in 33.5 percent of the cases for expenditure, but in 40.3 and 42.8 percent of the cases for income and standard of living respectively. The modest association between subjective evaluations and quantitative

evidence on welfare is not surprising (see Baulch and Massat, 2003; Sahn, and Stiffel, 2000 on the comparison of monetary and non-monetary indicators of well-being)

The results of the comparison are a bit discouraging; the subjective evaluations tends to be more accurate when people are getting worse off than when they are getting better off. In general there seems to be a tendency for people to be pessimistic compared to the consumption measure.

Table 5: Subjective Evaluations of Welfare Change between 1994 and 1995

Table 5a: Non-poor in 1994 and poor in 1995

Direction Of change	Income change since last interview (%)	Changes in household expenditure on basic needs (%)	Change in standard of living (%)
Decreased	75 (49.3)	48 (31.6)	80 (53.0)
Increased	14 (9.2)	69 (45.4)	8 (5.3)
Remain the same	63 (41.4)	35 (23.0)	63 (41.7)
N (%)	152 (100.0)	152 (100.0)	152 (100.0)

Table 5b: Poor in 1994 and non-poor in 1995

Direction Of change	Income change since last interview (%)	Changes in household expenditure on basic needs (%)	Change in standard of living (%)
Decreased	25 (29.1)	20 (23.3)	31 (36.0)
Increased	14 (16.3)	36 (41.9)	6 (7.0)
Remain the same	47 (54.7)	30 (34.9)	48 (55.8)
N (%)	86 (100.0)	86 (100.0)	85 (100.0)

Table 5c: Poor in 1994 and poor in 1995

Direction Of change	Income change since last interview (%)	Changes in household expenditure on basic needs (%)	Change in standard of living (%)
Decreased	98 (36.3)	68 (25.2)	111 (41.3)
Increased	45 (16.7)	103 (38.1)	12 (4.5)
Remain the same	127 (47.0)	99 (36.7)	146 (54.3)
N (%)	270 (100.0)	270(100.0)	269 (100.0)

Table 5d: non- Poor in 1994 and non-poor in 1995

Direction Of change	Income change since last interview (%)	Changes in household expenditure on basic needs (%)	Change in standard of living (%)

Decreased	153 (28.7)	97 (18.2)	197 (37.0)
Increased	112 (21.0)	259 (48.6)	38 (7.1)
Remain the same	269 (50.4)	177 (33.2)	297 (55.8)
N (%)	534 (100.0)	533 (100.0)	532 (100.0)

Table 6: Subjective Evaluations of Welfare Change between 1995 and 1997

Table 6a: Non-poor in 1995 and poor in 1997

Direction Of change	Income change since last interview (%)	Changes in household expenditure on basic needs (%)	Change in standard of living (%)
Decreased	49 (38.3)	31 (24.2)	59 (46.1)
Increased	22 (17.2)	45 (35.2)	14 (10.9)
Remain the same	57 (44.5)	52 (40.6)	55 (43.0)
N (%)	128 (100.0)	128 (100.0)	128 (100.0)

Table 6b: Poor in 1995 and non-poor in 1997

Direction Of change	Income change since last interview (%)	Changes in household expenditure on basic needs (%)	Change in standard of living (%)
Decreased	31 (29.8)	20 (19.4)	33 (32.0)
Increased	27 (26.0)	41 (39.8)	20 (19.4)
Remain the same	46 (44.2)	42 (40.8)	50 (48.5)
N (%)	104 (100.0)	103 (100.0)	103 (100.0)

Table 6c: Poor in 1995 and poor in 1997

Direction Of change	Income change since last interview (%)	Changes in household expenditure on basic needs (%)	Change in standard of living (%)
Decreased	124 (39.2)	76 (24.0)	148 (47.6)
Increased	50 (15.8)	114 (36.0)	34 (10.9)
Remain the same	142 (44.9)	127 (40.0)	129 (41.5)
N (%)	316 (100.0)	317 (100.0)	317 (100.0)

Table 6d: Non- Poor in 1995 and non-poor in 1997

Direction Of change	Income change since last interview (%)	Changes in household expenditure on basic needs (%)	Change in standard of living (%)
Decreased	124 (25.5)	79 (16.3)	145 (30.5)
Increased	123 (25.3)	207 (42.7)	81 (17.1)
Remain the same	240 (50.3)	199 (41.0)	248 (52.2)
N (%)	487 (100.0)	485 (100.0)	484 (100.0)

VI Characteristics of the poor

In this section we consider the links between the characteristics of households with their inter-temporal poverty status comparing the chronically poor, sometimes poor and never poor groups using the format of table 3 above. As is common in panel studies (Haddad and Ahmed, 2003), the characteristics are initial period characteristics and these are used as explanatory variables our regression analysis discussed below.

Chronic poverty is often strongly associated with households having high dependency rates. While these may be life cycle effects, such households are nonetheless often persistently poor over many years, more than the time horizon of this data set. This is indeed the case in urban Ethiopia, where chronically poor households are more likely to be large, and likely to have more children in them compared to households that are only sometimes poor (Table 7). Similarly, the households that were never poor over this period are more likely to be smaller and likely to have fewer children than those that were sometimes poor. However, the never poor households are also more likely not to have any household members aged 55years and above compared to the other groups. The number of adults though tends not to vary very much across these four groups of households, so indicating that poor households in general and the chronically poor in particular typically have somewhat higher dependency rates. This of course is potentially a very important determinant of persistent poverty.

Table 7: Household demographics and poverty status between 1994 & 1997

Household size	**Never poor**	**One period poor**	**Two period poor**	**Three period poor**	**ALL**
Less than 3	33 (7.5)	15 (7.4)	15 (8.5)	11 (4.9)	74 (7.1)
Between 3 and 6	242 (54.9)	95 (46.8)	79 (44.9)	81 (36.0)	497 (47.6)
Above 6	166 (37.6)	93 (45.8)	82 (46.6)	133 (59.1)	474 (45.4)
Number of children less than 6					
0	303 (68.7)	146 (71.9)	117 (66.5)	129 ((57.3)	695 (66.5)
1	119 (27.0)	40 (19.7)	40 (22.7)	60 (26.7)	259 (24.8)
2 or above	19 (4.3)	17 (9.4)	19 (10.8)	36 (16.0)	91 (8.7)

Number of children between 6 and 14					
0	174 (39.5)	58 (28.6)	46 (26.1)	35 (15.6)	313 (29.9)
1	107 (24.3)	53 (26.1)	37 (21.0)	44 (19.6)	241 (23.1)
2 or above	160 (36.3)	92 (45.3)	93 (52.8)	146 (64.9)	491 (47.0)
Number of adults between 15 and 55					
0	6 (1.4)	2 (1.0)	3 (1.7)	5 (2.2)	16 (1.5)
1	32 (7.3)	15 (7.4)	20 (11.4)	13 (5.8)	80 (7.7)
2	89 (20.2)	43 (21.2)	38 (21.6)	46 (20.4)	216 (20.7)
3 or above	314 (71.2)	143 (70.4)	115 (65.3)	161 (71.6)	733 (70.1)
Number of the elderly over the age of 55					
0	282 (63.9)	114 (56.2)	96 (54.5)	130 (57.8)	622 (59.5)
1	125 (28.3)	69 (34.0)	65 (36.9)	81 (36.0)	340 (32.5)
2 or above	34 (7.8)	20 (9.9)	15 (8.6)	14 (6.2)	83 (8.0)

There are also important variations across households according to the characteristics of their head. A greater proportion of poor households are female-headed compared to the never poor, though among the poor female headed households are not more likely to be chronically poor (Table 8). There are some variations by ethnicity, with the gurage being more likely to be chronically poor and the tigre less so (Table 8 again). The marital status and religion of the head were not strongly associated with poverty status (results not presented).

Table 8: Gender and ethnicity of the head by poverty status 1994-97

Characteristics	**Never poor**	**One period poor**	**Two period poor**	**Three period poor**	**ALL**
Female	137 (31.3)	79 (39.3)	74 (42.0)	93 (42.1)	383 (37.0)
Ethnic group					
Amhara	221 (50.5)	104 (51.7)	80 (45.5)	104 (47.1)	509 (53.6)
Gurage	40 (9.1)	26 (12.9)	25 (14.2)	38 (17.2)	129 (13.6)
Oromo	81 (18.5)	38 (18.9)	34 (19.3)	39 (17.6)	192 (20.2)
Tigre	61 (13.9)	20 (10.0)	23 (13.1)	16 (7.2)	120 (12.6)

But the strongest association between poverty status and the characteristics of the household head is with education (Table 9). The heads of households that are never poor are much less likely to have no schooling and much more likely to have completed secondary education or above compared to the poor in general, but again especially in comparison with the chronic poor. Low levels of education are clearly another strong feature of chronic poverty.

Table 9: Level of Schooling of the head and poverty status, 1994-97 (%)

Characteristics	**Never poor**	**One period poor**	**Two period poor**	**Three period poor**	**ALL**
No schooling	86 (19.5)	75 (36.9)	67 (38.1)	95 (42.4)	323 (34.1)
Some primary	70 (15.9)	36 (17.7)	35 (19.9)	53 (23.6)	194 (20.5)
Primary completed	20 (4.5)	12 (5.9)	10 (5.7)	11 (4.9)	53 (5.6)
Some secondary	64 (14.5)	28 (13.8)	26 (14.8)	21 (9.3)	139 (14.7)
Secondary completed	91 (20.6)	25 (12.3)	14 (8.0)	7 (3.1)	137 (14.5)
College and vocational training	62 (14.1)	9 (4.4)	4 (2.3)	4 (1.8)	79 (8.3)
Degree and above	20 (4.5)	3 (1.5)	0 (0)	0	23 (2.4)

Among the chronically poor households 27.5% of their heads work as casual labourers or in female business activities, compared to only 7.7% for the never poor. These are insecure or low return activities and it is not surprising that the chronic poor disproportionately undertake such activities. The never poor are much more likely, and the chronic poor much less, to be wage workers compared to other groups. There are significant numbers of unemployed household heads in each poverty group, but the proportions are highest among the chronically poor. In most of these respects the transitory poor are intermediate between the other two groups.

Table 10: Employment status of the head and poverty status, 1994-1997 (%)

Characteristics	**Never poor**	**One period poor**	**Two period poor**	**Three period poor**	**ALL**
Own account worker	95 (21.5)	51 (25.1)	26 (14.8)	33 (14.7)	205 (20.4)
Female business activity	23 (5.2)	26 (12.8)	22 (12.5)	34 (15.1)	105 (10.5)
Wage worker	175 (39.7)	51 (25.1)	35 (19.9)	37 (16.4)	298 (29.7)
Casual worker	11 (2.5)	14 (6.9)	17 (9.7)	28 (12.4)	70 (7.0)
Pensioner	65 (14.7)	24 (11.8)	31 (17.6)	32 (14.2)	152 (15.2)
Unemployed	47 (10.7)	24 (11.8)	32 (18.2)	42 (18.7)	145 (14.5)
Disabled or unable to work	8 (1.8)	4 (2.0)	8 (4.5)	8 (3.6)	28 (2.8)

In short, there is clear evidence for a distinct group of chronically consumption poor households in urban areas, whose characteristics are plausible determinants of their

poverty status. And the transitory poor have many of the same characteristics, though to a lesser extent, in comparison with those that are never poor.

However, given that estimates of household consumption will inevitably be subject to measurement errors which are clearly of consequence for the classification of a household's dynamic poverty status, it is also of interest to see to what extent the patterns of poverty it identifies correspond to other potential measures of well being. One straightforward comparison is presented in Table 11, which looks at the estimated value of consumer durables owned by households in the different poverty status categories. Even if the estimated values respondents an give may be imprecise, this table nonetheless shows a clear ranking between the chronically poor, transitorily poor and never poor identified based on the consumption criterion. Nearly three quarters of the chronic poor own a total value of consumer durables below 1000 birr, compared to only one fifth of the never poor. More than a third of the never poor own consumer durables of 5000 birr or above in total value, while almost none of the chronically poor do. As elsewhere the transitory poor are intermediate between these cases. Patterns of ownerships of assets therefore provide corroboration of the poverty status classification identified based on the consumption standard of living measure.

Table 11: Asset Ownership of Households and poverty status, 1994-97
(%)

Value of assets*	**Never poor**	**One period poor**	**Two period poor**	**Three period poor**	**ALL**
0 <x ?1,000	90 (20.4)	80 (39.4)	105 (59.7)	165 (73.3)	440 (42.8)
1,000 < x ?5,000	185 (42.0)	92 (45.3)	57 (32.4)	50 (22.2)	384 (37.4)
5,000 < x ? 10,000	78 (17.7)	21 (10.3)	9 (5.1)	2 (0.9)	110 (10.7)
>10,000	86 (19.5)	7 (3.4)	1 (0.6)	0 (0)	94 (9.1)
Total	439 (100.0)	200 (100.0)	172 (100.0)	217 (100.0)	1028 (100)

N.B. *= values reported in Ethiopian birr.

VII. Factors affecting chronic poverty: Econometric Evidence

The descriptive analysis in the previous section has already clearly identified some distinct characteristics of chronically and transitorily poor households. However, to investigate this more carefully calls for a multivariate analysis, considering many factors together. This is considered here by estimating the factors influencing the

likelihood of a household being in each of the four poverty status groups identified above, by means of a multinomial logit model. The explanatory variables used in this model are summarised in the appendix; these include characteristics such as household demographics; main economic activity of the head; education of the head; gender, ethnicity and religion of the head. As before these are the values of these variables in the initial year (1994). While many of these were considered individually in the previous section, the regression model enables the simultaneous effects of these different factors to be considered and so gives a more robust assessment of their importance.

The dependent variable in this model takes the values of 0, 1, 2 or 3 depending on whether the household was respectively never poor, poor in one of the three periods, poor in two periods out of three or poor in all three. The multinomial logit regression gives the coefficient values for three groups relative to the fourth omitted group (here the never poor). However, the results are more easily interpreted in terms of the marginal effects and their significance. These show the impact of each explanatory variable on the likelihood of a household being in each one of the four groups.

First however we consider the fit of the regression. Jointly the explanatory variables are very strongly significant in explaining the outcomes according to a chi-squared log likelihood test. However, a more intuitive (if not always 100% reliable criterion) is to consider the ability of the model to predict which poverty status group the household is expected to be in based on the model. This is summarised as table 12 below, comparing predicted and actual groups for each household.

Table 12: Predicted poverty status group based on multinomial logit regression model

Frequencies of actual & predicted outcomes
Predicted outcome has maximum probability.

	Predicted				
Actual	0	1	2	3	Total
0	376	19	7	36	438
1	113	37	8	43	201
2	70	14	20	72	176
3	38	10	15	158	221
Total	597	80	50	309	1036

The prediction results are reasonably good for this type of model, with 57% of households predicted into the "correct" poverty status group. As is commonly the case in such models, the predictions are much better for the two extreme cases, the never poor and the always poor. This makes intuitive sense. There may not be clear distinctions between those that were poor for one or two periods in which they are observed, and for instance some of the households that were poor for only two periods might not be very different from the chronically poor except that they were lucky in one year. For the never poor households, 85% of those that actually are in this group are predicted to be never poor by the model, with the corresponding figure for the chronic poor being 71%. Of course there are type I and type II errors, but overall the fit is reasonable.

The marginal effects and their statistical significance are presented in Table 13 below. Some factors are strongly associated with being in all four of the groups. The value of assets owned by the household has a significant positive (negative) impact on the probability that the household was never poor (poor in one of more periods). The education of the head has a similar direction of impact, with lack of secondary education being a particularly important correlate for the chronic poor, but lack of college education mattering for those that were poor in only one period.

Multinomial logit Estimates: Determinants of Chronic and Transitory Poverty

Variable	**One period poor Marginal Effects (s.e.)**	**Two period poor Marginal Effects (s.e.)**	**Three period poor Marginal Effects (s.e.)**	**Never poor Marginal Effects (s.e.)**
Constant	-0.155 (0.18)	-0.114 (0.103)	0.009 (0.01)	0.25 (0.19)
Female	-0.024 (0.06)	0.029 (0.03)	0.002 (0.005)	0.01 (0.07)
Married	-0.088 *(0.055)	-0.008 (0.03)	-0.002 (0.004)	0.10 (0.06)
Age	-0.002 (0.002)	-0.0003 (0.001)	-0.0002 (0.0002)	0.002 (0.002)
Employment Variables				
Own account worker	-0.045 (0.07)	-0.071** (0.04)	-0.012* (0.01)	0.128* (0.07)
Wage employed	-0.107 (0.07)	-0.043 (0.03)	-0.009 (0.01)	0.159** (0.08)
Casual worker	0.062 (0.09)	0.068 (0.04)	0.008 (0.01)	-0.138 (0.11)

Pensioner	-0.146** (0.07)	0.009 (0.04)	-0.02 (0.01)	0.139* (0.08)
Unemployed	-.094 (0.07)	0.042 (0.03)	0.003 (0.004)	0.050 (0.08)
Disabled	-0.123 (0.13)	0.068 (0.06)	0.003 (0.01)	0.052 (0.14)
Schooling Variables				
Primary	-0.006 (0.08)	-0.037 (0.04)	-0.009 (0.01)	0.052 (0.08)
Secondary	-0.063 (0.06)	-0.04 (0.04)	-0.015* (0.008)	0.121** (0.06)
College and above	-0.142* (0.08)	-0.086 (0.06)	-0.14 (0.01)	0.24*** (0.09)
Location				
Central	0.060 (0.06)	0.009 (0.03)	0.003 (0.004)	-0.072 (0.06)
South	-0.019 (0.07)	0.009 (0.04)	-0.010 (0.006)	0.02 (0.07)
Ethnicity and religion				
Amhara	-0.054 (0.07)	-0.023 (0.04)	-0.008 (0.01)	-0.023 (0.08)
Gurage	-0.002 (0.09)	-0.009 (0.05)	-0.008 (0.01)	0.020 (0.09)
Oromo	0.009 (0.08)	-0.025 (0.04)	-0.011 (0.01)	0.030 (0.09)
Tigre	-0.035 (0.09)	-0.029 (0.04)	-0.022** (0.011)	0.090 (0.10)
Orthodox	0.089 (0.12)	0.062 (0.07)	-0.003 (0.007)	-0.148 (0.12)
Muslim	0.103 (0.12)	0.047 (0.07)	-0.006 (0.01)	-0.144 (0.13)
Catholic	0.059 (0.26)	0.083 (0.12)	-0.023 (0.02)	-0.119 (0.28)
Demographics				
Household size	0.046** (0.02)	0.035*** (0.01)	0.008** (0.004)	-0.089*** (0.02)
Children less than 6	-0.029 (0.04)	-0.011 (0.02)	-0.003 (0.003)	0.042 (0.04)
Girls between 6 and 14	-0.004 (0.03)	0.004 (0.02)	-0.001 (0.002)	0.0006 (0.03)
Males between 15 and 55	0.003 (0.02)	-0.025* (0.01)	-0.006** (0.003)	0.027 (0.03)
Females b/n 15 and 55	-0.048* (0.025)	-0.03** (0.01)	-0.005** (0.002)	0.083*** (0.02)
Males over 55	-0.008 (0.05)	0.036 (0.03)	-0.0006 (0.004)	-0.027 (0.06)
Females over 55	0.059 (0.04)	-0.026 (0.03)	-0.002 (0.003)	-0.031 (0.051)
Assets	-0.90E-05 *	0.31E-04 ***	0.11E-04	0.51E-

	(0.52E-05)	(0.29E-05)	*** (0.33E-05)	04*** (0.59E-05)
No of observations	1036			
Log –likelihood	-1072.059			
$?^2$	576.08			

N.B. *,**,***=significant at 10%, 5% and 1% respectively.

There are also important demographic effects. A larger household size is significantly positively associated with the likelihood that a household is sometimes or always poor, and significantly negatively with the likelihood that the household was never poor. In terms of composition, it is numbers in the 15-55 age range that is particularly important. An increased number of females aged 15-55 years in the household has a significantly positive impact on the likelihood that a household was never poor, and a significantly negative impact on the probability that it is sometime or always poor. An increased number of in the same age though only has a significant negative impact on the likelihood of a household being poor in two or three periods.

The economic activity of the household head is also an important determinant of which poverty status group a household is in. As might be expected employers are significantly less likely to be poor for two or more periods. Wage workers and indeed pensioners are significantly more likely to be never poor. Te former result is expected given the descriptive analysis above, but the latter is perhaps surprising given the finding above that non-poor households are more likely not to have any members aged 55 and above. Clearly many of those where the household is receiving a pension are non–poor, but why this is the case needs to be investigated further (for example, does it reflect the fact that in many of these households other members are working and are in fact the effective "economic head").

Also interesting in these results are the factors that are not significantly associated with a household's poverty status. It might have been expected from the previous section that the fact that the head was a casual worker would be strongly associated with the household being persistently poor, but this is not in fact the case. This may be because this characteristic is strongly associated with a lack of education, which is in fact the fundamental factor underlying why the head can only work as a casual labourer. This clearly though needs to be established more definitively. Ethnicity is another factor which is generally not important, apart from the fact that the tigre are significantly less

likely to be chronically poor. Again the suggestion from the descriptive analysis that the gurage were more likely to be chronically poor may in fact be a reflection of other factors, such as lower levels of education or the type of activities in which they are engaged. Again this is an issue to be investigated further.

VIII. Conclusions and next steps

In an initial analysis based on the Ethiopian Urban Household Survey panel data covering the period 1994-97, this paper has demonstrated the existence of sizeable chronic urban poverty. Of course this partly reflects the generally increasing levels of poverty over this period, but also reflects the fact that few people that were initially poor or fell into it over this period subsequently escaped. In urban Ethiopia there are clearly distinct groups of chronic, transitory and never poor households, and these differences are reflected in their characteristics. Chronic poverty is strongly associated with high dependency rates an large household size, and even if some of this is just a lifecycle effect, this still persists over many years. Lack of education is another fundamental factor associated with, and probably underlying, poverty in general and chronic poverty in particular, and this lack of education seems to results in many chronically poor working in insecure or low return activities, or being unemployed. Significant additional numbers of the homeless are also likely to be chronically poor.

Clearly further in-depth analysis is needed to understand better the factors associated with chronic poverty and how they interact. Qualitative information on urban poverty will clearly complement and enrich this understanding with important insights that cannot be obtained from surveys. In addition though it will be important to understand the factors associated with what few escapes from poverty there were over this period, in order to understand why other households were not able to make this transition. Similarly it will be important to investigate why so many fell into poverty over this period. Micro analysis alone will not enable a connection to be made between changing patterns and levels or urban poverty and the broader policy environment (notably macroeconomic stability and the change in development strategy associated with the ADLI) but it is an important input to this discussion.

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APPENDIX

Name of variable	Description

Female	Dummy=1 if head is female
Married	Dummy =1 if head is married
Age	Age of the head
Occupation	
Own Account Worker	Dummy =1 if the head is own account worker
Wage	Dummy =1 if head is wage employed
Casual worker	Dummy=1 if the head is casual worker
Pensioner	Dummy=1 if the head is a pensioner
Unemployed	Dummy =1 if the head is unemployed
Disabled	Dummy=1 if the head is disabled
Schooling	
Primary	Dummy=1 if head has completed primary schooling
Secondary	Dummy =1 if head has completed secondary schooling
College and above	Dummy =1 if head has completed college education or above
Location	
Central	Dummy =1 if the household is located in the capital city
South	Dummy =1 if the household is located in the southern urban areas (i.e. awassa, diredawa and Jimma)
Ethnicity and religion	
Amhara	Dummy =1 if the head is an amhara
Gurage	Dummy =1 if the head is a gurage
Oromo	Dummy =1 if the head is an oromo
Tigre	Dummy =1 if the head is a tigre
Orthodox	Dummy =1 if the head is an orthodox Christian
Muslim	Dummy = 1 if the head is a muslim
Catholic	Dummy =1 if the head is a catholic
Demographics	
Household size	Number of household members
Children less than 6	Number of children aged less than 6
Girls between 6 and 14	Number of girls between 15 and 55
Males between 15 and 55	Number of males between 15 and 55
Females between 15 and 55	Number of females between 15 and 55
Males over 55	Number of males over 55
Females over 55	Number of females over 55
Assets	Value of assets owned by households in Ethiopian birr

Poverty Incidence by region and year

Region	**1994**	**1995**	**1997**
Central	38.1	41.6	43.2
South	25.9	35.9	40.0

North	30.1	42.3	45.5
All	34.4	40.5	42.9