Macro and Micro Perspectives of Growth and Poverty in Africa

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This article reviews trends in poverty, economic policies, and growth in a sample of African countries during the 1990s, drawing on the better household data now available. Experiences have varied. Some countries have seen sharp drops in income poverty, whereas others have witnessed marked increases. In some countries overall economic growth has been pro-poor and in others not. But the aggregate numbers hide systematic distributional effects. Taking both macro and micro perspectives of growth and poverty in Africa, the article draws four key conclusions. First, economic policy reforms (improving macroeconomic balances and liberalizing markets) appear conducive to reducing poverty. Second, market connectedness is crucial to enable participation in the gains from economic growth. Some regions and households by virtue of their remoteness were left behind when growth picked up. Third, education and access to land emerge as key private endowments to help households benefit from new economic opportunities. Finally, rainfall variations and ill health have profound effects on poverty outcomes, underscoring the significance of social risk management in poverty reduction strategies in Africa.

Have episodes of economic growth in Africa benefited the poorer segments of society, or have they left them largely unaffected? To what extent were poor households harmed disproportionately by periods of economic stagnation and recession? How did public policy affect the outcomes? These questions are difficult to answer, given the many real-world changes that affected people's lives in the region. In addition to economic and political reforms, external opportunities and constraints have shifted, with many countries experiencing sharp movements in their terms of trade. Some countries faced internal civil strife and political instability. Others had to endure one of the worst droughts of

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the century. And there have been serious health shocks, such as AIDS and malaria, affecting rich and poor alike. This complexity makes for considerable debate about the relationship between policy, growth, and poverty in Africa—a debate that previously has not been well served with hard evidence. But the much improved household survey data base that has become available in the region during the 1990s now offers an opportunity to revisit these questions.

This article draws on a series of recent (mostly World Bank) country poverty studies that use these survey data. The countries are Ethiopia (Bigsten and others 2003; Dercon 2000, 2002); Ghana (Coulombe and McKay 2003); Madagascar (Paternostro and others 2001); Mauritania (McCulloch and others 2000); Nigeria (Canagarajah and others 2000); Uganda (Appleton 2001; Appleton and others 1999; Deininger and Okidi 2001); Zambia (McCulloch and others 2001); and Zimbabwe (Alwang and Ersado 1999; Alwang and others 2002).[1] The objective of the studies was to measure and understand trends in income inequality and poverty during the 1990s. To ensure broad consistency in the welfare measures and methodology, a common analytical framework was developed and, to the extent that the underlying data permitted, adopted by the country studies (details are provided in the appendix).

This article provides a comparative perspective by synthesizing and building on this body of work. By covering a variety of countries and experiences, we are able to draw policy messages of more general interest to the Africa region, though the findings are (strictly speaking) not statistically representative of the region as a whole. Three central questions are addressed:

- What does recent household survey evidence reveal about the evolution of overall poverty and inequality in African countries and their relation with economic growth (and stagnation)?
- Moving beyond national averages, were the gains (or losses) from economic growth disproportionately borne by particular population groups or geographical regions?
- Among the wide array of disparate events and factors affecting growth and poverty trends, which emerge as key in explaining changes in income distribution and poverty?

The article first briefly reviews the background literature motivating this work and then describes the evolution of overall income poverty and inequality in the case study countries and the relation with economic growth. Section III examines the main factors behind observed poverty trends by taking a macro perspective, linking the historical changes in income poverty in the sample countries to changes in the economic environment—the macroeconomic framework and

1. Most of these studies were part of the Poverty Dynamics in Africa study, sponsored by the Africa Region of the World Bank, under the direction of the authors. The material covered here is not exhaustive but focuses on these studies. Those interested in a wider review of the literature (not covering the material dealt with here) should see White and Killick (2001).

institutional setting. Section IV exploits the survey data to greater depth by taking a micro perspective, assessing how poor households have been affected by the events of the 1990s and distinguishing between the effects of policies and of shocks.

I. Context and Motivation

It is now widely accepted that economic growth is at least a necessary condition for sustainable poverty reduction (Kanbur 2001). In Africa growth rates have historically been low. Reviewing the literature of cross-country growth studies, Collier and Gunning (1999) concluded that the explanations are to be found in macroeconomic policies (notably economic policy volatility and a lack of openness to international trade), in microeconomic and sectoral policies (in particular the urban bias of fiscal and agricultural policies, which eroded social capital and undermined the provision of public services while keeping rural producers largely subsistence producers), and in geography (the land-locked, tropical character of many countries). Despite these important insights from cross-country analysis, the reasons for "Africa's growth and poverty paradox" (Easterly and Levine 1997) remain open to debate. Does the Dollar and Kraay (2000, p. 27) view that "anyone who cares about the poor should favor the growth-enhancing policies of good rule of law, fiscal discipline, and openness to international trade" apply to Africa in the 1990s? Or was the growth path the reforms induced characterized by increasing inequality, denying benefits to the poorest (Stewart 1995; Mkandawire and Soludo 1999; Forsyth 2000)?

Collier and Gunning (1999) find that the messages from household-level analysis are different from those from the cross-country literature. Among the factors explaining poverty at the household level, "disease and climate feature most prominently, and these are largely omitted in the aggregate analysis" (p. 83). They hint that these growth-retarding risks might explain the results for the Africa dummy variable in growth regressions.[2] Ravallion (2001) also calls for a more microeconomic approach to the analysis of policies, growth, and poverty. Using household survey data for a sample of 50 developing economies and 120 spells of poverty change, he estimates that on average the growth elasticity of headcount poverty is –2.5.[3] But this average masks a great deal of variation across countries—variations related to income inequality levels and trends. Going beyond the averages highlights "the importance of more micro, country-specific research on the factors determining why some poor people are able to take up the opportunities afforded by an expanding economy—and so add to

2. In support of this hypothesis Guillaumont and others (1999) find that economic, political, and natural volatility are important factors explaining the poor growth performance of African economies.

3. This elasticity is based on the growth in mean household income or consumption. If growth is taken to be per capita private consumption from the national accounts, the elasticity is approximately −2.

its expansion—while others are not" (Ravallion 2001, p. 1813) This article applies Ravallion's advice to Africa in the 1990s.

II. Living Standards During the 1990s

A broader view of well-being looks not only at the evolution of private consumption but also at primary school enrollment, child malnutrition, and child mortality (table 1). This sets the scene for the analysis of the selected countries.

The first and obvious point is that living standards are very low in these countries. By the close of the decade no country enjoyed annual per capita consumption higher than US$500, and in Ethiopia it was just $86. All countries fell far short of universal primary enrollment, and in some (for example, Ethiopia) primary enrollment was unacceptably low. Malnutrition was a serious problem, especially in Ethiopia and Madagascar. In Ethiopia about two-thirds of children exhibited signs of stunting or long-term malnutrition. Even in Ghana, Mauritania, and Zimbabwe, where malnutrition indicators were better, there is evidence of stunting in about a quarter of the population under five years of age. Perhaps the most poignant indicator of the very low welfare levels is the incidence of child deaths. Under-age-five mortality exceeded 100 (per 1,000) in all countries. In Zambia about one in five children failed to survive to the fifth birthday. Too many African children are dying needlessly.

Second, there are differences in how these indicators changed over time. In Ethiopia, Ghana, Mauritania, and Uganda economic living standards appear to have improved. But in Madagascar average real consumption remained more or less unchanged, and in Nigeria, Zambia, and Zimbabwe it fell sharply. Similarly, improvements in primary school enrollment in Ethiopia, Ghana, Mauritania, and Uganda contrast with unsatisfactory outcomes in Zambia. Mauritania experienced sharp reductions in long-term malnutrition but limited progress elsewhere. In several countries the long-term downward trend in child mortality appears to have continued through the decade, but not in Nigeria, Zambia, and Zimbabwe, a result probably related to the AIDS epidemic in these countries (among other factors). Also, the latest Uganda Demographic and Health Survey (Uganda Bureau of Statistics 2001) suggests that child mortality has been unchanged (and has possibly even increased) since 1995 despite the economic gains.

Third, the trends in the indicators are generally consistent with each other, though there are important exceptions. In the four countries experiencing economic growth (Ethiopia, Ghana, Mauritania, and Uganda), the trends in human development indicators match the improvement in economic well-being, albeit to different degrees. But in the four countries experiencing stagnation and decline (Madagascar, Nigeria, Zambia, and Zimbabwe), the signals are noisier. In some the education indicator improved despite the stagnation or decline in economic living standards (Madagascar, Nigeria, and Zimbabwe). Child malnutrition improved in Zimbabwe during an episode of deteriorating economic

TABLE 1. Evolving Living Standards in Eight African Countries during the 1990s (%, unless otherwise specified)

Growth outcome/ Country and years	Real private consumption per capita (constant 1995 US$)			Net primary school enrollment rates[b]			Under-five child malnutrition[c]			Under-five child mortality[d]		
	Year 1	Year 2	AGR[a]	Year 1	Year 2	Change (%)	Year 1	Year 2	Change (%)	Year 1	Year 2	Change
Positive growth												
Ethiopia												
1994 and 1997	80	86	2.6	19	25	+6	66	55	−11	190	175	−15
Ghana												
1992 and 1999	275	304	2.0	70	82	+12	26	26	0	119	104	−15
Mauritania												
1987 and 1995	297	361	3.6	28	41	+13	48	23	−25	—	149	—
Uganda												
1992 and 1997	211	258	4.7	68	86	+18	43	39	−4	165	162	−3
Stagnation or decline												
Madagascar												
1993 and 1999	223	222	0.0	48	64	+16	50	49	−1	170	149	−21
Nigeria												
1992 and 1996	206	173	−3.4	94	98	+4	38	—	—	136	147	11
Zambia												
1991 and 1998	362	266	−6.6	73	666	−7	40	42	+2	192	202	10
Zimbabwe												
1991 and 1996	595	439	−5.2	83	886	+3	30	23	−7	80	90	10

Note: Many of these estimates are subject to margins of error, given the difficulties of obtaining reliable and accurate estimates (especially of under-five mortality and malnutrition). —, not available.

[a]AGR = Annual growth rate. Calculated based on least squares method, which is less sensitive to the choice of base and terminal period.

[b]Percentage of school-age children enrolled in primary school as a fraction of the total number of children in that age group. First year figure for Ethiopia refers to 1996. Figures for Nigeria reflect gross enrollment rates in 1994 and 1996 and are obtained from *World Development Indicators* (World Bank various years).

[c]Percentage of children stunted (z-score of height for age of less than −2); reference periods are close to those in the country column.

[d]Reference periods are close to those in the country column; values presented, per 1000 live births.

Source: World Bank data and country studies for Ethiopia, Ghana, Madagascar, Mauritania, Nigeria, Uganda, Zambia, and Zimbabwe (see text for specific studies cited). Private consumption growth is from national accounts data.

circumstance. Such outcomes (and Uganda's experience after 1995) serve as a reminder that focusing on only one dimension of well-being can be misleading when tracking poverty dynamics (World Bank 2000). It is quite possible through public intervention to raise enrollment rates, for example, even if consumption per capita is not rising.

Trends in Income Inequality

Were episodes of growth in Africa in the 1990s associated with changes in income inequality?[4] Gini coefficients, a popular measure of inequality, are used to describe how income inequality evolved in the sample of countries (table 2). All underlying "welfare measures" are based on total household real expenditures.[5] The studies were designed to enable comparisons over time within a country, though differences in survey designs require caution in making comparisons across countries. Nonetheless, the differences in the degree of income inequality in the sample of countries are striking. At one extreme Zimbabwe has a highly unequal distribution (a Gini ratio of over 0.6),[6] reflecting unequal land distribution, a result in part of its colonial history. Highly unequal income distributions are also observed in Nigeria and Zambia and are likely to be related to the importance of mineral exports. Income distributions in Ghana and Uganda are far more egalitarian.

Over the periods considered, there was very little change in overall income inequality in these countries. Reforms and growth have clearly not led to a significant deterioration in consumption inequality, as some would hold (Forsyth 2000)—although Ethiopia is an important exception.[7] Nevertheless, these aggregate measures of inequality can be misleading. They may mask a great deal of distributional change, an issue reviewed in section IV.

Trends in Income Poverty

If growth episodes were not associated with significant changes in inequality, were they associated with poverty reduction? As with the inequality measures, real household consumption per adult equivalent (or in some cases per capita) is

4. All the empirical measures of income are based on expenditures, so the terms *income* and *consumption* are used interchangeably here.

5. For most countries researchers normalized expenditures on the number of "equivalent adults" in the household. In Ethiopia, Nigeria, and Madagascar the welfare measure is real household expenditure per capita. Details of the data and methods used by the researchers in computing the welfare measure (including the specifics of the adult equivalent scales) are provided in the appendix.

6. Intuitively, the Gini index of a population represents the expected income difference between two randomly selected individuals or households. Table 1 gives Zimbabwe's real average per capita consumption in 1996 as $439. The corresponding Gini index is 0.64 (table 2). Thus in 1996 the per capita consumption of any two randomly selected Zimbabweans differed on average by $281(= 0.64 * $439)—a clear indication of high inequality given that average per capita consumption is only $439.

7. A similar picture emerges when using the Theil inequality measures. Yet it must be noted that stability in the Gini ratio over relatively short periods is not uncommon (Deininger and Squire 1996).

TABLE 2. Consumption Inequality during the 1990s in Eight African Countries, Gini Coefficients

Country, years, and area	Year 1	Year 2	Change
Ethiopia[a]			
1994 and 1997			
Rural	0.39	0.43	0.04
Urban	0.40	0.45	0.05
National	0.39	0.44	0.05
Ghana			
1992 and 1999			
Rural	0.33	0.33	0.00
Urban	0.34	0.31	−0.03
National	0.37	0.37	0.00
Madagascar			
1993 and 1999			
Rural	0.42	0.36	−0.06
Urban	0.41	0.38	−0.03
National	0.43	0.38	−0.05
Mauritania			
1987 and 1995			
Rural	0.43	0.37	−0.06
Urban	0.40	0.36	−0.04
National	0.43	0.39	−0.04
Nigeria			
1992 and 1996			
Rural	0.51	0.44	−0.07
Urban	0.51	0.51	0.00
National	0.51	0.47	−0.04
Uganda			
1992 and 2000			
Rural	0.33	0.32	−0.01
Urban	0.39	0.40	0.01
National	0.36	0.38	0.02
Zambia			
1991 and 1996			
Rural	0.62	0.48	−0.13
Urban	0.47	0.44	−0.03
National	0.59	0.50	−0.09
Zimbabwe			
1991 and 1996			
Rural	0.58	0.57	−0.01
Urban	0.60	0.59	−0.01
National	0.68	0.64	−0.04

Note: Real per capita expenditures for Ethiopia, Nigeria, and Madagascar. Otherwise, real expenditures per adult equivalent.

[a]Purposely sampled villages and urban centers; not nationally representative.

Source: World Bank data and country studies for Ethiopia, Ghana, Madagascar, Mauritania, Nigeria, Uganda, Zambia, and Zimbabwe (see text for specific studies cited).

TABLE 3. Consumption Poverty in Eight African Countries during the 1990s (%)

	Poverty headcount			Poverty severity index		
Country and years	Year 1	Year 2	Change (%)[b]	Year 1	Year 2	Change (%)[b]
Ethiopia[a]						
1994 and 1997	41	35	−14*	8	6	−27*
Ghana						
1992 and 1999	51	39	−24	9	7	−22
Madagascar						
1993 and 1997	70	73	5	17	19	12
1997 and 1999	73	71	−3	19	19	0
Mauritania						
1987 and 1995	58	35	−40*	17	6	−65*
Nigeria						
1985 and 1992	46	43	−7**	8	9	13**
1992 and 1996	43	66	53*	9	17	89*
Uganda						
1992 and 1997	56	44	−21*	10	6	−40*
1997 and 2000	44	35	−20*	6	5	−16*
Zambia						
1991 and 1996	70	80	14**	31	31	1**
1996 and 1998	80	76	−5**	31	26	−16**
Zimbabwe						
1991 and 1996	26	35	35	4	5	25

*Statistically significant at the 5% level.

**Not statistically significant at the 5% level.

[a]Purposely sampled villages and urban centers; not nationally representative.

[b]For changes without a symbol, no statistical assessment is reported by the country study authors.

Source: World Bank data and country studies for Ethiopia, Ghana, Madagascar, Mauritania, Nigeria, Uganda, Zambia, and Zimbabwe (see text for specific studies cited).

taken as the central economic welfare measure (table 3). Poverty lines in all but one case (Mauritania) are derived from a food consumption basket estimated to yield a minimum caloric intake with adjustments made for essential nonfood consumption. These poverty lines are typically much higher than the purchasing power parity (PPP) $1 a day poverty line. The average poverty incidence in 24 spells of poverty change in African countries analyzed by Ravallion (2001) was 31 percent (based on the PPP $1 a day line). This compares with the (unweighted) average poverty headcount ratio of 58 percent in this sample, indicating higher poverty lines. Because of differences in survey design and in the specifics of how the welfare measure and poverty lines are derived, the data in table 3 are not comparable across countries. But the research has been designed to ensure comparable estimates over time. Where available, table 3 reports whether the observed changes are statistically significant.

The poverty measures reported here are derived from the familiar class of poverty indices after Foster and others (1984). They include the poverty headcount and the severity of poverty index, which is sensitive to the distribution of income among the poor, particularly to changes in the living standards of the poorest of the poor. The data suggest the following.

- Most countries have to deal with "mass" poverty. Over 70 percent of the population was estimated to be poor in Madagascar and Zambia toward the end of the 1990s and 66 percent in Nigeria in 1996.
- There is no uniform trend. Although the incidence of consumption poverty declined substantially in several countries (Ethiopia, Ghana, Mauritania, and Uganda), it rose sharply in Nigeria and Zimbabwe. Poverty has fluctuated in Madagascar and Zambia, remaining more or less unchanged in Madagascar and increasing marginally Zambia (but not significantly).
- Where the incidence of poverty has declined, the data suggest that the poorest sections of the population have also benefited. This is evidenced by the downward trend in the severity of poverty index, which in several instances fell more than the poverty headcount.

Poverty, Inequality, and Economic Growth

In some cases these changes in poverty occurred in a context of economic decline (Nigeria and Zimbabwe, and Madagascar and Zambia during the earlier periods). In others they accompanied overall economic progress (Ethiopia, Ghana, Mauritania, and Uganda). To shed more light on the relation between poverty, inequality, and growth, the poverty incidence was decomposed into changes arising from changes in mean consumption, with the distribution of consumption kept constant, and changes arising from changing consumption distribution, with mean consumption kept constant (table 4). The poverty measure decomposed is the elasticity of headcount poverty with respect to changes in mean household expenditure.[8]

In most countries changes in poverty incidence were due predominantly to changes in mean expenditure (table 4). But the results of this exercise serve as a caution against overgeneralizing for Africa. Growth experience in Uganda (in which reduction in inequality bolstered the effects of rising mean consumption) contrasts with that in Ethiopia, where inequality increased and dampened the poverty reducing impact of growth. Where there has been recession, mean and redistribution effects typically have opposite signs, and the redistribution effect substantially mitigates the poverty increasing impact of lower mean incomes (in

8. This is defined as the proportionate change in headcount poverty divided by the proportionate change in mean per capita household expenditure. For details about the method used, see Kakwani and Subbarao (1993) and Kakwani and Pernia (2000).

TABLE 4. Relative Importance of Mean and Redistribution in the Evolution of Poverty Incidence in Eight African Countries during the 1990s

Country and period	Change in mean per capita expenditure (%)	Change in poverty headcount (%)	Poverty elasticity relative to change in mean expenditure	Poverty elasticity explained by changes in	
				Mean	Distribution
Ethiopia 1994–97[a]	24.8	−13.8	−0.56	−1.09	0.53
Ghana 1992–99	24.9	−23.6	−0.95	−0.99	0.04
Madagascar 1993–97	−17.5	4.7	−0.27	−0.77	0.50
Madagascar 1997–99	0.6	−2.7	−4.50	−0.78	−3.72
Madagascar 1993–99	−17.0	1.9	−0.11	−0.73	0.62
Mauritania 1987–95	49.5	−40.4	−0.82	−0.75	−0.07
Nigeria 1992–96	−41.1	53.6	−1.30	−1.3	0.02
Uganda 1992–97	17.1	−20.7	−1.21	−1.06	−0.15
Zambia 1991–96	−25.7	14.9	−0.58	−0.58	0.00
Zambia 1996–98	13.2	−4.9	−0.37	−0.44	0.07

Note: Decompositions are based on Kakwani and Subbarao (1993). This method is an exact decomposition with no residual or interactive term.

[a]Purposely sampled villages and urban centers; not nationally representative.

Source: Authors' computations based on country studies for Ethiopia, Ghana, Madagascar, Mauritania, Nigeria, Uganda, Zambia, and Zimbabwe (see text for specific studies cited).

Madagascar, Nigeria, and Zimbabwe). Better-off groups clearly bear a heavier burden of income losses during periods of economic decline in Africa.[9]

To assess further the extent to which these episodes of growth and recession are pro-poor and following the work of Kakwani and Pernia (2000), an index of pro-poor growth (ϕ) is defined:

$$\phi = \eta/\eta_g$$

where η is the observed elasticity of headcount poverty with respect to changes in mean expenditure and η_g is the elasticity of headcount poverty assuming that the distribution of income did not change during the period. Growth can be considered pro-poor if $\phi > 1$. When mean household expenditures are declining, $\phi = \eta_g/\eta$, so that a recession would also be considered pro-poor if $\phi > 1$. Note that ϕ is defined for a specific poverty line, and its value may be sensitive to the poverty line selected.[10] Comparisons of estimates of ϕ for the eight African countries with estimates for four Asian countries suggest that growth and recession episodes have tended to be more pro-poor in Africa than in Asia (table 5).

Taking the 11 spells of poverty change in the sample of African countries reported in table 4 yields a growth elasticity of poverty incidence of just -0.89.[11] This relatively low elasticity cannot be due to increasing inequality—the Gini ratios were stable. It clearly reflects the depth of poverty—large numbers of people are subsisting well below the poverty line (and poverty lines are set well above modal consumption). The growth elasticity of the poverty severity index, at -1.28 (with a standard error of 0.21), is higher, indicating that growth has improved the economic well-being of the poorest, though not enough to take many of them out of poverty. (It should be pointed out that this assessment takes the poverty lines as given.)

III. Growth and Systematic Changes in Income Distribution: A Macro Perspective

These changes in inequality and poverty have occurred during an era of economic policy reform, institutional change, and profound internal and external

9. The tendency for income inequality to narrow as higher-income groups bear the brunt of economic recession was also noted by Grootaert (1996) in analyzing poverty changes in Côte d'Ivoire in the 1980s.

10. For that reason, recent work has analyzed the impact of growth on the whole distribution (Ravallion and Chen 2003). Here, however, the Kakwani-Pernia method is retained to compare the experience of the sample of African countries with their findings for East Asia.

11. This is simply the slope coefficient in the regression of the proportionate change in headcount poverty on the proportionate change in the survey mean. The standard error on the slope coefficient is 0.11. The regression line runs almost through the origin, a reflection of the fact that income inequality has been stable over this period. The historical elasticities observed for this sample of African countries are significantly lower than that estimated by Ravallion (2001) as typical of low-income countries (-2.5). Given the different poverty lines used (Ravallion uses the much lower benchmark of PPP $1 a day) and the different method of computation, his estimates are not comparable with those in this study.

TABLE 5. Pro-Poor Growth Indices (ϕ) in Selected African and Asian Countries during the 1990s

Africa	Pro-poor growth index	Asia	Pro-poor growth index
Growth episodes			
Ethiopia 1994–97	0.51	Thailand, 1992–96	0.61
Ghana 1992–99	0.96	Lao PDR, 1993–98	0.21
Mauritania 1987–95	1.10	Korea, 1990–96	1.03
Uganda 1992–96	1.14		
Zambia 1996–98	0.87		
Recession and stagnation episodes			
Madagascar, 1993–97	2.85	Thailand, 1996–98	0.73
Nigeria, 1992–96	1.02	Korea, 1997–98	0.84
Zambia, 1991–96	0.97		
Zimbabwe, 1991–96	1.81		

Note: For details on the method see text. Asian country estimates are simple means across years within the subperiods shown.

Source: Table 4; Kakwani and Pernia (2000).

shocks, including droughts, disease, and fluctuating commodity prices. These events have effects at all levels—they influence the growth rate of the economy at large, they affect the functioning of markets and of government, they change village and community life, and they impinge directly on households and individuals. Understanding how the changes have influenced poverty outcomes thus calls for knowledge at both the macro (economy-wide) and micro (household and individual) levels. An assessment of how macro changes (in economic and institutional environments) have affected poverty outcomes provides the context for reviewing the microeconomic evidence (from recent studies) linking poverty outcomes to policies and shocks.

Macroeconomic Reforms and Poverty Trends

This review of the relationship between macroeconomic policy reforms and income poverty elaborates on and updates the analysis of Demery and Squire (1996), who examined the empirical association between improvements in macroeconomic balances and poverty reduction using data for the late 1980s and the early 1990s. The better comparable household data now available (including panel data) together with another decade of economic reform in many countries make this a good time to revisit this issue.[12]

Following Bouton and others (1994), a macroeconomic policy index or score is calculated based on changes in three key elements of sound macroeconomic policy: fiscal, monetary, and exchange rate policies. The overall macro-policy

12. The data used in many previous assessments were often of doubtful quality, and given the lags involved in implementing the reforms, the 1990s might be a more appropriate decade to examine the growth path induced by economic policy reforms in Africa (Collier and Gunning 1999, p. 101).

TABLE 6. Changes in Macroeconomic Policy Scores, Selected Countries and Periods

Country	Period of change	Fiscal policy	Monetary policy	Exchange rate policy	Average score	
					Unweighted	Weighted
Côte d'Ivoire						
	1985–88	−3	1	−1	−1.0	−1.5
Ethiopia						
	1989–95	−1	0.5	2.5	0.7	1.0
	1994–97	2	1.5	2.5	2.0	2.2
Ghana						
	1988–92	−1	1.5	2	0.8	0.8
	1992–99	0	−0.5	0.5	0	0.2
Madagascar						
	1993–97	0	−0.5	0	−0.2	−0.1
	1997–99	1	1.0	0	0.7	0.5
Mauritania						
	1987–95	3	0.5	2.5	2.0	2.4
Nigeria						
	1985–92	1	−0.5	3	1.2	1.9
	1992–96	1	−1	−2.5	−0.8	−1.0
Uganda						
	1992–97	2	1.5	−0.5	1.0	0.7
	1997–2000	0	0.5	0.5	0.3	0.3
Zambia						
	1991–96	1	2	2	1.7	1.6
	1996–98	1	1	−1	0.3	0.0
Zimbabwe						
	1991–96	−1	−0.5	1.5	0	0.3

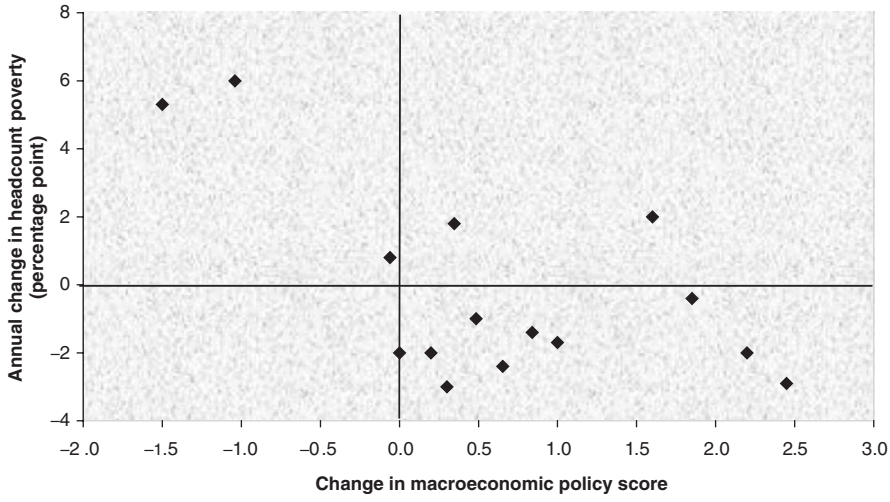
Source: Demery and Squire (1996); authors' computations based on World Bank data (see appendix table 1).

score is a weighted average of these components, the weights being derived from international cross-section growth regressions. These scores are computed for the three-year period prior to each survey, and changes in the index are then compared. The index is computed so that increases in the score (either lower negative values or higher positive values) indicate an improvement in economic policy (table 6). (Details of the changes in the different policy instrument indicators and of the computations of the macro-policy score are in appendix table 1.)

Given weaknesses in the underlying survey data, two countries included in the original Demery and Squire analysis (Tanzania and Kenya) were dropped from this analysis.[13] The data for Ethiopia, Ghana, and Nigeria, which were

13. Comparative household survey data were not available for these countries. Although Côte d'Ivoire is not among the sample of countries in this study (the survey data are not comparable for assessing trends in the 1990s), it is retained for this exercise because it was included in the Demery and Squire assessment.

FIGURE 1. Macroeconomic Policy Reform and Poverty Changes



included in the Demery and Squire analysis, were updated by adding the latest available survey. Finally Madagascar, Mauritania, Uganda, Zambia, and Zimbabwe were added for a total coverage of 15 episodes of change in 9 countries.

Most countries experienced improvements in their macroeconomic policy indicators—those for the second period (the three years prior to the second survey) generally being better than those for the earlier period (the three years prior to the first survey). But there were only marginal improvements in Ghana (1992–99) and Zimbabwe (1991–96) and no change in Zambia (1996–98). Macroeconomic destabilization is observed in two countries—Côte d'Ivoire during the 1980s and Nigeria in the 1990s.

Setting these macroeconomic trends against the trends in poverty reduction suggests that countries achieving improvements in their macroeconomic balances typically have not experienced (in the aggregate at least) increases in consumption poverty—rather the reverse (figure 1).[14] Nine of the 15 episodes of change for which there are data indicate both macroeconomic policy improvement and subsequent poverty reduction. In the two cases in which macroeconomic balances substantially deteriorated, poverty increased sharply. Only 2 of the 15 observations (Zimbabwe 1991–96 and Zambia 1991–96) are in the "wrong" quadrant in figure 1 (improved macroeconomic policy and increased poverty).[15]

14. Ali (1998) gets quite different results, with reforms being associated with increasing poverty. This is probably due to the different poverty data sets he uses (derived from International Fund for Agricultural Development data) and possibly the different time period covered (1985–95).

15. The Pearson correlation coefficient is −0.62 and statistically significant at the 5 percent level.

The association between the macro-policy stance and poverty reduction does not necessarily imply any causative or direct behavioral link.[16] Rather, it highlights the close interactions between macroeconomic policies and economic well-being at the household level. An important feature missing from this analysis is any measure of policy persistence and consistency.[17] Collier and Gunning (1999) argue that the slow investment response to the reforms derives in part from a fear of policy reversals. Countries with a longer history of consistent policies (Ethiopia, Ghana, Mauritania, and Uganda in the sample) are more likely to experience growth and poverty reduction dividends from the reforms.[18] The macro analysis is partial in another respect—the changes in the macroeconomic accounts took place alongside other reforms—mostly structural (trade liberalization, agricultural marketing reforms, privatization)—and within changing institutional environments. Both the sectoral reforms and the institutional environment are certain to be important, as is suggested by the quite similar poverty reductions that occurred in some of the countries despite different changes in their macroeconomic indicators (see bottom right quadrant in figure 1).

Institutional Change and Poverty Trends

There is an accumulation of convincing empirical evidence on the importance of political stability and good governance for growth and poverty reduction (Alesina and Perotti 1994; Knack and Anderson 1995; Collier 1999; Collier and Gunning 1999; World Bank 2000). Although the construction and consolidation of good indicators of political stability and good governance remain a work in progress, the composite political risk index of the International Country Risk Guide (ICRG) and its subsets have frequently been used by researchers to examine the effect of governance and institutional quality on growth and poverty. The composite index consists of 12 components covering different aspects of political stability (for example, government stability, internal conflict, external conflict), governance, and institutional quality (for example, corruption, democratic accountability, bureaucracy quality).[19] The key advantage of the ICRG index is its broad coverage across countries and over time (1985 to today).

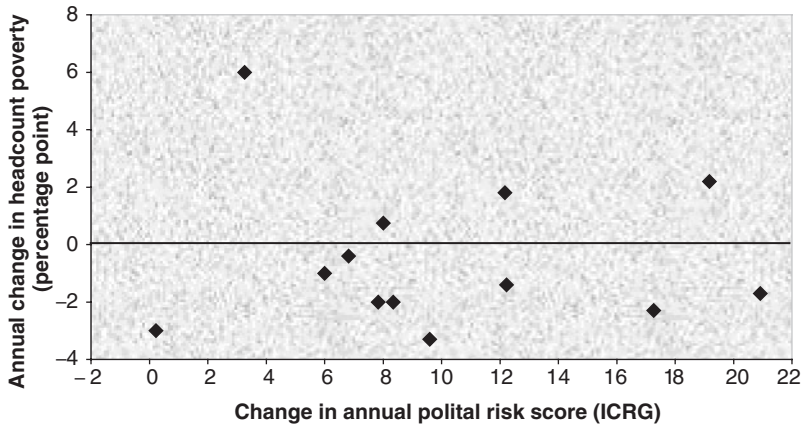
16. Both poverty changes and macro-policy scores might be favorably affected by a third factor, movements in the terms of trade, for example.

17. Although this study tracks and compares three-year averages of the macro-policy stance, it does so only for the two periods prescribed by the available household surveys.

18. These countries are described by Collier and Gunning (1999, p. 102) as "providing at least modest levels of social order, macroeconomic order and resource allocation."

19. The components of the ICRG political risk index (maximum scores in parentheses) are government stability (12), socioeconomic conditions (12), investment profile (12), internal conflict (12), external conflict (12), corruption (12), military in politics (6), religion in politics (6), law and order (6), ethnic tensions (6), democratic accountability (6), and bureaucracy quality (4). The maximum score is 100, with a score below 49.9 indicating very high political risk; 50 to 59.9 a high risk, 60 to 69.9 a moderate risk, 70 to 79.9 a low risk, and 80 or more a very low risk. The same range of scores on an individual component implies the same degree of risk for that component. Evaluations of the different aspects of the index are provided by a private consultancy. For a detailed description of the ICRG rating system, visit www.icrgonline.com/icrgMethods.asp.

FIGURE 2. Change in Political Stability and Governance and Poverty Trends



The political risk score improved during all episodes of poverty change covered by the Poverty Dynamics in Africa study. In all, 13 episodes of institutional change were examined. In Ethiopia (1989–95) the improvement followed largely from reduced risk of internal and external conflict following peace agreements with Eritrea. Better overall governance (as captured by the corruption, law and order, democratic accountability, and bureaucratic quality indices), as well as greater government stability and reduced risk of internal conflicts, induced progress in institutional quality in Ghana (1992–99) and Uganda (1992–97). Increased government stability was responsible for the change in Madagascar (1993–97). In Zimbabwe (1991–96) improvement followed from reduced risk of an external conflict, reflecting the peace process in neighboring Mozambique and the end of the cold war. Greater external security is also an important factor in explaining the large improvement in the political risk score in Zambia, in addition to substantial progress in internal political stability and security (law and order) following the peaceful handover of power by Kenneth Kaunda in 1991 after 27 years of autocratic rule.

Plotting the changes in the average annual political risk scores of the survey years of the sample countries against annual changes in the observed poverty incidence suggests that improvements in political stability and governance are generally associated with reductions in poverty, though experiences vary across countries (figure 2).[20] In 9 of the 13 episodes improvements were accompanied

20. Using two-year averages of the survey year and the year prior to the survey to account for lags in the effect of institutional change on poverty does not change the results. The findings are also robust to the use of a subset of the political risk indicator focusing on political stability (government stability, internal conflict, external conflict) and governance (corruption, law and order, democratic accountability and bureaucratic quality).

by poverty reduction. In one episode there was a modest increase in poverty (Madagascar during 1993–97), whereas in the three other cases (Nigeria, Zambia during 1991–96, and Zimbabwe) the poverty increases were more pronounced. In Nigeria the recorded improvement in the institutional environment was marginal (3.3 percentage points), likely swamped by the adverse effects of the macroeconomic deterioration.

The other exceptions, Zambia and Zimbabwe, are more of a puzzle, as the macroeconomic balances also improved during the 1991–96 episodes of poverty increase (if only moderately in Zimbabwe). So where did things go wrong? The answer cannot be provided here, but the very high level of initial inequality in both Zambia and Zimbabwe was a particularly serious challenge for growth and poverty reduction during the decade. Also, both countries experienced severe droughts in 1994, followed by mediocre rainfall in 1995, leaving households under considerable stress. This compares with above-average rainfall in 1990, the year preceding the first survey. (The Zimbabwe episode of poverty increase and the role of rainfall shocks is discussed in further detail in the section on shocks.)

Although these measures of political stability and the quality of governance are admittedly crude, the findings support the general observation that increased political stability and improved governance go hand in hand with poverty reduction. Nevertheless, many difficult questions remain that fall beyond the scope of this article. Which components of institutional change (for example, political, economic, civil rights, or social stability) have had the most significant impact? What is the direction of causality and the channels through which institutional improvements and poverty reduction affect each other (Aron 2000)?

A Multivariate Approach

The treatment so far has been partial and descriptive and does not take into account how factors other than macroeconomic policy and institutional quality might have affected economic growth and poverty during the periods covered by the household survey. A multivariate approach would control for these other factors, but the sample of countries is too small for that. However, the cross-country regression results of an African Economics Research Consortium study by O'Connell and Ndulu (2000) can be used to provide at least an international cross-section interpretation of the growth turnarounds that the study countries experienced.[21] Their model is used to speculate about the factors that have influenced the changes in economic growth (and therefore in consumption

21. Most cross-country models are ill equipped to deal with such questions because of their very long-run concern (Collier and Gunning 1999). In contrast, the O'Connell and Ndulu specification has a medium-run (half-decade) empirical orientation.

poverty) over the periods defined by the survey years.[22] This approach cannot trace precisely the situations of the first and second surveys, but it can be used to examine growth dynamics during the period broadly surrounding the surveys.

This exercise was conducted for four of the study countries—two experiencing growth surges and poverty reduction (Ghana and Uganda) and two facing declining growth and worsening poverty (Côte d'Ivoire and Nigeria).[23] The periods are selected to best describe the growth dynamics that influenced the observed poverty changes. The model correctly predicts the change in per capita gross domestic product (GDP) growth in all countries, indicating an acceleration in growth over the relevant periods in Ghana and Uganda and a deceleration in Côte d'Ivoire and Nigeria (table 7). The predictions are reasonably close for Ghana and Uganda but tend to underestimate the growth reversals in Côte d'Ivoire and Nigeria. The most striking result is the confirmation of the importance of macroeconomic policy for growth and poverty reduction. In both Ghana and Uganda changes in macroeconomic policy explain most of the growth turnaround. Of the macroeconomic variables the reduction in the black market exchange rate premium has the greatest impact. The deterioration in macroeconomic policy is important in interpreting Nigeria's growth reversal (1.2 percentage points of the decline in the growth rate is attributable to that alone).

Changes in the institutional setting (approximated in this model by the political stability variable—the mean number of revolutions, strikes, and assassinations) also play an independent role, raising the growth potential in Ghana and Uganda by 0.2 percentage points and harming growth prospects in Nigeria. Finally, luck is also crucial. In Nigeria and especially Côte d'Ivoire deterioration in the terms of trade and the slowdown in growth in trading partner countries harmed growth prospects. The decade effect (basically a time trend allowed in the O'Connell and Ndulu model that is assumed to be common to all countries) also indicates an increasingly harsh external environment during the periods covered for Côte d'Ivoire and Nigeria. In sum, interpreting the growth changes

22. Of the various regression models O'Connell and Ndulu specify to analyze the "deep determinants" of growth, this study takes the following, $G=15.35-1.765\ Y_0+0.089\ LE-0.052\ ADR+0.728\ LFG+0.004\ TT+0.540\ TPG-0.912LL$ dummy $-0.975\ POL+-0.004\ CPI-0.007\ BMP-0.113\ GOV\pm$ decade dummies, where Y_0 is the log of initial GDP, *LE* is life expectancy at birth, *ADR* is the age dependency ratio, *LFG* is the difference between the growth of the population of working age and the total population, *TT* is the terms of trade, *TPG* is the trade-weighted GDP growth of trading partners, *LL* is a dummy variable for land-locked countries, *POL* is a measure of political stability (mean number of revolutions, strikes and assassinations), *CPI* is the mean annual inflation rate, *BMP* is the black market exchange rate premium, and *GOV* is government consumption (less spending on education and defense) to GDP ratio. Per capita GDP growth in Côte d'Ivoire, Ghana, Nigeria, and Uganda are obtained by applying the country regressors to this relationship.

23. The choice of countries covers cases of both economic recovery and stagnation. But it was also constrained by lack of data and by the poor performance of the model (particularly for Madagascar). In the cases, selected the model correctly predicts the growth turnarounds that took place during the years surrounding the survey observations.

TABLE 7. Decomposition of Changes in Predicted per Capita GDP Growth Based on O'Connell and Ndulu (2000), Selected Countries and Periods

Variable	Ghana 1975–84 to 1985–97	Uganda 1980–89 to 1990–97	Côte d'Ivoire 1970–79 to 1980–89	Nigeria 1970–79 to 1980–97
Initial year GDP	0.20	−0.06	0.05	−0.29
Demographic factors[a]	0.42	−0.28	0.10	0.21
Geography	0.00	0.00	0.00	0.00
Shocks	0.89	−0.26	−0.70	−0.46
Political stability	0.19	0.21	0.00	−0.12
Inflation	0.16	0.36	0.02	−0.05
Black-market exchange rate premium	3.02	1.85	0.00	−0.69
Government spending	−0.42	−1.15	−0.26	−0.42
Sum (macro policy effect)	2.76	1.06	−0.24	−1.16
Decade effect	−0.10	0.33	−0.99	−0.88
Predicted change	4.36	1.00	−1.78	−2.70
Actual change	5.17	1.91	−7.18	−5.16

Note: Decomposition values are given as percentage points.

[a]The demographic regressors are life expectancy at birth, age dependency ratio, and difference between the growth of the population of working age and the total population (see note 23).

Source: Authors' calculation based on O'Connell and Ndulu (2000) and World Bank data.

in these countries using a multivariate approach confirms the independent effects of improved macroeconomic policy and also points to the importance of institutions for growth and poverty reduction.

IV. Growth and Systematic Changes in Income Distribution: A Micro Perspective

The evidence from the African experience covered in this study indicates that growth and recession—except in Ethiopia—have been reasonably pro-poor. Yet this conclusion is true only in an aggregate sense. Further decomposition of national inequality and poverty measures—by geographic location and socioeconomic group—indicates that the aggregate statistics often mask a wide variety of experiences. Some groups and regions gained disproportionately from the new opportunities following economic reforms, but others lost out or even became impoverished. Similarly, overall Gini coefficients often appear stable over time despite substantial churning within and across geographic regions. From microeconometric evidence the positive association between improved macro environments and poverty reduction seems conditioned by other factors, such as market liberalization, location and infrastructure, private endowments, and the occurrence of shocks.

Two of the case studies (Dercon 2002; Deininger and Okidi 2001) use panel data to explain the determinants of consumption and income growth and poverty dynamics. Dercon (2002) uses panel data from six rural communities in Ethiopia covering 1989–95.[24] The change in household real consumption per adult is explained through a reduced-form regression model with an Oaxaca-Blinder type decomposition. Changes in consumption and poverty are explained by changes in endowments over time and by changes in returns to those endowments. The main regressors are changes in real crop producer prices (closely related to macroeconomic and agricultural reforms), location, access to roads, private endowments (land, labor, and education), and two shock variables, rainfall and ill health. Deininger and Okidi (2001) analyze changes in consumption and income observed for a panel of about 1,200 Ugandan households during 1992–2000. They regress household-level changes in consumption and income against variables representing the change in relative producer prices of coffee, largely due to the liberalization of coffee markets (Townsend 1999), access to infrastructure, initial endowments of physical and human capital, and initial health status of households and their social capital.

These microeconometric analyses of panel data suggest that the following factors are influential in determining the relationship between economic growth and poverty reduction.

- Most poor rural households stand to benefit directly from liberalization measures, as well as from increased political stability and better governance. The gains can be substantial. Insofar as liberalization measures increase producer prices, rural producers gain, and to the extent that food marketing margins decline, rural consumers will benefit as well. Nonetheless, some gain more than others, depending on the product and consumption mix of the household.
- A household's location is key in conditioning the extent to which it benefits from liberalization measures. Whether the household had access to infrastructure and urban markets is an immensely important factor governing the growth in household income. It explains about half of household consumption growth and poverty reduction in Ethiopia during 1989–95 and is also quantitatively important for growth in Ugandan household income. So connectedness to markets, as captured by access to infrastructure (especially roads, but also electricity) and distance to urban centers, is likely to be a major factor in determining how growth in any country transmits its benefits to the population.
- The potential for economic growth and poverty reduction further depends on a household's private endowments. Households with larger private

24. Because the study is not nationally representative, the results cannot be generalized to Ethiopia as a whole. Nonetheless, the methodology and the empirical findings provide important insights to the linkages between economic policy, growth, and poverty reduction.

TABLE 8. Poverty Incidence by Rural Activity, Ghana and Uganda in the 1990s

	Uganda				Ghana			
Crop type	Population share (2000)	1992	2000	% reduction	Population share (1998)	1992	1998	% reduction
Food crop	45.9	63.3	45.7	−27.8	43.9	68.1	59.4	−12.8
Cash crop	21.3	62.7	29.7	−52.6	6.3	64.0	38.7	−39.5

Source: Appleton (2001); Coulombe and McKay (2003).

endowments—be it more and better qualified labor or land—tend to be not only less poor but also better placed to profit from new opportunities generated by liberalization and institutional change.

- It is vital to separate the effects of shocks (such as ill health or drought) from the effects of other factors when assessing poverty trends or the impact of policy changes.

Liberalization

The panel studies show that policy-induced changes in relative prices directly benefited poor households. The experience of Ghana in West Africa echoes these East African findings. Ghana experienced sharp poverty reductions among cash (export) crop producers during the 1990s, a result of more favorable world cocoa prices and an increase in cocoa production. A comparison of trends in poverty among crop producers in rural Ghana and Uganda shows that about two-fifths of the population in both countries are food-producing farmers, and about two-thirds of them were poor in the early 1990s (table 8). In both countries poverty fell among food producers, but the decline was greater among export crop producers. So, although most of the rural poor appear to have benefited from growth, those producing export crops benefited most. That a much larger share of the population grows cash crops in Uganda (21 percent) than in Ghana (6 percent) may explain the larger drop in poverty among food crop producers in Uganda. Reviewing the evidence on agricultural reforms in Sub-Saharan Africa, Kherallah and others (2002) arrive at a similar conclusion—export-crop producers seem to have benefited more than food crop producers. What needs to be better understood is the transmission mechanism that led to economic gains for households not producing for export.[25]

Location

The panel analysis of Ethiopian and Ugandan households provides strong empirical evidence that location and geography are important in determining

25. Coulombe and McKay (2003) find that remittances were an important source of income growth in rural Ghana during this time.

TABLE 9. Headcount Poverty Trends in Rural and Urban Areas of Eight African Countries during the 1990s (% unless otherwise specified)

		Rural			Urban		
Country and period	Population share, year 1	Year 1	Year 2	% point change	Year 1	Year 2	% point change
Ethiopia							
1994–97	84	42	35	−6	37	35	−2
Ghana							
1992–98	67	64	49	−15	28	19	−9
Madagascar							
1993–99	81	74	77	2	50	52	2
Mauritania							
1987–95	56	68	48	−20	45	17	−28
Nigeria							
1992–96	62	46	69	23	37	58	21
Uganda							
1992–97	88	59	48	−11	28	16	−12
Zambia							
1991–96	62	88	90	2	47	62	15
1996–98	62	90	86	−4	62	59	−3
Zimbabwe							
1991–96	63	36	48	12	3	8	5

Sources: World Bank data and country studies for Ethiopia, Ghana, Madagascar, Mauritania, Nigeria, Uganda, Zambia, and Zimbabwe (see text for specific studies cited).

how growth influences income distribution. In some countries the decline in poverty is observed in both rural and urban areas (Ghana, Mauritania, Ethiopia, Uganda; table 9). In others the change is confined mainly to urban areas (Zambia in 1991–96). It is clear from the case studies that within both rural and urban sectors, poverty changes have varied considerably by geographic location. Some geographic areas have not benefited as much as others from growth, and some have even lost ground during the period of recovery. The different experience in the evolution of poverty seems closely related to the extent to which the region or village is integrated within the overall economy.

The experiences of Ghana and Madagascar are illustrative. Although poverty fell in Ghana between 1992 and 1999, not all regions benefited. Living standards declined in urban areas other than Accra and in rural areas in the north. Recent studies by Badiane and Shively (1998) and Abdulai (2000) conclude that markets (more specifically the maize market) in the remoter northern region are not well integrated with the economy at large, likely impeding transmission of the benefits of growth to the region. Remoteness is also important in understanding geographic differences in poverty outcomes in Madagascar. Paternostro and others (2001) report an association between the degree of remoteness and the likelihood of being in poverty. They also show that although overall rural poverty remained largely unchanged during 1997 and 1999, the most

remote households experienced increased poverty—in contrast to the least remote, whose poverty indicators improved.

Private Endowments

The experiences in Ethiopia and Uganda demonstrated that better-endowed households, particularly more educated households and those with more (fertile) land, were not only less likely to be poor but also more likely to benefit from favorable changes in the macro environment. The importance of education for poverty reduction is echoed by microeconometric evidence from Ghana, Madagascar, and Zimbabwe. In Ghana and Madagascar real consumption levels increase with educational attainment. The returns to education across education levels increased between the first and second survey years (Coulombe and McKay 2003; Paternostro and others 2001). In Zimbabwe a sharper increase in poverty following the economic decline was prevented by previous investments in schooling that increased the educational attainment of the population in the 1990s (Alwang and others 2002). That incomes fell and poverty increased despite household efforts to invest in human capital, assets, and migration was due to a reduction in the rates of return to these assets.

In Madagascar consumption levels are higher for households that possess land, but only for holdings greater than 0.1 ha per capita. Returns increase with the size of the plots. Consumption levels deteriorated between 1993 and 1999 for households with less than 0.4 hectare per capita, while they improved for households with more land. As a result, poverty incidence fell by 2 percentage points among those with more land and rose by 0.82 percentage points among those with less than 0.4 ha per capita. Paternostro and others (2001) surmise that this difference follows from more extensive land use by small farmers forced by demographic pressures to expand their fields into less productive and more fragile areas.

Shocks

Poverty estimates provide a snapshot of the standard of living at a certain point in time, reflecting both policy reforms and temporary external shocks, such as droughts. In evaluating the evolution of poverty, it is thus important to control for the effect of external shocks on comparative poverty figures. Controlling for all other factors, the Ethiopian panel analysis estimated that household income growth was reduced by about a fifth because of rainfall shortage (Dercon 2002). Rainfall variations were also an important influence on household income growth in Madagascar and Zimbabwe.

Simulations of poverty change in Madagascar show that 75 percent of the predicted change in household economic well-being and poverty incidence can be traced to the effects of drought (Paternostro and others 2001). The capacity of households to insure themselves against covariate shocks is clearly extremely limited in many parts of Africa.

That poverty increased sharply in Zimbabwe during the 1990s is without question (Alwang and others 2002). Less clear is whether poverty increased because of the droughts that afflicted the country in 1991/92 and again in 1994/95 or because of the Economic Structural Adjustment Program (launched in 1991) that was being implemented at the same time. Alwang and others apply nonparametric methods to confirm that the drought did lead to an increase in poverty during the early 1990s. But they also show that the drought alone cannot explain the worsening in economic well-being. The deteriorating economic environment sharply undermined the returns to both human and physical capital, reducing incomes and increasing poverty.

V. Conclusion

In the African countries studied, episodes of growth reduced poverty, at least in the aggregate. Countries whose macroeconomic balances and institutional quality improved also saw a decline in poverty. But there are two serious qualifications. First, experiences varied enormously. Some countries enjoyed a decade of sustained growth, and others had to cope with crisis and decline. Of the eight countries covered, four experienced declines in poverty (Ethiopia, Ghana, Mauritania, and Uganda), two faced sharp increases (Nigeria and Zimbabwe), and two (Madagascar and Zambia) no exhibited discernible trend. This variety counsels caution in applying the empirical findings reported here to Africa as a whole.

The second qualification derives from the need to go beyond the averages. Although it is true that overall income distributions (evidenced by the Gini ratio) did not change during episodes of growth in these African countries (except Ethiopia) and that such growth (or recession) can be characterized as pro-poor in this aggregate sense, this conclusion can be misleading. A variety of experience lies beneath the aggregate numbers. Neglect of this reality by policymakers—and sometimes by academics—has often impeded a constructive and fruitful dialogue with civil society about appropriate poverty-reducing policies (Kanbur 2001). Focusing on income poverty, this review of the evidence finds systematic changes in income distribution and poverty in the countries covered and identifies some of the main contours of these distribution changes. These results highlight four key policy messages: the importance of economic reform and political stability for poverty reduction, the role of geographic location (especially remoteness) in conditioning how the benefits of growth are distributed, the importance of private endowments (especially education and land) for the ability of households to take advantage of new opportunities and for consequent poverty outcomes, and the need to account for shocks in understanding distributional outcomes and poverty changes over time.

The "emerging picture" described by Demery and Squire (1996) is further supported by the new, better data (reflecting also a longer time perspective than previous work). Improvements in macroeconomic balances are generally

associated with reductions in poverty in the countries examined. There is also an emerging micro-picture of the impact of market liberalization on consumption poverty. The analysis of household panel data by Dercon (2002) for Ethiopia and Deininger and Okidi (2001) for Uganda provides the most systematic and empirically convincing cases that policy-induced changes in relative prices can have poverty-reducing effects. Micro evidence from Ghana provides some corroboration from West Africa.

The second policy message is the need for a geographic perspective on poverty. Although various rounds of poverty assessments have established that the incidence of poverty varies considerably across regions of a country, this recent work on poverty dynamics has shown that some regions, by virtue of their sheer remoteness, have been left behind as growth has picked up. Households with limited access to markets and public services have not benefited from growth during the 1990s. The provision of public goods (notably infrastructure services—from the Ethiopian case especially roads, and from the Ugandan case, electricity) is crucial to help poor households benefit from growth. Third, education emerges as a key private endowment enabling households to escape poverty. Its importance for poverty reduction is brought out in the case studies—for both rural and urban areas—with the marginal returns to education typically increasing with the level of educational attainment.

Finally, the empirical evidence reviewed here underscores the importance of risk in everyday life in Africa. Two risks featured in the analysis are the impact of rainfall variations and ill health. Dercon (2002) estimates that poverty reduction in the sample of Ethiopian rural communities would have been 18 percentage points greater had households been protected from the effects of ill health and rainfall shortages. The importance of weather shocks for changes in poverty was also underscored by the findings from Madagascar and Zimbabwe. Deininger and Okidi (2001) find that in Uganda ill health in 1992 noticeably increased the probability of being in poverty eight years later. Policies to help the poor manage their risks should be an integral part of poverty reduction strategies in the region.

27. Appendix. Data Sources and Constructs

This appendix presents basic information on the survey instruments, the construction of the welfare measures used in the studies covered in this article, and the construction of the macroeconomic policy scores. Readers are referred to the individual studies for a detailed exposition of survey design and methodological choices made in building each welfare measure. Some of the salient features are reported here.

Surveys Used

For all countries investigated except Ethiopia data were obtained from household surveys collected by local statistical authorities. For Ethiopia the authors (Dercon 2002; Bigsten and others 2003) constructed a purposively selected

Appendix Table 1. Computations of Macroeconomic Policy Scores

		Fiscal policy					Monetary policy					Exchange rate policy						
		Change in overall fiscal balance excluding grants (% GDP)		Change in government revenue (% GDP)		Change in fiscal policy	Change in seigniorage		Change in inflation		Change in monetary policy	Change in real effective exchange rate		Change in black market premium		Change in exchange rate policy	Overall macroeconomic policy	
Country and Period		%	Score	%	Score	Score[a]	%	Score	%	Score	Score[b]	%	Score	%	Score	Score[c]	Average score	Weighted[d] average score
Côte d'Ivoire	1985–88	−11.6	−2	−5.2	−1	−3.0	−2.7	2	2.9	0	1.0	21.8	−2	−2.1	0	−1.0	−1.0	−1.5
Ethiopia	1989–95	0.3	0	−6.9	−1	−1.0	−0.7	1	2.9	0	0.5	−55.8	3	−56.0	2	2.5	0.7	1.0
	1994–97	2.5	1	6.1	1	2.0	−3.8	2	−6.8	1	1.5	−23.9	2	−126.6	3	2.5	2.0	2.2
Ghana	1988–92	−2.3	−1	0.1	0	−1.0	−1.2	1	−10.1	2	1.5	−23.5	2	−51.0	2	2	0.8	0.8
	1992–98	−5.0	−1	4.5	1	0.0	0.4	0	7.9	−1	−0.5	−11.9	1	−4.4	0	0.5	0.0	0.2
Madagascar	1993–97	0.8	0	−0.5	0	0.0	−1.1	1	13.7	−2	−0.5	−0.2	0	−8.0	0	0.0	−0.2	−0.1
	1997–99	1.7	1	1.6	0	1.0	−0.2	0	−16.8	2	1.0	2.3	0	1.4	0	0.0	0.7	0.5
Mauritania	1987–95	9.2	3	0.6	0	3.0	−1.3	1	−1.1	0	0.5	−35.8	3	−84.2	2	2.5	2.0	2.4
Nigeria	1985–92	0.4	0	12.3	1	1.0	1.0	−1	−1.8	0	−0.5	−518.9	3	−260.4	3	3.0	1.2	1.9
	1992–96	3.7	2	−4.6	−1	1.0	−1.2	1	31.4	−3	−1.0	53.3	−2	249.1	−3	−2.5	−0.8	−1.0
Uganda	1992–97	2.9	1	3.3	1	2.0	−1.8	1	−30.3	2	1.5	10.2	−2	−23.0	1	−0.5	1.0	0.7
	1997–00	−0.5	0	0.3	0	0.0	0.4	0	−4.5	1	0.5	−8.9	1	−5.8	0	0.5	0.3	0.3
Zambia	1991–96	1.7	1	1.0	0	1.0	−2.7	2	−63.2	2	2.0	−8.4	1	−350.7	3	2.0	1.7	1.6
	1996–98	2.2	1	−0.7	0	1.0	−0.9	1	−9.2	1	1.0	11.0	−2	1.7	0	−1	0.3	0.0
Zimbabwe	1991–96	−2.6	−1	−0.8	0	−1.0	1.6	−1	4.2	0	−0.5	−8.0	1	−40.6	2	1.5	0.0	0.3

Scoring criteria (from World Bank 1994)						
−3				≥31.0		≥51.0
−2	≤−5.0		2.0 to 3.9	10 to 30.9	≥10.0	16 to 50
−1	−4.9 to −2.0	≤−4.0	1.0 to 1.9	5.0 to 9.9	5.0 to 9.9	5.0 to 15
0	−1.9 to 0.9	−3.9 to 3.0	−0.5 to 0.9	−2.4 to 4.9	−2.0 to 4.9	−9.0 to 4.0
1	1.0 to 2.9	≥3.1	−2.0 to −0.6	−9.9 to −2.5	−2.1 to −14.9	−29 to −10
2	3.0 to 4.9		−3.0 to −2.1	−49.0 to −10.0	−15.0 to −30.9	−99 to −30
3	≥5.0				≤−31.0	≤−100

[a]Sum of scores for change in overall fiscal balance and change in revenue.

[b]Average of scores for change in seigniorage and change in inflation.

[c]Average of scores for change in the real effective exchange rate and change in the black market premium.

[d]Weights derived from cross-sectional growth regressions.

Source: Authors' computations based on World Bank (1994) and World Bank data.

panel germane to their research objectives (in a collaborative venture with the University of Addis Ababa). Details on the survey designs, time frames, coverage, and sample size can be found online at http://poverty.worldbank.org/files/14946_afr_growth.pdf. With the exception of Ethiopia, where one panel covered 6 villages and the other 15, all the surveys are nationally representative.

There are, however, a few omissions worth noting. The surveys used in Mauritania did not sample the nomadic population (about 30 percent). In Uganda the 1996–97 Monitoring Survey and the 1999–2000 Uganda National Household Survey did not cover four districts (6.9 percent of the population according to the 1991 census) for security reasons. These districts reported relatively low levels of mean consumption in the 1992–93 Household Income Survey. These omissions affect only the representativeness of the sample. The analysts adjusted the sample to ensure over-time comparability.

Welfare Measurement

The welfare indicator commonly chosen was total household expenditure (see data online at http://poverty.worldbank.org/files/14946_afr_growth.pdf). The studies used adult equivalence scales to account for household composition except in Ethiopia, Madagascar, and Nigeria, where total expenditures are computed on a per capita basis (see data online at http://poverty.worldbank.org/files/14946_afr_growth.pdf). In general, the principle guiding the selection of items included in each expenditure measure was ensuring comparability over time. Therefore, only items common across surveys and for which questions were asked in a similar fashion were retained. In some cases, like Zimbabwe, surveys maintained a common design over time, thus allowing for a wide coverage of household consumption expenditures including use of services, consumption values from assets owned and imputed values from gifts remittances, and transfers received. In some other instances, as in Madagascar, this approach led to a more restrictive coverage. The survey design changed over time so that items such as consumption of own livestock, gifts, remittances, in-kind payments, and own consumption from nonfood enterprises were omitted to ensure proper comparability.[26]

In all cases, consumption included items requiring imputations, such as imputed rent from owner-occupation and imputed income from the consumption of food produced by the household. Methods of computing these imputations differed. Although consumption of own-produced food was included in all expenditure measures, for Ghana households themselves estimated the value of such items, whereas for Uganda the imputation was obtained using median unit values from household food purchases (market prices). Such procedures were

26. Such items accounted for only 4.3 percent of total expenditure in 1993. The highest number of items omitted was in Ethiopia (1989–95 rural panel), where only food expenditures were included.

applied consistently to data sets to preserve over-time comparability. But differences among countries would counsel caution in comparing results across countries.

Adjustments were also made to account for differences in prices, across both time and space. All studies computed total expenditures in real terms, using official price series to express values in base year prices (see data online at http://poverty.worldbank.org/files/14946_afr_growth.pdf). Moreover, with the exception of Zambia and Zimbabwe, regional and rural-urban price differences are also taken into account in constructing the consumption measure.

Macroeconomic Policy Scores

A macroeconomic policy index or score is calculated for the countries covered in this article. It is based on changes in three key components: fiscal, monetary, and exchange rate policies. The overall score is a weighted average of these components, computed for the three-year period prior to each survey (the weights being derived from international cross-section growth regressions). The index is computed so that increases in the score (either lower negative values or higher positive values) indicate an improvement in economic policy. Appendix table 1 provides details of the changes in the different policy instrument indicators and of the computations of the macro-policy score.

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