Final Report ESCOR Project R 7909:

Paths Out of Poverty

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Background and Objectives

The project was designed to build on recent research findings on the key factors in reducing poverty by examining the lifetime income opportunities of people living in developing countries. As we enter the 21st century development practitioners, politicians and academics are still struggling to identify what determines an individual's chance of escaping poverty. Significant advances have been made in defining who the poor are through the use of multidisciplinary methods (Chambers, 1994; Booth, 1997); identifying the determinants of poverty and possibilities of escaping poverty using regression analysis (Owens and Hoddinott, 1999; Appleton, 1998); and outlining policies to combat poverty, including the World Banks (1990) three-pronged approach focusing on labour-intensity, human capital investment and social protection arrangements, and more recently strategies based on asset-building and empowerment. This research proposal focused on a longer run issue: what impact do the lifetime components of wage/non-wage employment, rural/urban location, education and assets have on poverty and income levels? From existing research we know that income opportunities for people living in developing countries are determined by a range of factors which include:

- whether individuals have wage or non-wage opportunities,
- the income opportunities from self-employment,
- whether they live in rural or urban areas,
- the level of education attained,
- and whether they have access to, or can acquire, assets in the form of land or finance.

The research aimed to identify some of the paths individuals may take out of poverty. We proposed to investigate which paths are better, by how much are they better, and what prevents movements between these income sources. In addressing the research hypotheses posed, we adopted both a general approach and one focusing on the specifics of some of the general issues. In the first section we will outline the general approach we adopted and its major results. In the following section we will consider the specifics related to certain aspects of the determination of incomes.

Research Methods for Investigating Life Time Paths Out of Poverty

The research focused on two countries, Ghana and Tanzania. As is explained below much of the work on the Tanzanian data has been published as part of the Poverty Survey on Tanzania. In this section, therefore, we focus mainly on the Ghana data leaving until the end a comparison with data drawn from the Tanzanian survey.

The data available for assessing changes in consumption per capita in Ghana over the 1990s is presented in Table 1. We begin by setting out the figures for expenditure from the published reports on these data. Table 1 line 1 shows figures from GSO (1995) for household expenditure per capita in 1991/92 prices, line 2 shows the figures from GSO (2000) for household expenditure per adult equivalent from 1991/92 to 1998/99 in 1998/99 prices. If we link these figures to provide an index of household expenditure per capita (thus ignoring any differences between numbers and adult equivalents) we obtain a rise in per capita expenditure of 35 per cent over the decade. The index number is shown in line (3) of Table 1.

In this research we adopted a measure of per capita expenditures as we propose to control for household size in deriving life cycle histories. To that end we show, in line (4) of Table 1, the nominal figures for expenditure per capita over the four periods. It will be noted that the figures for 1991/922 and 1998/99 are very close, although not identical, to the relevant ones from the published reports. In the Table we report the CPI indices we are using and then provide two series of constant price household expenditure per capita.[1] The implications of these calculations are shown in index number form in line (9) of the Table. Per capita household expenditure rises by 16 per cent, approximately half the figure in line (3), obtained by linking the GSO studies.

Next we turn to the macro data. Table 1 lines (10)-(12) show per capita figures for GDP, investment and consumption taken from the World Bank Indicators Data for 2000. Line (13) shows the implied rise in consumption per capita to be 12 per cent which is lower, although not by very much, to the figures from the surveys given in line (9). Line (14) shows the data from the surveys for the incomes in the principal jobs of the individuals in the labour force. For reasons we will come to, this income number is likely to be less reliable than the expenditure data. In the final two lines of the Table, we show the logs for the per capital household expenditure and the income data. It is these which will be used as the basis of the growth rates we will present and for the life histories of individuals in the economy.

We conclude that there is a broad concordance between the micro and macro data for the data for per

1 For the third and fourth waves of data the CPI indices are the deflators used by the published reports. For the first two waves of the data we have linked these figures to a measure of the CPI derived from figures from the Ghana Statistical Office.

Table 1 Expenditures in Ghana 1987/88-1998/99: Household Survey and Macro Data

		GLSS1 1987/88	GLSS2 1988/89	GLSS3 1991/92	GLSS4 1998/99
1	HHEXP/Capita ('000 cedis 1991/92 prices) (a)	198.3	187.5	215.0	
2	HHEXP/AE ('000 cedis 1998/99 prices) (b)			1130.8	1412.1
3	Index 1998/99=100	73.9	69.9	80.1	100
	HHEXP/Capita				
	Weights used for GLSS 4				
4	Nominal ('000 Cedis)	87.0	107.9	208.9	1,336.3
5	CPI 1998/99 prices	6.8	8.6	15.8	88.7
6	CPI 1991/92 prices	43.3	54.6	100	561.2
7	Real ('000 Cedis 1998/99 prices)	1,283.2	1,249.1	1,326.8	1,336.3
8	Real ('000 Cedis) 1991/92 prices)	202.7	197.4	209.6	235.0
9	**HHEXP/Capita Index 1998/99=100**	**86.5**	**85.7**	**90.5**	**100**
10	GDP per Capita ('000 Cedis 1998/99)	796	814	857	940
11	Investment per Capita ('000 Cedis 1998/99)	145	167	176	208
12	Consumption per Capita ('000 Cedis 1998/99)	643	653	665	719
13	**Consumption per Capita Macro Index 1998/99=100**	**89.4**	**90.8**	**92.4**	**100**
14	**Income in Principal Job** ('000 Cedis 1998/99) (c)	**1,430**	**1,537**	**1,814**	**1,990**
	Natural Logs of				
15	Real HHEXP/Capita ('000 Cedis 1998/99 prices)	13.78	13.75	13.79	13.87
16	Income in Principal Job ('000 Cedis 1998/99)	13.30	13.20	13.55	13.41

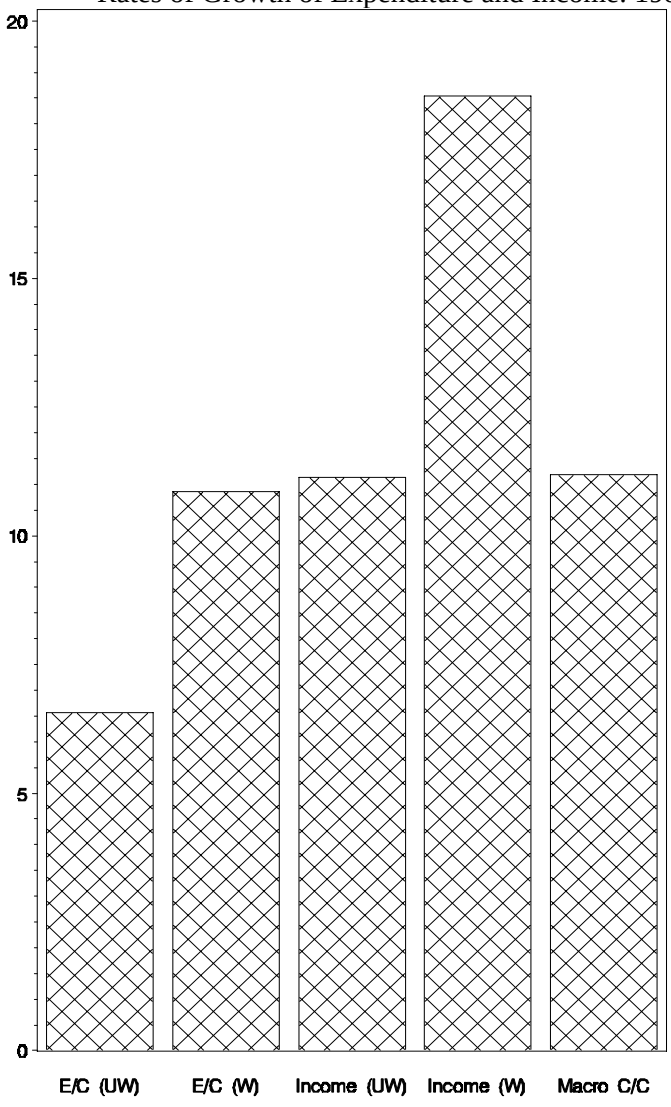
Sources: GLSS Surveys and World Development Indicators (2000). As noted in the text the aggregate expenditure data for the third round of the survey were revised at the time the fourth round was analysed. We use throughout this study the original data so that we can compare our results with those published in GSO (1995).

(a) Household Expenditure per Capita (HHEXP/Capita) is taken from GSO (1995, Table 2.1 p.6).
(b) Household Expenditure per Adult Equivalent (HHEXP/AE) is taken from GSO (2000, Appendix 1, p.35).
(c) Income in the Principal Job is obtained from the employment part of the GLSS surveys.

capita consumption. The two survey reports should not be linked as we have done in Table 1 line (3) in part because the estimate of household expenditure per capita for round 3 of the survey was substantially reduced when the fourth round was analysed.[2] The published reports do not allow comparisons to be made over the decade which is our purpose here. Figure 1 compares three sources of data all of which are related to welfare change.

Figure 1

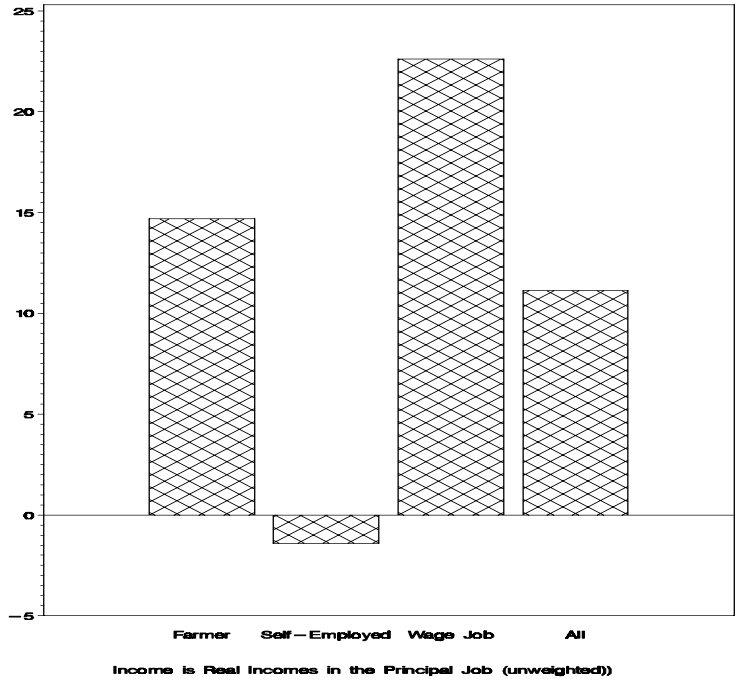
Rates of Growth of Expenditure and Income: 1987/99-1998/99



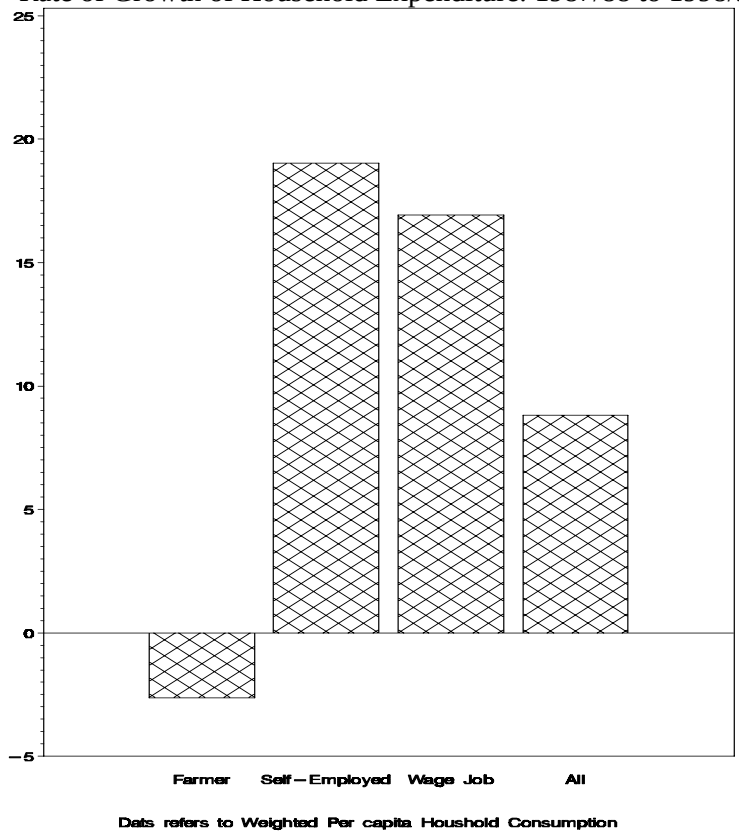
2 In GSO (1995, Table 2.1 p.6) the figure for consumption per capita is given as Cedis 215,000, as reported in our Table1. At the time of the analysis of the fourth round this figure was revised down to Cedis 183,000, a reduction of 15 per cent. This figure can only be obtained from the data, not from the report, which gives figures in terms of adult equivalents rather than per capita and uses 1998 prices. In GSO (2000, p.3) there is a warning that "the results reported here are not strictly comparable with the previous report". In this paper

Figure 2

Rate of Growth of Income: 1987/88 to 1998/99



Rate of Growth of Household Expenditure: 1987/88 to 1998/99



we use the original data. A more detailed use of the data can be found in Teal (2001).

The first is a measure of household per capita consumption, the second is a measure of income - both of these drawn from the GLSS survey data. The third is the data from the macro accounts. In the creation of the fourth round of the GLSS data, household weights were created to address some problems in the sample design. In Figure 1 we present the data for both weighted and unweighted averages for both income and consumption. The weights were designed to be applied to households so it is probable they should not be applied to the individual data. The Figure shows that weighted consumption, unweighted income and the macro consumption data all give a similar answer: real consumption per capita/income rose by 11 per cent over the decade. In particular it appears not to matter whether we approach the question from the basis of household per capita consumption or individual incomes, assuming unweighted income is correct.

In Table 2 we show how the allocation of workers across types of employment has changed across the four waves of the survey. The major change has been a shift from wage employment to urban self-employment. Thus we need to assess how far consumption and incomes of these different workers has changed.

In Figure 2 the data for income and consumption per capita are shown. In the top part of the Figure we present the rates of growth of income where individuals are classified by their principal source of income while in the bottom half we present rates of growth of household expenditure per capita where households are classified by the occupation of the household head. While both income and consumption data support the view that wage employees have done much better than farmers, the perspective on the self-employed depends on whether we measure income or expenditure. The wage sector has the highest levels of expenditure (see Table 3 for a breakdown) so it is clear from the figure that the relatively rich got richer faster.

It is usually argued that the expenditure data is more reliable than the income, particularly for the self-employed where measurement problems are severe. If that view is accepted then it is the household expenditure data in Figure 2 which must be used as the basis for any welfare assessment. Adopting the household as the basis for measurement however creates the problem of how household averages can be linked to individuals in the household. To two aspects of that problem we now turn.

Human Capital and Household Size

Household consumption is a function of many factors which include the composition of the household, the source of earning in the household, the number of children and its size. We are not intent here on providing an assessment of all these factors, our aim is limited. We wish to show if we focus on two aspects of the household which are known to be important - its level of human capital and its size - how

Table 2a Labour Force Status: Percentages of Individuals by Category of Employment

	1987/88	1988/89	1991/92	1998/99
Wage Employees	17.3	18.1	15.4	12.8
Government	8.0	7.9	7.8	5.9
State Enterprise	1.9	2.3	1.2	0.5
Private	7.4	7.9	6.4	6.0
Other (a)	na	na	na	0.4
Farmer	58.7	54.6	56.7	54.7
Non-Agricultural Self Employment	19.5	24.2	23.5	28.2
Unpaid Family	2.2	1.1	1.3	1.0
Unemployed	2.2	1.9	3.2	3.4
Total	100	100	100	100
Labour Force participation	0.87	0.89	0.89	0.87

Table 2b Labour Force Status: Sample Size (Number of Observations)

	1987/88	1988/89	1991/92	1998/99
Wage Employees	1,053	1,133	1,231	1,308
Government	485	492	627	599
State Enterprise	118	142	94	55
Private	450	499	510	616
Other (a)				55
Farmer	3,567	3,420	4,548	5,579
Non-Agricultural Self Employment	1,185	1,513	1,885	2,875
Unpaid Family	135	73	255	103
Unemployed	136	120	102	344
Total	6,076	6,259	8,021	10,209

(a) In the 1998/99 survey age workers who worked in NGOs, co-operatives or international organisations were identified separately.

Table 3 Household Expenditure per Capita (Annual Measures)

	1987/88	1988/89	1991/92	1998/99
Wage Employees (N) (Units)	797	896	991	1046
1998 Cedis	1,739,173 (1,511,205)	1,671,170 (1,526,970)	1,814,395 (1,627,723)	2,041,369 (1,784,568)
Logs (1998 cedis)	14.11 (0.70)	14.06 (0.72)	14.12 (0.77)	14.28 (0.73)
US $	659 (561)	613 (559)	707 (649)	812 (708)
Farmers (N) (Units)	1,649	1,655	2,299	2,940
1998 Cedis	1,001,534 (814,842)	960,789 (846,274)	969,044 (798,623)	1,007,263 (831,395
Logs (1998 cedis)	13.58 (0.68)	13.52 (0.69)	13.54 (0.70)	13.55 (0.70)
US $	384 (310)	350 (304)	384 (315)	382 (318)
Self employed (N) (Units)	517	720	985	797
1998 Cedis	1,487,194 (1,275,218)	1,426,714 (1,328,677)	1,592,886 (1,409,819)	1,802,173 (1,527,338)
Logs (1998 cedis)	13.94 (0.72)	13.88 (0.74)	14.02 (0.72)	14.13 (0.77)
US $	657 (484)	522 (484)	617 (556)	718 (619)
All (a) (N) (Units)	2,963	3,271	4,275	5,465
1998 Cedis	1,284,687 (1,172,096)	1,257,936 (1,219,156)	1,308,746 (1,246,675)	1,454,805 (1,348,863)
Logs (1998 cedis)	13.78 (0.73)	13.75 (0.75)	13.79 (0.77)	13.87 (0.79)
US $	489 (440)	460 (444)	512 (492)	570 (538)

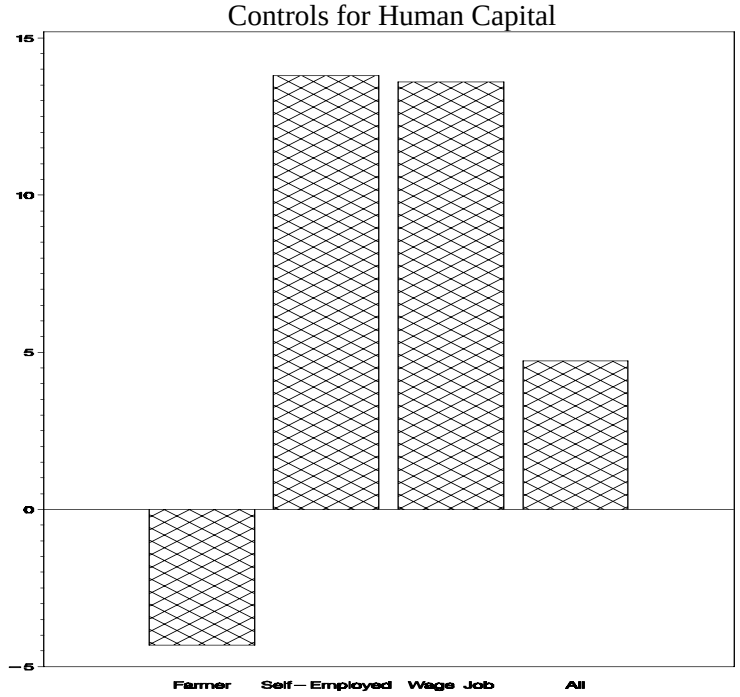
N is the number of households, the figures in ( ) parentheses are standard errors.

(a) These figures are the totals for the three categories identified, not for all households in the survey.
Sources: GSO Surveys.

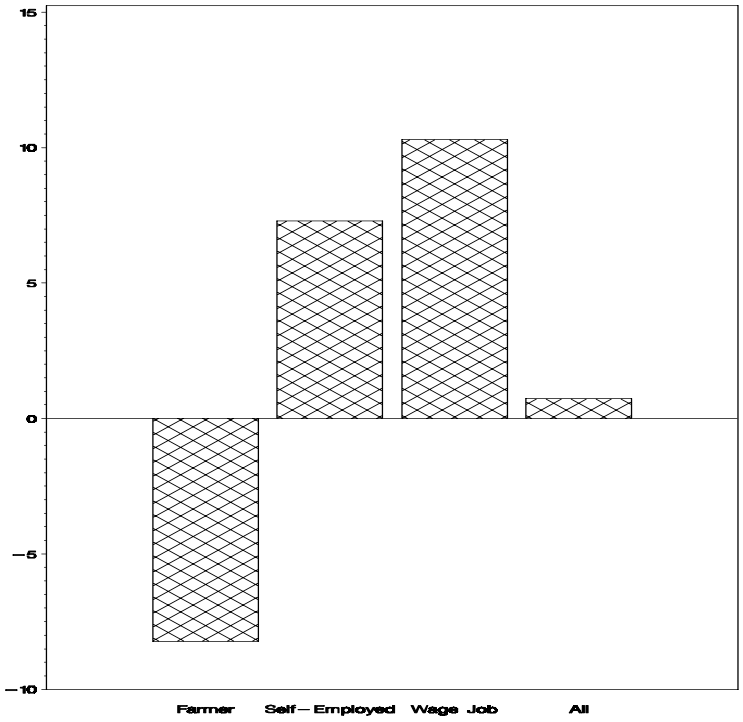
this affects our assessment of the welfare outcomes. We do this by controlling for the education of the household head and the size of the household measured by the log of the total number of household members. With such controls the increases in income as measured by the time dummies have an interpretation as to how much income would have risen for a household with given levels of education and given size. So far we have addressed the issue as to how consumption growth has varied across households whose heads have different sources of earnings. We now add these two sets of controls - for education and household size - to each of the three types of household - in Figure 3.

Figure 3
Rate of Growth of Household Expenditure: 1987/88 to 1998/99

Controls for Human Capital



Controls for Human Capital and Household Size



The results are rather dramatic. The rise in decadal consumption per capita is halved when we control for

the human capital of the household head and is reduced effectively to zero when controls for household size are added to those for human capital. The effect of the controls for household size is uniformly across all three types of household to greatly reduce the underlying rise in consumption. While these results are in no sense causal, they do not tell us what happens to household consumption if we alter education or size, they do however tell us what on average happened to types of households over this ten year period. For households of a given size, and given level of education, household consumption has not risen at all. Further, and more important from a welfare perspective, they show that the differences across household type are further accentuated by these controls.

Life Histories

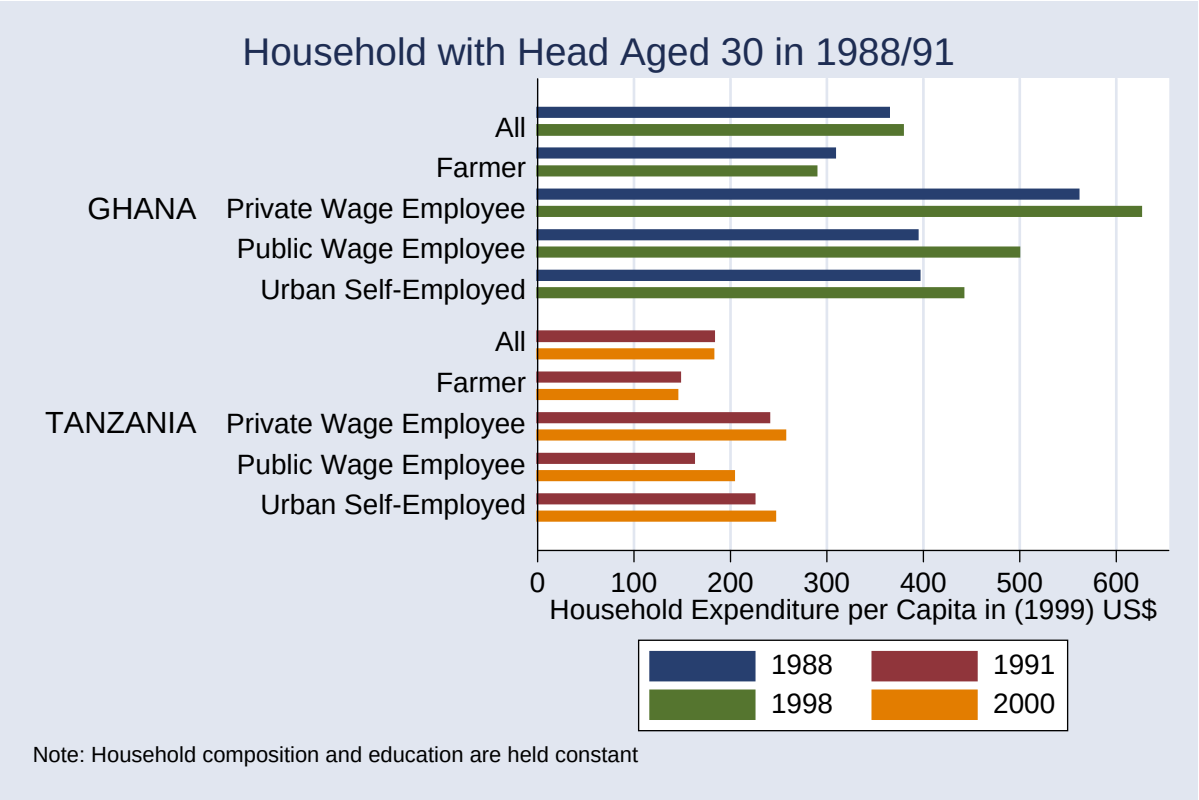
So far the analysis has focused on showing how income growth differs greatly by income source. The largest and poorest section of Ghanaians, the farmers, saw a fall in their expenditures over the decade of some 3 per cent. In contrast the urban self-employed and wage employees saw rises in excess of 15 per cent. Households headed by wage employees or those with urban self-employment have close to twice the per capita expenditure of farmers.

However we have not yet shown how the data can be used to study life-histories. To do that we now estimate a consumption function for household per capita expenditure in which we control for as many as possible of the characteristics of the household. Using that function we are in a position to extend the analysis of Figures 1-3 by asking counter-factual questions. In this sub-section we do that for both Ghana and Tanzania. We ask: how would households whose head was aged 30 in 1988 have fared over the next ten years if their household composition had not changed. Figure 4 answers that question for both Ghana and Tanzania. Before considering the implications of the data in the figures we need to make clear the assumptions on which they are based.

We identify four types of household, farmers, non-agricultural self-employed, private and public sector wage employees. We hold the education of the household head and all other adult members of the household constant. We also hold constant the age of other adult members of the household and the numbers in the household. Of course for most households many of these aspects of household composition will have changed. Our purpose is to isolate the effect of the learning through work experience of the household head and any underlying rise in come for that income group. The methodology allows other counter-factual questions to be asked as to how the pattern of per capita expenditure will differ for different types of household.

Figure 4

A Comparison of Ghana and Tanzania
Changes in Consumption per Capita for Households with Unchanged Composition



Sources: Ghana: GSO surveys, Tanzania: Household Budget Survey 2000/01.

We do not have panel data so this analysis is the closest we can come to seeing how households headed by either farmers, wage earners or the self-employed have fared over the ten years of reform. In Figure 4 the counter-factual question covers the period 1988 to 1998, for Tanzania the period covered is 1991 to 2000.

It needs to be stressed that the Figure shows not what happened to the average household in that group but what happened to households whose composition did not change.

Figure 4 shows some remarkable similarities between Ghana and Tanzania for the households defined by the analysis. Farming households whose household composition did not change saw falls in their per capita consumption. The largest percentage rise was for households headed by a public sector worker but these households have substantially lower per capita consumption than those households headed by a private sector wage employee. The relative position of the urban self-employed households identified by the analysis differs between Ghana and Tanzania. In Ghana the urban self employed saw no change for their per capita consumption whereas for those in Tanzania there was a small rise. The Figure also reveals

how low are per capita expenditures in Tanzania relative to Ghana.

Research Methods for Investigating Incomes and its Determinants

The outputs of this part of the Research are papers each of which address some aspect of the general question posed: how can people escape poverty? The most important is the *Tanzanian Household Budget Survey 2000/01: Dar es Salaam, July 2002*. Trudy Owens worked on this Report extensively with OPM and the NBS. Details of her activities are given below. It is data from this Report which underlies the analysis for Tanzania presented in the previous section.

In addition to this Report the project has produced several papers which address in detail issues in wage formation. As the analysis of income changes over the 1990s for both Ghana and Tanzania has shown, wage employment is one of the key elements in the path out of poverty. These papers address a range of detailed questions as to how wages are determined by education and firm characteristics.

Research Paper 1: Måns Söderbom, Francis Teal, Anthony Wambugu and Godius Kahyarara "The Dynamics of Returns to Education in Kenyan and Tanzanian Manufacturing", CSAE WPS/2003-17

Abstract

Both the returns to education and the shape of the earnings function are of central concern for policy. In developed countries there is evidence that the returns to education have been rising. Evidence for changes over this period for developing countries is limited. If the shape of the earnings function is concave then new entrants benefit from higher returns. In this paper we use micro data on manufacturing employees in Kenya and Tanzania to investigate returns to education and the shape and the dynamics of the earnings function over the 1992-2000/01 period. We estimate the earnings equations using a semiparametric approach modelling the earnings-education profile as a piecewise linear spline function, which is flexible, and test for endogeneity of education. Our results indicate that there have been long run falls in the returns to education in Kenya while for Tanzania there is little long run change and evidence of rising returns in the 1990s. There is strong evidence that the earnings function is convex for both countries and there are significant differences in the earnings profiles across cohorts, typically with stronger convexity amongst the young. For Tanzania, we find evidence of increasing convexity over the 1990s. The convexity result is robust to treating education as an endogenous variable, and we find that treating education as endogenous results in higher estimated returns to education than what is obtained by OLS. The flexibility of our econometric estimator implies that we can distinguish between several possible reasons for this result. In particular, we reject explanations that rely on the earnings function being concave.

Research Paper 2: Måns Söderbom and Francis Teal, "Openness and Human Capital as Sources of Productivity Growth: An Empirical Investigation" CSAE WPS/2003-06

Abstract

Do openness to trade and higher levels of human capital promote faster productivity growth? That they do

is a key implication of several versions of endogenous growth theory. To answer the question we use panel data on 93 countries spanning the 1970-2000 period. Controlling for fixed effects as well as endogeneity, the results show a significant effect of openness on productivity growth. If the level of openness of an economy is doubled the underlying rate of technical progress will increase by 0.8 per cent per annum. We find an effect, significant at the ten per cent level, of the level of human capital on the level of income but no effect on underlying productivity growth. Our preferred estimator combines high and low frequency differences of the data. We discuss reasons why this estimator is well suited for empirical analysis of economic growth.

Research Paper 3: Måns Söderbom, Francis Teal and Anthony Wambugu. "Does firm size really affect earnings?" CSAE WPS/2002-08

Abstract

In this paper we investigate the implications of labour and capital market imperfections for the relationship between firm size and earnings. To establish that such a question is of interest we need to show that the firm size-wage effect cannot be explained by either the observed or unobserved skills of the workforce or the characteristics of the workplace. To do that we require data where controls are possible for observable time-varying firm and worker characteristics, as well as the unobservable characteristics of both the firm and its workers. Our data is a sample of workers matched with firms over time so such controls are possible. Changes in wages are shown to respond to changes both to profits per employee and the size of the firm. It is argued that these empirical results clearly reject the hypothesis that the firm-size relationship can be explained by the skills of the workers. They can be shown to be consistent with some forms of non-competitive theories of bargaining and efficiency wages.

Research Paper 4: Måns Söderbom, Francis Teal and Anthony Wambugu "Unobserved Heterogeneity and the Relation between Earnings and Firm Size: Evidence from Two Developing Countries", forthcoming Economic Letters

Abstract

It has been argued that the most likely explanation for the result that earnings rise with firm size is that large firms employ high-ability individuals. In this paper we use matched employer-employee panel data from Ghana and Kenya and test for firm size effects in earnings regressions whilst controlling for unobserved ability in the form of worker fixed effects. For both countries we obtain a size effect that is both economically and statistically significant.

Research Paper 5: Måns Söderbom and Francis Teal "How can policy towards manufacturing in Africa reduce poverty? A review of the current evidence from cross-country firm studies". African Perspectives Yearbook 2003/04.

Abstract

In this paper it is argued that policy towards manufacturing in Africa can reduce poverty if such policy focuses on the creation of high paying jobs. The paper draws on a range of cross-country firm-level evidence to show how policy can promote jobs and higher real wages. It is shown that Mauritius is a country which has achieved both these objectives. The paper places Mauritius in the context of other African countries and then asks why these countries have lagged so far behind. The paper examines the policies needed to build a linkage from manufacturing to overall economic growth with a substantial impact on poverty drawing on firm-level evidence from Nigeria, Kenya, Tanzania, Ghana and South

Africa.

Policy Issues

The Context of the Research

It is DFID's aim to eliminate poverty in poorer countries. The current goal is to develop strategies to achieve international targets of lifting one billion people out of abject poverty by 2015. In this project through the analysis of existing datasets and the development and publication of the work on the Tanzanian Survey we have furthered this aim by providing an account of the determinants of life-time chances of the poor and identifying policies under which these chances can be improved.

Policy Implications of the Sources of Life-Time Earnings

The determinants of poverty are the focus of substantial research currently being undertaken by DFID. One aspect of this work which is linked closely with the research undertaken for this project is the focus on pro-poor growth. The work on Life-Time Earnings is directly relevant for this issue. We have found that for Ghana growth was not pro-poor in the sense that the poorest section of the community - the farmers - benefited. In fact they saw falls in both absolute and relative per capita consumption.

The methodological developments we have proposed have enabled us to extend this research by a focus on the role of urban self-employment incomes. In the two African countries on which we focus, Tanzania and Ghana, income earning opportunities from self-employment far exceed those from wage employment. However for many households private wage employment is the source of higher incomes and higher growth rates of incomes. The implication is that the strategy for poverty reduction is being greatly hindered by the limited growth of private sector wage opportunities.

Changes in Policy Towards the Manufacturing Sector

The data available to us enables us to ask detailed questions about the manufacturing sector. Why have wage earnings opportunities not expanded in the manufacturing sector? In the last decade there have been sweeping changes in the attitude of policy makers towards manufacturing in Africa. Policy now focuses on the need for firms to compete and the role of industrial policy is seen to be to promote the effectiveness of firms in such competition.

There is essentially only one way that industrial policy can impact on poverty and that is through the creation of higher wage jobs. This process is closely linked to economic growth. Without rapid growth few new jobs will be created, and without access to more better-paying jobs, poverty reduction on anything but a very modest scale is impossible. While it was beyond the scope of this project to

investigate the reasons for the failure of private sector wage employment growth in both Ghana and Tanzania, the research has identified this as one of the key constraints on the more rapid reduction of poverty. It has also been able to show by a presentation of comparable data how much more pressing this problem is in Tanzania than Ghana.

Dissemination

March 2002 Work on the Ghanaian dataset was presented by Trudy Owens at the CSAE Conference: Understanding poverty and growth in sub-Saharan Africa (18th-19th March 2002)

March 2002 Poverty estimates from the Tanzanian household budget survey were presented by Trudy Owens in Dar es Salaam on March 27th to Government officials and donors. The estimates were accepted as official government figures.

May 2002 Trudy Owens held informal meetings in Dar es Salaam with the Director of the Bureau of Statistics, and REPOA, to discuss/plan for the forthcoming analysis of the dataset.

June 2002 The National Bureau of Statistics in Tanzania launched the Household Budget Survey Report during Poverty week in Tanzania. Opened by the Vice-President more than 200 people attended.

December 2002 Trudy Owens presented paper on Growth of Rural Incomes at the CSAE in-house seminar series. Sent the report "Developing Proxy Predictors for Household Expenditure and Poverty" to the National Bureau of Statistics in Tanzania for comment.

January 2003 Francis Teal visited Ghana with a World Bank team to advise the Ghanaian Government on aspects of its poverty reduction strategy.

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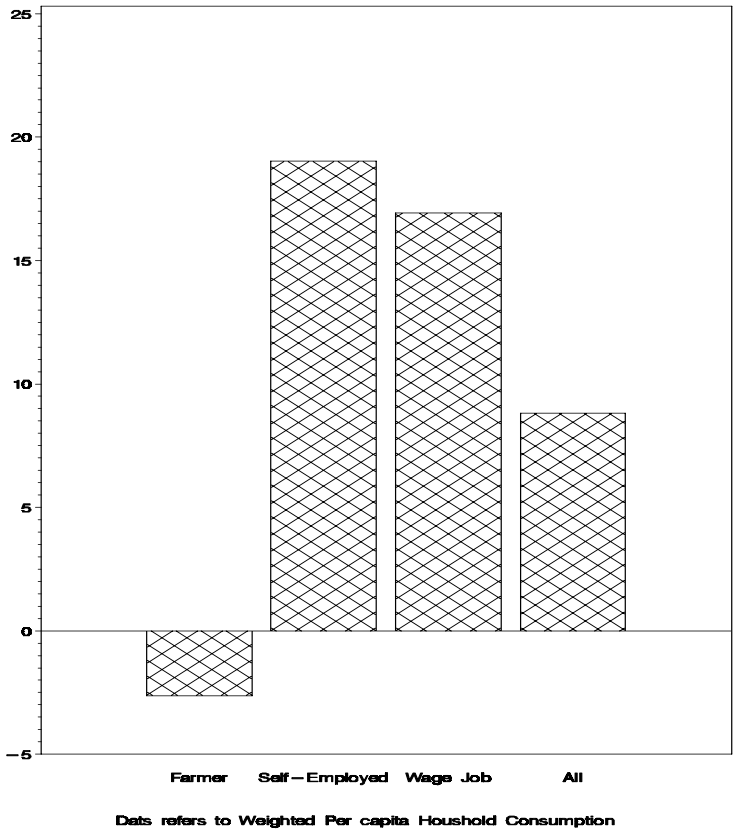
HIGHLIGHTS

Research question: can we identify paths out of poverty?

This research has focused on two countries both of which are seen measured falls in poverty over the 1990s: Ghana and Tanzania. We have sought to identify possible paths out of poverty by developing a methodology that allows us to address counter-factual questions as to how certain types of household fared over the period when the average measure of income rose and poverty fell.

Our most important results in this area can be summarised by means of two Figures. The first, Figure A, shows for Ghana how the average growth in household per capita consumption varied across different types of household.

Figure A
Rate of Growth of Household Expenditure in Ghana: 1987/88 to 1998/99

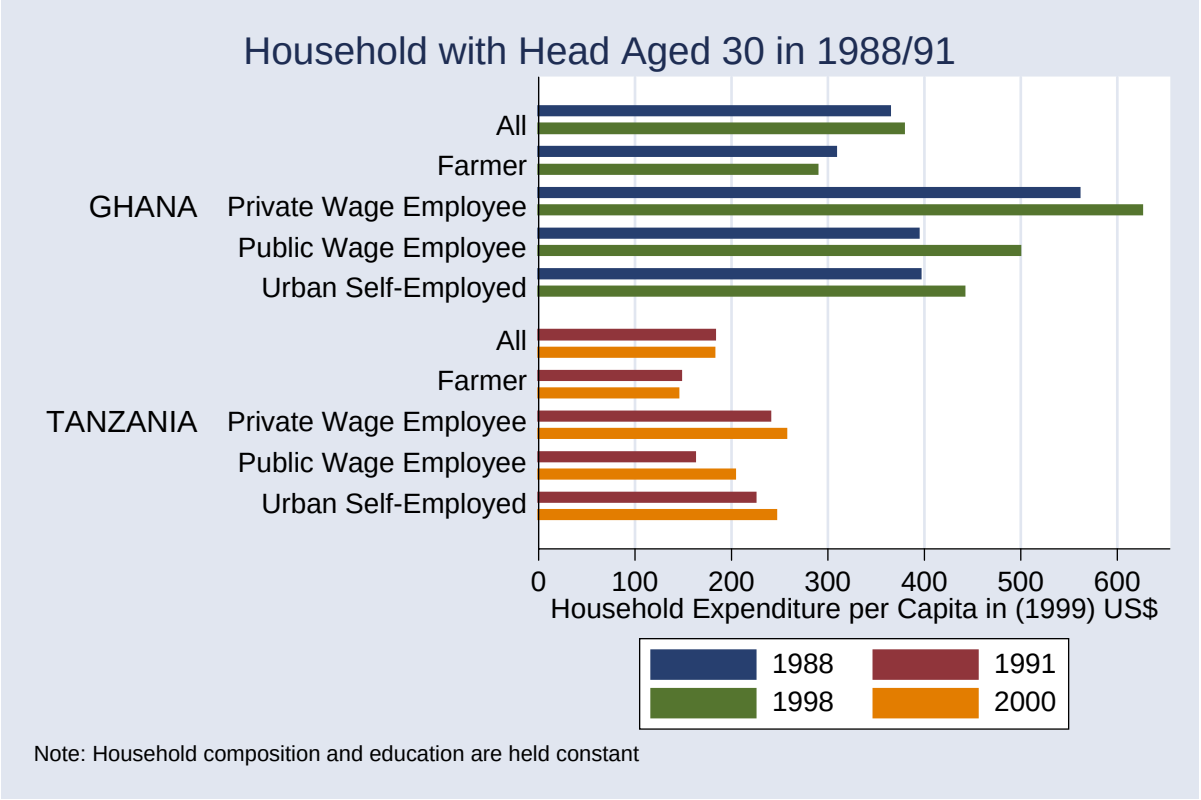


- The class of household that saw the largest rise in per capita consumption was that headed by an urban self-employed person. Farmers - the poorest class of households - saw falls in their per capita consumption.

- Such a breakdown shows that the average can hide substantial variation. We have developed a methodology that enables us to extend such a breakdown further by asking how the consumption would have changed if the household composition had remained unchanged over the ten years for which we have comparable data for Ghana and Tanzania.

The second Figure, Figure B, shows how would households whose head was aged 30 in 1988 have fared over the next ten years if their household composition had not changed.

Figure B
A Comparison of Ghana and Tanzania
Changes in Consumption per Capita for Households with Unchanged Composition



Note: Household composition and education are held constant

- We hold the education of the household head and all other adult members of the household constant.
- We also hold constant the age of other adult members of the household and the numbers in the household. Our purpose is to isolate the effect of the learning through work experience of the household head and any underlying rise in income for that income group.
- The methodology allows other counter-factual questions to be asked as to how the pattern of per capita expenditure will differ for different types of household.

Figure B shows some remarkable similarities between Ghana and Tanzania for the households defined by the analysis.

- Farming households whose household composition did not change saw falls in their per capita consumption.
- The largest percentage rise was for households headed by a public sector worker but these households have substantially lower per capita consumption than those households headed by a private sector wage employee.
- The relative position of the urban self-employed households identified by the analysis differs between Ghana and Tanzania.
    - In Ghana the urban self employed saw no change for their per capita consumption whereas for those in Tanzania there was a small rise.
- The Figure also shows clearly how low are per capita expenditures in Tanzania relative to Ghana.