The Recent Growth Resurgence in Africa and Poverty Reduction:

The Context and Evidence

By

Augustin Kwasi FOSU*

**Professor*, Institute for Statistical, Social and Economic Research (ISSER), University of Ghana, Legon, Ghana; *Extraordinary Professor*, Faculty of Economic and Management Sciences, University of Pretoria, Pretoria, South Africa; and *Visiting Professor of Economics*, Aalto University, Helsinki, Finland.

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Abstract

While economic growth in Africa has resurged substantially since the mid-to-late 1990s, the amount of poverty reduction seems much less spectacular. Building on other studies, the paper explores the translation of the recent growth to poverty reduction using 1985-2013 PovcalNet (World Bank) data. It assesses the relative abilities of various panel-data methodologies to predict poverty changes based on income-inequality decompositions. Surprisingly, SYSGMM performs substantially worse than Fixed Effects and Random Effects. The analysis is conducted for both the $1.25 and $2.00 poverty lines, and for the 'spread' and 'depth' of poverty, as well as for the usual popular measure, the headcount ratio. Although income growth appears to be the main force behind poverty reduction in Africa, the decomposition reveals striking differences, across countries and poverty measures, with respect to the relative roles of inequality and income.

JEL codes: D31, I32, O11, O49, O55

Key words: Growth resurgence; income; inequality; poverty reduction; Africa

1. Introduction

There has been increasing recognition of the importance of poverty reduction as a development objective in both the economic literature and policy community. Indeed, poverty eradication was enshrined as the Millennium Development Goal 1 (MGD1), and is currently the Sustainable Development Goal 1 (SDG1).[1]

The developing world as a whole has experienced a substantial reduction in poverty since the 1980s, at an annual average rate of about 1 percentage point (Chen and Ravallion, 2008). The progress has not been uniform across and within regions, however. While most Asian countries have exhibited tremendous poverty reduction, the progress in Africa, particularly sub-Saharan Africa (SSA), has been slow, with poverty incidence, spread and depth remaining at relatively high levels (Chen and Ravallion, 2007, 2008; Thorbecke, 2013; World Bank, 2014). In order for Africa to achieve faster progress on poverty in the years ahead, therefore, national policymakers and their development partners must embark on policies that are likely to most efficiently and effectively reduce poverty. That would in turn imply the need to examine the factors that influence the continent's progress on poverty.[2]

The main objective of the present paper is to advance the understanding of the issue of income vis-a-vis inequality influencing the direction of poverty in African countries. It builds on previous studies that have shown the importance of these two factors in poverty reduction. In addition to providing the most recent up-to-date relative impacts of the changes in income and in inequality, based on the World Bank PovcalNet data, the paper employs various panel-data

[1] The recently adopted SDGs may be found at: http://www.un.org/sustainabledevelopment/sustainable-development-goals/

[2] For a comprehensive discussion on the recent progress on Africa's poverty see, for instance, Beegle et al. (2016).

methodologies to assess their relative abilities to predict poverty changes based on income-inequality poverty decompositions. Judged by their relative predictive powers, it is possible to deduce the 'optimal' choice among methodologies.

The choice among the popular panel estimating methods – Random Effects (RE), Fixed Effects and Systems Generalized Methods of Moments (SYS-GMM) – is often guided by the usual statistics that are meant to ensure that the estimates meet the various desirable statistical properties: unbiasedness, efficiency, absence of endogeneity, and/or consistency (asymptotic). For *predictive* purposes, however, it is not entirely clear that these estimating properties would necessarily be translated into relatively accurate predictions. Using a large sample of African countries with the necessary data over time, the present approach explores the relative desirability of the various methodologies with respect to predicting in-sample changes in poverty over time, based on decompositions of poverty growth into changes in income and in inequality. Such decompositions should prove useful, as they shed light on the relative importance, at the country level, of poverty-reduction policies directed at improving income growth vis-à-vis income distribution.

Moreover, in the light of growing concerns that the headcount ratio, the usual statistic of analysis, fails to capture the level of actual poverty, the paper further provides analyses of the measures of the 'spread' and 'depth' of poverty. This additional evidence is particularly germane, given the observation that African countries' performance on poverty reduction, relative to the rest of the world, is less impressive on these measures than on the headcount (see, e.g., Chen and Ravallion, 2008).

Following a brief discussion of the growth-inequality-poverty literature, I shed light on the historical trends of poverty for Africa versus other regions of the world. This is conducted for the $1.25 and $2.00 per-day poverty lines and based on the three Foster-Greer-Thorbecke (FGT) measures of poverty: poverty 'headcount', 'poverty gap', and 'squared poverty gap', which measure poverty incidence, spread, and depth, respectively.[3] Second, the 'identity' model involving poverty changes as a function of changes in income and in income inequality is presented and estimated using several panel-estimation methods. Third, progress on poverty is decomposed into income and inequality changes for all the countries in the African sample. Fifth, based on the relative predictive powers of the estimating methods, the 'optimal' sets of results are selected and discussed. The final section of the paper provides a summary of the findings, with implications for policy.

2. The Growth-Inequality-Poverty Nexus

A Brief Review

There seems to be a general consensus that income growth is the main engine for poverty reduction globally (Deininger and Squire, 1998; Dollar and Kraay, 2002; Kraay, 2004; Ravallion, 2001). Yet, the transformation of growth to poverty reduction is nonlinear, with especially inequality playing an important intervening role. For example, Adams (2004), Bourguignon (2003), Easterly (2000), Epaulard (2003), Kalwij and Verschoor (2007), and Ravallion (1997) find that high initial inequality inhibits the effectiveness of growth in reducing poverty in global samples.

[3] See Foster et al. (1984).

In addition, Fosu (2008, 2009, 2010a, b, c) present and estimate various nonlinear poverty functions involving the transformation of growth to poverty reduction. While Fosu (2010a) is a comparative study involving all the major global regions, the rest of these studies focus on Africa. Furthermore, Fosu (2011, 2015a) emphasize the tendency of lower initial incomes to retard the translation of income growth and changes in income distribution into poverty reduction.

Furthermore, Ravallion (2012) finds that the initial level of poverty dominates other initial conditions in determining the path of poverty, particularly by its adverse influence on growth and by limiting the rate at which growth is transformed to poverty reduction. Similarly, Thorbecke (2013) emphasizes the reverse effect of poverty on growth, with further implications for poverty.

The Model

Consistent with Fosu (2011, 2015a), for instance, I estimate the following 'identity' model, which is a theoretically comprehensive representation of the growth-inequality-poverty nexus. [4]

$$(1)\quad p = b_1 + b_2 y + b_3 y G^I + b_4 y(Z/Y) + b_5 g + b_6 g G^I + b_7 g(Z/Y) + b_8 G^I + b_9 Z/Y$$

where p is the growth in the poverty rate, y is income growth, g is growth in the Gini coefficient as a measure of the level of inequality, G^I is the initial Gini coefficient (expressed in natural logarithm), Z/Y is the ratio of the poverty line Z to income Y (expressed in natural logarithm), and b_j (j=1,2,…,9) are the respective coefficients to be estimated.

[4] This 'identity' model, first derived by Bourguignon (2003), is based on an approximation to an assumed lognormal income distribution, and allows one to explain the heterogeneity of the nexus across countries and time periods. For details of the application of the Bourguignon model see, for example, Fosu (2009, 2011) and Kalwij and Verschoor (2007); see also Epaulard (2003) for a version of this model.

The sign of b_2 is anticipated to be negative, since an increase in income growth would decrease poverty growth, ceteris paribus.[5] In contrast, b_3 is expected to be positive; a higher level of initial inequality would reduce the rate at which growth acceleration is translated into poverty reduction. The sign of b_4 should also be positive, consistent with the notion, based on the lognormal income distribution, that a larger income (relative to the poverty line) would have associated with it higher income elasticity.[6]

The sign of b_5 is expected to be positive, as a worsening income distribution should increase poverty, ceteris paribus. In contrast, the sign of b_6 is likely to be negative for a diminishing poverty-increasing effect of rising inequality. The sign of b_7 would be negative as well, for in a relatively low-income economy (high Z/Y) improving income distribution (lowering g) might worsen poverty by raising the likelihood that more people would fall into poverty. Finally, b_8 and b_9 are likely to be positive: rising initial inequality or increasing poverty line relative to income should, ceteris paribus, exacerbate poverty, respectively; however, these coefficients do not affect the income or inequality elasticity of poverty.

From equation (1), the respective income and inequality elasticities are obtainable as:

(2) $E_y = b_2 + b_3 G^I + b_4 Z/Y$

(3) $E_g = b_5 + b_6 G^I + b_7 Z/Y$

Therefore, given the above expected signs of the regression coefficients, E_y and E_g are generally anticipated to be negative and positive, respectively, so that raising income growth should reduce

[5] For details on the expected signs of the coefficients see, for instance, Bourguignon (2003) and Epaulard (2003). See also Duclos and Araar (2010, pp. 92-97) for further insights on poverty decomposition, and Ferreira (2010) for a discussion on the poverty dynamics related to growth and income distribution.

[6] I ignore the sign and adopt the convention of referring to the income elasticity by its magnitude.

the growth of poverty, while worsening inequality changes would exacerbate poverty increases. It is conceivable, though, that perverse signs of the elasticities could occur. For example, in a highly unequal (high G^I) and low-income (high Z/Y) economy, the magnitude of the combined positive-signed b_3 and b_4 could actually overwhelm the magnitude of the negative-signed b_2, thus rendering E_y positive. Similarly, in such an economy, E_g could be negative. These two elasticities are critical for determining what happens to poverty reduction over time in a given economy.

Thus poverty would decline faster as: (1) income growth is higher, (2) the decline in inequality is larger, (3) initial inequality is smaller, or (4) as income relative to the poverty line is higher. Furthermore, the income growth and inequality-lowering effects on poverty would be respectively larger as: (a) initial inequality is lower and (b) as income relative to the poverty line is higher. These last two effects, therefore, work via the income and inequality elasticities of poverty. That is, both elasticities would decrease with initial inequality but increase with income relative to the poverty line; hence, initial inequality plays only a part of this growth-to-poverty transformation process.

3. The Data and Estimation

The World Bank (2015a) PovcalNet database provides the main source for the present analysis. The panel derived from this database is extremely unbalanced; the data emanate from available country surveys, which are for different years across countries and are far from regular within countries. Thus, considerable adjustments are required in order to obtain reasonably reliable regional estimates for the time series (Chen and Ravallion, 2008). The data are therefore revised by the World Bank as necessary, with implications for regional comparability over time. For

example, Fosu (2015a) finds less-than-stellar performance for SSA compared with South-Asia since the mid-1990s when 2014 rather than 2009 PovcalNet data are used. This revelation suggests that as the data are revised and improved, updated studies are called for.

Before proceeding with the estimation of equation (1), I first present graphically the data on the SSA region,[7] comparatively with the other global regions.[8] The comparison for the $1.25 per-day poverty line is provided for the three FGT poverty measures as appendix Figures A1.1a, A1.1b, and A1.1c, respectively, while that for the $2.00 is shown as respective appendix Figures A1.2a, A1.2b, and A1.2c. It is apparent from these graphs that SSA performed poorly on poverty in the 1980s and early 1990s, but has since about 1993 improved on its poverty record. This result holds for all the three FGT measures. However, on a comparative basis with the developing world (DW) generally, the African region does not seem to have fared as well even in the more recent period, for the gaps with particularly South Asia (SA) and East Asia and the Pacific (EAP) have been widening, as they have with the developing world as a whole. Furthermore, the SSA gap with the rest of the world is wider for the poverty gap than for the headcount ratio (poverty incidence), and for the squared poverty gap than for the poverty gap. Thus, it appears that *relative* to the other FGT measures, the headcount actually understates Africa's gap on poverty *comparatively* with the rest of the world (see Chen and Ravallion, 2008). Hence, equation (1) will be estimated for the measures of the 'spread' and 'depth' of poverty, that is, in addition to the headcount.

[7] Because the World Bank data incorporate North Africa's data into the Middle East and North Africa (MENA) group, the aggregate evidence cited here for Africa is that of SSA; hence, 'Africa' and 'SSA' are used interchangeably at present. At the country-specific level, however, both North African and SSA countries are analyzed together.

[8] These regional data are considered to be more accurate than aggregating the available country data into the respective regional aggregates, as various adjustments were required to render the estimates relatively representative (Chen and Ravallion, 2008).

Estimation

Equation (1) is estimated using the World Bank PovcalNet unbalanced panel data over the 1985-2013 sample period for the poverty rates at the $1.25 and $2.00 per-day lines, yielding the respective sample sizes of 104 and 103 involving at most 39 African countries each. Summary statistics for the levels of the poverty rates, income inequality (Gini coefficient) and mean income are reported for the $1.25 and $2.00, in the appendix tables B1.1 and B1.2, respectively.[9] Note that the averages are non-weighted and, due to missing data, sample composition may vary over time.

Using the above unbalanced panel data, equation (1) is estimated by applying three procedures: random-effects (RE), country fixed-effects (FE), and the two-gap system generalized method of moments (SYSGMM). The results for the $1.25 poverty line are presented in Tables 1.1a, 1.1b, and 1.1c for the headcount, poverty gap and squared poverty gap measures, respectively. Similarly for the $2.00 poverty line, the respective results for these poverty measures are reported in Tables 1.2a, 1.2b and 1.2c. [10]

[9] We do not report the summary data for the growth rates because they would not be reliable, as the periods are not standardized across observations. That is, growth rates over different period lengths depending on data availability, so that their averages are not statistically meaningful.

[10] Note that all the level variables used in the estimation are expressed in (natural) logarithm, while the growth variables are the logarithmic changes.

Table 1.1a: Regression Results (Unbalanced Panel), African Countries, 1985-2013.
Dependent Variable: **Headcount Ratio ($1.25)**

VARIABLES	(1) Fixed Effects	(2) Random Effects	(3) Two-step System GMM
dlog Y_{it}	-10.16**	-10.75***	-38.18***
	(-2.60)	(-3.56)	(-4.98)
dlog Y_{it} x log G_{it-1}	2.43**	2.50***	9.467***
	(2.41)	(3.19)	(4.71)
dlog Y_{it} x log (Z/Y_{it-1})	0.99***	0.93***	0.997***
	(4.54)	(5.86)	(5.26)
dlog G_{it}	14.30**	11.46**	36.51***
	(2.01)	(2.07)	(2.67)
dlog G_{it} x log G_{it-1}	-3.78**	-3.04**	-9.802***
	(-2.03)	(-2.09)	(-2.71)
dlog G_{it} x log (Z/Y_{it-1})	-4.77***	-4.39***	-6.921***
	(-8.64)	(-9.93)	(-6.66)
log G_{it-1}	0.06	-0.01	-0.0858*
	(0.47)	(-0.16)	(-1.76)
log (Z/Y_{it-1})	-0.15**	-0.02	-0.0256
	(-2.61)	(-1.27)	(-1.56)
Constant	-0.31	0.03	0.325*
	(-0.61)	(0.15)	(1.80)
Observations	117	117	117
Number of Countries	40	40	40
R-sq within	0.63	0.6	
R-sq between	0.09	0.62	
R-sq overall	0.36	0.61	
Hausman [P]	14.98 [0.06]	14.98 [0.06]	
Sargan [P]			4.409 [0.818]
Hansen [P]			3.363 [0.910]

*** p<0.01, ** p<0.05, * p<0.1

Notes: The dependent variable, dlog P_{it}, is the log-difference of the poverty measure; heteroscedastic robust t-statistics in parentheses. 'Hausman' is the specification test with p value in brackets. Under GMM: All regressors involving dlog Y_{it} are considered endogenous and are instrumented; estimation employs the 2-step SYSGMM; instruments: sub-regional dummy variables, logY_{it-1} and logG_{it-1} interacted with regional dummy variables, dlogPOP_{it}, logY_{it-1} x logG_{it-1}, logY_{it-1} x log(Z/Y_{it-1}) and logG_{it-1} x logG_{it-1}. 'Sargan' and 'Hansen' statistics test for over-identification of instruments (p-values in brackets). P, Y, G, Z, POP are poverty rate, income, the Gini coefficient, poverty line and population, respectively.

Table 1.1b: Regression Results (Unbalanced Panel), African Countries, 1985-2013.
Dependent Variable: **Poverty Gap ($1.25)**

VARIABLES	(1) Fixed Effects	(2) Random Effects	(3) Two-step System GMM
$dlogY_{it}$	-18.70*	-18.77**	-79.90**
	(-1.80)	(-2.45)	(-2.40)
$dlogY_{it}*logG_{it-1}$	4.56*	4.43**	20.00**
	(1.71)	(2.23)	(2.33)
$dlogY_{it}*log(Z/Y_{it-1})$	1.40**	1.24***	1.372**
	(2.39)	(3.09)	(2.17)
$dlogG_{it}$	44.99**	37.32***	83.34**
	(2.33)	(2.63)	(2.23)
$dlogG_{it}*logG_{it-1}$	-11.86**	-9.85***	-22.15**
	(-2.35)	(-2.64)	(-2.23)
$dlogG_{it}*log(Z/Y_{it-1})$	-10.38***	-9.42***	-11.98***
	(-7.04)	(-8.43)	(-3.16)
$logG_{it-1}$	0.09	-0.08	-0.343**
	(0.23)	(-0.70)	(-2.30)
$log(Z/Y_{it-1})$	-0.32**	-0.06*	-0.0805*
	(-2.11)	(-1.70)	(-1.70)
Constant	-0.48	0.30	1.299**
	(-0.34)	(0.68)	(2.39)
Observations	117	117	117
Number of Countries	41	41	41
R-sq within	0.58	0.55	
R-sq between	0.05	0.39	
R-sq overall	0.35	0.53	
Hausman [P]	11.77 [0.16]	11.77 [0.16]	
Sargan [P]			4.916 [0.766]
Hansen [P]			3.855 [0.870]

*** p<0.01, ** p<0.05, * p<0.1

Notes: See notes for table 1.1a.

Table 1.1c: Regression Results (Unbalanced Panel), African Countries, 1985-2013.
Dependent Variable: **Squared Poverty Gap ($1.25)**

VARIABLES	Fixed Effects	Random Effects	Two-step System GMM
dlog Y_{it}	-26.90	-26.45**	-120.8**
	(-1.51)	(-2.03)	(-2.07)
dlogYit*logG_{it-1}	6.64	6.30*	30.35**
	(1.45)	(1.86)	(2.02)
dlogY_{it}*log(Z/Y_{it-1})	1.79*	1.54**	1.692
	(1.79)	(2.26)	(1.45)
dlogG_{it}	80.25**	66.32***	137.3**
	(2.43)	(2.75)	(2.15)
dlogG_{it}*logG_{it-1}	-21.20**	-17.56***	-36.52**
	(-2.45)	(-2.77)	(-2.15)
dlogG_{it}*log(Z/Y_{it-1})	-16.67***	-15.12***	-18.75***
	(-6.60)	(-7.95)	(-2.75)
logG_{it-1}	0.14	-0.17	-0.592**
	(0.21)	(-0.83)	(-2.10)
log(Z/Y_{it-1})	-0.52*	-0.11*	-0.149*
	(-1.96)	(-1.82)	(-1.72)
Constant	-0.75	0.61	2.237**
	(-0.31)	(0.80)	(2.17)
Observations	117	117	117
Number of Countries	41	41	41
R-sq within	0.56	0.54	
R-sq between	0.04	0.24	
R-sq overall	0.36	0.51	
Hausman [P]	10.89 [0.21]	10.89 [0.21]	
Sargan [P]			5.236 [0.732]
Hansen [P]			3.886 [0.867]

*** p<0.01, ** p<0.05, * p<0.1

Notes: See notes for table 1.1a.

The estimates are generally as expected. In particular, all the estimated coefficients, especially those required for estimating the income and inequality elasticities, exhibit the anticipated signs and are generally significant [see equations (2) and (3) and the accompanying

exposition]. Considering, first, the results for the $1.25 (Tables 1.1a, 1.1b and 1.1c), all the relevant coefficients for the headcount (the first six variables) display the expected signs and are significant: income growth reduces poverty, but at a decreasing rate with inequality (measured by the Gini coefficient) and also with the poverty line relative to income. In contrast, increases in the Gini coefficient raise poverty, but at a decreasing rate with respect to the poverty line relative to income. Similar results are obtained for the poverty gap and squared poverty gap, although fewer coefficients are significant in the latter case.

The results for the $2.00 are qualitatively similar to those of the $1.25 (Tables 1.2a, 1.2b and 1.2c); however, the estimated coefficients enjoy much less precision as compared with those of the $1.25. In particular, most of the coefficients are insignificant in the headcount equations (Table 1.2a). Nonetheless, the SYSGMM estimated coefficients exhibit much better precision than the FE and RE for the $2.00 results.

Customarily, the SYSGMM results would be technically superior to those of the other two methods, since this procedure can potentially control for possible endogeneity of the regressors, provided the over-identifying restrictions are satisfied. Indeed, in nearly all cases,[11] the Sargan and Hansen tests indicate that the null hypotheses of 'absence of endogeneity' cannot be rejected. Hence, one would ordinarily select and report the GMM results.

However, an important objective of the present paper is to decompose poverty reduction into contributions by income and inequality. Hence, the predictive powers of the various methods are at stake. In this regard, equations (2) and (3) are employed to estimate the income and inequality elasticities, E_y and E_g. The results are reported in appendix tables B2.1a, B2.1b

[11] The only potential exception appears to be the Sargan test in table 1.2a where the p value is 0.08.

Table 1.2a: Regression Results (Unbalanced Panel), African Countries, 1985-2013.
Dependent Variable: **Headcount Ratio ($2.00)**

	(1)	(2)	(3)
VARIABLES	Fixed Effects	Random Effects	Two-Step System GMM
dlogYit	-3.12	-4.93	-9.79***
	(-0.75)	(-1.46)	(-4.17)
dlogYit*logGit-1	0.52	1.03	2.28***
	(0.49)	(1.18)	(3.85)
dlogYit*log(Z/Yit-1)	0.51**	0.57***	0.63***
	(2.28)	(3.50)	(7.16)
dlogGit	-6.77	-0.38	3.61
	(-0.84)	(-0.06)	(1.07)
dlogGit*logGit-1	2.01	0.23	-0.76
	(0.96)	(0.14)	(-0.89)
dlogGit*log(Z/Yit-1)	-0.85	-1.10**	-1.13***
	(-1.42)	(-2.27)	(-5.09)
logGit-1	0.19	-0.02	0.05*
	(1.23)	(-0.32)	(1.78)
log(Z/Yit-1)	0.02	-0.00	-0.00
	(0.34)	(-0.28)	(-0.62)
Constant	-0.69	0.06	-0.18*
	(-1.23)	(0.30)	(-1.88)
Observations	104	104	104
Number of Countries	39	39	39
R-sq. within	0.32	0.29	
R-sq. between	0.03	0.34	
R-sq. overall	0.21	0.31	
Hausman [P]	7.90 [0.44]	7.90 [0.44]	
Sargan [P]			9.99 [0.08]
Hansen [P]			2.70 [0.75]

*** p<0.01, ** p<0.05, * p<0.1
Notes: See notes for table 1.1a.

Table 1.2b: Regression Results (Unbalanced Panel), African Countries, 1985-2013. Dependent Variable: **Poverty Gap ($2.00)**

	(1)	(2)	(3)
VARIABLES	Fixed Effects	Random Effects	Two-Step System GMM
dlogYit	-9.38***	-9.89***	-28.41***
	(-4.29)	(-5.83)	(-3.12)
dlogYit*logGit-1	2.13***	2.23***	6.95***
	(3.79)	(5.07)	(2.97)
dlogYit*log(Z/Yit-1)	0.67***	0.63***	0.73***
	(5.70)	(7.68)	(5.30)
dlogGit	2.33	3.42	19.75**
	(0.53)	(1.07)	(2.03)
dlogGit*logGit-1	-0.26	-0.55	-4.85*
	(-0.23)	(-0.66)	(-1.92)
dlogGit*log(Z/Yit-1)	-2.32***	-2.15***	-3.44***
	(-7.36)	(-8.75)	(-4.77)
logGit-1	-0.01	-0.01	-0.08**
	(-0.17)	(-0.30)	(-1.98)
log(Z/Yit-1)	-0.05	-0.00	-0.00
	(-1.62)	(-0.27)	(-0.18)
Constant	0.05	0.03	0.31**
	(0.16)	(0.33)	(2.06)
Observations	103	103	103
Number of Country	39	39	39
R-sq. within	0.75	0.74	
R-sq. between	0.52	0.76	
R-sq. overall	0.65	0.77	
Hausman [P]	9.19 [0.33]	9.19 [0.33]	
Sargan [P]			4.90 [0.67]
Hansen [P]			5.80 [0.56]

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: See the notes for table 1.1a.

Table 1.2c: Regression Results (Unbalanced Panel), African Countries, 1985-2013.
Dependent Variable: **Squared Poverty Gap ($2.00)**

	(1)	(2)	(3)
VARIABLES	Fixed Effects	Random Effects	Two-Step System GMM
dlogYit	-14.37***	-14.43***	-43.40***
	(-3.35)	(-4.56)	(-3.41)
dlogYit*logGit-1	3.35***	3.33***	10.68***
	(3.03)	(4.05)	(3.29)
dlogYit*log(Z/Yit-1)	0.82***	0.74***	0.91***
	(3.57)	(4.82)	(4.44)
dlogGit	10.12	10.17*	36.92**
	(1.17)	(1.71)	(2.40)
dlogGit*logGit-1	-2.10	-2.12	-9.17**
	(-0.92)	(-1.37)	(-2.28)
dlogGit*log(Z/Yit-1)	-3.92***	-3.58***	-5.81***
	(-6.34)	(-7.82)	(-4.11)
logGit-1	-0.05	-0.04	-0.12**
	(-0.33)	(-0.77)	(-2.10)
log(Z/Yit-1)	-0.09	-0.01	-0.01
	(-1.36)	(-0.78)	(-0.38)
Constant	0.19	0.14	0.47**
	(0.32)	(0.79)	(2.20)
Observations	103	103	103
Number of Countries	39	39	39
R-sq. within	0.66	0.65	
R-sq. between	0.48	0.70	
R-sq. overall	0.57	0.67	
Hausman[P]	6.70 [0.57]	6.70 [0.57]	
Sargan [P]			4.84 [0.68]
Hansen [P]			5.67 [0.58]

*** p<0.01, ** p<0.05, * p<0.1

Notes: See notes for table 1.1a.

and B2.1c for the headcount, poverty gap, and squared poverty gaps, respectively, in the case of the $1.25, and in respective appendix tables B2.2a, B2.2b and B2.2c for the $2.00. As these

results show, the income elasticity is generally negative, while the inequality elasticity tends to be positive. There are several notes, however. First, in the case of the $1.25, the SYSGMM estimates produce a lot more unanticipated signs for the elasticities, as compared with FE and RE. While positive and negative signs of E_y and E_g, respectively, are theoretically feasible [see equations (2) and (3)], they should be rare empirically. Hence, the relatively large number of atypical signs for especially E_g among the SYSGMM estimates potentially portends relatively poor predictive power for this estimating procedure.

Second, the E_g estimates (in magnitude) appear correspondingly higher than those of E_y generally, consistent with earlier findings for SSA as a whole (see Fosu, 2009). These results suggest that poverty reduction would be more sensitive to changes in inequality than to income growth. Third, this inequality-elasticity advantage appears even larger for the higher orders of the FGT measures, suggesting that the spread and severity of poverty are relatively more sensitive to changes in inequality than the headcount is. Fourth, both the income and inequality elasticity estimates for the higher FGT measures seem correspondingly higher generally than those of the lower orders, suggesting that the spread and severity of poverty would be more responsive than the headcount to growth and income distribution-improving policy measures. These results are important, for they suggest that the responsiveness of the poverty rate measured by the headcount, as in the case of MDG1 for instance, would constitute a relative lower bound and should thus suffice for assessing the spread and severity of poverty as well.

The results for the $2.00 are similar, except that the frequencies of unanticipated signs of E_y and E_g are much lower compared to those of the $1.25, foreboding higher respective predictive powers for the $2.00 compared to the $1.25. Indeed, all the E_y estimates for the $2.00, including those of the SYSGMM, now signify the correct (negative) sign. These results are a bit

puzzling, though, given the observation above that the estimated coefficients in the regressions seemed more precise for the $1.25 than for the $2.00. Apparently, the higher precision of the regression estimates does not necessarily translate into a greater likelihood of obtaining theoretically anticipated signs for the derived elasticities.

Decomposition of Poverty Changes

Following Fosu (2011, 2015a), the E_y and E_g estimates are now employed to decompose p as:

(4) $p = yE_y + gE_g + r$

where p, y, and g are growth rates of poverty, income and inequality (the Gini coefficient), respectively; E_y and E_g are the respective income and inequality elasticities with respect to poverty;[12] and r is the residual term.[13] The objective then is to choose an estimating procedure among the ones presented here that minimizes r. Two selection criteria are employed: the root mean squared (RMSE) and mean absolute error (MAE). The results are presented in Tables 2.1 and 2.2 for the $1.25 and $2.00, respectively.

[12] The elasticity estimates are reported as appendix tables A2.1a, A2.1b, and A2.1c for the headcount, poverty gap, and squared poverty gap, respectively, in the case of the $1.25. Appendix tables A2.2a, A2.2b and A2.2c report the respective rates for the $2.00.

[13] All variables are computed between two years starting from the mid-late 1990s to the present, to correspond to the more recent period of African growth resurgence and to the availability of survey data for a given country.

Table 2.1: Root Mean Square Error (RMSE) and Mean Absolute Error (MAE) **($1.25)**

	Headcount Ratio		Poverty Gap		Squared Poverty Gap	
	RMSE	**MAE**	**RMSE**	**MAE**	**RMSE**	**MAE**
Fixed Effects	3.43	2.36	7.81	5.47	13.55	4.26
Random Effects	3.50	2.37	7.29	5.20	12.39	8.55
Two-step System GMM	7.81	5.51	16.17	11.46	25.55	18.34

Notes: RMSE and MAE were calculated, respectively, based on observed and predicted values of the poverty growth rate for all sample countries, with the latter based on equation (4) of text.

Table 2.2: Root Mean Square Error (RMSE) and Mean Absolute Error (MAE) (**$2.00**)

Model	Headcount Ratio		Poverty Gap		Squared Poverty Gap	
	RMSE	MAE	RMSE	MAE	RMSE	MAE
Fixed Effects	2.66	1.97	2.09	1.23	3.01	1.82
Random Effects	1.81	1.30	2.20	1.37	3.03	1.89
Two-step System GMM	2.16	1.57	4.17	2.89	6.78	4.71

Notes: See notes for table 2.1.

These results show, first, that the predictive powers for the $2.00 are correspondingly higher than those for the $1.25, as earlier anticipated based on the frequency of the theoretically anticipated signs of the income and inequality elasticities. Second, for both poverty lines, the SYSGMM is a much poorer predictor generally than the FE and RE,[14] which are both indeed

[14] The only exception is the case of the $2.00 where SYSGMM displays lower RMSE and MAE values than FE for the headcount.

quite close in predictive ability. For the $1.25, FE and RE may be judged to be the better predictors for the headcount and poverty gap, respectively, according to both RMSE and MAE. In the case of the squared poverty gap, however, there are conflicting signals from these two criteria, with RMSE selecting RE while MAE selects FE. Hence, whether FE or RE is chosen depends on the relative weights placed on extreme values of the error term, with RE preferred if extreme-value errors are weighted relatively more. In the present case, RE is selected in order to account for the extreme errors. It should be emphasized, though, that the results are very much qualitatively similar between these two estimating methods.

For the $2.00 (table 2.2), however, there is no conflict between the two criteria; RE is selected for the headcount while FE for both the gap and squared poverty gap; SYSGMM remains quite inferior in its predictive ability, particularly for the $1.25. Although the relative predictive power of the SYSGMM improves considerably for the case of the $2.00 over the $1.25, as to be expected given the above finding of more precise coefficient estimates of the SYSGMM than the FE and RE for this poverty line, the predictive power of the SYSGMM remains inferior.[15]

Given the above 'optimal' selection, the decomposition results are presented in the appendix tables B3.1a, B3.1b, and B3.1c for the headcount, poverty gap and squared poverty gap, respectively, in the case of the $1.25. Appendix tables B3.2a, B3.2b and B3.2c report the respective results for the $2.00. These results are shown, respectively, for both poverty-decreasing and poverty-increasing country groups.

[15] Although the RMSE and MAE of SYSGMM are respectively lower than those of the FE and RE, in the case of the headcount for the $2.00, the SYSGMM still underperforms in either case relative to the remaining estimating method.

To begin with, the results show that over 70 percent of the roughly 39 African countries in the sample have reduced their poverty levels since about the late 1990s. Generally, this proportion is larger for the headcount than for the other FGT poverty measures and for the $2.00 relative to the $1.25. In addition, the decomposition results reveal that for both the $1.25 and $2.00 and all the FGT poverty measures, on average the major contribution to poverty reduction is income growth, rather than inequality changes. However, the importance of inequality for countries' ability to reduce poverty tends to increase with the order of the measure, that is, higher for the poverty gap than for the headcount ratio, and for the squared poverty gap relative to the poverty gap. These outcomes are to be expected, as the higher-order FGT measures accord greater importance to the deviation of incomes of the poor from the poverty line. Nonetheless, on average, growth still generally plays the major part in the case of rising poverty even for these higher-order poverty measures. These results provide support for previous findings based on the headcount (Fosu, 2015a).

There are considerable differences across countries, however. Consider the $1.25 case first. In countries such as Angola, Botswana, Cape Verde, Guinea-Bissau, Namibia, Niger, Sierra Leone, and Tunisia, changes in inequality contribute considerably more to the observed poverty reductions than income growth does. This result holds for all the three FGT measures. And, in more than one-half of the countries experiencing increases in poverty (six out of ten), inequality changes generally contribute more to the worsening poverty than negative income growth does, even though the mean contribution by income is higher than that of inequality.

The results for the $2.00 are similar to those for the $1.25, though the exceptions are fewer and may not necessarily involve the same countries. However, Angola, Cape Verde and Guinea-Bissau continue to consistently show the exceptional case where decreasing inequality

contributes more to poverty reduction than income growth does. Expectedly, these are countries that have succeeded in substantially reducing their initial levels of inequality, with all the three countries ranking in the top quintile in the African sample, while their income growth has been rather sub-par (Fosu, 2015b).

4. Summary of Findings and Implication for Policy

The present paper finds that Africa as a whole has made considerable progress on poverty since the mid-1990s, about the same time that the region's (per capita GDP) growth has resurged. This performance is a reversal of the record for the previous decade-and-half when growth was quite anemic in the region and poverty rose considerably. Correspondingly, the growth resurgence has, in general, been translated into appreciable poverty reduction. The data also reveal, however, that other regions of the world have performed even better during the same period, thus exposing an increasing Africa's progress-on-poverty gap with the rest of the developing world. Furthermore, this Africa-developing world gap is larger for the poverty spread and for the poverty depth measures than for poverty incidence, suggesting that Africa must perform even better on these measures if it is to catch up with the rest of the world.

Applying the FE, RE and SYSGMM regression methods to unbalanced 1985-2013 panel data, the paper estimates country-specific income and inequality elasticities. These elasticities vary substantially among countries. The estimates also differ across estimating methods, with the greatest divergence from the other two exhibited by the SYSGMM. Furthermore, the SYSGMM estimates display the largest number of theoretically unexpected signs, with wider and more frequent divergences occurring as the order of the FGT measure increases. Such 'perverse' results also seem much more severe for the $1.25 than for the $2.00 standard, however,

suggesting that the predictive powers of the models would improve with the higher poverty standard.

Employing the elasticity estimates to predict country-level poverty changes since the mid-to-late-1990s, the FE and RE provide generally similar predictive abilities, which are both generally superior to that of the SYSGMM. The relative poor performance of the SYSGMM was much more pronounced for the $1.25 than for the $2.00. Indeed, in no case was the SYSGMM prediction found to display the minimum predictive error. Such a finding is methodologically important, as it suggests that controlling for endogeneity with SYSGMM does not necessarily translate into superior predictive ability, and that the FE and RE methods are preferable for prediction purposes.

The results show that the vast majority of the nearly 40 sample African countries have reduced their poverty levels since about the late 1990s. This outcome holds for all the FGT measures and for both poverty lines. Furthermore, income growth has been the main driver of this progress on poverty. Yet, there are considerable disparities across African countries, with certain countries, albeit a relatively small number, relying primarily on improving income distribution for poverty reduction. Among the majority of countries experiencing poverty exacerbation, furthermore, worsening income distribution was generally a major culprit. Such disparities suggest that country-specific analyses would be required in order to tease out the idiosyncratic characteristics of each country that might give rise to the optimal mix of growth-enhancing versus inequality-reducing policies.

Nonetheless, the result that growth has by far been the main factor behind the recent progress on poverty in African countries generally suggests that growth-enhancing factors be

accorded major importance. In this regard, recent findings from a comprehensive growth project (Ndulu et al., 2008a, 2008b) - 'Explaining African Economic Growth' (the Growth Project) – must be accorded significant attention. A major result of that study is that a 'syndrome-free' (SF) regime – a state of political stability with reasonable market-friendly policies - is critical for sustaining growth in Africa. An SF regime is not only a necessary condition for attaining sustained growth, but also a near-sufficient condition for avoiding growth collapse (Fosu and O'Connell, 2006). Furthermore, the historically poor performance of African economies could be traced to the excessive power of the executive branch of government that tended to spawn growth-inhibiting 'policy syndromes' (ibid.). Hence, attenuating such power of the executive would appear to be an appropriate growth-enhancing policy. Indeed, strengthening the constraint on the executive in Africa may increase the prevalence of SF regimes, independently or by limiting the potentially pernicious effect of ethnicity, and thus improve growth (Fosu, 2013), and in turn reduce poverty.

Better yet might be policies that enhance both income growth and income distribution. Such policies, including those that improve the complementarity between physical and human capital and insure against downside risks of economic undertakings, could produce a virtuous circle between economic growth and poverty.

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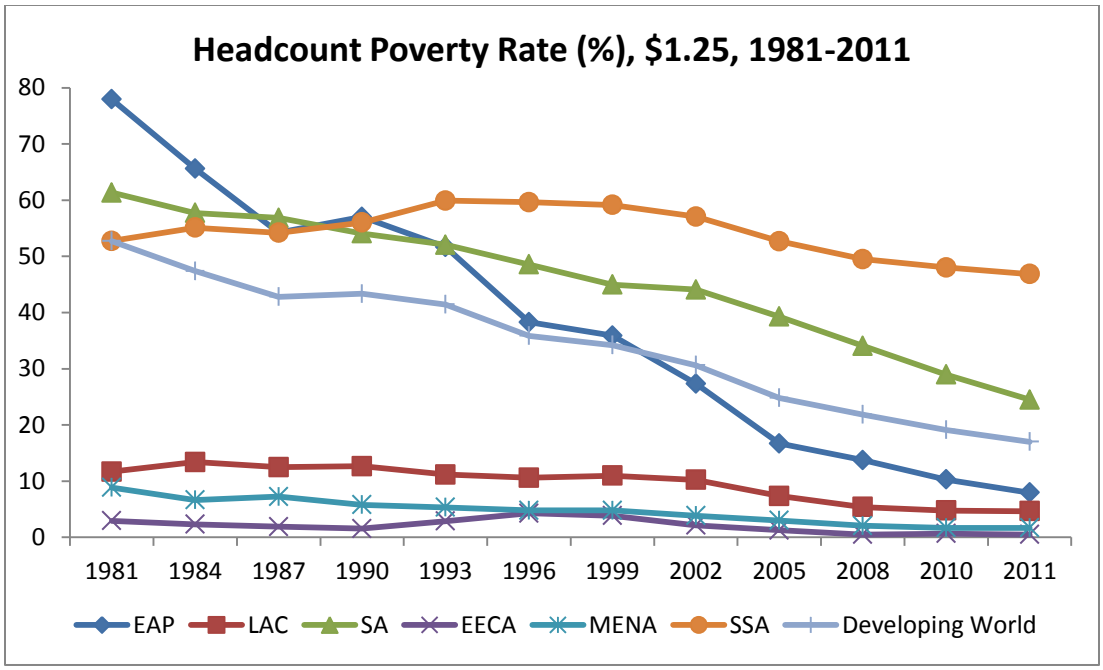
Appendix A (Figures)

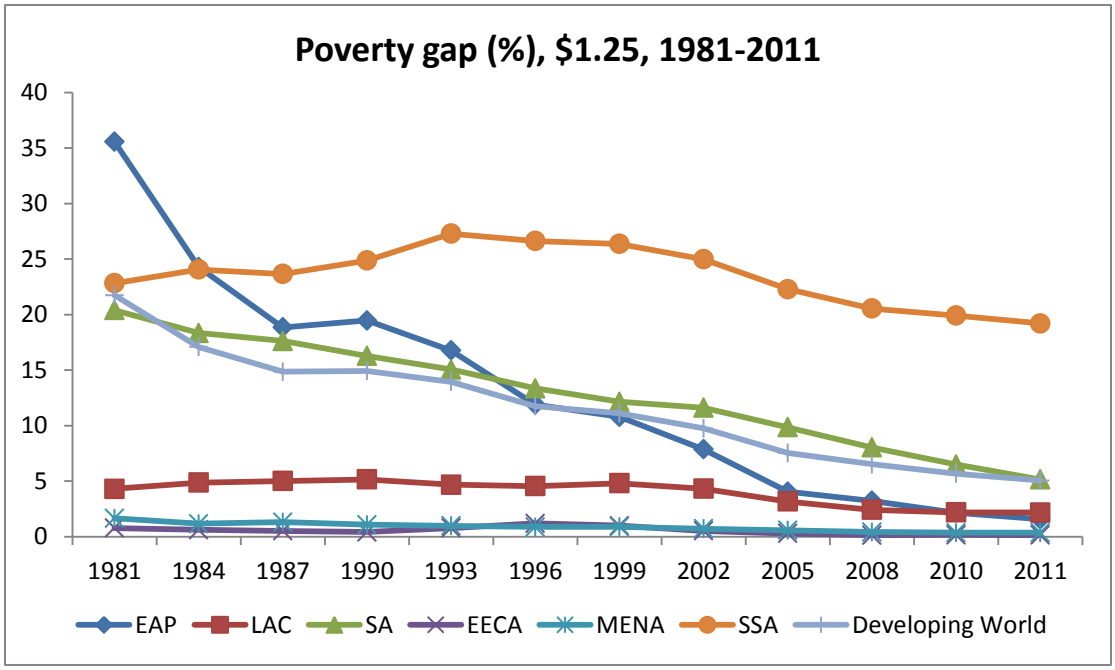
Figure A1.1a: Poverty Trends (*$1.25*), Africa vs. Other Regions: *Headcount (Incidence)*



Notes: EAP=East Asia and Pacific; LAC=Latin America and the Caribbean; SA=South Asia; EECA=Eastern Europe and Central Asia; MENA=Middle East and North Africa; SSA=Sub-Saharan Africa.

Data source: World Bank, 2015a

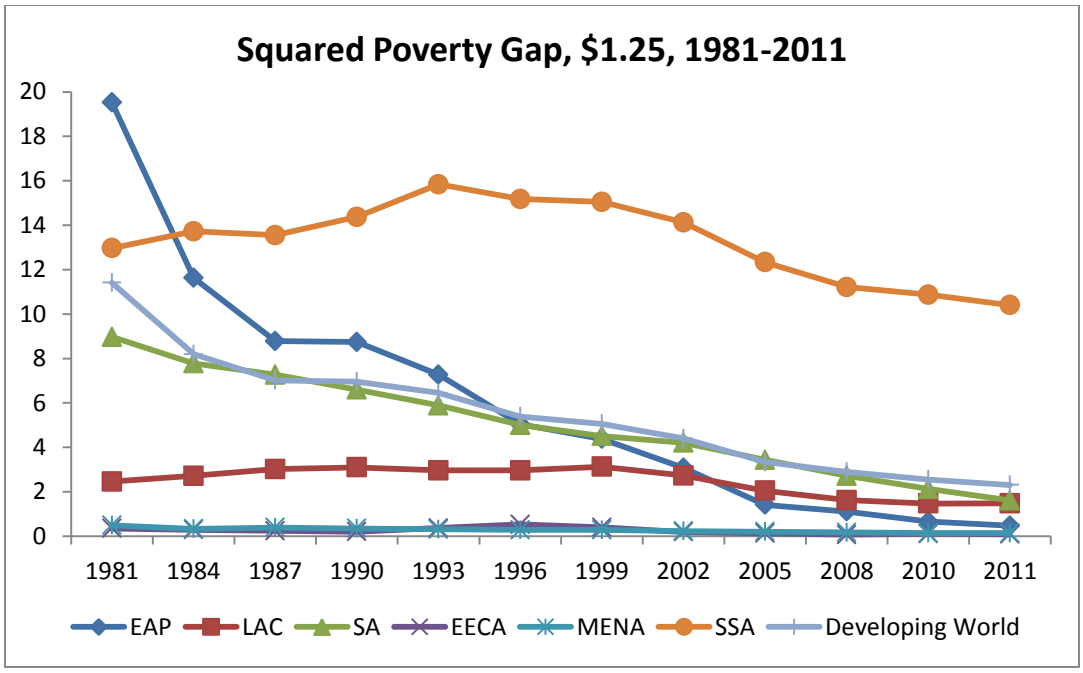
Figure A1.1b: Poverty Trends (*$1.25*), Africa vs. Other Regions: *Poverty Gap*



Notes: EAP=East Asia and Pacific; LAC=Latin America and the Caribbean; SA=South Asia; EECA=Eastern Europe and Central Asia; MENA=Middle East and North Africa; SSA=Sub-Saharan Africa.

Data source: World Bank, 2015a

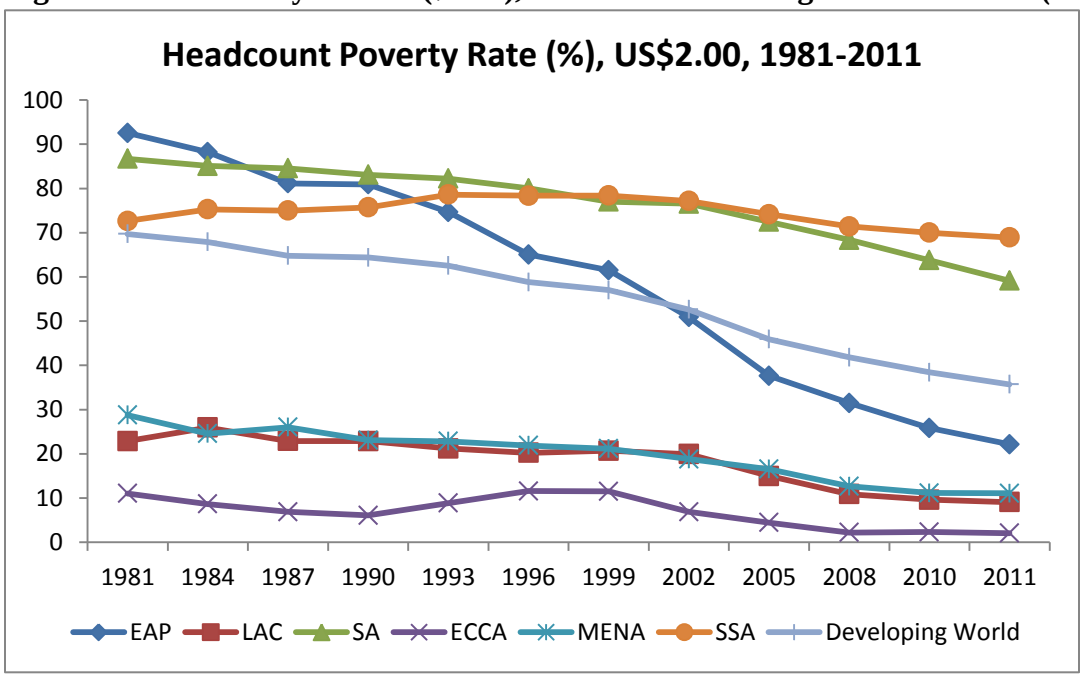
Figure A1.1c: Poverty Trends (*$1.25*), Africa vs. Other Regions: *Squared Poverty Gap*



Notes: EAP=East Asia and Pacific; LAC=Latin America and the Caribbean; SA=South Asia; EECA=Eastern Europe and Central Asia; MENA=Middle East and North Africa; SSA=Sub-Saharan Africa.

Data source: World Bank, 2015a

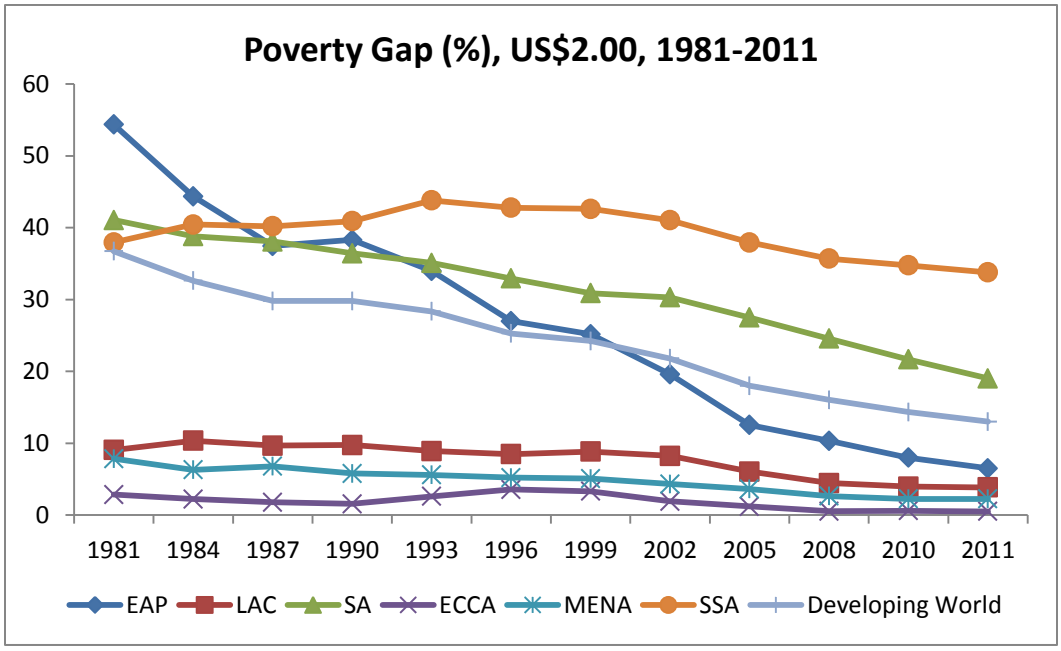
Figure A1.2a: Poverty Trends (*$2.00*), Africa vs. Other Regions: *Headcount (Incidence)*



Notes: EAP=East Asia and Pacific; LAC=Latin America and the Caribbean; SA=South Asia; EECA=Eastern Europe and Central Asia; MENA=Middle East and North Africa; SSA=Sub-Saharan Africa.

Data source: World Bank, 2015a

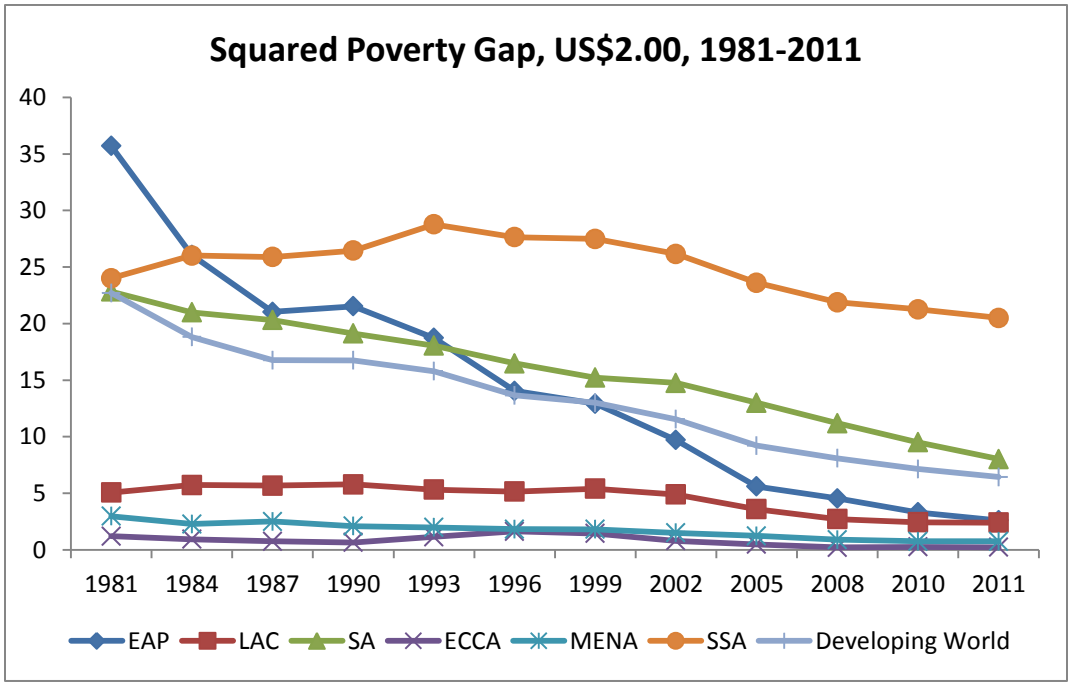
Figure A1.2b: Poverty Trends (*$2.00*), Africa vs. Other Regions: *Poverty Gap*



Notes: EAP=East Asia and Pacific; LAC=Latin America and the Caribbean; SA=South Asia; EECA=Eastern Europe and Central Asia; MENA=Middle East and North Africa; SSA=Sub-Saharan Africa.

Data source: World Bank, 2015a

Figure A1.2c: Poverty Trends (*$2.00*), Africa vs. Other Regions: *Squared Poverty Gap*



Notes: EAP=East Asia and Pacific; LAC=Latin America and the Caribbean; SA=South Asia; EECA=Eastern Europe and Central Asia; MENA=Middle East and North Africa; SSA=Sub-Saharan Africa.

Data source: World Bank, 2015a

Appendix B (Appendix Tables)

Table B1.1: Summary statistics for regression variables **($1.25)**

Variables	**Mean**	**SD**	**Min**	**Max**
Headcount ratio, $US1.25 per day	44.70	24.45	0.21	93.74
Poverty gap, $US1.25 per day	19.22	14.16	0.07	65.36
Squared poverty gap, $US1.25 per day	10.86	9.87	0.02	50.59
Inequality (Gini, %)	44.14	8.43	28.9	67.4
Mean income, $	76.69	54.78	13.92	319.6

Table 1.2: Summary statistics of regression variables **($2.00)**

Variables	**Mean**	**SD**	**Max**	**Min**
Headcount ratio, US$ 2 per day	61.42	24.48	98.88	1.28
Poverty gap, US$ 2 per day	30.18	17.19	76.90	0.26
Squared poverty gap, US$ 2 per day	18.64	13.16	63.55	0.11
Inequality (Gini, %)	44.12	8.54	67.40	28.90
Mean income, $	78.01	55.12	319.60	13.92

Table B2.1a: Income and Inequality Elasticities (**$1.25**), **Headcount Ratio**

Country	Income Elasticity (Ey)			Inequality Elasticity (Eg)		
	FE	**RE**	**GMM**	**FE**	**RE**	**GMM**
Angola	-0.74	-1.02	-0.11	1.20	1.19	-0.08
Benin	-1.62	-1.94	-3.94	2.14	1.87	3.09
Botswana	-1.89	-2.11	-1.82	6.10	5.67	7.38
Burkina Faso	-0.86	-1.16	-1.26	0.63	0.61	-0.27
Burundi	-1.32	-1.68	-4.66	-0.50	-0.62	-0.10
Cabo Verde	-1.75	-2.00	-2.18	4.90	4.53	5.93
Cameroon	-1.61	-1.89	-2.91	3.19	2.90	3.99
CAR	-0.19	-0.49	0.76	-1.10	-0.91	-3.61
Chad	-1.57	-1.88	-3.67	2.10	1.85	2.90
Congo, Rep.	-1.27	-1.56	-2.15	2.04	1.87	2.07
Cote d'Ivoire	-1.83	-2.09	-2.98	4.43	4.05	5.70
Egypt	-2.76	-3.05	-6.4	6.14	5.47	9.70
Ethiopia	-1.44	-1.76	-3.51	1.51	1.31	2.03
Gambia	-1.13	-1.41	-1.59	1.83	1.70	1.51
Ghana	-1.90	-2.22	-4.84	2.78	2.42	4.40
Guinea	-0.94	-1.25	-1.89	0.37	0.33	-0.31
Guinea-Bissau	-1.18	-1.47	-1.98	1.69	1.55	1.51
Kenya	-1.05	-1.31	-0.56	2.51	2.38	1.91
Lesotho	-0.76	-1.04	-0.45	0.91	0.91	-0.30
Madagascar	-0.64	-0.97	-1.7	-1.21	-1.13	-2.53
Malawi	-0.51	-0.84	-0.96	-1.12	-1.01	-2.78
Mali	-0.69	-1.00	-1.11	-0.25	-0.21	-1.54
Mauritania	-1.67	-1.95	-3.08	3.39	3.08	4.34
Mauritius	-3.33	-3.56	-6.21	9.73	8.82	14.44
Morocco	-2.53	-2.78	-4.74	6.6	5.98	9.50
Mozambique	-0.92	-1.25	-2.23	-0.12	-0.15	-0.80
Namibia	-1.06	-1.27	1.23	4.62	4.44	3.86
Niger	-1.61	-1.94	-4.4	1.56	1.31	2.54
Nigeria	-1.36	-1.69	-3.66	0.89	0.73	1.28
Rwanda	-2.07	-2.42	-6.42	1.99	1.61	4.13
Sao Tome	-1.25	-1.53	-1.63	2.51	2.33	2.45
Senegal	-0.87	-1.16	-0.81	1.21	1.16	0.28
Sierra Leone	-1.38	-1.70	-3.54	1.14	0.96	1.55
South Africa	-1.98	-2.18	-1.28	7.26	6.77	8.67
Swaziland	-0.73	-1.00	0.13	1.41	1.39	0.08
Tanzania	-1.60	-1.95	-4.84	0.98	0.75	1.98
Togo	-1.38	-1.69	-3.07	1.69	1.5	2.06
Tunisia	-2.51	-2.75	-4.01	7.36	6.73	10.16
Uganda	-1.22	-1.53	-2.55	1.28	1.14	1.25
Zambia	-0.69	-0.99	-0.82	0.07	0.10	-1.25

Notes: Computed using equations (2) and (3) of the text (same notes for subsequent tables B2.1b and B2.1c.)

Table B2.1b: Income and Inequality Elasticities (**$1.25**), .**Poverty Gap**

Country	Income Elasticity (Ey)			Inequality Elasticity (Eg)		
	FE	RE	GMM	FE	RE	GMM
Angola	-0.81	-1.33	0.87	1.68	1.73	-1.10
Benin	-2.52	-3.01	-7.30	5.25	4.59	6.56
Botswana	-2.52	-2.87	-2.03	12.64	11.61	12.22
Burkina Faso	-1.14	-1.68	-1.72	0.98	0.97	-0.67
Burundi	-2.26	-2.84	-9.33	0.05	-0.26	1.80
Cabo Verde	-2.41	-2.80	-3.01	10.28	9.40	10.09
Cameroon	-2.34	-2.79	-4.89	7.01	6.32	7.38
CAR	0.02	-0.58	2.38	-3.49	-2.91	-7.44
Chad	-2.41	-2.90	-6.73	5.05	4.44	6.08
Congo, Rep.	-1.79	-2.29	-3.43	4.30	3.91	3.74
Cote d'Ivoire	-2.62	-3.04	-4.83	9.63	8.72	10.21
Egypt	-4.34	-4.70	-12.01	14.63	12.93	18.97
Ethiopia	-2.22	-2.73	-6.47	3.76	3.27	4.55
Gambia	-1.53	-2.03	-2.24	3.62	3.35	2.45
Ghana	-3.02	-3.48	-9.16	6.96	6.06	9.27
Guinea	-1.34	-1.89	-3.14	0.69	0.63	-0.34
Guinea-Bissau	-1.65	-2.16	-3.12	3.49	3.19	2.72
Kenya	-1.26	-1.74	0.11	4.60	4.37	2.45
Lesotho	-0.88	-1.41	0.09	1.23	1.28	-1.24
Madagascar	-0.93	-1.53	-2.98	-2.68	-2.44	-4.09
Malawi	-0.66	-1.26	-1.37	-2.80	-2.47	-4.97
Mali	-0.90	-1.47	-1.54	-0.93	-0.77	-2.85
Mauritania	-2.44	-2.89	-5.22	7.49	6.75	8.05
Mauritius	-5.02	-5.26	-10.98	22.05	19.76	26.61
Morocco	-3.78	-4.12	-8.31	14.90	13.36	17.57
Mozambique	-1.37	-1.94	-3.97	-0.19	-0.22	-0.92
Namibia	-0.99	-1.40	4.37	8.26	7.92	4.49
Niger	-2.59	-3.09	-8.41	4.23	3.61	5.95
Nigeria	-2.15	-2.68	-6.91	2.53	2.13	3.41
Rwanda	-3.48	-3.97	-12.74	5.98	4.99	9.85
Sao Tome	-1.69	-2.16	-2.21	5.06	4.67	4.01
Senegal	-1.08	-1.61	-0.64	1.99	1.94	-0.06
Sierra Leone	-2.16	-2.68	-6.60	3.00	2.57	3.77
South Africa	-2.54	-2.86	-0.65	14.83	13.68	13.98
Swaziland	-0.75	-1.27	1.45	2.01	2.07	-1.00
Tanzania	-2.64	-3.17	-9.47	3.21	2.62	5.33
Togo	-2.08	-2.59	-5.48	3.96	3.50	4.31
Tunisia	-3.65	-3.97	-6.58	16.18	14.62	18.18
Uganda	-1.79	-2.31	-4.43	2.88	2.57	2.65
Zambia	-0.85	-1.41	-0.86	-0.38	-0.23	-2.56

Table B2.1c: Income and Inequality Elasticities (**$1.25**), **Squared Poverty Gap**

Country	Income Elasticity (Ey)			Inequality Elasticity (Eg)		
	FE	RE	GMM	FE	RE	GMM
Angola	-0.72	-1.54	1.96	1.93	2.08	-2.40
Benin	-3.26	-3.96	-10.49	8.56	7.4	10.36
Botswana	-2.98	-3.52	-2.06	19.7	18.06	18.59
Burkina Faso	-1.27	-2.09	-2.06	1.12	1.1	-1.46
Burundi	-3.04	-3.86	-13.83	0.53	-0.14	3.18
Cabo Verde	-2.89	-3.49	-3.68	16.06	14.64	15.38
Cameroon	-2.9	-3.58	-6.71	11.08	9.92	11.37
CAR	0.37	-0.57	4.07	-6.47	-5.46	-12.41
Chad	-3.09	-3.80	-9.62	8.18	7.10	9.55
Congo, Rep.	-2.16	-2.90	-4.57	6.60	5.95	5.57
Cote d'Ivoire	-3.25	-3.86	-6.51	15.24	13.73	15.77
Egypt	-5.74	-6.21	-17.37	24.03	21.11	30.13
Ethiopia	-2.85	-3.59	-9.28	6.10	5.22	7.15
Gambia	-1.77	-2.53	-2.76	5.37	4.94	3.44
Ghana	-3.96	-4.62	-13.29	11.49	9.90	14.77
Guinea	-1.59	-2.41	-4.27	0.83	0.70	-0.79
Guinea-Bissau	-1.97	-2.73	-4.12	5.28	4.77	3.95
Kenya	-1.32	-2.06	0.90	6.66	6.34	3.18
Lesotho	-0.86	-1.68	0.73	1.30	1.43	-2.53
Madagascar	-1.08	-1.98	-4.16	-4.55	-4.20	-6.64
Malawi	-0.66	-1.57	-1.68	-4.94	-4.41	-8.17
Mali	-0.96	-1.83	-1.86	-1.94	-1.68	-4.86
Mauritania	-3.05	-3.71	-7.19	11.89	10.63	12.46
Mauritius	-6.52	-6.82	-15.48	35.71	31.88	41.89
Morocco	-4.86	-5.33	-11.65	24.03	21.45	27.57
Mozambique	-1.67	-2.51	-5.59	-0.48	-0.57	-1.61
Namibia	-0.77	-1.44	7.62	11.99	11.6	5.91
Niger	-3.39	-4.12	-12.25	7.07	5.93	9.54
Nigeria	-2.78	-3.55	-10.01	4.19	3.43	5.42
Rwanda	-4.72	-5.39	-18.85	10.36	8.54	16.05
Sao Tome	-1.96	-2.69	-2.66	7.67	7.04	5.87
Senegal	-1.14	-1.95	-0.36	2.60	2.55	-0.63
Sierra Leone	-2.77	-3.53	-9.51	4.90	4.11	5.96
South Africa	-2.94	-3.44	0.15	23.02	21.23	21.18
Swaziland	-0.63	-1.43	2.86	2.39	2.55	-2.31
Tanzania	-3.52	-4.26	-13.92	5.58	4.47	8.68
Togo	-2.62	-3.37	-7.74	6.29	5.48	6.67
Tunisia	-4.6	-5.05	-8.94	25.87	23.29	28.33
Uganda	-2.21	-2.98	-6.17	4.46	3.91	3.99
Zambia	-0.87	-1.73	-0.79	-1.14	-0.89	-4.48

Table B2.2a: Income and Inequality Elasticities (**$2.00**), **Headcount Ratio**

	Income Elasticity (Ey)			**Inequality Elasticity (Eg)**		
Country	FE	RE	GMM	FE	RE	GMM
Angola	-1.01	-0.75	-0.54	1.43	0.58	0.52
Benin	-1.16	-1.10	-1.41	0.48	0.34	0.69
Botswana	-1.55	-1.38	-1.32	2.10	1.63	1.67
Burkina Faso	-0.97	-0.77	-0.72	0.94	0.29	0.37
Burundi	-0.83	-0.76	-1.10	-0.25	-0.45	-0.06
Cape Verde	-1.43	-1.28	-1.29	1.69	1.27	1.37
Cameroon	-1.26	-1.15	-1.29	1.05	0.74	0.96
CAR	-0.76	-0.45	-0.16	1.14	0.10	-0.02
Chad	-1.16	-1.08	-1.35	0.55	0.36	0.68
Congo, Rep	-1.13	-0.97	-1.03	1.01	0.54	0.69
Cote d'Ivoire	-1.39	-1.28	-1.41	1.33	1.05	1.25
Egypt	-1.61	-1.69	-2.26	0.69	1.05	1.61
Gambia	-1.10	-0.91	-0.90	1.13	0.56	0.65
Ghana	-1.24	-1.23	-1.65	0.36	0.39	0.83
Guinea	-0.95	-0.78	-0.83	0.68	0.14	0.30
Guinea-Bissau	-1.09	-0.93	-0.97	0.97	0.47	0.61
Kenya	-1.16	-0.92	-0.75	1.61	0.86	0.83
Lesotho	-0.99	-0.74	-0.58	1.26	0.47	0.45
Madagascar	-0.79	-0.60	-0.65	0.36	-0.24	-0.08
Mali	-0.88	-0.66	-0.61	0.77	0.08	0.16
Mauritania	-1.28	-1.18	-1.34	1.05	0.77	1.00
Mauritius	-1.98	-2.06	-2.54	1.62	2.00	2.47
Morocco	-1.64	-1.63	-1.96	1.31	1.38	1.74
Namibia	-1.44	-1.19	-0.92	2.39	1.61	1.49
Niger	-1.11	-1.07	-1.45	0.20	0.13	0.54
Nigeria	-1.03	-0.95	-1.24	0.26	0.05	0.40
Rwanda	-1.18	-1.25	-1.90	-0.32	-0.01	0.62
Sao Tome	-1.17	-0.99	-0.97	1.28	0.73	0.81
Senegal	-1.02	-0.80	-0.68	1.22	0.50	0.51
Sierra Leone	-1.05	-0.97	-1.24	0.36	0.13	0.46
South Africa	-1.66	-1.47	-1.31	2.54	1.99	1.95
Swaziland	-1.03	-0.75	-0.51	1.56	0.67	0.57
Tanzania	-1.06	-1.04	-1.49	-0.08	-0.07	0.40
Togo	-1.11	-1.00	-1.19	0.64	0.33	0.60
Tunisia	-1.71	-1.66	-1.88	1.73	1.67	1.94
Uganda	-1.06	-0.92	-1.05	0.70	0.29	0.51
Zambia	-0.91	-0.68	-0.58	0.94	0.20	0.24

Notes: Computed using equations (2) and (3) of the text (same notes for subsequent tables B2.2b and B2.2c.)

Table B2.2b: Income and Inequality Elasticities (**$2.00**), **Poverty Gap**

	Income Elasticity (Ey)			**Inequality Elasticity (Eg)**		
Country	FE	RE	GMM	FE	RE	GMM
Angola	-0.72	-0.83	-0.14	1.32	1.23	0.07
Benin	-1.52	-1.67	-2.94	1.12	1.17	1.64
Botswana	-1.54	-1.61	-1.39	3.59	3.35	3.77
Burkina Faso	-0.88	-1.00	-0.98	0.82	0.81	-0.03
Burundi	-1.18	-1.36	-2.85	-0.5	-0.32	-0.5
Cape Verde	-1.48	-1.57	-1.65	2.89	2.73	3.05
Cameroon	-1.44	-1.56	-2.19	1.86	1.81	2.09
CAR	-0.33	-0.44	0.5	0.28	0.24	-1.68
Chad	-1.47	-1.62	-2.75	1.15	1.19	1.55
Congo, Rep	-1.18	-1.31	-1.63	1.4	1.36	1.14
Cote d'Ivoire	-1.58	-1.69	-2.24	2.5	2.4	2.94
Egypt	-2.39	-2.53	-4.75	2.77	2.76	4.92
Gambia	-1.06	-1.18	-1.22	1.39	1.34	0.85
Ghana	-1.75	-1.91	-3.6	1.29	1.36	2.28
Guinea	-0.97	-1.1	-1.44	0.57	0.6	-0.05
Guinea-Bissau	-1.12	-1.24	-1.51	1.24	1.22	0.86
Kenya	-0.94	-1.03	-0.47	1.93	1.8	1.06
Lesotho	-0.76	-0.87	-0.39	1.11	1.05	-0.04
Madagascar	-0.77	-0.92	-1.3	-0.22	-0.13	-1.15
Mali	-0.76	-0.89	-0.87	0.38	0.4	-0.66
Mauritania	-1.49	-1.61	-2.31	1.93	1.88	2.26
Mauritius	-2.72	-2.81	-4.61	4.69	4.5	7.27
Morocco	-2.13	-2.24	-3.53	3.32	3.2	4.82
Namibia	-1.16	-1.21	-0.21	3.44	3.16	2.82
Niger	-1.55	-1.71	-3.28	0.73	0.83	1.36
Nigeria	-1.35	-1.51	-2.74	0.52	0.61	0.74
Rwanda	-1.97	-2.15	-4.77	0.59	0.77	2.15
Sao Tome	-1.14	-1.25	-1.25	1.74	1.66	1.32
Senegal	-0.85	-0.96	-0.65	1.2	1.14	0.25
Sierra Leone	-1.35	-1.5	-2.65	0.67	0.75	0.87
South Africa	-1.56	-1.61	-0.99	4.29	3.98	4.41
Swaziland	-0.7	-0.79	0.04	1.48	1.36	0.15
Tanzania	-1.57	-1.75	-3.61	0.35	0.5	1.09
Togo	-1.32	-1.46	-2.31	1.05	1.08	1.13
Tunisia	-2.07	-2.16	-2.99	3.85	3.66	5.15
Uganda	-1.18	-1.32	-1.93	0.93	0.95	0.73
Zambia	-0.74	-0.86	-0.66	0.6	0.6	-0.51

Notes: Computed using equations (2) and (3) of the text.

Table B2.2c: Income and Inequality Elasticities (**$2.00**), **Squared Poverty Gap**

	Income Elasticity (Ey)			**Inequality Elasticity (Eg)**		
Country	FE	RE	GMM	FE	RE	GMM
Angola	-0.75	-0.89	0.06	1.66	1.62	-0.28
Benin	-2.04	-2.18	-4.28	2.01	2.03	2.77
Botswana	-1.80	-1.87	-1.65	5.61	5.25	6.05
Burkina Faso	-1.04	-1.20	-1.28	1.05	1.09	-0.31
Burundi	-1.66	-1.86	-4.29	-0.64	-0.38	-0.79
Cape Verde	-1.79	-1.87	-2.13	4.55	4.29	4.91
Cameroon	-1.83	-1.95	-3.05	3.02	2.92	3.40
CAR	-0.23	-0.41	0.95	-0.19	-0.07	-3.29
Chad	-1.95	-2.09	-3.97	2.01	2.02	2.59
Congo, Rep	-1.47	-1.61	-2.24	2.14	2.10	1.73
Cote d'Ivoire	-1.99	-2.08	-3.06	4.06	3.86	4.81
Egypt	-3.23	-3.32	-6.91	5.11	4.89	8.50
Gambia	-1.28	-1.41	-1.60	2.02	1.98	1.19
Ghana	-2.39	-2.52	-5.28	2.45	2.44	3.95
Guinea	-1.21	-1.38	-2.02	0.75	0.84	-0.27
Guinea-Bissau	-1.38	-1.52	-2.06	1.86	1.84	1.25
Kenya	-1.03	-1.15	-0.39	2.71	2.59	1.40
Lesotho	-0.82	-0.97	-0.34	1.38	1.37	-0.42
Madagascar	-0.98	-1.18	-1.87	-0.56	-0.36	-2.11
Mali	-0.90	-1.07	-1.15	0.32	0.43	-1.37
Mauritania	-1.90	-2.02	-3.23	3.17	3.06	3.70
Mauritius	-3.56	-3.58	-6.51	8.17	7.67	12.38
Morocco	-2.77	-2.83	-4.98	5.69	5.39	8.14
Namibia	-1.22	-1.28	0.14	5.09	4.74	4.28
Niger	-2.12	-2.28	-4.84	1.47	1.54	2.37
Nigeria	-1.82	-1.98	-4.02	0.99	1.09	1.25
Rwanda	-2.80	-2.95	-7.14	1.60	1.71	3.91
Sao Tome	-1.36	-1.49	-1.61	2.60	2.50	1.97
Senegal	-0.97	-1.11	-0.74	1.59	1.57	0.09
Sierra Leone	-1.81	-1.97	-3.87	1.22	1.29	1.46
South Africa	-1.76	-1.80	-0.97	6.65	6.18	7.05
Swaziland	-0.69	-0.83	0.36	1.86	1.80	-0.18
Tanzania	-2.20	-2.36	-5.38	0.93	1.06	1.97
Togo	-1.72	-1.87	-3.30	1.74	1.76	1.82
Tunisia	-2.62	-2.67	-4.10	6.42	6.03	8.60
Uganda	-1.52	-1.67	-2.73	1.45	1.48	1.10
Zambia	-0.85	-1.01	-0.80	0.62	0.70	-1.16

Notes: Computed using equations (2) and (3) of the text.

Table B3.1a: Contributions of Growths in Inequality and Income to Poverty Reduction (Late-1990s to Present) – Based on optimally selected **Fixed Effects** Results (**$1.25**), **Headcount Ratio**

Countries experiencing poverty reduction

				A	B	A+B
Country	**Period**	**Sub-Region**	**Headct. Pov. Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Headct. Pov. Grth.**
Angola	2000-2009	SA	-2.65	0.44	-4.48	-4.04
Botswana	2003-2009	SA	-8.88	-3.97	-6.20	-10.17
Burkina Faso	1998-2009	WA	-4.13	-2.35	-0.94	-3.30
Burundi	1992-2006	CA	-0.25	-1.00	0.01	-0.99
Cabo Verde	2002-2008	WA	-7.34	1.42	-12.00	-10.58
Cameroon	1996-2007	CA	-4.92	-4.02	-2.62	-6.64
Chad	2003-2011	CA	-6.21	-9.16	2.09	-7.07
Congo, Rep.	2005-2011	CA	-8.33	-5.33	-5.58	-10.91
Egypt	1996-2008	NA	-3.05	-3.38	1.00	-2.38
Ethiopia	2000-2011	EA	-3.58	-3.25	1.55	-1.70
Gambia	1998-2003	WA	-13.37	-15.01	-2.21	-17.22
Ghana	1998-2006	WA	-4.33	-6.49	1.84	-4.65
Guinea	2003-2012	WA	-3.56	-1.36	-0.73	-2.09
Guinea-Bissau	1993-2002	WA	-3.22	-1.31	-5.59	-6.90
Malawi	1998-2010	SA	-1.12	-0.94	0.75	-0.19
Mali	2001-2010	WA	-2.11	-0.82	0.54	-0.28
Morocco	1999-2007	NA	-11.38	-6.30	2.75	-3.55
Mozambique	1996-2009	SA	-2.28	-3.10	-0.03	-3.13
Namibia	2004-2010	SA	-5.22	-2.00	-3.26	-5.27
Niger	2005-2011	WA	-3.80	1.38	-10.27	-8.89
Nigeria	1996-2010	WA	-0.75	-0.69	-0.52	-1.21
Rwanda	2000-2011	CA	-2.13	-7.54	-0.25	-7.79
Senegal	2001-2011	WA	-2.59	-1.30	-0.28	-1.57
Sierra Leone	2003-2011	WA	-0.61	-0.05	-1.57	-1.62
South Africa	2000-2011	SA	-9.59	-13.65	8.04	-5.61
Swaziland	2001-2010	SA	-1.00	-0.17	-0.57	-0.73
Tanzania	2000-2012	EA	-5.82	-10.96	0.76	-10.20
Togo	2006-2011	WA	-0.26	-1.31	2.87	1.56
Tunisia	2000-2010	NA	-11.90	-5.40	-9.29	-14.69
Uganda	1996-2013	EA	-3.14	-4.13	1.43	-2.70
Mean			**-4.58**	**-3.73**	**-1.43**	**-5.15**

Countries experiencing poverty increases

				A	B	A+B
Country	**Period**	**Sub-Region**	**Headct. Pov. Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Headct. Pov. Grth.**
Benin	2003-2012	WA	1.02	-0.68	3.01	2.33
CAR	2003-2008	CA	0.13	-0.78	-5.65	-6.43
Cote d'Ivoire	1998-2008	WA	1.53	0.14	4.45	4.59
Kenya	1997-2005	EA	3.68	2.81	0.82	3.63
Lesotho	2003-2010	SA	0.25	-0.43	0.61	0.18
Madagascar	1997-2010	EA	1.51	1.71	-0.34	1.37
Mauritania	1996-2008	NA	0.01	-0.94	2.21	1.27
Mauritius	2006-2012	EA	11.94	-0.23	1.00	0.76
Sao Tome	2001-2010	CA	4.58	7.80	-10.73	-2.93
Zambia	1996-2010	SA	1.29	0.82	0.07	0.89
Mean			**2.59**	**1.02**	**-0.46**	**0.57**

Notes: A: Predicted poverty growth by income, B: predicted poverty growth by inequality; A+B: predicted poverty growth due to both income and inequality. Computation based on equations (2) and (3) of the text.

Table B3.1b: Contributions of Growths in Inequality and Income to Poverty Reduction (Late-1990s to Present) – Based on optimally selected **Random Effects** Results (**$1.25**), **Poverty Gap**

Countries experiencing poverty reduction

				A	B	A+B
Country	**Period**	**Sub-Region**	**Pov. Gap Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Pov. Gap Grth.**
Angola	2000-2009	SA	-7.05	0.78	-6.49	-5.70
Botswana	2003-2009	SA	-11.47	-6.04	-11.79	-17.83
Burkina Faso	1998-2009	WA	-6.61	-4.59	-1.44	-6.03
Burundi	1992-2006	CA	-0.71	-2.14	0.00	-2.14
Cabo Verde	2002-2008	WA	-11.07	2.27	-23.02	-20.75
Cameroon	1996-2007	CA	-7.13	-7.00	-5.19	-12.19
Chad	2003-2011	CA	-6.97	-16.96	4.43	-12.53
Congo, Rep.	2005-2011	CA	-11.46	-9.61	-10.68	-20.29
Ethiopia	2000-2011	EA	-3.78	-6.19	3.36	-2.82
Gambia	1998-2003	WA	-21.24	-26.98	-4.06	-31.04
Ghana	1998-2006	WA	-5.15	-11.89	4.02	-7.86
Guinea	2003-2012	WA	-5.74	-2.73	-1.26	-3.99
Guinea-Bissau	1993-2002	WA	-6.23	-2.39	-10.56	-12.95
Malawi	1998-2010	SA	-2.34	-2.29	1.66	-0.63
Mali	2001-2010	WA	-4.99	-1.75	1.65	-0.10
Mauritania	1996-2008	NA	-0.31	-1.62	4.40	2.78
Morocco	1999-2007	NA	-8.68	-10.28	5.56	-4.72
Mozambique	1996-2009	SA	-3.75	-6.52	-0.05	-6.57
Namibia	2004-2010	SA	-8.55	-2.64	-5.60	-8.24
Niger	2005-2011	WA	-11.27	2.65	-23.75	-21.10
Nigeria	1996-2010	WA	-1.17	-1.36	-1.24	-2.61
Rwanda	2000-2011	CA	-4.19	-14.47	-0.62	-15.09
Senegal	2001-2011	WA	-2.56	-2.38	-0.45	-2.83
Sierra Leone	2003-2011	WA	-2.07	-0.10	-3.54	-3.64
South Africa	2000-2011	SA	-18.07	-19.75	15.16	-4.59
Tanzania	2000-2012	EA	-10.16	-21.68	2.04	-19.64
Tunisia	2000-2010	NA	-8.01	-8.51	-18.45	-26.97
Uganda	1996-2013	EA	-4.25	-7.85	2.87	-4.97
Mean			**-6.96**	**-6.86**	**-2.97**	**-9.82**

Countries experiencing poverty increases

				A	B	A+B
Country	**Period**	**Sub-Region**	**Pov. Gap Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Pov. Gap Grth.**
Benin	2003-2012	WA	2.11	-1.26	6.47	5.21
CAR	2003-2008	CA	1.99	-2.36	-14.94	-17.30
Cote d'Ivoire	1998-2008	WA	3.52	0.23	8.76	8.99
Egypt	1996-2008	NA	0.68	-5.75	2.11	-3.65
Kenya	1997-2005	EA	6.45	4.67	1.43	6.09
Lesotho	2003-2010	SA	0.54	-0.79	0.85	0.05
Madagascar	1997-2010	EA	3.02	4.12	-0.69	3.43
Mauritius	2006-2012	EA	15.74	-0.37	2.02	1.66
Sao Tome	2001-2010	CA	6.02	13.50	-19.95	-6.45
Swaziland	2001-2010	SA	0.27	-0.29	-0.83	-1.12
Togo	2006-2011	WA	2.05	-2.45	5.92	3.48
Zambia	1996-2010	SA	2.49	1.69	-0.24	1.45
Mean			**3.74**	**0.91**	**-0.76**	**0.15**

Notes: Same as for table B3.1a.

Table B3.1c: Contributions of Growths in Inequality and Income to Poverty Reduction (Late-1990s to Present) – Based on optimally selected **Random Effects** Results (**$1.25**), **Squared Poverty Gap**

Countries experiencing poverty reduction

				A	B	A+B
Country	**Period**	**Sub-Region**	**Sq. Pov. Gap Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Sq. Pov. Gap Grth.**
Angola	2000-2009	SA	-10.85	0.91	-7.77	-6.86
Botswana	2003-2009	SA	-12.73	-7.40	-18.34	-25.75
Burkina Faso	1998-2009	WA	-8.34	-5.71	-1.64	-7.35
Burundi	1992-2006	CA	-1.26	-2.92	0.00	-2.92
Cabo Verde	2002-2008	WA	-13.07	2.82	-35.85	-33.03
Cameroon	1996-2007	CA	-8.99	-8.96	-8.15	-17.11
Chad	2003-2011	CA	-7.11	-22.22	7.08	-15.14
Congo, Rep.	2005-2011	CA	-13.35	-12.19	-16.25	-28.43
Ethiopia	2000-2011	EA	-3.88	-8.12	5.36	-2.76
Gambia	1998-2003	WA	-27.57	-33.67	-5.98	-39.66
Ghana	1998-2006	WA	-5.15	-15.76	6.58	-9.19
Guinea	2003-2012	WA	-7.23	-3.50	-1.40	-4.89
Guinea-Bissau	1993-2002	WA	-8.43	-3.03	-15.79	-18.81
Malawi	1998-2010	SA	-3.17	-2.86	2.95	0.09
Mali	2001-2010	WA	-7.45	-2.18	3.60	1.41
Mauritania	1996-2008	NA	-0.73	-2.08	6.94	4.85
Morocco	1999-2007	NA	-4.03	-13.29	8.92	-4.37
Mozambique	1996-2009	SA	-4.59	-8.47	-0.12	-8.59
Namibia	2004-2010	SA	-11.60	-2.71	-8.20	-10.91
Niger	2005-2011	WA	-17.62	3.53	-39.07	-35.54
Nigeria	1996-2010	WA	-1.48	-1.80	-2.01	-3.81
Rwanda	2000-2011	CA	-5.74	-19.62	-1.06	-20.68
Senegal	2001-2011	WA	-2.47	-2.89	-0.59	-3.47
Sierra Leone	2003-2011	WA	-3.29	-0.13	-5.66	-5.79
South Africa	2000-2011	SA	-26.16	-23.69	23.52	-0.17
Tanzania	2000-2012	EA	-13.61	-29.17	3.47	-25.70
Tunisia	2000-2010	NA	-3.90	-10.85	-29.39	-40.24
Uganda	1996-2013	EA	-5.22	-10.12	4.37	-5.76
Mean			**-8.54**	**-8.79**	**-4.45**	**-13.24**

Countries experiencing poverty increases

				A	B	A+B
Country	**Period**	**Sub-Region**	**Sq. Pov. Gap Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Sq. Pov. Gap Grth.**
Benin	2003-2012	WA	2.58	-1.66	10.41	8.75
CAR	2003-2008	CA	3.63	-2.33	-28.01	-30.34
Cote d'Ivoire	1998-2008	WA	5.40	0.29	13.80	14.08
Egypt	1996-2008	NA	5.09	-7.60	3.44	-4.16
Kenya	1997-2005	EA	9.15	5.54	2.07	7.61
Lesotho	2003-2010	SA	0.62	-0.95	0.95	0.00
Madagascar	1997-2010	EA	3.82	5.33	-1.19	4.14
Mauritius	2006-2012	EA	19.39	-0.48	3.27	2.79
Sao Tome	2001-2010	CA	7.51	16.79	-30.07	-13.28
Swaziland	2001-2010	SA	1.70	-0.33	-1.03	-1.36
Togo	2006-2011	WA	4.32	-3.18	9.28	6.10
Zambia	1996-2010	SA	3.22	2.07	-0.92	1.15
Mean			**5.54**	**1.12**	**-1.50**	**-0.38**

Notes: Same as for table B3.1a.

Table B3.2a: Contributions of Growths in Inequality and Income to Poverty Reduction (Late-1990s to Present) – Based on optimally selected **Random Effects** Results (**$2.00**), **Headcount Ratio**

Countries experiencing poverty reduction

				A	B	A+B
Country	**Period**	**Sub-Region**	**Pov. Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Pov. Grth.**
Angola	2000-2009	SA	-0.52	0.44	-2.18	-1.73
Benin	2003-2012	WA	-0.15	-0.46	0.48	0.02
Botswana	1994-2009	SA	-3.86	-5.13	-0.09	-5.21
Burkina Faso	2003-2009	WA	-0.04	-0.14	-0.40	-0.54
Burundi	1992-2006	CA	-0.13	-0.58	0.01	-0.57
Cameroon	1996-2007	CA	-2.75	-2.87	-0.61	-3.48
Cape Verde	2002-2008	WA	-2.89	1.03	-3.11	-2.08
CAR	1992-2008	CA	-0.84	-2.10	-0.06	-2.15
Chad	2003-2011	CA	-3.83	-6.32	0.36	-5.96
Congo, Rep	2005-2011	CA	-4.48	-4.09	-1.47	-5.57
Egypt	1991-2008	NA	-3.40	-1.17	-0.24	-1.40
Gambia	1998-2008	WA	-7.61	-12.18	-0.67	-12.85
Ghana	1992-2006	WA	-2.93	-4.39	0.32	-4.08
Guinea	1991-2012	WA	-1.52	-4.96	-0.22	-5.18
Guinea-Bissau	1993-2002	WA	-0.95	-1.03	-1.56	-2.58
Lesotho	1993-2010	SA	-0.49	-0.92	-0.18	-1.10
Mali	1994-2010	WA	-1.13	-2.74	-0.22	-2.96
Mauritania	1993-2008	NA	-2.47	-1.37	-1.09	-2.46
Morocco	1991-2007	NA	-0.70	-0.31	0.35	0.04
Namibia	2004-2010	SA	-2.95	-2.24	-1.14	-3.38
Niger	1992-2011	WA	-0.98	-2.32	-0.10	-2.42
Rwanda	1985-2011	CA	-1.21	-4.21	0.01	-4.20
Senegal	1991-2011	WA	-1.54	-1.64	-0.73	-2.37
South Africa	1993-2011	SA	-2.59	-5.15	1.03	-4.11
Swaziland	2001-2010	SA	-0.92	-0.17	-0.27	-0.44
Tanzania	1992-2012	EA	-1.14	-2.69	-0.04	-2.74
Togo	2006-2011	WA	-0.69	-0.94	0.57	-0.38
Tunisia	1990-2010	NA	-7.21	-3.34	-0.96	-4.30
Uganda	1996-2013	EA	-1.90	-3.12	0.33	-2.80
Mean			**-2.13**	**-2.59**	**-0.41**	**-3.00**

Countries experiencing poverty increases

				A	B	A+B
Country	**Period**	**Sub-Region**	**Pov. Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Pov. Grth.**
Cote d'Ivoire	1993-2008	WA	1.03	0.86	0.65	1.51
Kenya	1992-2005	EA	0.94	2.39	-1.20	1.19
Madagascar	1997-2010	EA	0.50	1.62	-0.07	1.55
Mauritius	2006-2012	EA	5.31	-0.14	0.20	0.06
Nigeria	1992-2010	WA	0.13	-0.25	-0.01	-0.26
Sao Tome	2001-2010	CA	3.19	6.17	-3.10	3.07
Sierra Leone	2003-2011	WA	0.07	-0.04	-0.18	-0.22
Zambia	1993-2006	SA	0.17	-0.04	0.06	0.02
Mean			**1.42**	**1.32**	**-0.46**	**0.86**

Notes: Same as for table B3.1a.

Table B3.2b: Contributions of Growths in Inequality and Income to Poverty Reduction (Late-1990s to Present) – Based on optimally selected **Fixed Effects** Results (**$2.00**), **Poverty Gap**

Countries experiencing poverty reduction

				A	B	A+B
Country	**Period**	**Sub-Region**	**Pov. Gap Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Pov. Gap Grth.**
Angola	2000-2009	SA	-3.57	0.43	-4.96	-4.53
Botswana	1994-2009	SA	-5.12	-5.71	-0.19	-5.90
Burkina Faso	2003-2009	WA	-1.58	-0.16	-1.13	-1.29
Burundi	1992-2006	CA	-0.41	-0.89	0.01	-0.89
Cameroon	1996-2007	CA	-4.57	-3.61	-7.08	-5.88
Cape Verde	2002-2008	WA	-5.45	1.20	-1.53	-5.14
CAR	1992-2008	CA	-2.51	-1.54	-0.15	-1.69
Chad	2003-2011	CA	-5.63	-8.60	1.15	-7.45
Congo, Rep	2005-2011	CA	-8.01	-4.98	-3.81	-8.79
Egypt	1991-2008	NA	-4.28	-1.65	-0.62	-2.27
Gambia	1998-2008	WA	-14.17	-14.11	-1.68	-15.79
Ghana	1992-2006	WA	-3.83	-6.26	1.06	-5.20
Guinea	1991-2012	WA	-4.61	-6.13	-0.89	-7.02
Guinea-Bissau	1993-2002	WA	-3.34	-1.24	-4.11	-5.35
Lesotho	1993-2010	SA	-1.19	-0.93	-0.44	-1.37
Mali	1994-2010	WA	-4.09	-3.14	-1.02	-4.15
Mauritania	1993-2008	NA	-3.68	-1.74	-2.74	-4.48
Morocco	1991-2007	NA	-0.42	-0.41	0.84	0.44
Namibia	2004-2010	SA	-4.97	-2.18	-2.43	-4.62
Niger	1992-2011	WA	-2.89	-3.36	-0.57	-3.92
Nigeria	1992-2010	WA	-0.23	-0.35	-0.13	-0.48
Rwanda	1985-2011	CA	-3.15	-6.60	-0.51	-7.11
Senegal	1991-2011	WA	-3.47	-1.75	-1.77	-3.53
Sierra Leone	2003-2011	WA	-0.79	-0.05	-0.93	-0.98
South Africa	1993-2011	SA	-4.54	-5.46	2.22	-3.24
Swaziland	2001-2010	SA	-0.58	-0.16	-0.60	-0.76
Tanzania	1992-2012	EA	-2.47	-4.07	0.20	-3.87
Tunisia	1990-2010	NA	-8.58	-4.16	-2.21	-6.37
Uganda	1996-2013	EA	-3.01	-4.01	1.03	-2.97
Mean			**-3.83**	**-3.16**	**-1.14**	**-4.30**

Countries experiencing poverty increases

				A	B	A+B
Country	**Period**	**Sub-Region**	**Pov. Gap Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Pov. Gap Grth.**
Benin	2003-2012	WA	0.85	-0.64	1.58	0.94
Cote d'Ivoire	1993-2008	WA	1.82	1.06	1.55	2.61
Kenya	1992-2005	EA	0.88	2.44	-2.68	-0.24
Madagascar	1997-2010	EA	1.82	2.07	-0.06	2.01
Mauritius	2006-2012	EA	9.51	-0.19	0.48	0.29
Sao Tome	2001-2010	CA	4.40	7.09	-7.42	-0.33
Togo	2006-2011	WA	0.38	-1.24	1.77	0.53
Zambia	1993-2006	SA	0.28	-0.05	0.17	0.13
Mean			**2.49**	**1.32**	**-0.58**	**0.74**

Notes: Same as for table B3.1a.

Table B3.2c: Contributions of Growths in Inequality and Income to Poverty Reduction (Late-1990s to Present) – Based on optimally selected **Fixed Effects** Results (**$2.00**), **Squared Poverty Gap**

Countries experiencing poverty reduction

				A	B	A+B
Country	**Period**	**Sub-Region**	**Sq. Pov. Gap Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Sq. Pov. Gap Grth.**
Angola	2000-2009	SA	-6.15	0.44	-6.21	-5.77
Botswana	1994-2009	SA	-5.92	-6.70	-0.30	-7.00
Burkina Faso	2003-2009	WA	-2.83	-0.19	-1.45	-1.64
Burundi	1992-2006	CA	-0.68	-1.26	0.01	-1.25
Cameroon	1996-2007	CA	-5.86	-4.59	-11.14	-9.70
Cape Verde	2002-2008	WA	-7.06	1.45	-2.48	-7.07
CAR	1992-2008	CA	-3.69	-1.09	0.10	-0.99
Chad	2003-2011	CA	-6.38	-11.41	2.00	-9.41
Congo, Rep	2005-2011	CA	-10.11	-6.19	-5.84	-12.03
Egypt	1991-2008	NA	-3.80	-2.23	-1.15	-3.38
Gambia	1998-2008	WA	-18.90	-16.99	-2.45	-19.44
Ghana	1992-2006	WA	-4.21	-8.52	2.00	-6.52
Guinea	1991-2012	WA	-6.85	-7.71	-1.18	-8.89
Guinea-Bissau	1993-2002	WA	-5.15	-1.53	-6.15	-7.68
Lesotho	1993-2010	SA	-1.61	-1.02	-0.55	-1.56
Mali	1994-2010	WA	-6.31	-3.74	-0.84	-4.58
Mauritania	1993-2008	NA	-4.45	-2.22	-4.49	-6.71
Namibia	2004-2010	SA	-6.62	-2.30	-3.60	-5.89
Niger	1992-2011	WA	-4.32	-4.59	-1.14	-5.73
Nigeria	1992-2010	WA	-0.62	-0.47	-0.26	-0.73
Rwanda	1985-2011	CA	-4.67	-9.39	-1.38	-10.77
Senegal	1991-2011	WA	-4.89	-1.99	-2.34	-4.33
Sierra Leone	2003-2011	WA	-1.55	-0.07	-1.67	-1.74
South Africa	1993-2011	SA	-6.34	-6.18	3.45	-2.73
Tanzania	1992-2012	EA	-3.42	-5.68	0.52	-5.16
Tunisia	1990-2010	NA	-9.09	-5.27	-3.69	-8.96
Uganda	1996-2013	EA	-3.74	-5.15	1.62	-3.53
Mean			**-5.38**	**-4.24**	**-1.80**	**-6.04**

Countries experiencing poverty increases

				A	B	A+B
Country	**Period**	**Sub-Region**	**Sq. Pov. Gap Grth.**	**Ey*dlnY**	**Eg*dlnG**	**Pred. Sq. Pov. Gap Grth.**
Benin	2003-2012	WA	1.55	-0.85	2.84	1.98
Cote d'Ivoire	1993-2008	WA	2.46	1.33	2.52	3.85
Kenya	1992-2005	EA	0.72	2.68	-3.78	-1.10
Madagascar	1997-2010	EA	2.64	2.65	-0.16	2.49
Mauritius	2006-2012	EA	13.00	-0.25	0.84	0.59
Morocco	1991-2007	NA	0.40	-0.53	1.45	0.92
Sao Tome	2001-2010	CA	5.27	8.50	-11.08	-2.59
Swaziland	2001-2010	SA	0.00	-0.16	-0.75	-0.91
Togo	2006-2011	WA	1.56	-1.63	2.94	1.32
Zambia	1993-2006	SA	0.24	-0.05	0.18	0.13
Mean			**2.78**	**1.17**	**-0.50**	**0.67**

Notes: Same as for table B3.1a.