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Distributional and Poverty Impacts of Uganda's Growth: 1992 to 2003

John A. Okidi, Sarah Ssewanyana, Lawrence Bategeka, Fred Muhumuza

Economic Policy Research Centre
51 Pool Road Makerere Campus
P. O. Box 7841 Kampala, Uganda
Phone: 256-41-540141, 541023, 541234
Fax: 256-41-541022

Contact persons: okidi@eprc.or.ug, ssewanyana@eprc.or.ug

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Abstract

Whereas Uganda's recovery and growth strategies have delivered impressive poverty reduction, ensuring the pro-poorness of post-recovery growth has been very challenging. Although annual growth rates have been sustained at around 5%, participation in growth has narrowed, resulting in deepening inequality that has undermined the poverty impact of growth. Consequently, the poverty reduction momentum that characterized the 1990s began to diminish by the turn of the millennium. Evidence discussed in this paper suggests that long-term pro-poor growth could result from consistently and patiently investing in people and physical infrastructure, especially in a policy environment that ensures efficient linkages to the international markets of commodities that the poor can be facilitated to produce.

1 Introduction

The welfare outcomes of Uganda's economic strategies during the 1990s into the 2000s illustrate that consistent implementation of good policies and improved access to economic and social infrastructure are necessary for growth and poverty reduction. However, differentials in participation in growth by households, which are largely driven by initial household-specific conditions, are critical for a fair and equitable distribution of the benefits of macroeconomic growth.

In this paper we present a detailed disaggregate analysis of the distributional and poverty outcomes of Uganda's economic growth strategies using data from the Uganda National Household Surveys conducted during the period 1992/93 to 2002/03. All the surveys were designed to provide valid national, rural/urban and regional statistical estimates of micro-level impacts of the various reforms undertaken in Uganda since 1990.¹ The 1992/93 survey was, therefore, designed to provide baseline data on socioeconomic statuses of households. Because most of the reforms commenced in 1991/92, any initial conditions of interest for our analysis are captured using the 1992/93 observations or estimates.

The Uganda National Household Surveys emphasize consumption expenditure as the measure of welfare. The regular (total) poverty lines used to generate the official poverty statistics of Uganda are specific to rural/urban sub-regions.² But the food (extreme) poverty line is a single number for the whole country. Accordingly, for commands (in the statistical software, stata) that require a specific number as the national poverty line, the average of the rural/urban poverty lines (Appleton, 2001) is applied. Using the single-value national poverty line instead of the rural/urban specific poverty lines, however, increases the poverty statistic being measured, for example, the 1992/93 absolute poverty headcount increases from 56 to 57 percent. Nevertheless, the order of magnitude in the poverty measures remains the same and the trends are also unchanged.

To motivate a discussion of the poverty and distributional impacts of growth, we present in section two the main sources of Uganda's growth and poverty reduction before discussing the distributional and poverty outcomes of the growth strategies pursued during the 1990s in section three. In section four we present estimates of the poverty impacts of growth for any given distributional pattern. In section five and six intertemporal changes in poverty are decomposed into growth, inequality and sectoral components. Section seven presents some explanations of the welfare outcomes of Uganda's growth experience and section eight provides concluding remarks.

2 Sources of Uganda's growth and poverty reduction

Growth and welfare improvements during the 1990s were inevitably a result of revitalization of civil and economic order in the second half of the 1980s. Restoration of peace and stability in most parts of the country, removal of transaction costs of enforcing business contracts through institutional building, reduction of private diversion and capture of public

¹ Some parts of the country were not covered in some surveys due to insecurity. For comparability over time, we have restricted the analysis to the same geographical coverage.

² The derivation of the expenditure aggregates and poverty lines is presented in the appendix.

expenditure, and reversal of capital flight through risk reduction and exchange rate realignment all eased the hitherto suppressed growth capacity.

Donor-supported post-conflict reconstruction of physical infrastructure and restoration of good policies significantly contributed to growth and poverty reduction. Between 1992 and 1997 foreign aid contributed 31% of Uganda's growth and 29% of poverty reduction (Collier and Ritva, 2001).³ Other than economic management, donor money has substantially funded education, health, institutional reforms and public administration, which have consistently received about 50% of the national budget. The contributions of aid inflows and international coffee prices indicate that access to external sources of growth was critical in complimenting the growth dividend of Uganda's recovery.

But growth dividend from recovery typically ends, at which point the challenge of sustainable normal growth sets in, requiring higher investment rates and continued export growth and diversification, which ought to be underpinned by increased efficiency in the deployment of private and public capital (Collier and Ritva, 2001 and Bevan *et al.*, 2003). Indeed, growth can be sustained in the long run if the return to capital does not diminish as economies develop (Rebelo, 1991; Lucas, 1988; and Romer, 1986).

The importance of efficient deployment of capital for sustaining Uganda's growth is amplified by Dunn's (2002) estimates, which demonstrate that due to removal of distortions and improved economic efficiency, the contribution of Total Factor Productivity (TFP) to growth rose from 1% per annum in 1986-92 to 3% in 1992-97 before falling to 0.5%. If investment is to generate sustained growth, factor productivity has to be sufficiently high since it is productivity rather than the stock of capital that effectively boosts economic growth (Easterly and Levine, 2001).

From a sectoral perspective, the role of increased factor productivity in agriculture for Uganda's growth is critical if the more than 85% of the population that lives in the rural areas is to effectively participate in growth. With more than 80% of the workforce engaged in agricultural, developments in the sector potentially impacts poverty more than any other factor.

With an annual population growth rate of 3.4%, and fertility rate of 6.9 children per woman of child-bearing age, the resources available for welfare improvement for each individual in agricultural households are likely to have dwindled over time, affecting the rate of poverty reduction. With deteriorating internal terms of trade against agriculture, coupled with declining international prices of the main tradable (coffee) and insecurity effects on production in the northern and eastern parts of the country, the sluggish performance in Uganda's agricultural sector suggests that agriculture has not contributed to growth to its fullest potential.

³ However, these are very conservative estimates of the impact of aid, given that aid has also contributed to policy reform, which have indirectly generated growth and poverty reduction. Keefer (2000) estimate that improved macroeconomic policies contributed an additional 2.5% growth per annum between the 1980s and 1990s.

The overall economic picture in the past decade is that, after 1998/99 growth has been slower than in the previous five years, export base has not expanded, Government revenue mobilization has stagnated, domestic saving has fallen to below 6% of GDP, private investment increased by no more than 1.5-percentage points, and structural change has (at best) been slower than what is likely needed to spur higher future growth. The unimpressive performance of the main sector for the majority of the people and the high population growth rates indicate that achieving national and international poverty goals through higher pro-poor growth rates requires structural transformation that builds on successful productivity enhancement in agriculture. Dunn (2002) estimates that achieving the PEAP target of 7% annual growth rate requires that investment expands to 27% of GDP, especially given that his projection of TFP growth is less than 0.5% per annum for the foreseeable future. Keefer (2000) emphasizes institutional reforms to improve property rights, contract enforcement, tax administration, procurement procedures and corruption, most of which would be achieved with full operationalization of the country's MTCS, which is aimed at addressing constraints to realizing private-sector led growth (Bevan *et al.*, 2003).

3 Main welfare outcomes of Uganda's economic strategies

Having reviewed the key aspects of Uganda's growth experience we now explore the micro-level features of the poverty and distributional outcomes of some growth episodes during the period 1992 to 2003. In particular, this section presents the poverty and distributional impacts of growth using standard FGT measures, the growth incidence curves, and the Ravallion-Chen pro-poor growth index (Ravallion and Chen, 2003).

The recovery and growth strategies pursued by Uganda have impressively been pro-poor, with the headcount index of total income poverty declining from 56% in 1992/93 to 34% in 1999/00 after which it rose to 38% in 2002/03 (Table 1). However, poverty in Uganda remains a predominantly rural phenomenon. Rural poverty headcount declined from 60% in 1992 to 37% in 2000 before rising to 42% in 2003. The corresponding figures for urban areas are 28, 10 and 12 percent. The disproportionate contribution of rural areas to the national poverty has remained unchanged at about 96%. Although poverty is predominantly rural, it is particularly pronounced among crop farmers. During 1999/00 when there was a reversal in the downward trend of poverty, poverty incidence among crop farmers rose by about 20-percentage points. The trends in poverty according to the depth and severity indices follow a similar pattern to that taken by the headcount index.

Table 1: Spatial and sectoral distribution of poverty, 1992 to 2003

	Poverty headcount				Poverty Gap				Poverty gap squared			
	1992/93	1997	1999/00	2002/03	1992/93	1997	1999/00	2002/03	1992/93	1997	1999/00	2002/03
National	55.7	45.0	33.8	37.7	20.3	14.0	10.0	11.3	9.9	6.0	4.3	4.8
Rural	59.7	49.2	37.4	41.7	22.0	15.4	11.2	12.6	10.8	6.7	4.8	5.4
Urban	27.8	16.7	9.6	12.2	8.3	4.3	2.1	3.0	3.5	1.7	0.7	1.1
Central	45.6	27.9	19.7	22.3	15.3	7.6	4.4	5.5	7.0	3.0	1.5	1.9
Eastern	58.8	54.3	35.0	46.0	22.0	18.3	9.3	14.1	10.9	8.2	3.6	6.0
Northern	72.2	60.9	63.6	63.3	28.6	21.4	24.6	23.4	14.6	10.0	12.3	11.6
Western	53.1	42.8	26.2	31.4	18.7	11.0	6.1	7.9	9.0	4.0	2.1	2.9
Crop agriculture	63.6	53.0	39.1	50.4	23.7	16.9	11.3	15.5	11.7	7.4	4.7	6.7
Non-crop agriculture	52.4	37.0	41.9	33.6	20.7	11.5	14.4	9.8	10.6	4.9	6.6	4.1
Mining/construction	36.5	25.3	25.7	23.0	11.2	5.3	8.9	4.6	4.5	1.8	4.3	1.5
Manufacturing	44.4	36.4	23.3	28.4	15.8	8.0	5.2	8.0	7.5	2.8	1.7	3.0
Trade	26.5	20.5	12.7	17.4	7.6	5.8	2.6	4.3	3.2	2.3	0.9	1.6
Transport/comm..	34.5	28.0	13.8	18.3	12.4	7.6	2.6	3.7	5.9	2.8	0.7	1.0
Government services	36.8	22.0	15.4	12.6	10.5	6.1	3.9	3.4	4.5	2.3	1.5	1.4
Other services	29.5	30.8	16.4	24.1	9.9	9.0	5.3	6.4	4.4	3.7	2.6	2.6
Not working	65.6	51.6	42.4	38.9	25.0	17.5	16.8	14.7	12.1	7.4	9.1	7.5

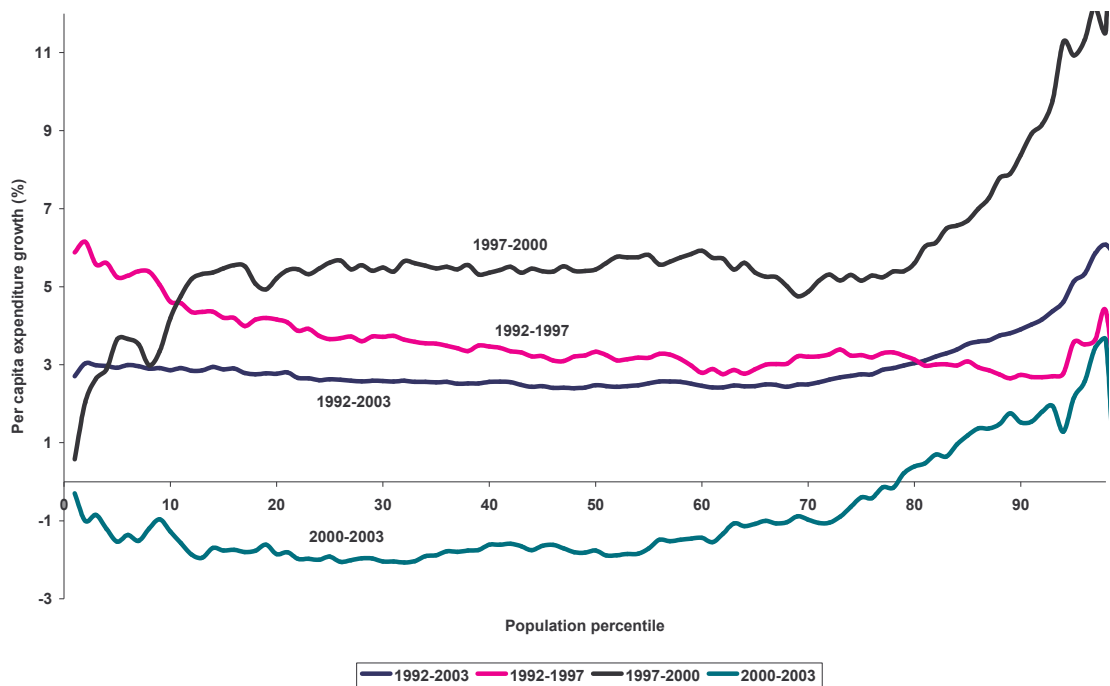
Source: Authors' computation from the Uganda National Household Survey data

For the whole period of analysis (1992-2003) there was overall growth in consumption expenditure with the mean growing at about 3.8% per annum (Table 2). But growth was skewed towards the top 20% as illustrated by the upward sloping incidence curve for the period (Figure 1). Relative mean expenditure for the bottom quintile dropped from 0.34 to 0.31 while that of the top quintile rose from 2.18 to 2.50. Although the distributional shift disfavored the poor, its growth impact was positive given that the rate of pro-poor growth for this entire period of analysis was positive.⁴

The downward sloping incidence curve for the period 1992-1997 shows that growth was disproportionately in favor of the poorest 20%, with the rate of pro-poor growth (3.94%) being higher than the ordinary rate of growth in mean consumption expenditure (3.02).

⁴ Rate of pro-poor growth in this case is defined as the ordinary growth in mean consumption expenditure adjusted up or down depending on whether or not the shift in welfare distribution that occurred during the period was in favor of the poor.

Figure 1: Growth incidence for various periods



Of all the growth episodes considered, the highest rate of growth in mean consumption expenditure of over 8% was recorded for the period 1997-2000 during which only the richest 20% experienced above-average growth. Welfare inequality widened during this period, from a Gini coefficient of 0.35 to 0.40. For the whole period of analysis and for the periods 1992-97 and 1997-2000, growth was robust across percentiles and poverty headcount fell significantly. But a dramatic pattern is observed for the 2000-2003 period during which the mean growth rate was negative, the top quintile was the only subgroup that enjoyed positive growth, the Gini index increased from 0.40 to 0.43, and poverty headcount rose from 34 to 38 percent. It is striking to note that while only the top 20% enjoyed positive growth during this period, the real GDP growth rate was still about 5.8% per annum. In other words, growth became so skewed that the depth of inequality more than offset the positive effects of growth on poverty, resulting in the observed rise in poverty incidence.

Table 2: Growth in consumption expenditure per adult equivalent

	Growth in mean expenditure	Rate of pro-poor growth
1992 - 2003		
National	3.77	2.66
Rural	3.09	2.57
Urban	5.25	3.45
1992 - 1997		
National	3.02	3.94
Rural	3.03	3.83
Urban	2.50	5.07
1997 - 2000		
National	8.24	4.87
Rural	6.19	4.75
Urban	14.38	7.58
2000-2003		
National	0.67	-1.67
Rural	0.19	-1.64
Urban	1.21	-4.16

Source: Authors calculation from Uganda National Household Survey data

4 Responsiveness of poverty to growth

Okidi *et al.* (2003) estimated growth elasticities of poverty using rural-urban sub-regional pseudo panel data constructed from five rounds of the Uganda National Household Survey, yielding a pooled dataset of 40 observations. Applying OLS to the pooled data by regressing the log of poverty headcount on the log of mean consumption expenditure and log of Gini coefficient they estimate a growth elasticity of 1.67 for distribution-neutral growth and elasticity of 1.39 when distributional shifts are allowed to affect the impact of growth on poverty.

In this study, however, we adopt Ravallion's (1997) method to estimate the elasticity of each of the three FGT measures and the watts index with respect to "distribution corrected" growth in consumption expenditure.⁵ The distribution correction uses the 1992 Gini coefficient as the initial inequality index because that is the year when reforms in Uganda fully got underway. In effect, the conditions prevailing around 1992 determined the growth paths of households in subsequent years (Deininger and Okidi, 2003). Seven rounds of surveys are used in estimating the growth elasticity. The consecutive rates of change in the

⁵ Ravallion's (1997) method has been modified in his 2004 paper, *Pro-poor growth: A primer*, by introducing a parameter, θ , to adjust for possible non-linear relationship between the growth elasticity of poverty and the initial level of inequality. Ravallion (2004) recommends using $\theta = 3$, which he estimates using cross-country data from two surveys in 62 countries. But because we are not sure about the criterion of choosing θ in country-specific analysis, we let it take on the value one.

poverty measures and in the consumption expenditure between the 1996/97, 1999/2000, 1999/2000 and 2002/2003 survey rounds are annualized since the surveys were not conducted at an interval of one year. Accordingly, we adjust for this unevenness in spells by introducing a trend variable that captures the interval between successive surveys, thereby suppressing the conventional constant term in the estimation (Ravallion and Chen, 1997).

Table 3 shows that the responsiveness of the FGT measures of total or extreme poverty to growth, adjusting for initial inequality, increases with the sensitivity of the poverty measure to large poverty gaps, indicating that growth does not only benefit those just below the poverty line but actually alleviates the depth and severity of poverty. The Watts measure is more responsive to growth than the poverty gap index but less responsive than the poverty gap squared index. Overall, the results indicate that there was no underlying trend independently of growth in the poverty dynamics in Uganda during the 1990s. This means that on average, after adjusting for initial inequality, growth was statistically responsible for the entire changes in poverty during 1992 to 2003 irrespective of the poverty measure used. Extreme poverty is, however, more responsive to growth than total poverty. Using the estimated elasticities, Table 4 illustrates that initial inequality is important in determining future poverty trends; sub-regions with lower initial inequality experienced higher responsiveness of poverty to growth.

The estimated national elasticity implies that a one-percent increase in real mean consumption expenditure per adult equivalent, with no change in distribution, reduces total poverty headcount index by 1.83%. At the annualized mean growth rate of 3.77% (Table 2) and with initial (1992/93) total poverty headcount index of 56%, poverty is calculated to fall by about 6.9% per year, or 3.9-percentage points in the first year after the initial period. Using straight line compounding, by 1997 (four years later), with no change in distribution, the headcount index is calculated to fall to about 42%. For the whole period 1992-2003 with no change in distribution the headcount index would have fallen to about 28%. Considering the decomposition in Table 2, we can roughly say that the 8-percentage-point contribution of inequality to rising poverty, indeed, brings the headcount index to 36%, which is only 2-percentage points less than the total poverty headcount for 2002/2003.

Table 3: Regression of changes in log of poverty measure on distribution-corrected changes in the log of mean consumption

	Coefficient	P-value
Regular poverty measure = headcount index		
Distributional trend	0.011	0.471
Distribution corrected growth	-2.882	0.000
R-squared = 0.60		
National growth elasticity = 1.83		
Regular poverty measure = poverty gap index		
Distributional trend	0.011	0.601
Distribution corrected growth	-3.655	0.000
R-squared = 0.55		
National growth elasticity = 2.32		
Regular poverty measure = squared poverty gap index		
Distributional trend	0.014	0.605
Distribution corrected growth	-4.412	0.000
R-squared = 0.51		
National growth elasticity = 2.81		
Regular poverty measure = watts index		
Distributional trend	0.011	0.379
Distribution corrected growth	-3.928	0.000
R-squared = 0.61		
National growth elasticity = 2.50		
Extreme poverty measure = headcount index		
Distributional trend	0.014	0.582
Distribution corrected growth	-3.963	0.000
R-squared = 0.45		
National growth elasticity = 2.52		
Extreme poverty measure = poverty gap index		
Distributional trend	0.021	0.489
Distribution corrected growth	-5.365	0.000
R-squared = 0.49		
National growth elasticity = 3.41		
Extreme poverty measure = squared poverty gap index		
Distributional trend	0.029	0.445
Distribution corrected growth	-6.566	0.000
R-squared = 0.45		
National growth elasticity = 4.18		
Number of observations = 48		

Note: The national growth elasticities are calculated based on the initial (1992) national gini coefficient of 0.36414. Sub-regional elasticities can be calculated based on their respective initial gini coefficients.

Table 4: Spatial distributional of growth elasticity of various regular and extreme poverty measures

	Initial inequality	Regular poverty measure				Extreme poverty measure		
		P0	P1	P2	Watts	P0	P1	P2
National	0.364	1.832	2.324	2.805	2.497	2.520	3.412	4.175
Central rural	0.329	1.935	2.454	2.963	2.637	2.661	3.603	4.409
Central urban	0.394	1.746	2.215	2.674	2.380	2.402	3.252	3.979
Eastern rural	0.321	1.957	2.482	2.996	2.668	2.692	3.644	4.459
Eastern urban	0.319	1.964	2.491	3.007	2.677	2.701	3.656	4.475
Western rural	0.309	1.992	2.527	3.050	2.715	2.740	3.709	4.539
Western urban	0.352	1.867	2.368	2.858	2.544	2.567	3.475	4.253
Northern rural	0.330	1.930	2.448	2.955	2.631	2.655	3.594	4.398
Northern urban	0.394	1.747	2.216	2.675	2.381	2.403	3.253	3.980

Note: Initial inequality is the 1992 Gini coefficient

5 Growth and inequality decomposition of the welfare outcomes

Decomposing Uganda's poverty changes into growth and redistribution components,⁶ we observe in Table 5 that for each of the constituent episodes in the 1992-2003 period, growth consistently induced poverty reduction while deterioration in inequality undermined some of the positive impacts of growth on poverty such that the net change in poverty depended on the magnitudes of the growth versus inequality components of the changes. In the 1992-1997 period when total poverty headcount declined by 10.7-percentage points, almost the whole of the decline (10.3-percentage points) was attributed to growth and the rest was due to improvement in redistribution. Similar orders of magnitude were observed in rural areas for this period. In urban areas, improvement in inequality from a Gini coefficient of 0.4 to 0.35 accounted for half (5.6-percentage point) of the fall in poverty headcount.

During the 1997-2000 period high growth rates contributed to large reductions in poverty that more than offset the dampening effects of rising inequality in both rural and urban areas, and in the different regions and economic sectors (Table 5). The period 2000-2003 saw a reversal in the poverty trends. Growth was confined to the richest quintile and poverty increases in rural and urban areas were wholly attributed to worsening inequality. Regionally, it was only Eastern that experienced poverty-increasing slowdown in growth, meaning that had there been distribution-neutral growth poverty would have fallen in each of the regions other than Eastern. Exploring the same survey datasets, we observe that it was in Eastern only where household size increased in the 2000-2003 period,⁷ directly impacting the welfare measure (consumption expenditure per adult equivalent). Regarding economic sectors, crop farming, where the vast majority of households are economically engaged, experienced

⁶ The decomposition applies the *gidecomposition* Stata routine written by Michael Lokshin and Martin Ravallion based on the methods developed by Datt and Ravallion (1992).

⁷ From 2000 to 2003 average house size in Central was constant at 4.8, decreased in Northern and Western from 5.3 to 5.0 and 5.6 to 5.2 respectively, but increased in Eastern from 5.3 to 5.5.

slowdown in growth and worsening inequality, both of which contributed to rising poverty within the sector between 2000 and 2003. During this period, poverty-reducing effects of growth in non-crop agriculture and government services were substantial enough to more than offset the negative impact of rising inequality in these sectors. Overall, 1992-2003 was a period of significant poverty-reducing growth that more than offset the poverty increasing effects of the rise in inequality experienced during the period.

Table 5: Growth and inequality decomposition of poverty, 1992 to 2003

	1992-1997		1997-2000		2000-2003		1992-2003	
	Growth	Inequality	Growth	Inequality	Growth	Inequality	Growth	Inequality
National	-10.3	-0.4	-16.3	5.0	-1.4	5.3	-26.3	8.3
Rural	-10.9	0.4	-13.3	1.5	-0.4	4.7	-23.1	5.1
Urban	-5.6	-5.5	-14.7	7.6	-1.3	3.8	-22.8	7.2
Central	-13.7	-4.0	-14.1	5.8	-2.6	5.1	-31.1	7.7
Eastern	-6.7	2.2	-21.8	2.5	8.7	2.3	-18.7	5.9
Northern	-9.1	-2.2	2.6	0.2	-1.4	1.1	-8.6	-0.2
Western	-10.5	0.1	-20.9	4.3	-0.1	5.3	-27.9	6.2
Crop agriculture	-10.5	-0.2	-17.3	3.3	9.2	2.2	-18.1	4.8
Non-crop agriculture	-10.6	-4.8	-1.4	6.2	-10.6	2.3	-23.2	4.4
Mining/construction	-0.7	-10.5	-1.3	1.7	-2.3	-0.5	-5.5	-8.1
Manufacturing	-8.2	0.2	-22.3	9.2	8.4	-3.3	-18.1	2.2
Trade	-3.6	-2.4	-12.9	5.1	8.2	-3.4	-10.2	1.2
Transport/comm.	-7.2	0.7	-15.3	1.1	0.6	4.0	-21.4	5.2
Government services	-12.2	-2.6	-15.2	8.6	-5.5	2.7	-32.0	7.8
Other services	-0.5	1.8	-20.2	5.7	0.9	6.8	-21.7	16.3
Not working	-16.1	2.1	-12.1	2.9	-2.1	-1.4	-34.1	7.5

Note: All residual components are zero, hence they are omitted from the table.

6 Sectoral decomposition of the welfare outcomes

Table 6 presents changes in poverty headcount decomposed into intra-sectoral, inter-sectoral and interaction effect (Ravallion and Huppi, 1991) based on place of residence, region and main sector of economic activity of the head of the household. The proportion of Ugandans living in rural areas has remained almost constant at about 87% during the 1992-2003 period. Regionally, the population share of Central and Eastern increased by 1 and 1.4-percentage points respectively. The share of Western declined by 0.5-percentage points while that of

Northern declined by 2-percentage points, most likely due to out-migration associated with the 18-year old guerrilla war in the region.

Irrespective of whether we use total or extreme headcount measure of poverty, the results of analysis show that over 98% of the change in poverty during any given period and for any of the population sub-groups in Table 6 was due to within group change in the proportion of those living in poverty. The contribution of inter-sectoral population shifts to the total change in poverty has been relatively small but rising over time.

Table 6: Sectoral decomposition of poverty, 1992-2003

	Population share				Contribution to change in total poverty				Contribution to change in extreme poverty							
	1992	1997	2000	2003	1992-97	1997-00	2000-03	1992-03	1992-97	1997-00	2000-03	1992-03	1992-97	1997-00	2000-03	1992-03
Rural	87.6	87.0	86.9	86.5	85.4	91.5	94.8	87.4	91.0	95.8	96.8	92.7	91.0	95.8	96.8	92.7
Urban	12.4	13.0	13.1	13.5	12.9	8.2	8.7	10.8	7.7	4.0	6.5	5.9	7.7	4.0	6.5	5.9
<i>Total Intra-sectoral effect</i>					98.3	99.7	103.4	98.1	98.7	99.8	103.4	98.7	98.7	99.8	103.4	98.7
<i>Population-shift effect</i>					1.7	0.3	-3.2	2.0	1.6	0.3	-3.1	2.0	1.6	0.3	-3.1	2.0
<i>Interaction effect</i>					0.0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.3	-0.7	-0.2	-0.1	-0.3	-0.7
Central	30.6	29.3	29.0	31.6	50.6	21.4	18.9	39.7	39.2	21.8	32.1	31.7	39.2	21.8	32.1	31.7
Eastern	27.9	27.8	26.6	29.3	11.8	47.7	74.8	19.9	14.5	58.7	92.3	24.0	14.5	58.7	92.3	24.0
Northern	17.3	18.7	19.0	15.3	18.2	-4.5	-1.4	8.5	20.6	-9.1	-13.0	10.9	20.6	-9.1	-13.0	10.9
Western	24.2	24.3	25.4	23.7	23.4	35.9	34.2	29.1	29.1	29.6	20.9	30.7	29.1	29.6	20.9	30.7
<i>Total Intra-sectoral effect</i>					104.1	100.5	126.5	97.1	103.4	100.9	132.4	97.3	103.4	100.9	132.4	97.3
<i>Population-shift effect</i>					-3.3	0.2	-33.9	2.1	-3.3	0.7	-45.9	2.2	-3.3	0.7	-45.9	2.2
<i>Interaction effect</i>					-0.8	-0.7	7.4	0.8	-0.1	-1.6	13.5	0.5	-0.1	-1.6	13.5	0.5
Crop agriculture	66.6	63.3	67.6	52.2	66.2	78.8	197.4	48.9	70.5	85.1	194.4	60.9	70.5	85.1	194.4	60.9
Non-crop agriculture	5.0	3.3	3.2	5.4	7.2	-1.4	-6.7	5.3	6.8	-1.7	-9.9	5.6	6.8	-1.7	-9.9	5.6
Mining/construction	1.5	1.9	2.0	2.0	1.6	-0.1	-1.4	1.1	1.5	-1.7	-6.2	1.0	1.5	-1.7	-6.2	1.0
Manufacturing	4.0	5.1	3.0	7.1	2.9	5.9	3.9	3.5	4.9	3.5	5.5	3.4	4.9	3.5	5.5	3.4
Trade	7.4	8.9	7.2	14.2	4.1	6.2	8.7	3.7	2.9	5.2	6.9	2.9	2.9	5.2	6.9	2.9
Transport/comm	1.7	1.9	2.2	2.6	1.0	2.5	2.5	1.5	1.7	1.7	3.5	1.4	1.7	1.7	3.5	1.4
Government services	8.1	6.2	5.6	6.0	11.1	3.6	-4.0	10.8	6.3	3.2	2.6	5.6	6.3	3.2	2.6	5.6
Other services	2.6	3.1	4.5	4.7	-0.3	4.0	8.8	0.8	0.7	2.5	3.5	1.2	0.7	2.5	3.5	1.2
Not working	3.3	6.3	4.9	5.7	4.4	5.1	-4.3	4.9	3.8	6.1	-0.7	4.2	3.8	6.1	-0.7	4.2
<i>Total Intra-sectoral effect</i>					98.2	104.6	204.9	80.4	98.9	103.9	199.5	86.2	98.9	103.9	199.5	86.2
<i>Population-shift effect</i>					3.9	-6.9	-69.1	20.9	2.1	-6.9	-63.7	17.4	2.1	-6.9	-63.7	17.4
<i>Interaction effect</i>					-2.2	2.3	-35.8	-1.2	-1.0	3.0	-35.9	-3.6	-1.0	3.0	-35.9	-3.6

Source: Authors' computation from Uganda National Household Survey data

Because the vast majority of the population is in crop agriculture, it is not surprising that the sector is the overwhelming contributor to total intra-sectoral change in poverty for each of the periods considered. Crop farmers particularly performed well in the 1997-2000 period when they contributed about 80% of the poverty reduction during the period, a proportion much higher than their population share at the beginning of the period. The performance of crop farmers during the entire 1990s was primarily underpinned by good performance in the coffee sector. Table 6 shows that the rise in poverty between 2000 and 2003 was largely attributed to welfare deterioration among crop farmers. This deterioration more than offset the welfare improvements that occurred due to population shifts, especially to sectors where conditions for poverty reduction were more favorable.

7 Explaining the welfare outcomes of Uganda's economic strategies

To understand the above-outlined poverty outcomes, we start by recognizing that growth (much more than redistribution) has driven the poverty reduction in Uganda during the 1990s. Second, earlier discussions of the macroeconomic growth patterns of Uganda can be directly linked to these poverty outcomes. Third, the correlates of poverty identified in household growth regressions and their evolution since 1992 can provide useful insights for explaining the observed welfare outcomes.

Rising from the doldrums in the second half of the 1980s into the early 1990s, Dunn's (2002) TFP illustration strongly suggests that the dividend of removal of distortions and improved economic efficiency had been exhausted by 1998/99. Emphasizing that this was the easier part of engendering growth, Bevan *et al.* (2003) concludes that the slowdown in growth (to below the 7% PEAP target) after 1998/99 was the expected challenge of sustaining high recovery-related growth. Essentially, after 1998/99, structural transformation virtually stalled, investment rates plateaued well below what is estimated for realizing the national poverty goals, exports-GDP ratio tapered off to just above 11% while the reverse was true for imports, government revenue as a share of GDP stagnated well below Sub-Saharan African average, and domestic saving remained abysmally low.⁸

Agriculture, where the bulk of the population is economically engaged, has grown very slowly (at a rate much lower than the overall growth rate). The share of agriculture in public expenditure has previously been very low.⁹ But in the 2005/06 – 2007/08 Medium-Term Expenditure Framework the share of agriculture in the budget was projected to increase from 3.4% in 2004/05 to 4.4% in 2007/08 (Republic of Uganda, 2005). If the projected medium-term growth in the share of agriculture in the national budget is realized, then the average annual growth in the sector's budget will be higher than that of the overall budget, reflecting increased efforts to modernize the sector. The importance of agriculture in the Ugandan economy, indeed, requires that its productivity be raised in order to achieve rapid overall growth by increasing aggregate output and releasing labor for other sectors that have to expand in line with the pattern of structural transformation that some middle-income

⁸ See Bevan *et al.* (2003) for a full discussion of the implications of failure to achieve the structural benchmarks necessary for attaining Uganda's growth and poverty goals.

⁹ It is commonly argued by policymakers that whereas direct public expenditure share in agriculture is quite low, it is compensated by spending in areas that support agriculture – the traditional pro-poor spending areas such as education, health, water and sanitation, and roads and other connectivity programs.

countries experienced (Bevan *et al.*, 2003). But the implementation of the innovative framework of a multi-sectoral approach for modernizing agriculture (PMA) has several institutional constraints that inhibit the expansion of both the supply and demand sides of Uganda's agricultural sector.¹⁰

The main agricultural tradable, coffee, suffered significant price falls after the boom of the mid 1990s, prompting systematic efforts to increase the export shares of other commodities such as fish and flowers. Although the effort has paid off as highlighted in Section 1, the poverty effects are very limited given that they engage only a small segment of the population, unlike the coffee sector. Simple simulations by Deininger and Okidi (2003) suggest that had coffee prices been 10% higher during the 1990s there would have been an additional 6-percentage point decline in poverty by 1999/2000. Restoration of the price of cotton (which declined by about 40% during the 1990s due to structural constraints) would have significantly narrowed the regional welfare gap between the poorest Northern region and the rest of the country. To date, cotton sector liberalization has not succeeded due to low incentives for private sector middlemen to supply seeds and to invest in revamping cotton-ginning facilities. Overall, between 1999/2000 and 2002/2003 internal terms of trade between agriculture on the one hand and industry and service on the other deteriorated against the former by 20%, severely affecting purchasing power of the vast majority of Ugandans.

Inferring food production from the consumption data (given the subsistence nature of Uganda's agriculture and the limited imports and exports of food) Appleton and Ssewanyana (2003) conclude that food crop production may have not kept pace with population growth between 1999/2000 and 2002/2003,¹¹ a finding that also comes out of the Uganda Participatory Poverty Assessment Project (UPPAP) of 2002. Specifically, food consumption per capita fell by 3% in nominal terms between 1999/2000 and 2002/2003. Consumption of home produced food fell by around 20% per capita during the period. The median income from crop farming reported in the 2002/2003 survey was also lower than that for the 1999/2000 survey in nominal terms. The limited progress in the crop sub-sector could be attributed to low utilization of productivity enhancing technologies and poor land management practices (Nkonya *et al.*, 2003; Pender *et al.* 2004; Obwona and Ssewanyana, 2004). Furthermore, the planned modernization of Uganda's agriculture has not been widely implemented mainly due to resource constraints as exemplified by the share of agriculture in public expenditure having been limited to not more than 4% of the national budget for several consecutive years.

Between 1999/2000 and 2002/2003, there were significant inter-sectoral shifts by households. The proportion of Ugandans living in households with crop agriculture as the main economic activity declined from about 68 to 52 percent. The share in non-crop agriculture and trade increased from 3 to 5 percent and 7 to 14 percent respectively, while that in manufacturing doubled to 7%. In the same period, the proportion of the population depending on government services as the main economic activity grew by half a percentage point to 6%. The observed structural shifts are correlated with the growth trends in the

¹⁰ See Bevan *et al.* (2003) for a summary of the institutional and operational challenges facing the PMA.

¹¹ National accounts statistics show that Uganda's population increased from 22.2 million in 1999/2000 to 25 million in 2002/2003.

monetary crop and non-monetary agricultural components of GDP. These shifts, however, did not yield overall improvements in welfare. Poverty declined in households whose heads reported non-crop agriculture (mainly livestock farming), mining and construction, and government services¹² as the main economic sectors.¹³ The survey data reveal a significant shift from agriculture to non-agricultural self-employment, a move that is consistent with: (i) low returns in agriculture prompting diversification into other activities; and (ii) failure of the wage employment sector to absorb the labor released from agriculture (Appleton and Ssewanyana, 2003).

Table 1 suggests that trade and manufacturing are the main candidate sectors for exit from agriculture, although they seem to have offered limited opportunities for shifters to shake off the poverty that presumably characterized their main sector of origin, which has largely been crop-agriculture. Increased numbers of traders and small producers in non-agricultural sectors is likely to have raised competition and weakened profitability. This situation can lower incomes and increase poverty among the non-agricultural self-employed unless there is strong corresponding growth in demand. But growth in demand is expected to be associated with growth in real wages. According to the surveys, between 1999/2000 and 2002/2003 mean real monthly wages rose by 12%, the median wage fell by an equal proportion, real wages for employees with primary education or less fell by about one third, and for those with secondary education the fall was by 6% only. On the whole, the pattern of change suggests that nominal wages have not kept pace with inflation (Appleton and Ssewanyana, 2003).

A compounding problem is the insecurity from the civil war and cattle rustling in the northern and eastern parts of the country. The cost of the war to the economy is estimated at 3% of GDP. Estimates by Deininger and Okidi (2003) show that civil strife significantly reduces income growth by about 5-percentage points. Another important correlate of poverty is electricity, which increases opportunities for job creation to absorb the increasingly better educated Ugandans and hence reducing their vulnerability to poverty (Deininger and Okidi, 2003).¹⁴

An important traditional factor that explains differentials in welfare growth is education. Although the proportion of household heads without formal education continues to decline, about 55% of them have no higher than primary education.¹⁵ Low level of education/skill in an environment of slower macroeconomic growth could have contributed to the unchanged proportion (77%) of household heads engaged in self-employment as the main source of livelihood during the entire period of analysis. In essence, the poverty reduction of the 1990s occurred without widespread contributions of formal sector jobs to welfare growth.

¹² Whereas private sector real wages fell by about a fifth between 1999/2000 and 2002/2003, government sector real wages increased by about the same proportion, contributing to the improved welfare of government workers.

¹³ In total, these sectors comprised about 13% of the population in 2002/2003.

¹⁴ Estimates from the National Household Survey data series show that less than 10% of households have electricity in their homes. The proportion of non-poor households with electricity in homes fluctuated from 13% in 1992 to 17 and 14 percent in 2000 and 2003 respectively. For the poor, access to electricity has consistently decreased from 6% in 1992 to 2 and 1 percent in 2000 and 2003 respectively.

¹⁵ Estimates from the Uganda National Household Surveys show that it was only the expenditure of households headed by people with primary education or lower that fell relative to the national average.

Qualitative analysis by UPPAP identifies hard work, multiple income sources, access to land and other assets, and small family as the main factors for staying out of poverty (MoFPED, 2002). Poor access to markets, selling of assets to cope with illness, high taxes, and casual laboring were the key factors associated with falling into poverty. In both the 1998/99 and 2001/02 rounds of UPPAP, people felt that poverty was increasing in spite of the positive growth in average consumption expenditure and the high GDP growth rates recorded around these periods.

Urging caution in interpreting participatory poverty assessment results, Ravallion (2004) observes that that growth in average income tends to be associated with higher absolute income disparities, which is what registers vividly in people's perception. The qualitative approach through participatory assessment also brings out voices from a few specific villages (national household survey enumeration areas), which are usually averaged out when poverty is analyzed using quantitative approaches due to lack of representative small area samples. But where the qualitative and quantitative analyses cover similar topics, their results generally confirm or complement each other (Lawson *et al.*, 2003). In particular, using multinomial logit to model changes in poverty status between 1992 and 2000, Lawson *et al.* (2003) and Deininger and Okidi (2003) find that factors that are responsible for moving households out of poverty are basically the same factors that participatory assessment also identifies as the key causes of poverty.

8 Conclusion

The discussion of the underlying drivers of growth and poverty reduction in this paper demonstrate that consistent pursuit of good policies delivered significant dividends that propelled Uganda's recovery from the doldrums of the 1970s and early 1980s. However, the slowdown of economic growth of the late 1990s into the 2000s, the deepening inequality, and the failure to sustain rapid poverty reduction implies that a new wave of reforms (learning from other post-recovery experiences) to induce high rates of savings, investments, exports, domestic revenue, and factor productivity. Basically, long-term sustainability of pro-poor growth requires policy measures and programs that enhance the participation of poor people in growth, particularly through increased returns to the main assets that the poor employ in the primary sectors where they are economically active.

Specifically, as long as policies do not cause fast growth in the agricultural sector, which provides livelihoods to the majority of the people, overall growth is unlikely to have sustained poverty reducing impact. The contributions of the coffee sector in the mid 1990s to broad-based pro-poor growth shows how good domestic policies can complement the benefits of connectedness to global opportunities for poverty reduction, particularly for rural households.

Whereas growth has been demonstrated to have fundamental poverty effects, the distributional pattern of growth is critical for sustaining growth-led poverty reduction. A narrow growth base creates deepening inequality, which eventually offsets the positive impacts of growth on poverty. In addition, the level of inequality at the beginning of any growth episode contributes in large measures to the degree of responsiveness of poverty to

growth, suggesting that major changes in growth strategies need to be accompanied by measures to boost the capabilities of potentially lagging areas so that they can participate in the new growth process.

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