ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Kappel, Robert; Lay, Jann; Steiner, Susan

Conference Paper

Uganda: No more pro-poor growth?

Proceedings of the German Development Economics Conference, Kiel 2005, No. 31

Provided in Cooperation with:
Research Committee on Development Economics (AEL), German Economic Association

Suggested Citation: Kappel, Robert; Lay, Jann; Steiner, Susan (2005) : Uganda: No more pro-poor growth?, Proceedings of the German Development Economics Conference, Kiel 2005, No. 31, Verein für Socialpolitik, Ausschuss für Entwicklungsländer, Hannover

This Version is available at:
https://hdl.handle.net/10419/3715

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

Uganda: No more pro-poor growth?

By Robert Kappel, Jann Lay, and Susan Steiner*

Paper submitted to the Annual Conference of

Verein für Socialpolitik: Research Committee Development Economics

held on July 8-9, 2005

Abstract:

This article illustrates changing growth regimes in Uganda from pro-poor growth in the 1990s to growth without poverty reduction, actually even a slight increase in poverty, after 2000. Not surprisingly, we find that good agricultural performance is the key determinant of direct pro-poor growth in the 1990s as well as lower agricultural growth is the root cause of the recent increase in poverty. Yet after 2000, low agricultural growth appears to have induced important employment shifts out of agriculture, which have dampened the increase in poverty. We also assess the indirect way of pro-poor growth by analysing the incidence of public spending and the tax system and find that indirect pro-poor growth has only been achieved to a limited extend.

* Robert Kappel is Director of the German Overseas Institute in Hamburg and Professor at the University of Leipzig (kappel@duei.de). Jann Lay is Research Fellow at the Kiel Institute for World Economics (lay@ifw-kiel.de). Susan Steiner is Research Fellow at the Institute of African Affairs in Hamburg (steiner@iak.duei.de).

This article has grown out of a study by the authors commissioned by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Frankfurt, Germany. Responsibility is the authors'. Special thanks are due to the Uganda Bureau of Statistics (UBOS) for providing household survey data.

Introduction

The degree of poverty reduction following growth differs remarkably across countries and over time.[1] Therefore, pro-poor growth is a useful concept that allows for classifying growth patterns into those that lead to poverty reduction and those that do not. Growth on its own is commonly regarded as a necessary condition for poverty reduction. In that sense, growth is good for the poor, and the empirical literature supports this proposition. Pro-poor growth, however, is about how good growth is for the poor. If it is appropriately defined, pro-poor growth can be considered a sufficient condition for poverty reduction.

Kakwani and Pernia (2000) define pro-poor growth as growth that "enables the poor to actively participate in and significantly benefit from economic activity". Along these lines, Klasen (2003) suggests that there are two possible ways to achieve pro-poor growth. The direct way implies that growth is pro-poor if it immediately raises the incomes of the poor, or in other words, if growth occurs in those sectors and/or regions where the poor are employed and uses the factors of production they possess. It is widely accepted that growth has to be strong in agriculture and non-farm rural and informal sector activities in order to be pro-poor. It must be labour-intensive and land-intensive, and it must be concentrated in localities with high poverty rates. The indirect way suggests that growth is pro-poor if the gains from overall economic growth are redistributed to the poor via progressive taxation and targeted government spending. This spending can take the form of either direct financial transfers or investment in the assets of the poor by providing basic social services. While financial transfers immediately increase the poor's disposable income and thus welfare, investment in their assets is the clearly preferable option as this durably enables the poor to better participate in and benefit from economic activities without making them dependent on welfare programs.

Yet, the merit of pro-poor growth does not only depend on a proper definition of the concept, but also on an adequate empirical operationalisation. In the latter regard, this article seeks to make a contribution to the empirical literature on pro-poor growth by exploring whether or not growth has translated into poverty reduction in the case of Uganda between 1992 and 2002. The Ugandan economy has experienced high economic growth rates since 1986, and the growth record can be roughly divided into two periods, namely post-war recovery and economic reforms (Collier and Reinikka, 2001; Dijkstra and van Donge, 2001). Following the predations of Idi Amin and three other transient presidents accompanied by civil war, mass

[1] See Ravallion (2001) for cross-country differences, and Ravallion and Datt (1999) for differences between India's states.

murder, and mass emigration of skilled workers, the economy recovered quickly after the current president Yoweri Museveni took power in 1986. Subsequently, GDP grew by an annual 6.1 percent between 1986 and 1990, and GDP per capita growth amounted to 3.0 percent during the same period. However, there was little capital accumulation, and growth stemmed mainly from increases in productivity, which in turn was due to the reactivation of production capacities that had been unused during the years of war and to the return of flight capital of Ugandan-Asian entrepreneurs (Berthélemy and Söderling, 2001).

After this period of recovery, it was Uganda's reform program that triggered high GDP growth. The highly committed government of the National Resistance Movement stabilised and liberalised the economy. Inflation was reduced from more than 100 percent in 1987 to single-digit figures by 1992, the trade regime was liberalised, and the marketing boards for coffee, tea and cotton were abolished. These economic reforms were accompanied by important institutional reforms, such as the restructuring of public administration and decentralisation. Beside these internal factors, favourable world market prices for coffee, which is Uganda's main export product, and high inflows of official development aid played an equally important role in achieving growth rates well above the sub-Saharan average. Between 1990 and 2000, annual GDP growth amounted to 6.3 percent on average, slightly higher than growth in the late 1980s. However, growth slowed down somewhat during the second half of the 1990s and the first years of the new millennium.

The Ugandan case is particularly interesting for the pro-poor growth debate as high economic growth rates have coincided with remarkable poverty reduction during the 1990s, but not in recent years. Based on household survey data, this article first illustrates changing growth regimes from pro-poor growth between 1992/93 and 1999/2000 to growth without poverty reduction, actually even an increase in poverty, between 1999/00 and 2002/03. Then, we attempt to shed some light on the factors behind this change in growth patterns by looking at the direct way of pro-poor growth. In doing so, we focus on the sectoral dimension of growth and its link to poverty reduction. As noted above, the assessment of the direct way of pro-poor growth is only part of the story, at least when relatively short time horizons, in our case only 10 years, are taken into account. Therefore, we also assess the indirect way of pro-poor growth by analysing the incidence of public spending and the tax system. Finally, we conclude by summarising our main results and formulating some policy recommendations in the context of pro-poor growth in Uganda.

From pro-poor growth to some growth without poverty reduction

Household survey data[2] illustrate that the good macroeconomic performance of Uganda has been translated into broad-based growth of consumption in the course of the 1990s, whereas growth after the turn of century appears to have favoured mainly the rich. Thus, when measured in terms of consumption, poverty has decreased considerably between 1992/93 and 1999/00 (Appleton, 2001a, b; Deininger and Okidi, 2003; Okidi et al., 2000). Between 1999/00 and 2002/03, however, poverty has risen slightly despite continued growth. In the following, we take a closer look at the evolution of poverty and inequality over the past ten years.

Table 1 provides trends in poverty and inequality between 1992/93 and 2002/03. National poverty measured by the headcount declined from 55.7 percent to 37.7 percent over this period.[3] The poverty gap, which gives a notion about the resources needed to lift the poor out of poverty by perfectly targeted transfers, also decreased substantially from 20.3 percent to 11.3 percent. This substantial improvement is reflected in both rural and urban areas. In rural areas, the headcount index declined from 59.7 percent in 1992/93 to 41.7 percent in 2002/03, and in urban areas, from 27.6 percent to 12.2 percent.[4] Yet, poverty reduction has not been a steady but rather volatile process with little change in the early 1990s, much of the increases in consumption of the poor occurring in the second half of the decade (Appleton, 2001b), and the recent setback.

Table 1: Poverty and inequality, 1992-2002

	Poverty headcount			*Poverty gap*			*Gini coefficient*		
	1992/93	*1999/00*	*2002/03*	*1992/93*	*1999/00*	*2002/03*	*1992/93*	*1999/00*	*2002/03*
National	55.7	33.8	37.7	20.3	10.0	11.3	0.364	0.395	0.428
Urban	27.6	9.6	12.2	8.1	2.1	3.0	0.394	0.426	0.477
Rural	59.7	37.4	41.7	22.0	11.2	12.6	0.325	0.332	0.363

Source: Authors' calculations based on UBOS household survey data.

Measured by the Gini coefficient, inequality increased slightly from 0.364 to 0.396 over a period of seven years and then jumped to 0.428 in only three years. Disaggregating these figures into rural and urban inequality yields worrying insights into the growing disparities in

[2] For all calculations in this article, we use data from three household surveys which we obtained from the Uganda Bureau of Statistics (UBOS). These are the Integrated Household Survey (HIS) of 1992/93, the Uganda National Household Survey (UNHS) of 1999/00 and the Second Uganda National Household Survey (UNHS II) of 2002/03.

[3] In all our calculations, we use the official (per adult equivalent) consumption aggregate provided by UBOS based on the excellent work by Simon Appleton. For details, see the technical appendix in Appleton (2001a). We also use official poverty lines as documented in Appleton (2003).

[4] It is important to point out here that about 86 percent of the Ugandan population lived in rural areas in 2002/03, which is why rural poverty contributed 96 percent to national poverty.

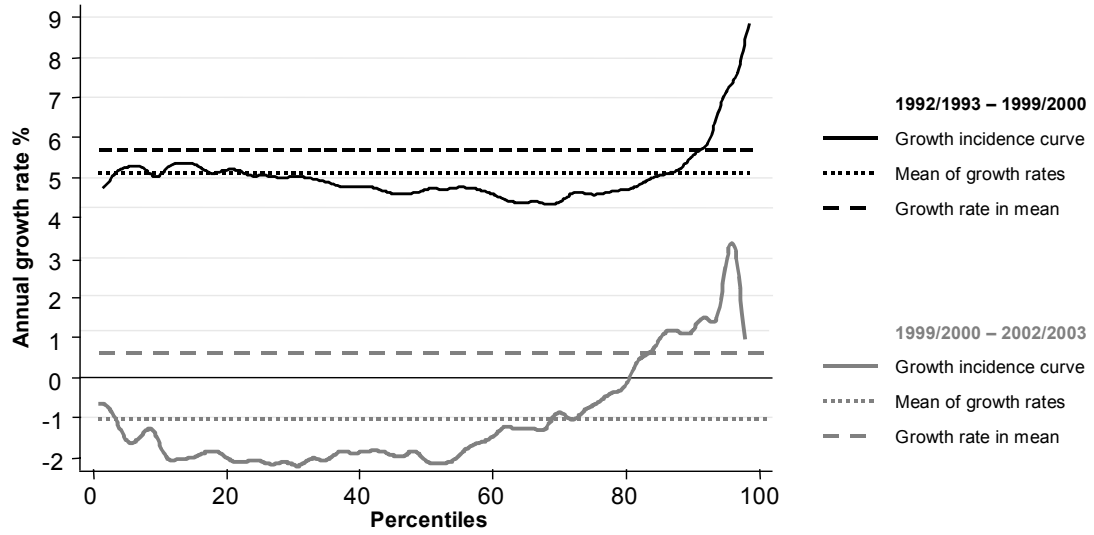
Uganda. Within rural areas, inequality remained fairly stable throughout the 1990s. Within urban areas, inequality had even decreased until 1997/98 (Appleton, 2001b) but then reached a level slightly higher than in 1992/93. Between 1999/00 and 2002/03, however, inequality rose substantially within both rural and urban areas, with the increase being more pronounced in urban places. In addition, the data show that rural-urban disparities widened during the 1990s. As decompositions of the Theil index reveal, the proportion of total inequality that can be attributed to the inequality between rural and urban areas (as opposed to the inequality within rural and urban areas respectively) increased from 16 percent in 1992/93 to 23 percent in 1999/00. As seen above, inequality increased sharply within rural and within urban areas in recent years, which led to a lower contribution of the between-inequality component of 20 percent in 2002/03.

We have dedicated quite some space to the evolution of inequality in Uganda, as it represents a crucial link between growth and poverty reduction. First, the initial level of inequality matters, as growth will have a relatively small poverty reducing effect with a highly unequal distribution. In economies where inequality is persistently low, the poor will tend to obtain a relatively higher share of the gains from growth (Ravallion and Datt, 1999). Second, changes in the distribution make growth either more or less effective in reducing poverty. If, for example, only the upper segments of the income distribution gain from growth, growth will not lead to poverty reduction at all. And third, the part of the distribution that changes has an influence on whether or not distributional shifts are in favour of or against the poor. In order to be in favour of the poor, income has to be redistributed from the non-poor to the poor and not among the poor or among the non-poor.

In the following, we intend to shed some more light on the relationship between consumption growth, inequality, and poverty in Uganda. An excellent tool to illustrate this relationship are growth incidence curves, which plot consumption growth at consumption percentiles (Ravallion and Chen, 2003). Figure 1 provides national growth incidence curves for the periods 1992/93 to 1999/00 and 1999/00 to 2002/03. In the first period, growth was broad-based as all parts of the population experienced positive growth in consumption. The annual percentage increase in per adult equivalent consumption lay between 4 and 9 percent, with increases for the highest percentiles (90th and above) much more pronounced than for lower percentiles. Yet in the second period, growth only amounted to between minus 2 and 3

percent with consumption declining for large parts of the population.[5] Only for the upper 20 percentiles, growth turned out to be positive, and the richer people were the more they gained.

Figure 1: Growth incidence curves, national

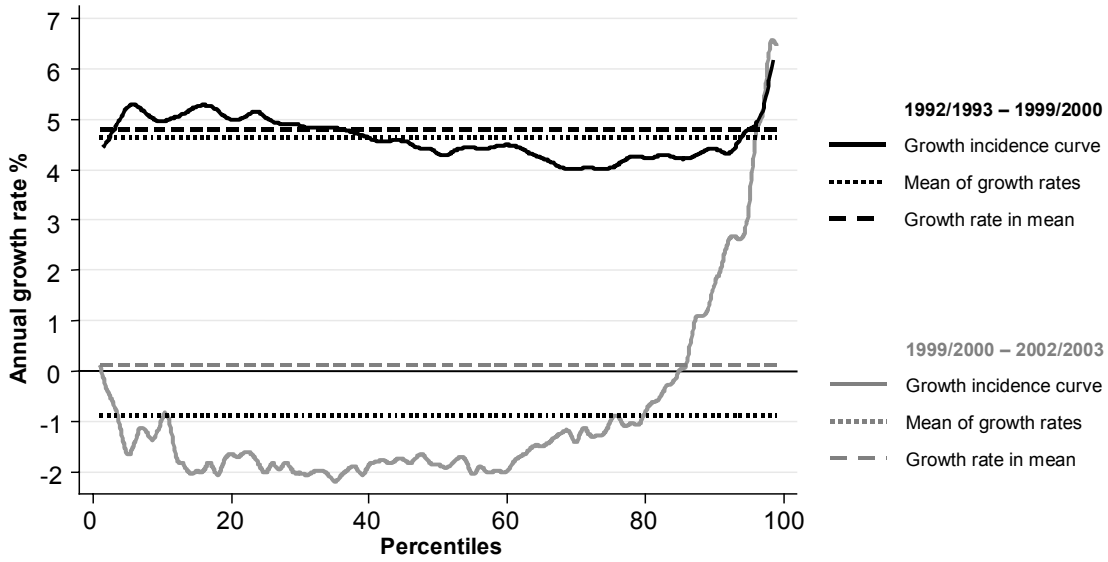


Source: Authors' calculations based on UBOS household survey data.

The poverty-growth nexus has proved to differ considerably between rural and urban areas in Uganda. As Figures 2 and 3 show, both rural and urban growth were broad-based between 1992/93 and 1999/00. With 7.8 percent, however, annual growth in mean consumption was much stronger in urban than in rural areas where consumption grew by 4.8 percent annually (Table 2). In rural areas, people up to the 40th percentile benefited more from growth than the rest of the population except for the extreme upper tail of the distribution. This is in line with the relatively constant Gini coefficient for that period. In urban areas, on the contrary, better-off people gained more than the poor. But still, the poor experienced important increases in consumption that explain the strong decrease in urban poverty rates.

[5] National accounts report an annual per capita growth rate of 2.0 percent at the national level between 1999/00 and 2002/03, which is different from the growth rate of 0.6 percent that we derived from household survey data for the same period. Appleton (2001b) illustrates that in the case of Uganda growth estimates from household surveys differ quite substantially from growth rates in national accounts for short time periods but are consistent if the longer period between 1992/93 and 1999/00 is considered. At this point, we do not want to elaborate on this question. For a discussion of discrepancies and reconciliation of data from household surveys and national accounts, see Deaton (2003) and Pyatt (2003). Still, the arising discrepancies in growth rates remind us of the pitfalls of both data sources. As our main concern is poverty, we are inclined to rely on survey data rather than national accounts.

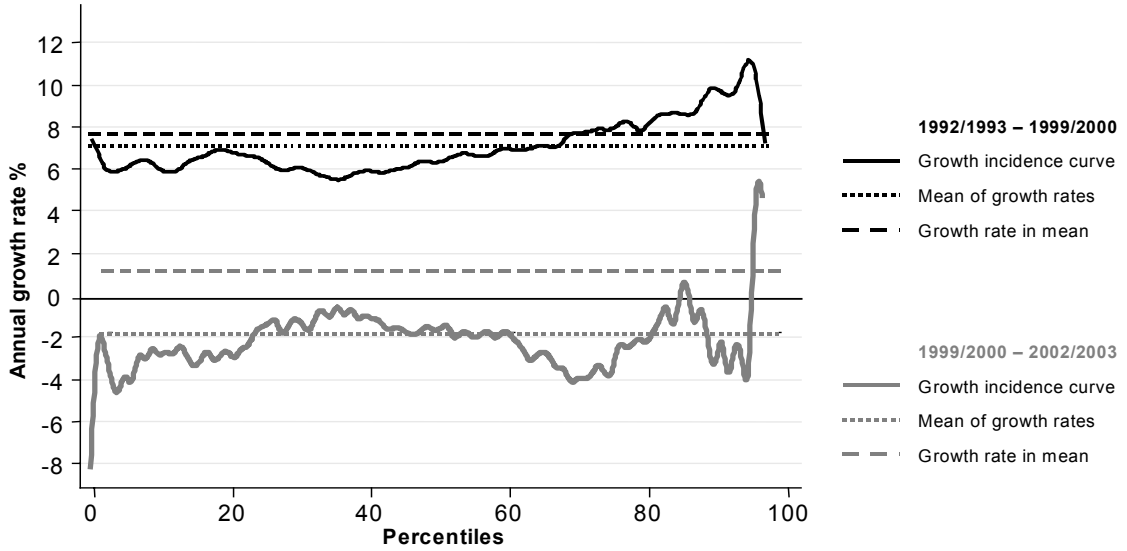
Figure 2: Growth incidence curves, rural



Source: Authors' calculations based on UBOS household survey data.

The growth incidence curves for the period from 1999/00 to 2002/03 reveal a dismal picture. Rural (urban) average consumption grew by only 0.12 (1.16) percent annually (Table 2). Nearly all people experienced negative consumption growth. In rural areas, only people above the 85th percentile benefited from growth, while people between the 15th and the 60th percentiles lost most (up to 2 percent annually). With regard to urban areas, the growth incidence curve exhibits a small peak around the 90th percentile, implying that there is an upper income class that saw its consumption levels increase moderately. At the very top end of the distribution, people gained substantially so that most of the total increase in mean consumption can be attributed to the few households of the highest percentiles. The rest of the urban population suffered a dramatic loss in terms of consumption of up to 7 percent annually. In contrast to rural areas, the poorest of the poor in urban areas appear to have fared particularly badly.

Figure 3: Growth incidence curves, urban



Source: Authors' calculations based on UBOS household survey data.

Beside this graphical representation, the literature offers different measures of pro-poor growth. One of them is the "rate of pro-poor growth" as proposed by Ravallion and Chen (2003). It can be interpreted as the area under the growth incidence curve up to the headcount index at the start of the respective period.[6] A positive rate of pro-poor growth reflects that growth has been pro-poor as this implies that the poor (as defined in the base year) have gained in consumption. If the rate of pro-poor growth exceeds the growth rate in the mean, distributional shifts have been in favour of the poor. They have then benefited relatively more from growth than the rest of the population. In the case of Uganda, growth was unambiguously pro-poor between 1992/93 and 1999/00 (Table 2). In rural areas, distributional shifts even favoured the poor though only marginally. Between 1999/00 and 2002/03, the rate of pro-poor growth was negative. Hence, growth then clearly benefited the rich, which confirms our findings from above.

[6] It is calculated as the ratio of the change in poverty over time (using the Watts index) to the change that would have been observed had the distribution remained unchanged times the growth rate in the mean.

Table 2: Annual growth in mean consumption and rate of pro-poor growth

	National		*Urban*		*Rural*	
	1992/93-1999/00	*1999/00-2002/03*	*1992/93-1999/00*	*1999/00-2002/03*	*1992/93-1999/00*	*1999/00-2002/03*
Rate of pro-poor growth	4.99	-1.65	6.60	-3.84	4.86	-1.63
Growth rate in the mean[7]	5.62	0.57	7.80	1.16	4.85	0.12

Source: Authors' calculations based on UBOS household survey data.

A different tool to assess the link between growth, inequality and poverty is decomposing poverty changes into growth and inequality components (Datt and Ravallion, 1992). The growth component indicates how much of the total change in poverty can be attributed to economic growth in the absence of distributional changes. If growth was positive, this component will be negative, implying that equally distributed growth will always reduce poverty. The inequality component shows how much of the poverty change can be traced back to changes in inequality keeping mean consumption constant. This component can either be positive or negative depending on whether distributional shifts have been against or in favour of the poor. The growth and inequality components do not add up to the total poverty change if mean consumption and the distribution change simultaneously, which in reality is always the case. The decomposition analysis thus provides growth and distribution components as well as a residual.[8]

Table 3 shows results for a decomposition of the annual change in poverty in Uganda. Between 1992/93 and 1999/00, national poverty decreased by an annual 3.1 percentage points, urban poverty by 2.6 points and rural poverty by 3.2 points. At the national level, the growth component amounts to -3.5 points, implying that poverty would have decreased by more than it actually did had the distribution remained unchanged. The distributional component takes the value of 0.6, which suggests that distributional shifts in this period were against the poor. Yet, as the growth component clearly dominates the distributional component, poverty reduction achievements were only slightly hampered by increasing

[7] Note that the growth rate in the mean reported here appears to be somewhat underestimated. As explained above, computing the rate of pro-poor growth uses the poverty line as an anchor. In the case of Uganda, there is no national poverty line but only regional lines that take regional differences with regard to non-food requirements into account (Appleton, 2001b). It is assumed that people in urban areas need to make more non-food expenditures for a decent standard of living, assigning higher poverty lines to urban areas. When we calculate the rate of pro-poor growth and the growth rate in the mean together, we end up deflating twice for regional differences (first for price differences, which are included in the consumption aggregates we use, and second for differences in non-food requirements). This, however, deflates already comparable per adult equivalent consumption more in urban than in rural areas, which is why the resulting growth rate in the mean is too low. If, for example, we calculate national growth rates without deflating consumption for regional poverty lines, we get a growth rate of 5.91 percent for the period 1992/93-1999/00 and a rate of 0.66 percent for 1999/00-2002/03.

[8] See Datt and Ravallion (1992) for details on the interpretation of the residual.

inequality. The same holds when urban and rural changes in poverty are considered separately.[9]

Between 1999/00 and 2002/03, poverty rose by an annual 1.3 percentage points at the national level, 0.9 points in urban areas and 1.4 points in rural areas. Since mean consumption growth was positive, growth components turn out to be negative. But compared to the previous period, the poverty reducing potential of distributionally neutral growth is much lower as suggested by the smaller growth component. This is of course due to the relatively low consumption growth in the mean at national, urban and rural levels during this period, as seen in Table 2. Distributional components again are positive and hence anti-poor. But in contrast to above, they dominate the growth components, thus explaining the increase in poverty in recent years.

Table 3: Decomposition of annual poverty change into growth and distributional components

	National		*Urban*		*Rural*	
	1992/93-1999/00	*1999/00-2002/03*	*1992/93-1999/00*	*1999/00-2002/03*	*1992/93-1999/00*	*1999/00-2002/03*
Poverty change	-3.13	1.30	-2.57	0.86	-3.19	1.41
Growth component	-3.49	-0.44	-2.91	-0.40	-3.17	-0.10
Distributional component	0.63	1.72	0.74	1.27	0.24	1.50
Residual	-0.27	0.01	-0.40	-0.01	-0.26	0.01

Source: Authors' calculations based on UBOS household survey data.
Note: Figures are given as percentage points.

In sum, we find that the Ugandan growth experience between 1992 and 2002 can be distinguished into two different regimes. During a first period (from 1992/93 to 1999/00), growth was broad-based with substantial consumption increases for the whole population, which in turn led to poverty reduction. As consumption growth was higher in urban areas and for the richer segments of the population, total inequality and inequality between urban and rural areas increased. But still, the growth effect on poverty clearly dominated the distributional effect so that growth in this period can unambiguously be considered pro-poor. In the following period (from 1999/00 to 2002/03), however, growth in mean consumption turned out to be much lower and most segments of the population saw their consumption decline. Only the rich experienced positive growth, both in rural and in urban areas. In consequence, inequality at national, rural and urban levels increased sharply, and the

[9] Note that the positive distributional component for rural areas contradicts our finding from above. The rate of pro-poor growth indicated pro-poor, or at least no anti-poor, distributional shifts in rural areas in this period. The reason for the contradiction lies in the fact that the decomposition analysis assesses changes in the headcount index whereas the calculation of the rate of pro-poor growth is based on the Watts index. The latter poverty measure satisfies the transfer axiom, i.e., inequality-reducing transfers among the poor lead to a decrease in the index. As we can infer from the growth incidence curve, inequality among the poor decreased between 1992/93 and 1999/00. Yet, these pro-poor distributional shifts are not taken into account in the decomposition analysis, which in turn leads to the positive distributional component.

distributional effect on poverty now dominated the growth effect. This growth regime is in stark contrast to the previous one and leaves no sign of pro-poor growth.

The direct way: Sectoral growth, structural change and poverty reduction

Pro-poor growth requires the sectoral pattern of growth to be biased in favour of the poor. In Uganda, the majority of the poor population lives in rural areas and is engaged in agricultural activities, as urbanisation occurs only slowly. Therefore, growth obviously has to be strong in agriculture to effectively reduce poverty. In fact, agricultural growth in the 1990s was strong enough to achieve the magnitude of poverty reduction described in the preceding section. Yet, other sectors have grown by much higher rates, which implies that the Ugandan economy has experienced considerable structural change since the early 1990s. The agricultural sector accounted for 38 percent of GDP in 2002/03, down from about 48 percent in 1992/93, and employed about 67 percent of the workforce in 2002/03, a decrease of 13 percentage points compared to 1992/93.[10] However, structural change has not only altered the sectoral composition of production and employment away from agriculture. There have also been important changes within the agricultural sector. As we illustrate in the following, both developments have had a strong impact on poverty.

The upper part of Table 4 provides sectoral poverty profiles and a decomposition of poverty changes into changes due to intrasectoral effects, intersectoral effects, also referred to as population shift effects, and interaction effects.[11] Intrasectoral effects are the changes in overall poverty that result from poverty changes within a specific sector. Population shift effects are the changes in overall poverty that can be attributed to people moving between sectors, e.g. from a sector with high poverty incidence into a sector with lower poverty incidence. The interaction effect describes the correlation between intrasectoral and population effects. It thus reflects poverty changes that are due to people moving between sectors where poverty is falling or rising. For the decomposition exercise, all members in the household were assigned the household head's sectoral affiliation.

[10] Employment shares are authors' calculations based on household survey data. Shares in GDP are from several issues of the Key Economic Indicators published by UBOS.

[11] For details on the decomposition techniques, see Ravallion and Huppi (1992).

Table 4: Decomposition of poverty changes

	Population share			*Poverty headcount*			*Intrasectoral effect*		*Population shift effect*		*Interaction effect*	
	1992	*1999*	*2002*	*1992*	*1999*	*2002*	*1992-99*	*1999-02*	*1992-99*	*1999-02*	*1992-99*	*1999-02*
Sector of household head												
Crop agriculture	66.3	67.6	52.2	63.8	39.1	50.4	-16.38	7.64	0.83	-6.02	-0.32	-1.74
Non-crop agriculture	2.9	3.2	5.5	54.9	41.9	33.6	-0.38	-0.27	0.16	0.96	-0.04	-0.19
Mining	0.1	0.5	0.2	31.5	41.5	26.2	0.01	-0.08	0.13	-0.12	0.04	0.05
Manufacturing	3.9	2.9	7.1	44.6	23.3	28.5	-0.83	0.15	-0.45	0.98	0.21	0.22
Public sector[1)]	3.7	1.9	1.6	35.1	20.5	11.2	-0.54	-0.18	-0.63	-0.06	0.26	0.03
Construction	1.4	1.5	1.8	36.6	20.1	22.6	-0.23	0.04	0.04	0.06	-0.02	0.01
Trade and transport[2)]	8.8	9.4	16.8	27.8	12.9	17.6	-1.31	0.44	0.17	0.95	-0.09	0.35
Miscellaneous services	6.7	8.1	9.2	34.2	14.5	18.8	-1.32	0.35	0.48	0.16	-0.28	0.05
Not working	6.2	4.9	5.7	56.9	42.3	39.1	-0.91	-0.16	-0.74	0.34	0.19	-0.03
Total effect							**-21.88**	**7.94**	**-0.02**	**-2.75**	**-0.04**	**-1.26**
Diversification of household activity[3)]												
Only agriculture	53.6	51.1	40.5	64.8	41.1	53.2	-12.70	6.18	-1.62	-4.36	0.59	-1.28
Agriculture and other	27.8	30.8	29.1	50.8	29.6	32.3	-5.89	0.83	1.52	-0.50	-0.64	-0.05
No agriculture	13.8	14.4	26.0	29.0	12.3	18.4	-2.30	0.88	0.17	1.43	-0.10	0.71
Not active	4.8	3.7	4.4	59.7	51.1	45.3	-0.41	-0.21	-0.66	0.36	0.09	-0.04
Total effect							**-21.31**	**7.68**	**-0.58**	**-3.08**	**-0.05**	**-0.66**
Residence in coffee district[4)]												
Yes	44.6	43.3	47.4	52.9	25.8	31.3	-12.09	2.38	-0.69	1.06	0.35	0.23
No	55.4	56.7	52.6	58.0	39.9	43.5	-10.03	2.04	0.75	-1.64	-0.24	-0.15
Total effect							**-22.11**	**4.42**	**0.07**	**-0.58**	**0.12**	**0.08**
Subsistence households												
Subsistence household	33.1	32.0	24.5	59.2	39.9	52.8	-6.39	4.13	-0.65	-2.99	0.21	-0.97
Non-subsistence	66.9	68.0	75.5	54.0	30.9	32.8	-15.45	1.29	0.59	2.32	-0.25	0.14
Total effect							**-21.84**	**5.42**	**-0.06**	**-0.68**	**-0.04**	**-0.83**

Source: Authors' calculations based on UBOS household survey data.

Note: Total poverty reduction 1992/93-1999/00 was 21.9 percentage points and poverty increased by 3.9 percentage points 1999/00-2002/03.

[1)] Includes public utilities and public administration. [2)] Includes communication. [3)] Diversification of household activity refers to dependence of households on agriculture and other activities. It includes household heads' main and secondary activities and other household members' main activity. [4)] Districts included are (according to 1992 disaggregation): Kalangala, Kapchorwa, Kiboga, Luwero, Masaka, Mpigi, Mubende, Mukono, Rakai, Mbale, Kamuli, Iganga, Bushenyi. These are districts with actual coffee production per capita of more than 20 bags of 60kg or production potential of more than 100,000 bags of 60 kg.

In 1992/93, almost 70 percent of the population lived in households where the household head was engaged in agricultural activities, and this was still the case in 1999/00. According to the 2002/03 survey, this share recently declined to less than 60 percent. In 1992/93, around 3 percent of households were mainly engaged in non-crop agriculture, including livestock production, but the share of the population living in such households rose to more than 5 percent in 2002/03.[12] As Table 4 indicates, the poverty incidence among crop-agriculture households in the early 1990s was very high. According to Appleton (2001b), food crop and cash crop households were equally poor in 1992/93. The situation of food crop households did not change much until 1995/96, and only between 1995/96 and 1999/00, they started to catch up. Cash crop households already fared better in the early 1990s and poverty among these households was significantly reduced until 1995/96. A further, though less impressive reduction followed thereafter. Table 4 illustrates that crop-agriculture was the most important contributor to poverty reduction in the 1990s, i.e. the reduction of poverty within this sector was the main contributor to overall poverty reduction (intrasectoral effect). In contrast, between 1999/00 and 2002/03 crop agriculture was by far the most important contributor to the observed increase in poverty, as the headcount in this sector increased by more than 10 percentage points. Yet, as its population share went down by more than 10 percentage points, the intersectoral contribution worked into the opposite direction (illustrated by the negative sign of the population shift effect). The explanation is straightforward: By moving out of crop agriculture, people moved out of a sector with a high poverty incidence compared to other sectors. The interaction component is also negative, which is due to the fact that people moved out of a sector where poverty was rising. With regard to non-crop agriculture, the picture is somewhat different. Between 1992/93 and 1995/96, poverty in this sector was reduced remarkably. In contrast to poverty in the cash crop and food crop sectors, it slightly increased between 1995/96 and 1999/00 (Appleton, 2001b), but has decreased significantly since 2000 (Table 4). Yet, non-crop agriculture still exhibits a relatively high poverty incidence of 34 percent, and since this coincides with a rising population share, the intersectoral contribution of this sector is positive, i.e. it has contributed to the overall poverty increase.

Table 4 nicely reflects that activities other than agriculture are gaining importance in the Ugandan economy. Service sectors, like trade, transport and other services, employed

[12] Unfortunately, the 2002/03 survey does not allow to further disaggregate the agricultural sector. Only the 1992/93 and 1999/00 surveys included agricultural modules that provide the necessary information for such a disaggregation. For the lack of comparability over time, we have not analysed these agricultural modules and borrow from Appleton (2001b) for the analysis of sectoral shifts within crop-agriculture.

household heads that represented 26 percent of the population in 2002/03, up from 15.5 percent in 1992/93. Employment in manufacturing declined in the 1990s, but grew remarkably in recent years. Between 1992/93 and 1999/00, households whose household head worked in manufacturing, public sector activities, trade, and other services (the most important non-agricultural activities) contributed significantly to poverty reduction. Among trade and public sector households, the poverty incidence was more than halved in this period. Manufacturing households started from higher poverty levels, and poverty declined somewhat less. After 1999/00, the poverty incidence among manufacturing households remained more or less constant; the positive intersectoral contribution resulted from the higher share in employment. Trade households accounted for almost 17 percent of the Ugandan population in 2002/03, which implies that their share has almost doubled in recent years. The poverty incidence among these households remained fairly low, although it rose somewhat recently. These factors explain the sector's relatively low contribution to the poverty increase between 1999/00 and 2002/03. The sectoral decomposition thus illustrates that the poverty changes in the 1990s were almost entirely due to intra-sectoral gains, in particular in agriculture, whereas since 1999/00 movements between sectors have also played an important role in determining poverty outcomes. Between 1999/00 and 2002/03, the total intersectoral and interaction effects were negative, i.e. people moved out of sectors with relatively high poverty incidence, and out of sectors where poverty was rising. This finding implies that poverty outcomes could have been a lot worse, had people stayed in agriculture.

However, the sectoral decomposition analysis suffers from the possibly important drawback that it does not consider the composition of household income. Households are classified according to the industry of the main occupation of the household head. This implies that intersectoral changes of other household members are not taken into account. In addition, intrasectoral gains or losses of other household members are implicitly contributed to the household head's sectoral choice. Indeed, there have been major changes in household income composition beyond the main occupation of the household head. Deininger and Okidi (2003) report that almost 50 percent of all households, and almost one third in rural areas, started a non-agricultural enterprise between 1988 and 1992/93, most of them in the trade sector. In Table 4, we present some evidence that supports this finding, as in 1992/93 only around 50 percent of the population relied exclusively on agricultural activities for their livelihood. The poverty headcount among diversified households was significantly lower than the headcount of "pure" agricultural households. Until 1999/00, the population share in pure agricultural households had declined only very little and poverty had been reduced

considerably. Between 1999/00 and 2002/03, we observe a decline of more than 10 percentage points in the population share of pure agricultural households and a corresponding increase of non-agricultural households. The poverty incidence among the remaining pure agricultural households increased considerably. There was also a marked increase of the headcount of non-agricultural households, whereas poverty among diversified households increased only slightly. It thus appears that those households moving out of agricultural activities have not been as successful as their predecessors in doing so. In addition, diversified households seem to have been able to cope better with the unfavourable conditions that led to the overall poverty increase.[13]

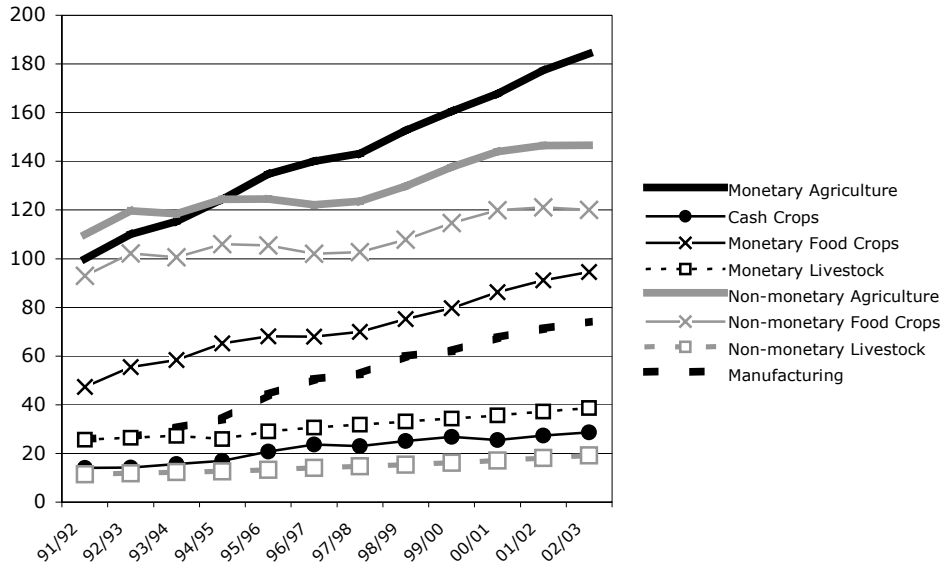
Despite the declining importance of agriculture in terms of production and employment, the preceding paragraphs have demonstrated that agricultural performance remains the key determinant of Uganda's success in terms of economic growth and poverty reduction. Therefore, we shortly review growth and structural change within this sector from the early 1990s until today in more detail and try to link these developments to the observed poverty changes. The restoration of peace and the public sector, and the liberalisation of agricultural markets in the late 1980s and early 1990s provided the framework for a reversal of the retreat to subsistence and the rehabilitation of traditional export products in Ugandan agriculture. Economic reforms in the agricultural sector predominantly affected the cash crop sector, as there were no interventions in the food crop sector (Dijkstra and van Donge, 2001). The deregulation of the coffee market, which had been dominated by the state-owned Coffee Marketing Board (CMB) until the beginning of the 1990s, can be considered as one of the key reforms.[14] With regard to the supply response of the cash crop sector to these reforms, there is no consensus in the literature. Whereas Belshaw et al. (1999) conclude that coffee and cotton production had failed to recover mainly due to institutional resistance to reforms, Dijkstra and van Donge (2001) find that there have been important supply responses that can be linked to liberalisation. Deininger and Okidi (2001) support the latter finding for the cotton sector. They also note that all agricultural sectors have benefited from a better functioning of rural factor markets, as land rental transactions have increased significantly and access to credit has improved. Extension services today reach a higher share of farms and facilitate diversification, in particular in the food crop sector.

[13] It should be noted that our analysis intends to identify tendencies and trends by using descriptive methods. A detailed analysis of changes in household income generation processes goes well beyond the scope of this article, but would certainly be a worthwhile undertaking.

[14] See for example Belshaw et al. (1999) and Dijkstra and van Donge (2001) for detailed assessments of agricultural reforms and outcomes.

Figure 4 shows cumulative production growth for several agricultural subsectors.[15] We also introduced a curve for manufacturing for illustrative purposes. Whereas production in well-performing agricultural sectors nearly doubled between 1991/92 and 2002/03, it almost tripled in manufacturing.[16] Yet, Uganda started from a pretty small manufacturing base. With regard to growth within the agriculture sector, Figure 4 provides a clear message: Monetary agriculture fared quite well with production almost doubling over a decade, whereas non-monetary agriculture grew significantly less. Only in livestock production, non-monetary agriculture grew stronger than monetary agriculture. Overall, these agricultural production growth rates are in line with the household-survey based evidence.[17]

Figure 4: Production in agricultural subsectors, 1992/93-2002/03 (Production of monetary agriculture in 1991/92 = 100)



Source: Several issues of the Key Economic Indicators published by UBOS.

Production of cash crop agriculture increased strongly in the early 1990s and at a somewhat lower rate in recent years. According to Dijkstra and van Donge (2001), production quantities of coffee, cotton and tobacco increased considerably. Increasing production quantities coincided with favourable cash crop prices until the mid-1990s. During the coffee price boom 1995/96 and 1996/97, growth rates of cash crop production were two digit. Yet, coffee prices

[15] The quality of data on agricultural production in Uganda is certainly of questionable quality, in particular for food crop production. Dijkstra and van Donge (2001) report that they had been told by the Ministry of Agriculture that official statistics on food production are best guesses. We think that an informed best guess can still be used in empirical work. Actually, the following analysis shows that the data appears to reflect household survey findings quite well. Furthermore, we believe that data quality has improved in the course of the 1990s, based on our experiences with household survey data and our contacts with UBOS staff.

[16] Trade more than doubled, transport almost tripled during the same time period.

[17] In this paragraph we have considered the value of production only. In the following, we also examine quantities and prices separately. Nevertheless, the term production always refers to values.

(robusta) started to fall after 1998 hitting the bottom in November 2001, down almost 90 percent from their highest levels in August 1994.[18] In addition, prices for cotton, tobacco, and tea also fell between 1998/99 and 2001/02 (MFPED, 2003). Increased production quantities appear to have partly compensated for decreasing prices. Despite some volatility in growth rates in cash crop production, which are not very well captured by Figure 4, the sector has performed quite well with an annual growth rate of 6.7 percent between 1992/93 and 2002/03. Yet, average annual growth between 1999/00 and 2002/03 was only 2.2 percent.

Agricultural households are vulnerable to such agricultural commodity price shocks, as household income diversification is still low. Appleton (2001a) argues that the increase in export prices for coffee and the liberalisation of the coffee sector (leading to higher prices for coffee farmers) allowed farmer households to benefit directly from the increase in world prices. Yet, this implies that in turn coffee farmers were negatively affected by the recent drop in coffee prices. Deininger and Okidi (2003) simulated price changes and their effects on poverty. They find that a price increase of 10 percent for coffee, the main tradable, would result in a reduction of the headcount by 6 percentage points, thus illustrating the high elasticity of poverty with respect to coffee prices. A downward shift of coffee prices of 10 percent, in view of the linear character of the regression, would lead to poverty increases of slightly more than 6 percentage points. Unfortunately, the 2002/03 household survey data does not allow for the identification of coffee growers in order to test Deininger and Okidi's claim. Yet, in order to broadly assess the poverty impact of the end of the coffee boom, we classify Ugandan districts into coffee and non-coffee districts. The results, reported in Table 4, appear to confirm the important role of the coffee sector. Coffee districts contributed more to the overall poverty reduction than non-coffee districts between 1992/93 and 1999/00, but they also contributed slightly more to the recent poverty increase, despite their lower population share.

Figure 4 shows that monetary food crop production has increased considerably in the 1990s. During the same period, non-monetary food crop production has either grown much less, or stagnated or even declined. Both curves flatten in recent years reflecting a general decrease in food prices. Non-monetary food crop production has virtually stagnated (despite high population growth), whereas monetary food crop agriculture appears to have compensated the price decrease somewhat by producing more. Overall, Figure 4 clearly indicates that a greater share of agricultural production is marketed, which could be due to farmers, who already participated in markets, producing and selling more and/or increasing market participation.

[18] Prices for Ugandan coffee growers from the International Coffee Organisation (www.ico.org).

Yet even today, only about 55 percent of agricultural production is sold on markets. Larson and Deininger (2001) find that farmer participation increased in the course of the 1990s, although they note that the evidence is ambiguous. The diversification of food crop production has certainly been conducive to increasing market participation. Deininger and Okidi (2001) report that many farmers started growing non-traditional crops during the 1990s, such as tomatoes, cabbage and fruit. However, the low growth rates of non-monetary agricultural production are certainly not entirely due to "subsistence" farmers moving into monetary agriculture. Instead, they also reflect the problems and limitations that these subsistence farmers face.

Indeed, we find that the share of the population living in subsistence households, defined as households with a ratio of home-produced food to household food consumption of more than 0.7, declined only little between 1992/93 and 1999/00 (Table 4). Between 1999/00 and 2002/03, however, this share went down from 32 to 24.5 percent. Note that this decrease may not only point to increased market participation but may as well be attributed to households switching into non-agricultural activities. Starting from a headcount index of 54 percent, poverty among non-subsistence households was reduced to 30.9 percent by 1999/00, which compares to a reduction from 59.2 to 39.9 percent for subsistence households. Non-subsistence households thus fared much better in the 1990s and despite their increasing population share poverty rose only slightly among these households in recent years. Poverty among the remaining subsistence households, however, increased massively, which contributed considerably to the overall observed poverty increase.

As mentioned above, the non-monetary livestock sector even outperformed the monetary livestock sector. Continuing high growth in this sector is in line with the result of the sectoral poverty analysis that the livestock sector is among the few sectors in which poverty was reduced between 1999/00 and 2002/03. Deininger and Okidi (2001) report that livestock ownership had increased significantly during the 1990s and our results suggest that this favourable development may have continued in recent years.

Primary sector products figure prominently in Uganda's development plans. In addition to coffee, cotton, Irish potatoes and livestock, the Strategic Interventions for Export Promotion program of the Ministry of Finance, Planning and Economic Development (MFPED) identifies fish and horticulture as key subsectors for initiating export-led growth. Even though production in these subsectors is still low compared to other agricultural subsectors already discussed, they already play an important role in generating export earnings: Fish exports have become as important as coffee exports, and horticultural (in particular flower and

vanilla) exports have grown remarkably - though from a low base - to account for approximately 10 percent of total exports earnings by today. Some of the non-traditional export products, such as vanilla and cocoa, are partly produced by small-scale farmers, whereas fish production is mostly small scale. Cut roses and chrysanthemum plant cuttings as well as fruits and vegetables are almost exclusively produced by large farmers, as they generally require significant capital investment. Typically, these farms offer high-quality employment, and in addition, they may subcontract small farmers.[19]

Unfortunately, we know very little about the link between the performance of these dynamic agricultural subsectors and poverty. Employment modules of the household surveys are not disaggregated enough to extract information about the evolution of employment and income generation in these sectors, and hence, about their impact on household welfare.[20] The anecdotal evidence presented so far suggests that export booms in some agricultural subsectors might have benefited the smallholders. It is certain though that not enough farmers have moved into these non-traditional subsectors and that employment generation on large farms has not been sufficient to make a difference in terms of poverty reduction.

To sum up, the analysis of the link between the pattern of growth and poverty reduction presented here yields the following major insights. Growth in agriculture was the basis of Uganda's poverty reduction achievement in the 1990s. It was accompanied by important structural change within agriculture towards a better market integration of farmers. In addition, households diversified into non-agricultural activities. Despite lower growth rates reported for non-monetary agriculture, subsistence farmers also appear to have benefited from the favourable conditions. This is not necessarily in contradiction to the lower growth rates of non-monetary agriculture, as this subsector grew despite increasing market participation. Non-agricultural households fared particularly well and diversified households also benefited from high growth rates in non-agricultural sectors. The coffee boom of the mid-1990s also played an important role in reducing poverty. Slow growth in non-monetary agriculture as well as the end of the coffee boom seem to be the key factors behind the increase in poverty after 2000. At the same time, important changes in the employment structure and the composition of household incomes have occurred. Poverty among subsistence farmers who have not been able to participate in markets or diversify into other economic activities increased massively. Possibly, declining incomes in agricultural activities have induced the

[19] Vanilla, for example, was grown by more than 10,000 smallholders, whereas in floriculture only 20 firms employed 4,000 workers. Both figures are for 2000 from IDEA Project (2001).

[20] Possibly, the analysis of the agricultural module of the UNHS can contribute to a better understanding of these developments, at least with regard to the question of how smallholders have benefited from the above mentioned positive developments in agriculture.

observed structural change. Structural change has apparently cushioned the poverty effect of slow agricultural growth, but it may also have put some pressure on the returns from non-agricultural activities. In turn, declining returns in non-agricultural activities may have caused the poverty increase among non-agricultural households. This relatively strong increase is particularly worrying, as it might be interpreted as a sign of an emerging non-agricultural subsistence or informal sector.

The indirect way: Public spending, taxation, and poverty reduction

In this section, we examine Uganda's experience with the indirect linkage between economic growth and poverty reduction. As pointed out above, high economic growth provides opportunities for both static and dynamic redistribution. The indirect way implies the adoption of a progressive tax system and targeted government spending on the poor. Taxes have the potential to directly correct an unequal distribution of market incomes. Together with development aid, they provide the resources required for public expenditures, which can either take the form of financial transfers or public services. Transfers can immediately benefit the poor by increasing their disposable incomes. Public services can increase the welfare of the poor by improving their living conditions. But maybe more importantly, they can be considered an investment in the assets of the poor, providing an opportunity to increase their earning capacities and to change the distribution of incomes in the medium to long run. Hence, we here address the question of whether public spending in Uganda is targeted towards the poor and whether the tax system is progressive.

With regard to public spending, our analysis concentrates on an assessment of public service delivery as there is no social security net that reaches the poor.[21] In line with the Poverty Eradication Action Plan (PEAP), which constitutes the government's major development plan to actively combat poverty, the provision of public services has become more and more focused on poverty reduction since the mid-1990s. In the course of elaborating the PEAP, five priority areas had been identified: primary education, primary health care, rural road rehabilitation and maintenance, agricultural modernisation, and water and sanitation. It was assumed that providing these services would help improve the living conditions of the poor and enable them to better participate in economic activities. Hence, it was determined that public expenditures for each of these priorities should increase at least as much as nominal GDP (Kempaka and Obwona, 2000). The introduction of the Poverty Action Fund (PAF) in

[21] The government merely provides pension payments for civil servants and army officials. The private National Social Security Fund offers pension, invalidity, and survivor's benefits to qualified private sector employees. But even though this fund is open to informal sector workers, the vast majority of members, if not all, are employed in the formal sector. For more details, see McDonald et al. (1999).

1998 has played an important role in securing this commitment. By way of channelling savings from debt relief, donor contributions, and domestic resources towards priority areas of spending, the PAF has contributed to a significant reorientation of budget allocations towards pro-poor service delivery. Over the past years, the share of allocations to programs covered by the PAF grew rapidly both in relative and absolute terms (Williamson and Canagarajah, 2003).

Yet, this does not tell anything about who benefits from the delivery of priority services. It may indeed be the better-off segments in society that benefit from an increased provision of education, health care, or roads, making the potential impact of these services on poverty rather marginal. A suitable tool to get to the bottom of this question is benefit incidence analysis, which measures the distribution of benefits of public spending on social services to individuals or households. It combines information about the unit cost of providing services with information on the use of these. In other words, it imputes to those households using a particular service the cost of providing it, therefore considering the amount by which household income would have to increase if it had to pay for the service itself.[22] In the following, we will conduct benefit incidence analyses for the education and health sectors, given their unquestioned relevance for poverty reduction.

According to the Medium-Term Expenditure Framework (MTEF), the Ugandan government spent USh 229,430 million on primary, USh 68,650 million on secondary, and USh 48,900 million on tertiary education in the financial year 2002/03. These numbers refer to budget releases for recurrent expenditure (wage and non-wage) and include spending by both the central and local governments. Local governments are responsible for the provision of education except tertiary education. In order to calculate the unit cost of providing public education, total costs have to be matched with user numbers. Table 5 shows the number of students enrolled in public, private, and NGO, religious or community schools as reported in the UNHS II.[23] In terms of enrolment numbers, NGO, religious and community schools do not play a substantial role in primary, secondary, or tertiary education. With regard to primary education, enrolment is highest in public schools for all consumption quintiles. Yet, it stands out that with increasing consumption households are more likely to send their children to private than to public schools. As far as secondary education is concerned, enrolment of

[22] Excellent surveys of origins and refinements of the methodology as well as case studies are given in Selden and Wasylenko (1992), Younger and Sahn (2000) and Younger (2003). For instructions on how to use it, see Demery (2000).

[23] Enrolment is reported as total enrolment regardless of a person's age. We chose to do so because in many cases children start school relatively late. In theory, primary school age is 6-12, secondary school age 13-19, and tertiary school age 20-25. Yet, in the UNHS II the average age for primary school is 10.4 years, for secondary 17.3 years, and for tertiary 23.8 years.

children from poorer households decreases heavily compared to children from better-off households. This effect is even more pronounced in tertiary education where students from the fifth quintile account for nearly 70 percent of all students. Considering the Ugandan policy of offering public primary education free of charge – known as Universal Primary Education (UPE) – while public secondary and tertiary education have to be paid for, this enrolment pattern suggests that school fees represent a significant burden for households from lower quintiles. Many of them make use of UPE but cannot afford to send their children to secondary school or above.

Table 5: Number of students in primary, secondary, and tertiary school, 2002/03

Quintile	***Primary***		
	Public	*Private*	*Other*
1	1,538,165	35,767	41,868
2	1,475,546	106,893	39,634
3	1,378,868	165,800	59,218
4	1,178,492	257,532	27,435
5	742,820	433,292	31,718
	Secondary		
	Public	*Private*	*Other*
1	28,936	18,761	1,877
2	50,342	48,458	8,116
3	82,850	102,431	1,894
4	107,889	114,051	4,924
5	118,596	149,645	13,186
	Tertiary		
	Public	*Private*	*Other*
1	206	207	964
2	1,432	621	558
3	3,694	927	750
4	9,098	3,012	131
5	22,229	23,222	2,846

Source: Authors' calculation based on UBOS household survey data.
Note: Other refers to religious, NGO, community and other institutions.

Combining public spending on education with enrolment in public schools results in a unit transfer amount of Ush 36,337 per student per year in primary schools, Ush 176,654 in secondary schools, and Ush 1,333,915 in tertiary institutions. The distribution of benefits from public education spending in terms of per capita transfers per quintile is presented in Table 6. Quintile shares in total spending are also reported.[24] Considering that the poverty headcount amounted to 38 percent in 2002/03, our findings suggest that spending on primary education benefits the poor more than the non-poor. The two lowest quintiles receive higher per capita transfers than other quintiles, and in fact, transfers decrease with increasing consumption. As could be expected, this does not hold for spending on secondary and tertiary education, from which the non-poor benefit more than the poor, and the richest gain most. These findings are of course heavily influenced by the fact that total enrolment in public

[24] Since unit costs are assumed to be equal among quintiles, these shares correspond to the proportion of the number of students from a particular quintile enrolled in total enrolment.

institutions is much higher for the poor in primary education while it is higher for the non-poor in secondary and tertiary education. In other words, since the number of children from poor households in public primary schools is significantly higher than the number of children from better-off households, it is quite clear that the poor benefit relatively more from public spending on primary education. Looking at education spending as a whole, per capita transfers are distributed relatively evenly but still increase with households' consumption. Overall, the poor receive less than average per capita transfers from education spending.[25]

Table 6: Benefit incidence of public spending on education, 2002/03

Quintile	*Primary*		*Secondary*		*Tertiary*		*All*	
	Per capita transfer	*Share in subsidy*	*Per capita transfer*	*Share in subsidy*	*Per capita transfer*	*Share in subsidy*	*Per capita transfer*	*Share in subsidy*
1	11,060	24.36	1,011	7.45	54	0.56	12,126	17.66
2	10,596	23.37	1,757	12.95	377	3.91	12,730	18.57
3	9,914	21.84	2,896	21.32	975	10.08	13,786	20.08
4	8,485	18.67	3,776	27.76	2,405	24.82	14,666	21.33
5	5,341	11.76	4,146	30.52	5,867	60.64	15,354	22.36
Total	9,080	100.00	2,717	100.00	1,935	100.00	13,732	100.00

Source: Authors' calculation based on UBOS household survey data.
Note: Per capita transfers are defined as the unit cost times the number of students enrolled in school divided by the population in each quintile.

With regard to public health expenditure, the MTEF reports Ush 40,750 million for hospitals, and Ush 59,390 million for primary health facilities in 2002/03. Again, this includes money spent by the center and by local governments, the latter of which are in charge of all health services except referral hospitals. As Table 7 reveals, public health facilities coexist with privately run services as well as health units led by NGOs or religious institutions, and all of them are attended by the population – yet with some differences.[26] As far as treatment in hospitals is concerned, public facilities are by far frequented most, followed by NGO or religious hospitals. Private hospitals do not play a significant role in terms of user numbers, which is most likely due to high costs charged by them. As regards primary health care, however, people prefer to seek treatment in private facilities, and this even holds for the poor. But similarly to the case of education, the probability of attending private facilities increases with households' consumption levels. Besides, it stands out that total user numbers in both hospitals and primary health units increase with consumption as well. Since it is not plausible that poorer people are less likely to fall sick, this suggests that the poorer an individual the less likely he or she is to seek treatment.

[25] Note that our results point out a remarkable improvement in the targeting of public education spending over the past few years. An unpublished study by the World Bank (1996) found that expenditures for primary education were relatively evenly distributed between quintiles at the beginning of the 1990s. The distribution of secondary education benefits was found to be highly regressive with a share of the first quintile in total expenditure of only 4 percent.

[26] The UNHS II also reported attendance at drug shops, pharmacies, traditional doctors and others. Yet, these types of health care are not listed here because they play only a minor role compared to hospitals and primary health units.

Table 7: Type of attended health facility in past month, 2002/03

Quintile	*Hospital*		
	Public	*Private*	*NGO/religious*
1	108,279	6,298	18,702
2	128,355	5,652	27,764
3	121,789	10,737	24,262
4	128,627	7,509	29,327
5	136,429	20,875	62,356
	Primary health		
	Public	*Private*	*NGO/religious*
1	310,919	335,794	19,192
2	263,607	400,784	14,937
3	220,902	496,971	27,489
4	169,483	646,390	35,180
5	152,240	749,104	30,935

Source: Authors' calculation based on UBOS household survey data.
Note: Primary health facilities comprise clinics, dispensaries, and health centers.

Extrapolating monthly user numbers in public facilities to annual user numbers and combining them with public health spending, the unit cost for hospitals amounts to Ush 4,704 and that for primary health facilities to Ush 4,430.[27] Table 8 shows the distribution of benefits from public spending on health across quintiles. For primary care, the poor receive higher per capita transfers than the non-poor, and in fact, the transfers fall steadily with households' increasing consumption levels. In the case of hospital care, however, the poor benefit less than the non-poor, receiving below average per capita transfers. Looking at health in general, the first and second quintiles clearly receive above average per capita transfers. This implies that the poor benefit more from health spending than the non-poor.

Table 8: Benefit incidence of public spending on health, 2002/03

Quintile	*Hospitals*		*Primary health care*		*All*	
	Per capita transfer	*Share in subsidy*	*Per capita transfer*	*Share in subsidy*	*Per capita transfer*	*Share in subsidy*
1	1,346	16.69	3,271	27.83	4,617	23.30
2	1,583	19.66	2,769	23.60	4,352	22.00
3	1,655	20.52	2,324	19.77	3,979	20.08
4	1,631	20.20	1,785	15.17	3,416	17.22
5	1,849	22.92	1,602	13.63	3,451	17.41
Total	1,613	100.00	2,350	100.00	3,963	100.00

Source: Author's calculation based on UBOS household survey data.

In sum, our findings suggest that benefits from public spending are relatively well distributed in the case of health but not so much in the case of education. Focusing on the poverty priority areas, primary education and primary health care, however, we have to acknowledge

[27] Note that in the calculation of the unit cost for hospital care, a distinction between indoor and outdoor hospital patients has been made. The UNHS II recorded around 525,000 outdoor and 98,000 indoor patients in public hospitals per month. In order to account for different cost structures between an inpatient day and an outpatient visit, we counted the number of inpatients double thereby treating an inpatient day twice as expensive as an outpatient visit. In their benefit incidence study on education and health spending in Indonesia, Lanjouw et al. (2001) assumed a cost ratio of 1:10. Applying such a high ratio does not change the basic message of our analysis. Nevertheless, the higher inpatient costs are treated relative to outpatient costs, the more do per capita transfers for the different quintiles diverge (Steiner 2004).

that the government is successfully targeting its spending in both sectors and reaching the intended group. Nevertheless, even if the poor have access to primary schools and primary health facilities, this does not necessarily lead to a long-term reduction in poverty. There is quite some evidence that in both education and health, the quality of services has been sacrificed for an increase in quantity. Low quality, however, can seriously inhibit the effectiveness of public spending, which may then fail to improve the living standards of the poor and to increase their human capital.

As far as education is concerned, it is reported that the quality of public schools has become unsatisfactory in recent years (MFPED, 2000). This is mainly due to the fact that the dramatic increase in enrolment rates, which has followed the introduction of UPE[28], has not been accompanied by a similar increase in the number of teachers, classrooms and textbooks. In the health sector, the situation is not much different. Since the abolition of user fees for public health services in 2001, the utilisation of these services has increased considerably but the number of health workers as well as the stock of medical equipment and drugs remain insufficient. Recruitment of qualified staff appears to be difficult, in particular in remote areas (Opolot, 2001). Incidents of corruption at the local government level make the abiding problem of low funding and scarce financial resources even worse (MFPED, 2002). As a consequence, people who can afford to pay for education and health services prefer private or NGO over public facilities (Hutchinson, 2001), which is confirmed by the user numbers reported above.

As mentioned above, the indirect way of pro-poor growth does not only refer to the question of targeted government spending but also to the progressiveness of the tax system. In other words, pro-poor growth requires that taxes are designed in such a way that they burden the rich more than the poor. In analogy to the case of public spending, this question is best addressed by tax incidence analysis. Chen et al. (2001) have recently conducted such an analysis for Uganda, and we shortly summarise their findings here. The authors compared the progressiveness of taxes at the beginning and at the end of the 1990s in order to account for changes in the tax system. During the last decade, comprehensive and substantial tax reforms were implemented, which changed the composition of tax revenue considerably. First, taxes on international trade were shifted from export to import taxation. As initially high import tax

[28] Pfaffe et al. (2003) report that following the introduction of UPE primary enrolment numbers increased from 2.7 million children in 1997 to 7.2 million children in 2002. Yet, this early success is today being put into perspective as a substantial proportion of students who have enrolled in primary class since 1997 drop out of school before finishing the regular seven years of education. The New Vision, one of Uganda's daily newspapers, reported on 21 May 2004 that out of the total number of students who enrolled in 1997, only 22 percent passed Primary Leaving Examinations in 2003.

rates were lowered over time, ad valorem excise taxes were imposed on selected imports in order to compensate parts of the revenue loss. Second, the 12-30 percent sales tax on the sale of goods and selected services was replaced by a common 17 percent value-added tax in order to broaden the tax base and improve compliance. And third, a new Income Tax Act was adopted, which ascribed graduated income tax rates to corporations and individuals (Gauthier and Reinikka, 2001; IMF, 2003).

Chen et al. (2001) showed that, with the exception of some excise taxes and graduated personal tax, which is an income tax levied by local governments, taxes had been progressive at the beginning of the decade. In particular the excise tax on kerosene, which is heavily consumed by the poor, was found to be highly regressive. Graduated personal tax also turned out to hurt the poor relatively much as its threshold was about half the lower threshold of the central government income tax on individuals. Being levied on formal sector employees and hence on the better-off, this pay-as-you-earn income tax was the most progressive tax. At the end of the decade, taxes remained largely progressive, the central government income tax again being the most progressive one. The findings indicate that tax reforms made excise taxes more progressive and import duties more regressive. The latter finding is most likely due to the introduction of duty-free treatment of imported capital goods for all firms in 1995. The excise tax on petroleum was found to be particularly progressive. As the authors point out, this finding should be treated with caution. If indirect effects of petroleum taxes were taken into account, excise taxes might turn out to be more regressive. Since taxing petroleum consumption affects transport prices and hence final consumer prices of all types of goods, people in rural areas and thus the poor are likely to be hurt more than proportionately.

This example points to the limitations of this type of tax incidence analysis. Additionally, it is based on the formal tax structure only. If the analysis were instead based on taxes actually paid, the above findings could change substantially. In an economy with a large rural and informal sector like Uganda, there is good reason to believe that numerous businesses and individuals do not pay taxes at all. For example, there is evidence that tax exemptions and tax evasion are widespread among firms. While tax exemptions appear to be more common among larger firms, tax evasion is especially prevalent among smaller firms (Gauthier and Reinikka, 2001). If this were taken into account, the resulting tax incidence could move in either direction depending on the extent of the tax burden resting on smaller firms.

While it is possible that poor people pay less tax than the formal tax system suggests, it is equally possible that they pay more. This can best be illustrated by the case of local taxation, which is steeply regressive in practice, even if not in intention (Bahiigwa et al., 2004).

Graduated personal tax, for example, is supposed to be levied in proportion to an individual's income, but in fact it is often applied at a flat rate of Ush 3,000 for all individuals regardless of their income. This makes the tax even more regressive than indicated by Chen et al. (2001). The same holds for local market dues, which are in many localities imposed as flat rates on small and large quantities alike (Ellis and Bahiigwa, 2003). Clearly, this practice places a relatively high burden on individuals with low incomes as well as on small businesses. This burden appears to be so significant that people consider local taxation a discouraging factor for local businesses and even a source of poverty (MFPED, 2002).

To summarise the main findings of our assessment of the indirect way of pro-poor growth: Benefit incidence analysis suggests that in general the poor benefit from public spending on health and to a somewhat lesser extent on education. In particular, they benefit from spending on primary education and primary health care, both poverty priority areas of the Ugandan government. These types of spending are expected to have a relatively large impact on poverty reduction. But in practice the impact appears to be severely limited by the low quality of public services in Uganda. Both education and health sectors suffer from a grossly inadequate human resource base as well as insufficient financial resources. Besides, our findings reveal that the non-poor benefit remarkably more from spending on secondary and tertiary education as well as hospitals. Highly worrying are the low secondary and tertiary enrolment numbers among the lower quintiles. The tax system is found to be progressive in principle but current taxing practice puts this into question.

Conclusions

Between 1992/92 and 2002/03, the Ugandan population experienced important welfare gains in terms of consumption. During the 1990s, consumption increases were broad-based, distributional shifts were only slightly negative or even pro-poor, and thus growth significantly reduced poverty. Growth was clearly pro-poor although the gains were not equally distributed across the country, as urban-rural disparities increased. After 2000, however, the number of the poor rose from 7 million to 9 million within only three years due to both lower growth and a worsening of the income distribution. This setback seriously reduces Uganda's chances to achieve its goal of reaching a poverty level of 10 percent or less by 2017. The period of pro-poor growth was thus followed by a period of low growth without poverty reduction. In this article, we have analysed how changing pattern of growth affected poverty outcomes, but we have said little about why the growth pattern changed. Our article should hence also be regarded as an invitation to further research in particular on agricultural performance and its link to the dynamics of household income generation in Uganda.

Analysing the link between the pattern of growth and poverty, or the direct way of pro-poor growth, we find that strong agricultural growth, which was accompanied by important structural change within the agricultural sector, in particular increased market participation, was the main driver of poverty reduction in the 1990s. Diversification into non-agricultural activities enabled many households to benefit from the high growth rates in these sectors. The period between 1999/00 and 2002/03 is characterised by a downturn in agriculture, in particular in non-monetary agriculture. Possibly as a response to the unfavourable conditions in agriculture, major shifts in the employment structure could be observed, which may have dampened the poverty increase. In addition, our analysis yields the following insights. First, poverty among subsistence households increased considerably, as these households probably had no means to respond to the adverse conditions in agriculture. Second, the pronounced increase of poverty among non-agricultural households points towards the emergence of a non-agricultural subsistence sector.

The vulnerability of subsistence farmers has of course been identified as a possible source of poverty before, which is why the Plan for the Modernisation of Agriculture (PMA), Uganda's policy package for the agricultural sector formulated in 2000, explicitly focuses on this group. The policies of the PMA are thus intended towards an integration of subsistence farmers into markets. Our results might be regarded as support for this focus. Yet, we agree with Bevan et al. (2003) who call for a more integrated approach, as the current PMA lacks a coherent strategy towards the rest of the agricultural sector. Uganda's development strategy towards the productive sector rightly focuses on the agricultural sector, but off-farm activities also deserve attention. Many households have already moved out of agriculture, and it can be expected that this trend will continue or even accelerate in the future. It is crucial for further poverty reduction that these people find employment in productive jobs.

Regarding the indirect way of pro-poor growth, we find that the Ugandan government has made notable progress in investing in the assets of the poor. Yet, we conclude that until quality concerns in the delivery of public services and shortcomings in the tax administration are not resolved, indirect pro-poor growth can only be achieved to a very limited extent. In particular the current situation of primary education cannot be regarded as satisfactory. High enrolment rates in public primary schools have to be accompanied by an improved quality of education. Improvements at the local level appear to be key, given that many quality concerns in public service delivery as well as problems in revenue collection could be traced back to the low capacity of local authorities. In addition, the incentive structure of public service

delivery must be reviewed. Teachers, health workers, and extension workers should be attracted to remote areas by offering them higher salaries, or any other type of compensation.

References

Appleton, S. (2001a) 'Changes in poverty and inequality', in Reinikka, R. and Collier, P. (eds), *Uganda's recovery. The role of firms, farms, and government*. Washington D.C.: World Bank.

Appleton, S. (2001b) 'Poverty reduction during growth: The case of Uganda, 1992-2000', under revision for the *Review of Income and Wealth*.

Appleton, S. (2003) 'Regional or national poverty lines? The case of Uganda in the 1990s', *Journal of African Economies* 12 (4): 598-624.

Bahiigwa, G. et al. (2004) *Uganda rural taxation study. Final report*. Commissioned by DFID Uganda.

Belshaw, D., Lawrence, P. and Hubbard, M. (1999) 'Agricultural tradables and economic recovery in Uganda: The limitations of structural adjustment in practice', *World Development* 27 (4): 673-90.

Berthélemy, J.-C. and Söderling, L. (2001) *Emerging Africa*, Paris: OECD.

Bevan, D., Adam C., Okidi, J. and Muhumuza, F. (2003) *Poverty Eradication Action Plan revision 2002/03. Discussion paper on economic growth, investment and export promotion.* Kampala: Paper prepared for the Ministry of Finance, Planning and Economic Development.

Chen, D., Matovu, J. and Reinikka, R. (2001) 'A quest for revenue and tax incidence', in Reinikka, R. and Collier, P. (eds), *Uganda's recovery. The role of firms, farms, and government*. Washington D.C.: World Bank.

Collier, P. and Reinikka, R. (2001) 'Reconstruction and liberalisation: An overview', in Reinikka, R. and Collier, P. (eds), *Uganda's recovery. The role of firms, farms, and government*. Washington D.C.: World Bank.

Datt, G. and Ravallion, M. (1992) 'Growth and redistribution components of changes in poverty measures. A decomposition with applications to Brazil and India in the 1980s', *Journal of Development Economics* 38 (2): 275-95.

Deaton, A. (2003) *Measuring poverty in a growing world (or measuring growth in a poor world)*. NBER Working Paper 9822. Cambridge: NBER.

Deininger, K. and Okidi, J.A. (2001) 'Rural households: Incomes, productivity, and non-farm enterprises', in Reinikka, R. and Collier, P. (eds), *Uganda's recovery. The role of firms, farms, and government*. Washington D.C.: World Bank.

Deininger, K. and Okidi, J.A. (2003) 'Growth and poverty reduction in Uganda, 1992-2000: Panel data evidence', *Development Policy Review* 21 (3): 481-509.

Demery, L. (2000) *Benefit incidence: a practitioner's guide.* Africa Region, Poverty and Social Development Group. Washington D.C.: World Bank.

Dijkstra, A.G. and van Donge, J.K. (2001) 'What does the 'show case' show? Evidence of and lessons from adjustment in Uganda', *World Development* 29 (5): 841-63.

Ellis, Frank and Godfrey Bahiigwa (2003) 'Livelihoods and rural poverty reduction in Uganda', *World Development* 31 (6): pp. 997-1013.

Gauthier, B. and Reinikka, R. (2001) *Shifting tax burdens through exemptions and evasion: An empirical investigation of Uganda*. World Bank Policy Research Working Paper 2735. Washington D.C.: World Bank.

Hutchinson, P. (2001) 'Combating illness', in Reinikka, R. and Collier, P. (eds), *Uganda's recovery. The role of firms, farms, and government*. Washington D.C.: World Bank.

IDEA Project (2001) *Uganda's horticulture sector: Fruits, flowers, vegetables and vanilla*. Kampala: Paper prepared for The Presidential Conference on Export Competitiveness.

IMF (2003) 'Uganda. Statistical Appendix'. IMF Country Report No. 03/84 (Available at http://www.imf.org/external/pubs/ft/scr/2003/cr0384.pdf).

Kakwani, N. and Pernia, E.M. (2000) 'What is pro-poor growth?', *Asian Development Review* 18 (1): 1-16.

Kempaka, G. and Obwona, M. (2000) 'Review of budget allocation and out-turns', in EPRC, *Review of how, when, and why does poverty get budget priority*. EPRC Occasional Paper 9. Kampala: EPRC.

Klasen, S. (2003): 'In search of the holy grail. How to achieve pro-poor growth?', in Tungodden, B. and N. Stern (eds), *Towards pro-poor policies. Proceedings from the ABCDE Europe*, Washington D.C.: World Bank.

Lanjouw, P. et al. (2001): *Poverty, education and health in Indonesia: Who benefits from public spending?,* World Bank Policy Research Working Paper 2739. Washington D.C.: World Bank.

Larson, D. and Deininger, K. (2001) Crop markets and household participation, in Reinikka, R. and Collier, P. (eds), *Uganda's recovery. The role of firms, farms, and government*. Washington D.C.: World Bank.

McDonald, C., Schiller, C. and Ueda, K. (1999) *Income distribution, informal safety nets, and social expenditures in Uganda*. IMF Working Paper 99/163. Washington D.C.: IMF.

MFPED (2000) *Learning from the poor. Uganda Participatory poverty assessment report.* Kampala: Ministry of Finance, Planning, and Economic Development.

MFPED (2002) *Deepening the understanding of poverty. Second participatory poverty assessment process.* Kampala: Ministry of Finance, Planning, and Economic Development.

MFPED (2003) *Medium-term competitive strategy for the private sector, 2000-2005*. Kampala: Ministry of Finance, Planning, and Economic Development.

Okidi, J.A., Okwi, P.O. and Ddumba, J.S. (2000) *Welfare distribution and poverty in Uganda, 1992-1997*. EPRC Occasional Paper 6. Kampala: EPRC.

Opolot, S.J. (2001) *How universal is universal primary education? A case study on access and equity dimensions in Arua, Gulu and selected schools in Kampala*. Report prepared for ActionAid-Uganda/CBR study on "Contradictions in UPE in Uganda".

Pfaffe, J.F. et al. (2003) *Mid-term review of the Education Strategic Investment Plan (ESIP) in Uganda. Final report*, Kampala: Ministry of Education and Sports.

Pyatt, G. (2003) 'Development and the distribution of living standards: A critique of the evolving database', *Review of Income and Wealth* 49 (3): 333-58.

Ravallion, M. (2001) 'Growth, inequality, and poverty: Looking beyond averages', *World Development* 29 (11): 1803-15.

Ravallion, M, and Chen, S. (2003) 'Measuring pro-poor growth', *Economics Letters* 78 (1): 93-9.

Ravallion, M. and Datt, G. (1999) *When is growth pro-poor? Evidence from the diverse experiences of India's states.* World Bank Policy Research Working Paper 2263. Washington D.C.: World Bank.

Ravallion, M. and Huppi, M. (1992) 'Measuring changes in poverty: A methodological case study of Indonesia during an adjustment period', *World Bank Economic Review* 5 (1): 57-82.

Selden, T.M. and Wasylenko, M.J. (1992) *Benefit incidence analysis in developing countries*. World Bank Policy Research Working Paper 1015. Washington D.C.: World Bank.

Steiner, S. (2004) *Public spending on education and health in Uganda. Do the poor benefit?* Focus Afrika 24, Hamburg: Institut für Afrika-Kunde.

Williamson, T. and Canagarajah, S. (2003) 'Is there a place for virtual poverty funds in pro-poor public spending reform? Lessons from Uganda's PAF', *Development Policy Review* 21 (3): 449-80.

World Bank (1996) *Access to education and health care in Uganda*. Unpublished.

Younger, S.D. (2003) 'Benefits on the margin: Observations on marginal benefit incidence', *World Bank Economic Review* 17 (1): 89-106.

Younger, S.D. and Sahn, D.E. (2000) *Fiscal incidence in Africa: Microeconomic evidence*. Cornell University Working Paper 91, Ithaca: Cornell University.