

AERC Explaining African Economic Growth Project

Background Information on Economic Growth

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Corresponding to each section of O'Connell/Ndulu (2000) we define the key variables, present the estimation results where relevant, and provide country-by-country fits and residuals. We describe the calculation of regression-based decompositions. The underlying country-level data are provided in a set of accompanying spreadsheets, which are described here in detail. These spreadsheets contain raw data, estimation results, and a set of alternative benchmarks against which the performance of African countries can be compared.

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1. Overview

The aim of the O’Connell/Ndulu framework paper¹ is to help country teams develop analytical narratives that are consistent with cross-country evidence and to that degree also mutually consistent. To that end the paper provides evidence on patterns of sectoral transformation during growth, on the relative importance of factor accumulation and productivity, and on the contributions of external shocks, policy, and other variables to predicted growth. The present document presents the empirical results in detail. Corresponding to each section of O’Connell/Ndulu we define the key variables, present the estimation results where relevant, and provide country-by-country fits and residuals. Raw data are provided in an accompanying set of country spreadsheets, along with a set of alternative benchmarks against which the performance of African countries can be compared. Table 1 lists the 34 case study countries in Sub-Saharan Africa and their 3-digit codes (“CCC”).

While a huge empirical literature testifies to the burgeoning supply of comparable cross-country data on economic growth, most case study teams will find major gaps in these results due to missing observations. An early priority should be filling these gaps where possible. We have done this to a substantial degree already, for example by splicing GDP deflators with consumer price indexes to extend the inflation series. But large gaps remain for many variables, and in many cases national-level sources will be available to fill these gaps. Fiscal deficits, for example, are available from World Bank and IMF data only from 1970; it will be possible in some cases to extend these to 1965-69 period or even 1960-64 using national data. For our “preferred” policy-inclusive specification, the country spreadsheets allow missing values to be supplied by country teams, with the results updated automatically.

Missing data pose a second general problem, which is that the regression panels are unbalanced and differ from regression to regression. This creates a problem in defining a meaningful benchmark for individual-country experience. With the country composition of regions differing over time and across regressions, one cannot unambiguously compare, say, Cameroon’s performance over time with that of “Sub-Saharan Africa” or “East Asia”. *Our approach is to compare individual-country experience with the regression-specific sample mean.* These comparators are also subject to compositional effects across regressions, but they are less severe than when a regional sub-sample is used.

In the following section we provide a guide to the country spreadsheets and review the calculations underlying the regression-based decompositions reported in subsequent sections and in Ndulu and O’Connell (2000). Sections 3 – 6 then provide the empirical results in detail.

¹ See O’Connell and Ndulu (2000), “Africa’s Growth Experience: A Focus on Sources of Growth,” April.

Table 1. Case study countries.

Angola	AGO	Malawi	MWI
Benin	BEN	Mali	MLI
Botswana	BWA	Mauritius	MUS
Burkina Faso	BFA	Mozambique	MOZ
Burundi	BDI	Namibia	NAM
Cameroon	CMR	Niger	NER
C. A. R.	CAF	Nigeria	NGA
Chad	TCD	Rwanda	RWA
Congo, D. R.	ZAR	Senegal	SEN
Congo, Rep.	COG	Sierra Leone	SLE
Cote d'Ivoire	CIV	South Africa	ZAF
Ethiopi	ETH	Sudan	SDN
Gabon	GAB	Tanzania	TZA
Ghana	GHA	Togo	TGO
Guinea	GIN	Uganda	UGA
Kenya	KEN	Zambia	ZMB
Madagascar	MDG	Zimbabwe	ZWE

2. Guide to country spreadsheets and calculations

2.1 The data

Each country spreadsheet (titled *CCC.xls* where *CCC* is the 3-digit code appearing in Table 1) contains 11 worksheets, as listed in Table 2. We encourage country teams make a backup copy of this spreadsheet so that they can manipulate the duplicate without fear of losing the original data or formatting.

Raw data appear in **avars** and **hvars** and are documented in **Variables**. Data are provided for all variables used in O’Connell and Ndulu (2000), including the variables that appear only in the partial correlation analysis. Since the halfdecadal variables in **hdat** are constructed from the annual data in **avars**, they can be reproduced from these data using the definitions in **Variables**. The remaining worksheets pertain to individual empirical models presented in O’Connell and Ndulu (2000).

Missing values are entered as blanks in **avars** and **hvars**. As indicated in Table 2, halfdecadal observations may be missing *either* because the annual data were not available or because criteria for inclusion in the halfdecadal sample were not satisfied. The general criterion for inclusion is that *at least half of the relevant annual observations be available for calculation of the halfdecade average*. Where this fails, the halfdecadal observation is treated as missing and entered as a blank. In some cases this criterion is clearly not relevant, as for example when growth rates are calculated using endpoint data only. Some variables have additional criteria that arose in the course of estimation; for example, *infl* and *bmpL*, the average inflation rate and black market premium, respectively, are defined as available in the halfdecade data only if their value is 500% or below; otherwise they are treated as missing even if the annual data are available. Any variable-specific inclusion criteria are noted in Table 2 of the **Variables** worksheet, which gives definitions for the halfdecadal variables.

The halfdecadal data sheet **hvars** shows, along with the raw data, the percentile rank of each observation in the distribution of *all available halfdecadal observations* for SSA, Developing Countries, and All Countries. These ranks provide a quick way of “locating” an individual country’s values in the overall distribution of each variable. Some caution is of course useful here. The reference sub-samples include all halfdecades, so part of an individual country’s evolution may reflect a period effect. A variable like the inflation rate, for example, tends to fall worldwide starting in the mid-1980s, and this is reflected in a general tendency for individual-country percentile ranks to rise.

A more complete assessment of a country’s location in the space of growth and its correlates is given in worksheets 4 and 5, which correspond to the two main growth specifications presented in Ndulu and O’Connell (2000). For both the Augmented Solow model of Hoeffler (2000) (results for which appear in Section 5 below) and the “Pooled Full Specification #1” (Section 6 below), these worksheets provide the coefficient estimates and period-by-period distributional information on the regression sample. Distributional information is provided for 4 sub-groups: All countries, Developing countries, SSA, and High-Performing Asian Economies (HPAE: Hong Kong, Indonesia, Korea, Malaysia, Singapore, Taiwan, Thailand). These data can be used either to reproduce the decompositions reported in the present paper – where we use the full sample means as reference points – or to generate decompositions for one or more of the three alternative reference groups.

Worksheets 6-11 present the results of fixed-effects regressions for the six sectoral variables considered in Section 2.3 of O’Connell and Ndulu (2000). Our expectation is that country teams will make somewhat less intensive use of these results

than of the growth accounting and growth regression results. We include them on the possibility that sectoral themes may prove important in the overall narrative.

2.2 Regression-based decompositions

As motivation for the calculations of fits, residuals and contributions reported below and in O’Connell and Ndulu (2000), consider the following estimated equation using halfdecadal data (this logic applies as well to worksheets 5 – 11 which pertain to sectoral dependent variables rather than growth):

$$(1) \quad g_{it} = b_1 x_{1it} + \dots + b_K x_{Kit} + e_{it}.$$

Here b and e are vectors of estimated coefficients and prediction errors, respectively. The vector x contains all explanatory variables in the regression, so that x_j might be initial income, for example. Note that in some cases we will be able to calculate prediction errors for observations that were not used in estimating b ; an example is the sys-GMM estimation, which uses only 404 observations for estimation but generates prediction errors for 489 observations. The discrepancy occurs because instruments are not available for the 85 countries in the initial (1960-65) halfdecade.

Given the estimated parameters b_k , the contribution of the k th explanatory variable (for country j in period t) is calculated by multiplying the estimated coefficient on variable k by the deviation between the observed explanatory variable and its overall regression sample mean, $x_{k..}$:

$$(2) \quad C_{kit} \equiv b_k (x_{kit} - x_{k..}).$$

The interpretation here is that C_{kit} gives *the contribution of variable k to the predicted deviation of g_{it} from its sample mean*. The relevant sample means are provided in Table 2 of each regression worksheet, in the bottom right-hand cell of each variable’s distribution matrix. The contribution of the overall fit is then simply the sum of these contributions across all K explanatory variables. The contribution of the residual is the difference $e_{it} - e_{..}$ between the observed residual and the overall average residual.

Combining the data in **hdat** with the regression parameters and sample means in worksheets 4 – 11, country teams can reproduce the ‘fits and residuals and contributions’ presented in the tables below. For this purpose each of these worksheets contains a Table 1 with estimation results (the estimated parameters b_k) and a Table 2 with distributional information (including the overall means $x_{k..}$). While the contributions reported above use the overall sample mean as benchmark, alternative benchmarks may also be useful analytically; these can be drawn from Table 2 in each worksheet.

We add a brief note here on *beta coefficients*, which are often reported along with coefficient estimates in O’Connell and Ndulu (2000). These provide an indication of a variable’s likely influence on predicted growth at the country level; they are closely related to the ‘contributions’ defined above. The beta coefficient for variable x_k is defined in the standard way as

$$(3) \quad \text{Beta}_k = b_k \frac{\text{stdev}(x_k)}{\text{stdev}(g)} = \frac{\text{stdev}(C_k)}{\text{stdev}(g)},$$

where g is the dependent variable and where we have treated b_k as a constant to obtain the second equality. A large beta coefficient therefore indicates a substantial “typical” contribution to the fit. Note that when estimation is by OLS, the fitted value and the residual are orthogonal, so that $Beta^2(\text{fit}) + Beta^2(\text{residual}) = 1$. The overall variance of the dependent variable is therefore cleanly apportioned between variance in the fit and variance in the residual (this is the basis for $R^2 = Beta^2(\text{fit})$). The same is not true for the individual components of the fit: the overall variance of the fit cannot be decomposed cleanly into contributions from the variances of the explanatory variables unless the latter variables are mutually orthogonal. A “clean” decomposition in this sense requires, as discussed in the paper, an orthogonalization among the explanatory variables. In Ndulu/O’Connell and the tables reported above, we report the contributions as in equation (2), without any attempt to orthogonalize.

2.3 Working with the preferred policy-inclusive specification

The “preferred” policy-inclusive specification, and the only such specification for which we provide country-level detail in these spreadsheets, is PFS1. As indicated in Table 2, the **PFS1** worksheet contains 2 additional tables: a Table 3 with country observations, fits and residuals, and a Table 4 with mean values for alternative comparison groups. These are provided to facilitate the use of this specification as outlined in the concluding section of O’Connell and Ndulu (2000).

Table 3 in the **PFS1** worksheet shows the evolution of the explanatory variables over time and at the bottom of the table, calculates the fits and residuals given the coefficient estimates in Table 1. These fits and residuals correspond to the country-by-country results reported in Section 5 below. Residuals can of course be calculated only when all explanatory variables and the dependent variable are available; otherwise the corresponding data cell has #N/A and the residual cell is blank. ***Data should not be entered directly into Table 3, as this will destroy the formulas that update the fits and residuals.*** Instead the missing values should be entered directly into the blank cells in the **hdat** spreadsheet (after heeding our warning to make a backup copy of the entire spreadsheet!), and Table 3 will update itself automatically. Note that it is not necessary to have an ‘exact’ observation on a variable to gain useful information from this procedure. In many cases both the estimated fit and the residual will be relatively insensitive to a range of alternative ‘guesses’ – and the degree of sensitivity can easily be assessed by trying a few alternatives.

Table 2. Contents of country spreadsheets.

Name of worksheet	Contents of worksheet
<i>Raw data spreadsheets.</i>	
1. Variables	Table 1. Definitions, sources, and summary statistics for annual variables. Table 2. Definitions, sources, and summary statistics for halfdecadal variables.
2. adat	Annual data 1960-97 for country CCC, with blanks for missing data.
3. hdat	Halfdecadal data for 1960-64 – 1990-97 for country CCC, for all observations satisfying the inclusion criteria explained in the text accompanying this table. Missing data or observations that fail the inclusion criteria are entered as blanks. Along with the raw data, the hdat worksheet gives percentile ranks for each observation relative to the full, developing, and ssa samples. <i>Missing data can be entered manually in this worksheet and the results in PFS1 will be updated automatically.</i>
<i>Estimation results: growth.</i>	
4. PFS1	Results for Pooled Full Specification #1 (“preferred specification”). Table 1. Estimation results (OLS). Table 2. Distributional information on regression sample. Table 3. Country observations, fits and residuals by period. <i>These are updated automatically when missing values in hdat are supplied.</i> Table 4. Reference sub-sample means. <i>These can be used to reproduce the decompositions that appear in section 5 of the present paper, or to do comparisons vis-a-vis alternative reference groups.</i>
5. sys-GMM	System-GMM Results from Hoeffler (2000). Table 1. Estimation results (System-GMM). Table 2. Distributional information on regression sample.
<i>Estimation results: sectoral variables.</i>	
6. ay95	Fixed-effects model for ay95, share of agriculture in real value added. Table 1. Estimation results (FE). Table 2. Distributional information on regression sample.
7. iy95	Same format for iy95, share of industry in real value added.
8. sy95	Same format for sy95, share of services, etc. in real value added.
9. my95	Same format for am95, share of manufacturing in real value added.
10. alsh	Same format for alsh, share of agriculture in labor force.
11. alpd	Same format for alpd, ratio of ALP in non-agri to ALP in agri.

3. Chenery/Syrquin regressions for sectoral output and labor force.

For sectoral GDP shares, we use data in constant 1995 dollars. This removes the influence of real exchange rate movements and other developments in sectoral relative prices. Variables are defined in Table 3.1, and a set of benchmark regressions appears in Table 3.2. These regressions differ from those in Table 2.1.1 of O’Connell and Ndulu (2000) only in excluding the SSA/trend interaction term. They provide a rough norm against which country-level patterns of transformation can be compared.

We estimate by fixed effects in order to allow for time-invariant factors that may be correlated with the included variables (though see O’Connell/Ndulu (2000) for a caveat). The estimated country effects appear in the “Totals” rows in Tables 3.3A and 3.3B.

Table 3.1 Definitions of variables.

Variable	Definition	Units	Source
<i>Dependent variables</i>			
ay95	share of agricultural value added (VA) in GDP.	%, data in constant 1995 dollars	WDI99
iy95	share of industry VA in GDP.	same	WDI99
sy95	share of “services, etc” VA in GDP.	same	WDI99
my95	share of manufacturing VA in GDP.	same	WDI99
alsh	share of agriculture in labor force	same	WDI99
apld	ratio of average product of labor in agri to APL in non-agri, = $100 * [\mathbf{ay95} / (\mathbf{iy95} + \mathbf{sy95})] / (\mathbf{alsh} / 100)$.	same	calculated
<i>Conditioning variables</i>			
ly	= $\ln(\mathbf{lyin})$, log of real GDP per capita in the initial year of the halfdecade.	(ynin) chained real dollars at 1985 international prices	GDN (extended version of PWT 5.6)
ly2	= $[\ln(\mathbf{lyin})]$ squared		
lpop	= $\ln(\mathbf{poin})$, log of population in the initial year of the halfdecade.	(poin) 000’s	GDN
lpop2	= $[\ln(\mathbf{poin})]$ squared.		
trend	centered linear trend, running from -3 in 1960-64 to 3 in 1990-97.		
<i>Other</i>			
in	Dummy variable = 1 for observations in the regression sample, 0 otherwise.		

Notes: Variables in bold are provided in the country spreadsheets and can be used to construct the others.

Table 3.2 Fixed effects estimates excluding SSA trend-interaction term.

Explanatory variables	Dependent variable					
	Share of sector in GDP				Employment share of agri culture	Ratio of APL in non-agri to APL in agri
	Agri culture	Industry	Services etc	Manufac turing		
ay95 (1)	iy95 (2)	sy95 (3)	my95 (4)	alsh (5)	alpd (6)	
ly ln(initial income)	-65.869 (-8.359)	50.245 (6.300)	15.624 (2.062)	12.437 (1.902)	6.034 (1.352)	12.283 (3.362)
ly2 [ln(initial income)] squared	3.695 (7.164)	-2.634 (-5.046)	-1.061 (-2.139)	-0.460 (-1.093)	-0.783 (-2.742)	-0.653 (-2.693)
lpop ln(initial population)	-2.933 (-0.314)	10.044 (1.063)	-7.111 (-0.792)	-3.808 (-0.492)	-10.750 (-1.838)	4.179 (0.965)
lpop2 [ln(initial population)] squared	0.067 (0.230)	-0.157 (-0.535)	0.091 (0.324)	0.360 (1.503)	-0.039 (-0.208)	-0.198 (-1.473)
trend centered trend	-0.843 (-2.361)	-0.730 (-2.021)	1.573 (4.583)	-0.845 (-3.029)	-0.858 (-4.093)	-0.285 (-1.524)
constant	335.876 (3.948)	-317.848 (-3.692)	81.972 (1.002)	-84.367 (-1.194)	225.127 (4.724)	-64.368 (-1.641)
R ² -within	0.516	0.320	0.217	0.259	0.738	0.218
# of observations	490	490	490	383	761	365
# of countries	85	85	85	69	134	71
Average # halfdecades	5.76	5.76	5.76	5.55	5.68	5.14
Estimated effect of doubling y, calculated at the African mean for <i>ln(y)</i>	-15.39	14.26	1.13	6.06	-4.60	3.36

Notes: Variables in bold are provided in the country spreadsheets; the others can be calculated as indicated in Table 3.1. *t*-statistics are directly below coefficient estimates. The regressions reported above are identical to those in Table 2.1.1 of Ndulu and O’Connell (2000), with the exception that they omit the interaction term between the SSA dummy variable and the centered trend. Countries are included in the regression sample only if they have at least 4 halfdecades of available data in the period 1960-64 – 1990-97. In column 6 we have excluded observations for Saudi Arabia, an extreme outlier.

Table 3.3A Actual and predicted sectoral variables, case study countries.

The predicted values in Tables 3.3A and 3.3B are calculated using estimated coefficients from Table 3.2. The columns labeled 'in' indicated observations in the regression sample. The "Total" entries are averages across halfdecades; under "Residual," the "Total" entry gives the average residual, which is the estimated fixed country effect.

Country and Period	Agriculture's share in GDP			Industry's share in GDP			Services, etc. share in GDP					
	Actual share, in ay95	Fitted share	Residual	Actual share, in iy95	Fitted share	Residual	Actual share, in sy95	Fitted share	Residual			
Angola												
1960-64	0.0			0.0	22.38		0.0	45.72				
1965-69	0.0			0.0	23.86		0.0	47.11				
1970-74	0.0			0.0	24.75		0.0	48.43				
1975-79	0.0			0.0	17.84		0.0	49.08				
1980-84	0.0			0.0	16.55		0.0	49.93				
1985-89	0.0	12.88	31.65	-18.78	0.0	51.68	17.31	34.38	0.0	35.44	51.04	-15.60
1990-97	0.0	8.72	31.53	-22.81	0.0	61.54	16.54	45.00	0.0	29.73	51.93	-22.20
Total	0.0	10.80	31.08	-20.79	0.0	56.61	19.89	39.69	0.0	32.59	49.03	-18.90
Benin												
1960-64	0.0		30.24		0.0	20.12		0.0	49.64			
1965-69	0.0		28.17		0.0	21.14		0.0	50.69			
1970-74	1.0	29.49	28.07	1.42	1.0	12.24	20.29	-8.05	1.0	58.27	51.64	6.63
1975-79	1.0	28.26	27.97	0.30	1.0	11.74	19.44	-7.71	1.0	60.00	52.59	7.41
1980-84	1.0	25.58	26.18	-0.60	1.0	13.36	20.20	-6.84	1.0	61.06	53.62	7.44
1985-89	1.0	29.21	25.28	3.94	1.0	12.53	20.21	-7.68	1.0	58.26	54.51	3.75
1990-97	1.0	34.03	27.03	7.00	1.0	14.63	17.75	-3.12	1.0	51.34	55.22	-3.88
Total	0.7	29.31	27.56	2.41	0.7	12.90	19.88	-6.68	0.7	57.79	52.56	4.27
Botswana												
1960-64	0.0		43.91		0.0	0.86		0.0	55.23			
1965-69	0.0		41.56		0.0	2.12		0.0	56.32			
1970-74	1.0	21.10	34.21	-13.11	1.0	38.79	7.96	30.83	1.0	40.11	57.83	-17.72
1975-79	1.0	17.08	26.16	-9.08	1.0	43.44	14.83	28.61	1.0	39.48	59.01	-19.53
1980-84	1.0	8.44	20.90	-12.46	1.0	54.13	19.36	34.77	1.0	37.44	59.74	-22.31
1985-89	1.0	5.10	18.15	-13.04	1.0	56.18	21.47	34.71	1.0	38.71	60.38	-21.67
1990-97	1.0	4.48	17.32	-12.84	1.0	47.90	21.46	26.44	1.0	47.62	61.21	-13.60
Total	0.7	11.24	28.89	-12.11	0.7	48.09	12.58	31.07	0.7	40.67	58.53	-18.96
Burkina Faso												
1960-64	0.0		44.76		0.0	10.68		0.0	44.56			
1965-69	0.0		48.13		0.0	6.73		0.0	45.14			
1970-74	1.0	41.42	47.14	-5.72	1.0	33.29	6.57	26.72	1.0	25.29	46.29	-21.00
1975-79	1.0	36.82	43.91	-7.09	1.0	32.79	8.33	24.47	1.0	30.39	47.77	-17.38
1980-84	1.0	33.01	41.00	-7.99	1.0	28.88	9.90	18.98	1.0	38.11	49.10	-10.99

1985-89	1.0	31.99	38.43	-6.44	1.0	29.13	11.22	17.91	1.0	38.88	50.35	-11.47
1990-97	1.0	33.47	36.86	-3.39	1.0	26.59	11.64	14.95	1.0	39.95	51.50	-11.55
Total	0.7	35.34	42.89	-6.13	0.7	30.14	9.29	20.61	0.7	34.52	47.82	-14.48
Burundi												
1960-64	0.0		38.61		0.0		14.08		0.0		47.31	
1965-69	0.0		47.57		0.0		5.15		0.0		47.29	
1970-74	1.0	59.31	49.63	9.67	1.0	15.26	2.32	12.94	1.0	25.43	48.05	-22.62
1975-79	1.0	58.44	42.85	15.59	1.0	18.19	6.92	11.26	1.0	23.37	50.22	-26.85
1980-84	1.0	51.86	40.45	11.41	1.0	22.06	8.08	13.98	1.0	26.08	51.48	-25.39
1985-89	1.0	49.89	37.62	12.27	1.0	22.35	9.70	12.65	1.0	27.76	52.68	-24.92
1990-97	1.0	48.85	35.83	13.02	1.0	20.83	10.43	10.40	1.0	30.32	53.74	-23.42
Total	0.7	53.67	41.79	12.39	0.7	19.74	8.10	12.25	0.7	26.59	50.11	-24.64
Cameroon												
1960-64	0.0		38.05		0.0		17.20		0.0		44.75	
1965-69	1.0	40.53	36.25	4.29	1.0	15.54	17.79	-2.25	1.0	43.92	45.96	-2.04
1970-74	1.0	42.97	32.27	10.70	1.0	16.41	20.41	-4.00	1.0	40.62	47.32	-6.70
1975-79	1.0	35.98	30.24	5.74	1.0	17.27	21.32	-4.05	1.0	46.75	48.43	-1.69
1980-84	1.0	31.01	24.44	6.57	1.0	28.61	25.83	2.77	1.0	40.38	49.73	-9.35
1985-89	1.0	28.44	20.70	7.74	1.0	32.16	28.52	3.64	1.0	39.40	50.78	-11.38
1990-97	1.0	36.09	22.18	13.92	1.0	26.84	26.11	0.73	1.0	37.06	51.71	-14.64
Total	0.9	35.84	29.16	8.16	0.9	22.81	22.46	-0.53	0.9	41.36	48.38	-7.63
C.A.R.												
1960-64	0.0		37.56		0.0		12.04		0.0		50.39	
1965-69	1.0	47.96	37.69	10.27	1.0	15.34	10.85	4.48	1.0	36.70	51.46	-14.76
1970-74	1.0	46.05	34.67	11.38	1.0	18.71	12.54	6.18	1.0	35.24	52.80	-17.56
1975-79	1.0	45.01	34.57	10.44	1.0	19.79	11.62	8.17	1.0	35.20	53.81	-18.61
1980-84	1.0	44.95	33.73	11.22	1.0	20.60	11.42	9.18	1.0	34.45	54.85	-20.40
1985-89	1.0	45.51	34.80	10.71	1.0	20.53	9.52	11.01	1.0	33.96	55.68	-21.72
1990-97	1.0	48.92	35.41	13.51	1.0	19.99	8.05	11.94	1.0	31.09	56.55	-25.45
Total	0.9	46.40	35.49	11.26	0.9	19.16	10.86	8.49	0.9	34.44	53.65	-19.75
Chad												
1960-64	0.0		35.66		0.0		16.92		0.0		47.42	
1965-69	1.0	38.10	35.19	2.90	1.0	15.72	16.23	-0.51	1.0	46.18	48.58	-2.40
1970-74	1.0	36.37	36.17	0.20	1.0	16.49	14.26	2.23	1.0	47.14	49.56	-2.43
1975-79	1.0	33.34	37.23	-3.88	1.0	16.34	12.28	4.06	1.0	50.32	50.49	-0.18
1980-84	1.0	34.89	38.48	-3.59	1.0	15.06	10.16	4.90	1.0	50.05	51.36	-1.31
1985-89	1.0	29.80	42.75	-12.95	1.0	14.67	5.56	9.11	1.0	55.53	51.69	3.84
1990-97	1.0	33.57	42.34	-8.76	1.0	14.81	4.97	9.84	1.0	51.61	52.69	-1.08
Total	0.9	34.35	38.26	-4.35	0.9	15.52	11.48	4.94	0.9	50.14	50.26	-0.59
Congo, D. R.												
1960-64	0.0		42.38		0.0		17.94		0.0		39.68	
1965-69	0.0		39.20		0.0		19.84		0.0		40.97	
1970-74	1.0	22.55	34.11	-11.57	1.0	34.63	23.48	11.15	1.0	42.82	42.40	0.42
1975-79	1.0	24.77	34.50	-9.73	1.0	33.63	22.21	11.42	1.0	41.60	43.28	-1.69

1980-84	1.0	26.99	39.16	-12.18	1.0	31.21	17.23	13.98	1.0	41.80	43.60	-1.80
1985-89	1.0	27.33	39.74	-12.41	1.0	31.90	15.91	15.99	1.0	40.76	44.35	-3.58
1990-97	1.0	48.11	41.80	6.31	1.0	19.68	13.33	6.34	1.0	32.21	44.86	-12.65
Total	0.7	29.95	38.70	-7.92	0.7	30.21	18.56	11.78	0.7	39.84	42.74	-3.86
Congo, Rep.												
1960-64	1.0	20.51	30.71	-10.20	1.0	18.97	16.32	2.65	1.0	60.53	52.97	7.55
1965-69	1.0	18.41	30.23	-11.82	1.0	22.96	15.79	7.18	1.0	58.63	53.98	4.65
1970-74	1.0	16.05	23.80	-7.75	1.0	25.03	21.09	3.94	1.0	58.93	55.11	3.82
1975-79	1.0	14.09	22.45	-8.36	1.0	33.49	21.49	12.00	1.0	52.42	56.06	-3.64
1980-84	1.0	10.18	20.30	-10.12	1.0	35.96	22.75	13.21	1.0	53.86	56.95	-3.09
1985-89	1.0	10.05	16.40	-6.35	1.0	38.04	25.97	12.07	1.0	51.91	57.63	-5.72
1990-97	1.0	10.28	17.05	-6.77	1.0	42.18	24.21	17.96	1.0	47.55	58.74	-11.19
Total	1.0	14.22	22.99	-8.77	1.0	30.95	21.09	9.86	1.0	54.83	55.92	-1.09
Cote d'Ivoire												
1960-64	1.0	49.02	29.40	19.62	1.0	8.37	23.65	-15.28	1.0	42.61	46.95	-4.34
1965-69	1.0	38.71	25.46	13.25	1.0	10.04	26.70	-16.65	1.0	51.25	47.85	3.40
1970-74	1.0	30.94	22.76	8.18	1.0	11.72	28.66	-16.94	1.0	57.34	48.58	8.76
1975-79	1.0	23.49	20.47	3.02	1.0	12.18	30.26	-18.09	1.0	64.33	49.27	15.07
1980-84	1.0	26.66	19.62	7.04	1.0	15.63	30.36	-14.73	1.0	57.71	50.02	7.69
1985-89	1.0	24.29	20.26	4.03	1.0	21.08	28.92	-7.84	1.0	54.63	50.83	3.81
1990-97	1.0	28.29	22.31	5.98	1.0	20.63	26.05	-5.41	1.0	51.07	51.64	-0.57
Total	1.0	31.63	22.90	8.73	1.0	14.24	27.80	-13.56	1.0	54.13	49.30	4.83
Ethiopia												
1960-64	0.0		56.56		0.0		7.41		0.0		36.03	
1965-69	0.0		52.70		0.0		9.69		0.0		37.61	
1970-74	0.0		51.28		0.0		9.98		0.0		38.73	
1975-79	0.0		49.57		0.0		10.52		0.0		39.91	
1980-84	0.0		47.45		0.0		11.43		0.0		41.12	
1985-89	0.0		48.27		0.0		9.84		0.0		41.89	
1990-97	0.0		45.45		0.0		11.46		0.0		43.09	
Total	0.0		50.18		0.0		10.05		0.0		39.77	
Gabon												
1960-64	0.0		25.81		0.0		17.79		0.0		56.39	
1965-69	0.0		21.57		0.0		20.79		0.0		57.64	
1970-74	0.0		18.39		0.0		23.00		0.0		58.61	
1975-79	0.0		15.83		0.0		25.73		0.0		58.44	
1980-84	0.0	11.48	15.25	-3.77	0.0	48.41	25.01	23.39	0.0	40.11	59.73	-19.62
1985-89	0.0	12.34	14.85	-2.51	0.0	48.97	24.25	24.72	0.0	38.69	60.90	-22.21
1990-97	0.0	9.33	13.96	-4.63	0.0	51.43	24.28	27.15	0.0	39.24	61.77	-22.53
Total	0.0	11.05	17.95	-3.63	0.0	49.60	22.98	25.09	0.0	39.35	59.07	-21.45
Ghana												
1960-64	0.0		32.23		0.0		23.56		0.0		44.21	
1965-69	1.0	44.30	31.46	12.84	1.0	29.59	23.38	6.20	1.0	26.11	45.16	-19.04
1970-74	1.0	46.28	27.80	18.48	1.0	29.95	25.68	4.27	1.0	23.77	46.51	-22.74

1975-79	1.0	43.38	29.06	14.33	1.0	31.29	23.56	7.73	1.0	25.33	47.38	-22.06
1980-84	1.0	50.39	27.14	23.25	1.0	22.02	24.20	-2.18	1.0	27.59	48.66	-21.07
1985-89	1.0	45.87	29.47	16.40	1.0	23.00	21.23	1.77	1.0	31.13	49.30	-18.17
1990-97	1.0	39.52	26.42	13.10	1.0	24.28	23.21	1.07	1.0	36.19	50.37	-14.17
Total	0.9	44.96	29.08	16.40	0.9	26.69	23.55	3.15	0.9	28.35	47.37	-19.54
Guinea												
1960-64	0.0		41.07		0.0		12.18		0.0		46.75	
1965-69	0.0		40.62		0.0		11.58		0.0		47.80	
1970-74	0.0		42.74		0.0		8.75		0.0		48.51	
1975-79	0.0		34.53		0.0		14.82		0.0		50.65	
1980-84	0.0		30.66		0.0		17.16		0.0		52.18	
1985-89	0.0	21.72	32.03	-10.31	0.0	42.15	14.91	27.24	0.0	36.14	53.06	-16.93
1990-97	0.0	21.99	29.79	-7.80	0.0	37.79	16.07	21.72	0.0	40.22	54.14	-13.92
Total	0.0	21.85	35.92	-9.06	0.0	39.97	13.64	24.48	0.0	38.18	50.44	-15.42
Kenya												
1960-64	0.0		37.18		0.0		19.96		0.0		42.87	
1965-69	1.0	44.25	37.49	6.76	1.0	11.97	18.86	-6.89	1.0	43.78	43.64	0.13
1970-74	1.0	40.67	37.39	3.28	1.0	14.66	18.18	-3.51	1.0	44.66	44.43	0.23
1975-79	1.0	39.09	30.19	8.90	1.0	16.52	23.93	-7.41	1.0	44.39	45.88	-1.49
1980-84	1.0	36.76	27.87	8.89	1.0	16.33	25.36	-9.02	1.0	46.91	46.77	0.13
1985-89	1.0	35.04	29.10	5.93	1.0	16.13	23.46	-7.33	1.0	48.84	47.44	1.40
1990-97	1.0	31.89	25.94	5.95	1.0	16.17	25.55	-9.39	1.0	51.94	48.50	3.44
Total	0.9	37.95	32.17	6.62	0.9	15.30	22.18	-7.26	0.9	46.75	45.65	0.64
Madagascar												
1960-64	0.0		28.24		0.0		26.29		0.0		45.47	
1965-69	0.0		28.25		0.0		25.30		0.0		46.45	
1970-74	1.0	27.19	26.88	0.31	1.0	16.13	25.58	-9.46	1.0	56.69	47.54	9.15
1975-79	1.0	27.15	27.95	-0.80	1.0	16.06	23.61	-7.55	1.0	56.79	48.44	8.35
1980-84	1.0	28.79	27.17	1.62	1.0	13.76	23.36	-9.60	1.0	57.44	49.47	7.97
1985-89	1.0	30.99	30.13	0.86	1.0	14.22	19.69	-5.47	1.0	54.79	50.18	4.61
1990-97	1.0	32.49	31.43	1.07	1.0	13.75	17.62	-3.87	1.0	53.75	50.95	2.80
Total	0.7	29.32	28.58	0.61	0.7	14.78	23.07	-7.19	0.7	55.89	48.36	6.58
Malawi												
1960-64	0.0		48.89		0.0		5.88		0.0		45.22	
1965-69	1.0	36.57	46.19	-9.62	1.0	18.56	7.30	11.26	1.0	44.87	46.51	-1.64
1970-74	1.0	34.53	43.84	-9.31	1.0	19.17	8.45	10.73	1.0	46.30	47.71	-1.42
1975-79	1.0	31.89	39.90	-8.01	1.0	19.87	11.08	8.79	1.0	48.23	49.01	-0.78
1980-84	1.0	29.78	37.27	-7.49	1.0	19.61	12.66	6.95	1.0	50.61	50.08	0.54
1985-89	1.0	28.56	37.60	-9.04	1.0	19.11	11.54	7.57	1.0	52.33	50.85	1.48
1990-97	1.0	29.67	36.59	-6.91	1.0	19.84	11.70	8.14	1.0	50.49	51.72	-1.23
Total	0.9	31.83	41.47	-8.40	0.9	19.36	9.80	8.91	0.9	48.81	48.73	-0.51
Mali												
1960-64	0.0		41.62		0.0		13.16		0.0		45.22	
1965-69	1.0	44.58	44.87	-0.29	1.0	17.47	9.27	8.20	1.0	37.95	45.86	-7.91

1970-74	1.0	38.52	44.73	-6.20	1.0	15.38	8.41	6.96	1.0	46.10	46.86	-0.76
1975-79	1.0	37.89	41.80	-3.91	1.0	13.93	9.94	3.98	1.0	48.19	48.26	-0.07
1980-84	1.0	40.90	38.00	2.90	1.0	13.77	12.29	1.48	1.0	45.33	49.71	-4.38
1985-89	1.0	40.75	37.06	3.69	1.0	15.39	12.14	3.25	1.0	43.86	50.80	-6.94
1990-97	1.0	44.32	36.14	8.17	1.0	16.90	12.06	4.84	1.0	38.78	51.79	-13.01
Total	0.9	41.16	40.60	0.73	0.9	15.47	11.04	4.78	0.9	43.37	48.36	-5.51
Mauritius												
1960-64	0.0		21.33		0.0		24.08		0.0		54.59	
1965-69	0.0		19.72		0.0		24.85		0.0		55.43	
1970-74	1.0	38.85	20.75	18.09	1.0	20.99	22.36	-1.37	1.0	40.16	56.88	-16.72
1975-79	1.0	22.44	16.98	5.45	1.0	24.32	25.47	-1.15	1.0	53.25	57.55	-4.30
1980-84	1.0	17.58	15.60	1.98	1.0	24.83	25.82	-0.99	1.0	57.59	58.58	-0.99
1985-89	1.0	15.52	14.45	1.07	1.0	30.46	25.75	4.71	1.0	54.03	59.80	-5.78
1990-97	1.0	10.70	12.60	-1.90	1.0	33.20	26.99	6.21	1.0	56.10	60.41	-4.31
Total	0.7	21.01	17.35	4.94	0.7	26.76	25.05	1.48	0.7	52.22	57.60	-6.42
Mozambique												
1960-64	0.0		28.41		0.0		27.55		0.0		44.04	
1965-69	0.0		26.23		0.0		28.57		0.0		45.19	
1970-74	0.0		23.19		0.0		30.49		0.0		46.31	
1975-79	0.0		25.27		0.0		27.40		0.0		47.34	
1980-84	0.0		27.90		0.0		24.00		0.0		48.10	
1985-89	0.0	36.77	30.35	6.41	0.0	35.59	20.72	14.87	0.0	27.64	48.92	-21.28
1990-97	0.0	29.43	29.23	0.20	0.0	21.80	20.43	1.37	0.0	48.77	50.34	-1.57
Total	0.0	33.10	27.23	3.30	0.0	28.70	25.59	8.12	0.0	38.20	47.18	-11.43
Namibia												
1960-64	0.0		25.52		0.0		19.27		0.0		55.22	
1965-69	0.0		22.04		0.0		21.86		0.0		56.10	
1970-74	0.0		20.02		0.0		22.99		0.0		56.98	
1975-79	0.0		17.02		0.0		25.46		0.0		57.52	
1980-84	0.0	9.76	17.36	-7.60	0.0	36.71	23.84	12.87	0.0	53.54	58.80	-5.26
1985-89	0.0	10.09	17.17	-7.08	0.0	34.20	22.94	11.26	0.0	55.71	59.89	-4.18
1990-97	0.0	11.75	15.51	-3.76	0.0	32.04	23.76	8.27	0.0	56.22	60.73	-4.51
Total	0.0	10.53	19.23	-6.15	0.0	34.31	22.87	10.80	0.0	55.15	57.89	-4.65
Niger												
1960-64	1.0	45.87	42.06	3.81	1.0	3.12	11.15	-8.02	1.0	51.00	46.79	4.21
1965-69	1.0	47.62	37.54	10.08	1.0	4.60	14.53	-9.93	1.0	47.78	47.93	-0.15
1970-74	1.0	44.28	32.65	11.63	1.0	9.45	18.04	-8.58	1.0	46.27	49.32	-3.05
1975-79	1.0	32.23	36.95	-4.72	1.0	14.75	13.27	1.48	1.0	53.02	49.77	3.24
1980-84	1.0	32.59	32.65	-0.06	1.0	21.04	16.33	4.71	1.0	46.37	51.01	-4.65
1985-89	1.0	35.85	36.20	-0.35	1.0	19.30	12.42	6.88	1.0	44.86	51.39	-6.53
1990-97	1.0	38.73	38.10	0.64	1.0	17.75	9.96	7.80	1.0	43.51	51.95	-8.43
Total	1.0	39.60	36.59	3.00	1.0	12.86	13.67	-0.81	1.0	47.54	49.74	-2.19
Nigeria												
1960-64	1.0	65.70	38.84	26.86	1.0	17.22	25.08	-7.86	1.0	17.08	36.08	-19.00

1965-69	1.0	54.24	36.13	18.10	1.0	30.76	26.52	4.24	1.0	15.00	37.34	-22.34
1970-74	1.0	38.31	31.59	6.71	1.0	49.31	29.66	19.65	1.0	12.39	38.75	-26.36
1975-79	1.0	30.36	23.41	6.95	1.0	54.46	36.32	18.14	1.0	15.18	40.27	-25.09
1980-84	1.0	27.49	20.67	6.82	1.0	56.10	38.02	18.08	1.0	16.42	41.32	-24.90
1985-89	1.0	32.22	23.76	8.46	1.0	49.64	34.10	15.54	1.0	18.14	42.14	-24.00
1990-97	1.0	30.97	23.80	7.17	1.0	47.90	33.10	14.80	1.0	21.13	43.10	-21.97
Total	1.0	39.90	28.32	11.58	1.0	43.63	31.83	11.80	1.0	16.47	39.86	-23.38
Rwanda												
1960-64	0.0		41.97		0.0		10.78		0.0		47.25	
1965-69	1.0	46.61	49.98	-3.37	1.0	24.95	3.03	21.92	1.0	28.44	46.99	-18.55
1970-74	1.0	44.03	36.51	7.52	1.0	22.59	14.05	8.54	1.0	33.38	49.44	-16.06
1975-79	1.0	52.71	35.72	17.00	1.0	22.07	14.00	8.07	1.0	25.21	50.28	-25.07
1980-84	1.0	46.22	31.79	14.42	1.0	22.61	16.77	5.85	1.0	31.17	51.44	-20.27
1985-89	1.0	41.54	30.40	11.14	1.0	22.74	17.24	5.50	1.0	35.72	52.37	-16.64
1990-97	1.0	40.10	29.88	10.22	1.0	20.70	16.81	3.89	1.0	39.20	53.31	-14.11
Total	0.9	45.20	36.61	9.49	0.9	22.61	13.24	8.96	0.9	32.19	50.15	-18.45
Senegal												
1960-64	1.0	25.57	30.52	-4.95	1.0	13.38	21.84	-8.46	1.0	61.04	47.64	13.40
1965-69	1.0	26.58	28.31	-1.74	1.0	14.73	22.97	-8.24	1.0	58.70	48.72	9.98
1970-74	1.0	25.41	27.31	-1.90	1.0	16.30	23.00	-6.70	1.0	58.30	49.69	8.60
1975-79	1.0	25.74	26.62	-0.88	1.0	17.33	22.76	-5.42	1.0	56.93	50.63	6.31
1980-84	1.0	21.30	25.52	-4.21	1.0	18.95	22.89	-3.93	1.0	59.74	51.59	8.15
1985-89	1.0	20.95	24.21	-3.25	1.0	19.86	23.21	-3.35	1.0	59.18	52.58	6.60
1990-97	1.0	19.76	23.46	-3.70	1.0	21.14	22.99	-1.84	1.0	59.10	53.55	5.55
Total	1.0	23.61	26.56	-2.95	1.0	17.39	22.81	-5.42	1.0	59.00	50.63	8.37
Sierra Leone												
1960-64	0.0		33.55		0.0		17.43		0.0		49.01	
1965-69	1.0	26.01	29.05	-3.04	1.0	39.25	20.49	18.77	1.0	34.74	50.47	-15.73
1970-74	1.0	23.23	24.81	-1.57	1.0	36.44	23.43	13.00	1.0	40.33	51.76	-11.43
1975-79	1.0	28.52	26.16	2.36	1.0	29.18	21.01	8.17	1.0	42.29	52.83	-10.54
1980-84	1.0	34.60	25.94	8.67	1.0	22.33	20.13	2.20	1.0	43.06	53.93	-10.87
1985-89	1.0	41.91	28.38	13.53	1.0	22.83	16.78	6.05	1.0	35.26	54.84	-19.59
1990-97	1.0	42.71	27.51	15.20	1.0	25.17	16.56	8.61	1.0	32.12	55.93	-23.81
Total	0.9	32.83	27.91	5.86	0.9	29.20	19.40	9.47	0.9	37.97	52.68	-15.33
South Africa												
1960-64	1.0	6.46	20.45	-13.99	1.0	45.58	39.05	6.53	1.0	47.97	40.50	7.47
1965-69	1.0	5.45	18.03	-12.58	1.0	47.43	40.59	6.84	1.0	47.12	41.38	5.74
1970-74	1.0	4.85	15.61	-10.76	1.0	46.59	42.16	4.43	1.0	48.56	42.23	6.32
1975-79	1.0	4.73	14.16	-9.43	1.0	44.80	42.64	2.16	1.0	50.47	43.20	7.27
1980-84	1.0	4.29	13.36	-9.06	1.0	44.47	42.27	2.19	1.0	51.24	44.37	6.87
1985-89	1.0	4.88	12.73	-7.85	1.0	41.21	41.75	-0.55	1.0	53.92	45.52	8.40
1990-97	1.0	4.94	11.95	-7.01	1.0	39.17	41.39	-2.22	1.0	55.89	46.66	9.23
Total	1.0	5.08	15.18	-10.10	1.0	44.18	41.41	2.77	1.0	50.74	43.41	7.33
Sudan												

1960-64	0.0	32.42		0.0	25.52		0.0	42.06				
1965-69	0.0	31.63		0.0	25.17		0.0	43.20				
1970-74	0.0	31.42		0.0	24.34		0.0	44.24				
1975-79	0.0	30.94		0.0	23.88		0.0	45.18				
1980-84	0.0	28.58		0.0	25.18		0.0	46.24				
1985-89	0.0	29.11		0.0	23.76		0.0	47.12				
1990-97	0.0	28.93		0.0	22.91		0.0	48.17				
Total	0.0	30.43		0.0	24.39		0.0	45.17				
Tanzania												
1960-64	0.0	51.95		0.0	7.94		0.0	40.11				
1965-69	0.0	47.57		0.0	10.86		0.0	41.58				
1970-74	0.0	43.72		0.0	13.37		0.0	42.92				
1975-79	0.0	39.02		0.0	16.63		0.0	44.35				
1980-84	0.0	39.24		0.0	15.62		0.0	45.14				
1985-89	0.0	38.59		0.0	15.38		0.0	46.03				
1990-97	0.0	45.05	34.66	10.39	0.0	22.34	18.01	4.33	0.0	32.61	47.33	-14.72
Total	0.0	45.05	42.11	10.39	0.0	22.34	13.97	4.33	0.0	32.61	43.92	-14.72
Togo												
1960-64	0.0	50.49		0.0	0.62		0.0	48.89				
1965-69	1.0	31.21	43.50	-12.29	1.0	18.10	5.57	12.53	1.0	50.69	50.94	-0.24
1970-74	1.0	26.75	37.93	-11.18	1.0	18.33	10.01	8.32	1.0	54.92	52.06	2.86
1975-79	1.0	23.93	36.97	-13.03	1.0	22.30	9.95	12.35	1.0	53.76	53.08	0.68
1980-84	1.0	25.41	33.01	-7.60	1.0	20.94	12.63	8.31	1.0	53.65	54.36	-0.71
1985-89	1.0	31.55	34.46	-2.91	1.0	20.26	10.50	9.76	1.0	48.20	55.04	-6.84
1990-97	1.0	37.79	33.36	4.43	1.0	20.87	10.67	10.21	1.0	41.34	55.97	-14.63
Total	0.9	29.44	38.53	-7.10	0.9	20.13	8.56	10.25	0.9	50.43	52.91	-3.15
Uganda												
1960-64	0.0	39.15		0.0	17.16		0.0	43.69				
1965-69	0.0	37.65		0.0	17.90		0.0	44.45				
1970-74	0.0	35.69		0.0	19.02		0.0	45.29				
1975-79	0.0	35.58		0.0	18.21		0.0	46.21				
1980-84	0.0	58.02	37.40	20.62	0.0	9.73	15.68	-5.95	0.0	32.25	46.93	-14.67
1985-89	0.0	57.05	36.26	20.79	0.0	10.45	15.62	-5.16	0.0	32.49	48.12	-15.62
1990-97	0.0	51.49	34.82	16.66	0.0	13.37	16.02	-2.66	0.0	35.15	49.15	-14.01
Total	0.0	55.52	36.65	19.36	0.0	11.18	17.09	-4.59	0.0	33.30	46.26	-14.77
Zambia												
1960-64	0.0	31.74		0.0	20.64		0.0	47.63				
1965-69	1.0	18.21	28.72	-10.52	1.0	48.35	22.57	25.78	1.0	33.44	48.71	-15.27
1970-74	1.0	17.82	27.66	-9.84	1.0	45.95	22.70	23.25	1.0	36.23	49.64	-13.41
1975-79	1.0	19.27	25.15	-5.88	1.0	45.15	24.19	20.96	1.0	35.59	50.66	-15.07
1980-84	1.0	18.60	27.73	-9.13	1.0	42.68	20.96	21.72	1.0	38.72	51.31	-12.59
1985-89	1.0	22.06	29.64	-7.58	1.0	41.50	18.36	23.14	1.0	36.43	51.99	-15.56
1990-97	1.0	17.49	31.38	-13.90	1.0	37.87	15.94	21.93	1.0	44.64	52.68	-8.03
Total	0.9	18.91	28.86	-9.47	0.9	43.58	20.77	22.80	0.9	37.51	50.37	-13.32

Zimbabwe												
1960-64	0.0		31.19		0.0		22.01		0.0		46.80	
1965-69	0.0		30.87		0.0		21.49		0.0		47.64	
1970-74	1.0	18.61	27.91	-9.30	1.0	42.35	23.46	18.89	1.0	39.05	48.63	-9.59
1975-79	1.0	17.82	23.98	-6.16	1.0	41.02	26.30	14.73	1.0	41.16	49.72	-8.56
1980-84	1.0	15.57	24.48	-8.90	1.0	34.07	24.90	9.17	1.0	50.35	50.63	-0.27
1985-89	1.0	16.40	23.38	-6.99	1.0	34.24	25.14	9.10	1.0	49.37	51.48	-2.11
1990-97	1.0	15.73	22.80	-7.06	1.0	31.14	24.84	6.30	1.0	53.13	52.37	0.76
Total	0.7	16.83	26.37	-7.68	0.7	36.56	24.02	11.64	0.7	46.61	49.61	-3.95

Notes: For calculation of contributions, see Section 2.

Table 3.3B Actual and predicted sectoral shares, case study countries.

The predicted values in Tables 3.3A and 3.3B are calculated using estimated coefficients from regressions in Table 3.2. The columns labeled ‘in’ indicated observations in the regression sample. The “Total” entries are averages across halfdecades; under “Residual,” the “Total” entry gives the average residual, which is the estimated fixed country effect.

Country and Period	Manufacturing's share in GDP				Agriculture's share of the labor force				Ratio of ALP in non-agri to ALP in agriculture			
	in	Actual share, my95	Fitted share	Residual	in	Actual share, alsh	Fitted share	Residual	in	Actual ratio, alpd	Fitted ratio	Residual
Angola												
1960-64	0.0		8.90		1.0	80.57	57.30	23.27	0.0		7.41	
1965-69	0.0		9.39		1.0	79.19	54.94	24.25	0.0		7.41	
1970-74	0.0		9.66		1.0	77.95	52.72	25.24	0.0		7.27	
1975-79	0.0		6.62		1.0	77.01	52.93	24.08	0.0		5.23	
1980-84	0.0		6.29		1.0	76.05	50.77	25.28	0.0		4.37	
1985-89	0.0	7.94	6.78	1.16	1.0	75.11	48.12	26.99	0.0	20.50	4.01	16.49
1990-97	0.0	4.29	6.73	-2.44	0.0		45.75		0.0		3.24	
Total	0.0	6.11	7.77	-0.64	0.9	77.65	51.79	24.85	0.0	20.50	5.56	16.49
Benin												
1960-64	0.0		3.96		1.0	84.26	66.68	17.58	0.0		9.43	
1965-69	0.0		4.45		1.0	82.24	63.89	18.35	0.0		9.19	
1970-74	0.0		4.12		1.0	78.58	61.80	16.79	1.0	8.86	8.49	0.36
1975-79	0.0		3.81		1.0	71.89	59.67	12.21	1.0	6.60	7.79	-1.19
1980-84	0.0		4.25		1.0	66.57	56.94	9.64	1.0	5.84	7.46	-1.62
1985-89	0.0		4.47		1.0	64.67	54.26	10.41	1.0	4.47	6.87	-2.41
1990-97	0.0		3.64		0.0		52.40		0.0		5.69	
Total	0.0		4.10		0.9	74.70	59.38	14.16	0.6	6.44	7.85	-1.21
Botswana												
1960-64	0.0		-9.52		1.0	91.07	87.00	4.06	0.0		8.69	
1965-69	0.0		-9.14		1.0	85.74	84.29	1.45	0.0		8.55	
1970-74	1.0	4.23	-6.81	11.04	1.0	78.52	80.17	-1.64	1.0	13.99	9.46	4.53
1975-79	1.0	8.49	-3.70	12.20	1.0	69.88	74.90	-5.02	1.0	11.49	10.53	0.97
1980-84	1.0	5.62	-1.37	7.00	1.0	60.58	69.88	-9.30	1.0	17.65	11.02	6.63
1985-89	1.0	4.75	-0.13	4.88	1.0	51.83	65.82	-13.99	1.0	20.55	10.93	9.62
1990-97	1.0	4.85	-0.06	4.91	0.0		63.14		0.0		10.37	
Total	0.7	5.59	-4.39	8.00	0.9	72.94	75.03	-4.07	0.6	15.92	9.93	5.44
Burkina Faso												
1960-64	0.0		3.99		1.0	91.88	60.70	31.18	0.0		4.75	
1965-69	0.0		2.47		1.0	91.95	59.36	32.59	0.0		3.39	
1970-74	1.0	25.24	2.37	22.86	1.0	92.03	57.31	34.72	1.0	16.38	2.92	13.46
1975-79	1.0	25.21	2.98	22.23	1.0	92.12	54.95	37.17	1.0	20.20	2.93	17.28

1980-84	1.0	24.57	3.65	20.92	1.0	92.25	52.38	39.87	1.0	24.19	2.82	21.37
1985-89	1.0	22.28	4.28	17.99	1.0	92.36	49.74	42.62	1.0	25.77	2.61	23.16
1990-97	1.0	20.17	4.57	15.60	0.0		47.33		0.0		2.21	
Total	0.7	23.49	3.47	19.92	0.9	92.10	54.54	36.36	0.6	21.64	3.09	18.82
Burundi												
1960-64	0.0		3.03		1.0	94.45	64.82	29.62	0.0		6.95	
1965-69	0.0		-0.53		1.0	93.90	64.74	29.16	0.0		4.44	
1970-74	1.0	12.76	-1.68	14.44	1.0	93.41	63.24	30.17	1.0	9.80	3.38	6.42
1975-79	1.0	13.03	-0.32	13.35	1.0	93.06	60.94	32.12	1.0	9.57	4.23	5.34
1980-84	1.0	13.64	0.14	13.51	1.0	92.62	58.45	34.17	1.0	11.67	4.04	7.63
1985-89	1.0	14.90	0.92	13.98	1.0	92.02	55.59	36.43	1.0	11.59	3.89	7.71
1990-97	1.0	13.43	1.38	12.05	0.0		52.89		0.0		3.51	
Total	0.7	13.55	0.42	13.47	0.9	93.24	60.10	31.94	0.6	10.66	4.35	6.77
Cameroon												
1960-64	0.0		7.24		1.0	88.47	57.79	30.68	0.0		5.88	
1965-69	1.0	6.68	7.48	-0.80	1.0	86.35	55.48	30.87	1.0	9.44	5.57	3.87
1970-74	1.0	7.96	8.65	-0.69	1.0	82.93	52.45	30.48	1.0	6.50	5.70	0.79
1975-79	1.0	7.75	9.19	-1.44	1.0	77.19	49.74	27.45	1.0	6.08	5.39	0.69
1980-84	1.0	10.56	11.41	-0.86	1.0	72.51	45.63	26.88	1.0	5.92	5.88	0.04
1985-89	1.0	10.69	12.94	-2.25	1.0	70.78	41.93	28.85	1.0	6.10	5.92	0.18
1990-97	1.0	11.17	12.08	-0.91	0.0		40.39		0.0		4.77	
Total	0.9	9.13	9.86	-1.16	0.9	79.71	49.06	29.20	0.7	6.81	5.59	1.11
C.A.R.												
1960-64	0.0		-0.71		1.0	92.72	72.17	20.55	0.0		8.34	
1965-69	1.0	2.94	-1.36	4.31	1.0	90.60	70.50	20.10	0.0		7.70	
1970-74	1.0	4.68	-0.80	5.48	1.0	88.29	67.98	20.31	0.0		7.71	
1975-79	1.0	5.95	-1.26	7.21	1.0	86.12	66.07	20.05	0.0		7.08	
1980-84	1.0	9.00	-1.36	10.36	1.0	83.83	63.84	19.99	0.0		6.58	
1985-89	1.0	10.40	-2.13	12.53	1.0	81.63	62.03	19.60	0.0		5.67	
1990-97	1.0	9.71	-2.69	12.40	0.0		60.07		0.0		4.85	
Total	0.9	7.11	-1.47	8.72	0.9	87.20	66.09	20.10	0.0		6.84	
Chad												
1960-64	0.0		4.38		1.0	94.99	63.63	31.36	0.0		7.50	
1965-69	0.0		3.96		1.0	93.45	61.88	31.57	1.0	21.97	6.97	15.00
1970-74	0.0		3.06		1.0	91.56	60.40	31.16	1.0	19.04	6.11	12.93
1975-79	0.0		2.20		1.0	89.39	58.80	30.59	1.0	17.01	5.23	11.78
1980-84	0.0		1.36		1.0	87.04	57.13	29.91	1.0	12.67	4.29	8.38
1985-89	0.0		-0.25		1.0	84.74	55.59	29.15	1.0	13.22	2.66	10.56
1990-97	0.0		-0.41		0.0		53.43		0.0		2.04	
Total	0.0		2.04		0.9	90.20	58.69	30.62	0.7	16.78	4.97	11.73
Congo, D. R.												
1960-64	0.0		13.67		1.0	78.56	46.08	32.48	0.0		2.50	
1965-69	0.0		14.69		1.0	76.64	43.16	33.48	0.0		2.36	
1970-74	0.0		16.50		1.0	74.70	39.67	35.04	1.0	10.15	2.60	7.55

1975-79	0.0	16.33			1.0	72.81	37.46	35.35	1.0	8.19	1.69	6.50
1980-84	0.0	14.82			1.0	70.89	35.91	34.98	1.0	6.60	-0.16	6.75
1985-89	0.0	14.84			1.0	68.97	33.39	35.58	1.0	5.92	-1.18	7.10
1990-97	0.0	14.46			0.0		31.00		0.0		-2.53	
Total	0.0	15.04			0.9	73.76	38.10	34.49	0.6	7.71	0.75	6.97
Congo, Rep.												
1960-64	0.0	-0.59			1.0	67.79	75.23	-7.44	1.0	8.19	10.54	-2.35
1965-69	1.0	17.05	-0.92	17.97	1.0	66.75	73.16	-6.41	1.0	8.93	9.99	-1.06
1970-74	0.0	1.54			1.0	64.56	68.52	-3.96	1.0	9.56	10.77	-1.22
1975-79	0.0	1.75			1.0	60.55	65.86	-5.31	1.0	9.40	10.38	-0.99
1980-84	1.0	6.90	2.45	4.45	1.0	56.22	62.67	-6.45	1.0	11.51	10.17	1.34
1985-89	1.0	8.37	4.31	4.06	1.0	51.55	58.10	-6.56	1.0	9.67	10.40	-0.73
1990-97	1.0	8.03	3.38	4.65	0.0		56.76		0.0		9.47	
Total	0.6	10.09	1.70	7.78	0.9	61.24	65.76	-6.02	0.9	9.54	10.25	-0.84
Cote d'Ivoire												
1960-64	0.0	8.28			1.0	82.41	59.30	23.10	1.0	4.92	8.45	-3.53
1965-69	0.0	10.04			1.0	78.33	55.14	23.19	1.0	5.75	8.50	-2.75
1970-74	0.0	11.45			1.0	73.61	51.15	22.46	1.0	6.26	8.23	-1.97
1975-79	0.0	12.77			1.0	68.28	47.20	21.07	1.0	7.05	7.84	-0.79
1980-84	0.0	15.21	13.31	1.89	1.0	63.87	44.11	19.76	1.0	4.87	7.12	-2.24
1985-89	0.0	18.51	13.09	5.42	1.0	61.43	41.83	19.60	1.0	5.01	6.05	-1.03
1990-97	0.0	18.06	12.13	5.93	0.0		40.28		0.0		4.71	
Total	0.0	17.26	11.58	4.41	0.9	71.32	48.43	21.53	0.9	5.64	7.27	-2.05
Ethiopia												
1960-64	0.0	12.41			1.0	92.75	43.34	49.41	0.0		-1.44	
1965-69	0.0	13.37			1.0	91.81	40.82	50.99	0.0		-1.41	
1970-74	0.0	13.78			1.0	90.85	38.33	52.51	0.0		-1.93	
1975-79	0.0	14.30			1.0	89.91	35.81	54.10	0.0		-2.39	
1980-84	0.0	14.99			1.0	88.73	33.16	55.57	0.0		-2.80	
1985-89	0.0	14.84			1.0	87.19	30.83	56.36	0.0		-3.82	
1990-97	0.0	16.05			0.0		27.72		0.0		-4.19	
Total	0.0	14.25			0.9	90.21	35.72	53.16	0.0		-2.57	
Gabon												
1960-64	0.0	-2.09			1.0	84.27	81.13	3.14	0.0		12.65	
1965-69	0.0	-0.84			1.0	81.38	77.85	3.53	0.0		13.19	
1970-74	0.0	0.22			1.0	77.03	74.43	2.60	0.0		13.53	
1975-79	0.0	2.31			1.0	70.16	68.58	1.58	0.0		13.62	
1980-84	0.0	5.69	1.58	4.11	1.0	62.81	67.17	-4.36	0.0	13.06	12.98	0.08
1985-89	0.0	6.94	0.94	5.99	1.0	55.86	65.53	-9.67	0.0	9.10	12.28	-3.19
1990-97	0.0	5.42	0.96	4.46	0.0		62.93		0.0		11.76	
Total	0.0	6.02	0.44	4.86	0.9	71.92	71.09	-0.53	0.0	11.08	12.86	-1.55
Ghana												
1960-64	0.0	11.18			1.0	62.70	53.40	9.30	0.0		6.59	
1965-69	1.0	11.72	11.35	0.36	1.0	61.31	50.86	10.44	1.0	1.99	5.97	-3.97

1970-74	1.0	12.47	12.35	0.12	1.0	60.67	48.00	12.67	1.0	1.79	6.08	-4.29
1975-79	1.0	13.73	11.63	2.10	1.0	61.19	46.26	14.93	1.0	2.07	5.03	-2.96
1980-84	1.0	9.03	11.88	-2.86	1.0	61.06	44.03	17.03	1.0	1.55	4.77	-3.22
1985-89	1.0	10.06	11.02	-0.96	1.0	59.97	42.18	17.78	1.0	1.77	3.40	-1.63
1990-97	1.0	9.58	12.30	-2.72	0.0		38.76		0.0		3.19	
Total	0.9	11.10	11.67	-0.66	0.9	61.15	46.21	13.69	0.7	1.84	5.00	-3.21
Guinea												
1960-64	0.0		2.59		1.0	93.32	64.60	28.73	0.0		6.30	
1965-69	0.0		2.32		1.0	92.67	62.57	30.10	0.0		5.73	
1970-74	0.0		1.23		1.0	91.99	60.95	31.05	0.0		4.60	
1975-79	0.0		3.37		1.0	91.32	57.85	33.47	0.0		5.74	
1980-84	0.0		4.16		1.0	90.23	55.37	34.85	0.0		5.96	
1985-89	0.0		3.25		1.0	88.41	53.78	34.62	0.0	27.03	4.97	22.06
1990-97	0.0	5.48	3.93	1.54	0.0		50.89		0.0		4.68	
Total	0.0	5.48	2.98	1.54	0.9	91.32	58.00	32.14	0.0	27.03	5.43	22.06
Kenya												
1960-64	0.0		10.82		1.0	87.47	52.25	35.22	0.0		5.06	
1965-69	1.0	5.78	10.73	-4.95	1.0	86.41	49.79	36.61	1.0	8.02	4.17	3.86
1970-74	1.0	7.20	10.88	-3.68	1.0	85.08	47.14	37.94	1.0	8.33	3.33	5.00
1975-79	1.0	8.59	13.74	-5.15	1.0	83.33	42.63	40.70	1.0	7.80	3.97	3.83
1980-84	1.0	9.09	14.97	-5.88	1.0	81.70	39.08	42.61	1.0	7.69	3.53	4.16
1985-89	1.0	9.41	14.73	-5.32	1.0	80.36	36.70	43.65	1.0	7.59	2.33	5.25
1990-97	1.0	9.85	16.16	-6.31	0.0		33.17		0.0		2.10	
Total	0.9	8.32	13.15	-5.22	0.9	84.06	42.97	39.46	0.7	7.88	3.50	4.42
Madagascar												
1960-64	0.0		11.18		1.0	85.79	54.80	30.99	0.0		7.98	
1965-69	0.0		10.87		1.0	84.87	52.76	32.11	0.0		7.23	
1970-74	0.0		11.09		1.0	83.79	50.34	33.45	1.0	13.91	6.81	7.11
1975-79	0.0		10.39		1.0	82.47	48.60	33.87	1.0	12.64	5.80	6.84
1980-84	0.0		10.44		1.0	80.98	46.28	34.70	1.0	10.61	5.21	5.40
1985-89	0.0	12.51	9.09	3.42	1.0	79.27	44.96	34.30	1.0	8.52	3.79	4.73
1990-97	0.0	11.64	8.51	3.13	0.0		42.99		0.0		2.71	
Total	0.0	12.07	10.22	3.27	0.9	82.86	48.68	33.24	0.6	11.42	5.65	6.02
Malawi												
1960-64	0.0		0.80		1.0	93.20	64.56	28.64	0.0		4.44	
1965-69	0.0		1.36		1.0	92.15	62.02	30.13	1.0	19.76	4.31	15.45
1970-74	0.0		1.88		1.0	90.71	59.40	31.31	1.0	18.60	4.07	14.53
1975-79	1.0	12.06	3.11	8.95	1.0	88.66	56.24	32.42	1.0	16.83	4.12	12.71
1980-84	1.0	12.37	4.05	8.32	1.0	87.15	53.08	34.06	1.0	16.00	3.86	12.14
1985-89	1.0	12.39	3.89	8.51	1.0	86.84	50.68	36.17	1.0	16.52	2.99	13.52
1990-97	1.0	14.35	4.34	10.00	0.0		47.79		0.0		2.36	
Total	0.6	12.79	2.77	8.95	0.9	89.79	56.25	32.12	0.7	17.54	3.74	13.67
Mali												
1960-64	0.0		4.62		1.0	93.62	60.86	32.76	0.0		5.53	

1965-69	0.0		3.07		1.0	93.05	59.60	33.45	1.0	16.69	4.20	12.49
1970-74	0.0		2.76		1.0	92.05	57.58	34.47	1.0	18.61	3.54	15.07
1975-79	0.0		3.32		1.0	90.25	55.18	35.08	1.0	15.24	3.47	11.77
1980-84	0.0	4.97	4.26	0.71	1.0	88.43	52.48	35.95	1.0	11.12	3.56	7.56
1985-89	0.0	6.16	4.28	1.89	1.0	86.83	50.25	36.59	1.0	9.80	3.04	6.75
1990-97	0.0	6.99	4.45	2.54	0.0		47.77		0.0		2.47	
Total	0.0	6.04	3.82	1.71	0.9	90.71	54.82	34.72	0.7	14.29	3.69	10.73
Mauritius												
1960-64	0.0		2.17		1.0	38.49	74.68	-36.18	0.0		13.36	
1965-69	0.0		2.57		1.0	35.70	71.67	-35.97	0.0		13.10	
1970-74	1.0	15.22	0.90	14.32	1.0	32.60	71.42	-38.82	1.0	0.76	12.18	-11.41
1975-79	1.0	15.76	2.63	13.13	1.0	29.14	66.96	-37.82	1.0	1.42	12.57	-11.15
1980-84	1.0	17.34	2.72	14.62	1.0	24.91	64.52	-39.61	1.0	1.57	12.33	-10.75
1985-89	1.0	22.40	2.46	19.94	1.0	19.62	62.66	-43.05	1.0	1.34	12.06	-10.72
1990-97	1.0	23.80	3.35	20.45	0.0		58.98		0.0		12.11	
Total	0.7	18.90	2.40	16.49	0.9	30.08	67.27	-38.57	0.6	1.28	12.53	-11.01
Mozambique												
1960-64	0.0		13.45		1.0	87.76	51.02	36.74	0.0		7.22	
1965-69	0.0		14.00		1.0	86.82	48.36	38.46	0.0		6.98	
1970-74	0.0		15.05		1.0	85.85	45.18	40.67	0.0		6.92	
1975-79	0.0		13.70		1.0	84.88	44.22	40.66	0.0		5.71	
1980-84	0.0		12.48		1.0	83.97	42.86	41.11	0.0		4.31	
1985-89	0.0		11.23		1.0	83.20	41.58	41.62	0.0	8.63	3.04	5.59
1990-97	0.0		10.83		0.0		40.13		0.0		2.70	
Total	0.0		12.96		0.9	85.41	44.76	39.88	0.0	8.63	5.27	5.59
Namibia												
1960-64	0.0		-0.65		1.0	69.67	78.18	-8.52	0.0		12.39	
1965-69	0.0		0.60		1.0	66.04	74.41	-8.37	0.0		12.59	
1970-74	0.0		1.15		1.0	62.35	71.32	-8.96	0.0		12.43	
1975-79	0.0		2.65		1.0	58.71	66.91	-8.20	0.0		12.55	
1980-84	0.0	11.57	1.54	10.02	1.0	54.98	65.89	-10.91	0.0	11.30	11.72	-0.41
1985-89	0.0	13.13	0.97	12.16	1.0	51.31	64.13	-12.82	0.0	9.42	11.04	-1.62
1990-97	0.0	14.67	1.46	13.21	0.0		61.08		0.0		10.75	
Total	0.0	13.12	1.10	11.80	0.9	60.51	68.84	-9.63	0.0	10.36	11.92	-1.02
Niger												
1960-64	0.0		2.02		1.0	93.95	65.20	28.74	1.0	18.33	6.16	12.17
1965-69	0.0		3.73		1.0	93.25	61.35	31.90	1.0	15.29	6.28	9.01
1970-74	0.0		5.26		1.0	92.53	57.98	34.55	1.0	15.82	6.61	9.21
1975-79	0.0		3.47		1.0	91.82	56.76	35.06	1.0	23.71	4.94	18.77
1980-84	0.0		4.97		1.0	91.08	53.25	37.83	1.0	21.34	5.06	16.29
1985-89	0.0	6.76	3.76	3.00	1.0	90.36	51.39	38.97	1.0	16.85	3.47	13.38
1990-97	0.0	6.45	3.13	3.32	0.0		49.20		0.0		2.26	
Total	0.0	6.60	3.76	3.16	0.9	92.17	56.45	34.51	0.9	18.56	4.97	13.14
Nigeria												

1960-64	1.0	2.67	22.95	-20.28	1.0	72.72	33.69	39.04	1.0	1.40	0.60	0.80
1965-69	1.0	3.22	23.89	-20.67	1.0	71.63	30.87	40.76	1.0	2.14	0.33	1.81
1970-74	1.0	3.46	25.58	-22.12	1.0	68.08	27.50	40.57	1.0	3.46	0.44	3.02
1975-79	1.0	3.57	28.96	-25.39	1.0	59.72	22.64	37.08	1.0	3.42	1.35	2.07
1980-84	1.0	5.57	30.33	-24.76	1.0	51.81	19.20	32.60	1.0	2.86	1.04	1.82
1985-89	1.0	5.39	29.15	-23.76	1.0	46.34	17.99	28.34	1.0	1.82	-0.62	2.45
1990-97	1.0	5.27	29.27	-24.01	0.0		15.68		0.0		-1.56	
Total	1.0	4.16	27.16	-23.00	0.9	61.72	23.94	36.40	0.9	2.52	0.22	1.99
Rwanda												
1960-64	0.0		1.39		1.0	94.51	66.35	28.16	0.0		6.37	
1965-69	1.0	12.89	-1.35	14.24	1.0	93.97	65.20	28.77	1.0	17.88	3.96	13.91
1970-74	1.0	11.66	3.07	8.59	1.0	93.45	60.23	33.22	1.0	19.07	6.00	13.07
1975-79	1.0	11.38	3.32	8.06	1.0	93.03	57.48	35.54	1.0	12.04	5.38	6.66
1980-84	1.0	11.78	4.74	7.04	1.0	92.56	53.96	38.60	1.0	14.50	5.41	9.09
1985-89	1.0	11.87	5.23	6.64	1.0	92.04	51.09	40.95	1.0	16.28	4.90	11.38
1990-97	1.0	12.47	5.26	7.21	0.0		48.69		0.0		4.24	
Total	0.9	12.01	3.09	8.63	0.9	93.26	57.57	34.21	0.7	15.96	5.18	10.82
Senegal												
1960-64	0.0		6.67		1.0	83.62	61.67	21.96	1.0	14.97	8.54	6.43
1965-69	0.0		7.26		1.0	83.06	58.84	24.22	1.0	13.60	8.31	5.29
1970-74	0.0		7.41		1.0	82.33	56.33	26.00	1.0	13.81	7.78	6.03
1975-79	0.0		7.49		1.0	81.34	53.84	27.50	1.0	12.72	7.16	5.56
1980-84	0.0	13.61	7.74	5.87	1.0	79.97	51.24	28.73	1.0	14.81	6.63	8.18
1985-89	0.0	14.52	8.09	6.43	1.0	77.97	48.57	29.40	1.0	13.39	6.15	7.24
1990-97	0.0	14.71	8.20	6.51	0.0		46.12		0.0		5.53	
Total	0.0	14.28	7.55	6.27	0.9	81.38	53.80	26.30	0.9	13.88	7.16	6.45
Sierra Leone												
1960-64	0.0		3.17		1.0	80.26	66.70	13.56	0.0		8.54	
1965-69	0.0		4.33		1.0	77.37	63.74	13.63	1.0	9.75	8.92	0.84
1970-74	0.0		5.58		1.0	74.43	60.52	13.91	1.0	9.62	9.23	0.39
1975-79	0.0		4.37		1.0	71.57	59.41	12.16	1.0	6.62	8.26	-1.64
1980-84	0.0		3.90		1.0	69.30	57.64	11.66	1.0	4.29	7.64	-3.36
1985-89	0.0		2.38		1.0	68.15	56.66	11.49	1.0	2.97	6.43	-3.46
1990-97	0.0	5.16	2.29	2.88	0.0		54.52		0.0		5.93	
Total	0.0	5.16	3.72	2.88	0.9	73.51	59.88	12.74	0.7	6.65	7.85	-1.45
South Africa												
1960-64	1.0	19.08	23.77	-4.69	1.0	36.16	37.31	-1.15	1.0	8.25	7.03	1.23
1965-69	1.0	22.56	24.94	-2.39	1.0	32.87	33.78	-0.90	1.0	8.56	6.80	1.75
1970-74	1.0	24.69	26.11	-1.42	1.0	27.86	30.21	-2.36	1.0	7.66	6.66	1.00
1975-79	1.0	26.12	26.67	-0.55	1.0	20.87	27.37	-6.50	1.0	5.36	6.24	-0.88
1980-84	1.0	27.37	26.65	0.72	1.0	16.50	25.33	-8.84	1.0	4.47	5.64	-1.17
1985-89	1.0	25.00	26.64	-1.65	1.0	14.60	23.28	-8.68	1.0	3.35	4.94	-1.59
1990-97	1.0	23.79	26.70	-2.91	0.0		21.15		0.0		4.30	
Total	1.0	24.09	25.93	-1.84	0.9	24.81	28.35	-4.74	0.9	6.27	5.94	0.06

Sudan										
1960-64	0.0		14.80		1.0	84.36	47.58	36.79	0.0	5.40
1965-69	0.0		14.71		1.0	79.96	45.53	34.43	0.0	4.85
1970-74	0.0		14.50		1.0	76.03	43.49	32.54	0.0	4.15
1975-79	0.0		14.64		1.0	73.67	41.02	32.64	0.0	3.42
1980-84	0.0		15.61		1.0	71.64	37.92	33.73	0.0	3.07
1985-89	0.0		15.35		1.0	70.30	35.79	34.51	0.0	2.13
1990-97	0.0		15.19		0.0		33.74		0.0	1.40
Total	0.0		14.97		0.9	75.99	40.72	34.10	0.0	3.49
Tanzania										
1960-64	0.0		7.46		1.0	92.13	52.40	39.73	0.0	1.51
1965-69	0.0		8.81		1.0	90.89	49.34	41.54	0.0	1.61
1970-74	0.0		10.10		1.0	89.30	46.23	43.07	0.0	1.58
1975-79	0.0		11.70		1.0	87.19	42.92	44.28	0.0	1.72
1980-84	0.0		11.74		1.0	85.51	40.40	45.12	0.0	0.82
1985-89	0.0		12.11		1.0	84.83	37.68	47.15	0.0	0.08
1990-97	0.0	7.48	13.60	-6.11	0.0		34.36		0.0	0.02
Total	0.0	7.48	10.79	-6.11	0.9	88.31	43.33	43.48	0.0	1.05
Togo										
1960-64	0.0		-5.16		1.0	79.11	74.75	4.37	0.0	5.65
1965-69	0.0		-3.57		1.0	76.29	72.05	4.25	1.0	7.10 6.52 0.58
1970-74	0.0		-1.44		1.0	73.38	67.72	5.66	1.0	7.55 6.86 0.70
1975-79	1.0	8.20	-1.46	9.66	1.0	70.54	65.39	5.15	1.0	7.64 6.38 1.26
1980-84	1.0	8.14	-0.30	8.44	1.0	68.13	62.23	5.90	1.0	6.37 6.51 -0.14
1985-89	1.0	7.49	-1.03	8.52	1.0	66.54	60.21	6.33	1.0	4.32 5.46 -1.14
1990-97	1.0	9.44	-0.79	10.23	0.0		57.55		0.0	4.93
Total	0.6	8.32	-1.96	9.21	0.9	72.33	65.70	5.27	0.7	6.60 6.04 0.25
Uganda										
1960-64	0.0		8.38		1.0	92.21	55.51	36.70	0.0	5.18
1965-69	0.0		9.25		1.0	90.86	52.10	38.76	0.0	4.58
1970-74	0.0		10.28		1.0	89.42	48.65	40.78	0.0	4.07
1975-79	0.0		10.19		1.0	88.01	46.35	41.65	0.0	3.31
1980-84	0.0	4.77	9.43	-4.66	1.0	86.60	44.48	42.12	0.0	4.58 2.14 2.44
1985-89	0.0	4.83	9.45	-4.62	1.0	85.33	42.40	42.94	0.0	4.38 1.68 2.71
1990-97	0.0	6.39	9.95	-3.56	0.0		39.70		0.0	1.15
Total	0.0	5.33	9.56	-4.28	0.9	88.74	47.03	40.49	0.0	4.48 3.16 2.57
Zambia										
1960-64	0.0		6.07		1.0	83.56	62.23	21.33	0.0	8.30
1965-69	1.0	13.74	7.06	6.68	1.0	80.84	59.02	21.82	1.0	19.02 8.22 10.79
1970-74	1.0	18.45	7.31	11.14	1.0	78.48	56.37	22.11	1.0	16.83 7.69 9.15
1975-79	1.0	19.10	8.18	10.92	1.0	77.02	53.21	23.81	1.0	14.07 7.48 6.60
1980-84	1.0	19.85	7.07	12.78	1.0	75.81	51.57	24.25	1.0	13.77 6.07 7.70
1985-89	1.0	22.82	6.24	16.58	1.0	75.06	49.70	25.37	1.0	10.69 4.84 5.84
1990-97	1.0	18.86	5.52	13.34	0.0		47.73		0.0	3.67

Total	0.9	18.80	6.78	11.91	0.9	78.46	54.26	23.11	0.7	14.88	6.61	8.02
Zimbabwe												
1960-64	0.0		7.59		1.0	79.98	59.80	20.18	0.0		8.04	
1965-69	0.0		7.61		1.0	77.92	57.27	20.65	0.0		7.32	
1970-74	1.0	24.77	8.77	16.00	1.0	75.80	53.81	22.00	1.0	13.84	7.16	6.68
1975-79	1.0	25.57	10.28	15.29	1.0	73.71	50.12	23.59	1.0	12.99	7.26	5.73
1980-84	1.0	26.84	9.86	16.98	1.0	71.80	48.11	23.69	1.0	13.88	6.35	7.54
1985-89	1.0	26.43	10.37	16.06	1.0	69.77	45.15	24.62	1.0	11.82	5.73	6.09
1990-97	1.0	23.82	10.58	13.24	0.0		42.54		0.0		5.02	
Total	0.7	25.49	9.30	15.51	0.9	74.83	50.97	22.45	0.6	13.13	6.70	6.51

Notes: For calculation of contributions, see section 2.

4. Collins-Bosworth (1996) growth accounting decomposition.

Table 4.1 Definitions of variables.

Variable	Definition	Units	Source
bgno	growth in real GDP per worker.	percent	Collins and Bosworth 1996*
bcko	contribution of physical capital per worker = 0.35*(growth of physical capital per worker). Growth in physical capital generated by applying perpetual inventory method to national-accounts investment data, using initial 1950 capital stocks from Nehru and Dhareshwar (1993)**.	percent	same
bcho	contribution of education per worker = 0.65*(growth in labor quality index). The labor quality index imputes a return of 7 percent to an additional year of average schooling attainment in the adult population. See Collins and Bosworth (1996) for details.	percent	same
bcro	TFP residual = bgno – bcko – bcho .	percent	same

Notes: Variables in bold are provided in the country spreadsheets.

*Collins, Susan M. and Barry P. Bosworth (1996), "Economic Growth in East Asia: Accumulation versus Assimilation," *Brookings Papers on Economic Activity* 2: 135-203. We thank Susan Collins for access to the data.

**Nehru, V. and A. Dhareshwar (1993), "A New Database on Physical Capital Stock: Sources, Methodology and Results," *Revista de Analisis Economico* 8(1): 37- 59.

Table 4.2.1
Growth of Real GDP per Worker, bgn0
Marginal Distribution by Region and Period
(balanced sample)

Region Period	Sub- Saharan Africa	Latin America & Caribbean	S. Asia	E. Asia & Pacific	Middle East & N. Africa	Industrial countries	Total
1960-64	1.26	2.54	3.09	1.81	4.92	4.39	2.92
	2.70	2.16	1.46	4.05	4.01	1.69	2.96
	21	22	4	9	11	21	88
1965-69	1.60	2.52	2.60	4.29	4.66	3.87	3.07
	2.49	1.46	1.73	2.18	2.34	1.87	2.27
	21	22	4	9	11	21	88
1970-74	2.29	2.80	0.59	4.55	3.55	2.78	2.85
	2.32	2.60	1.42	1.86	2.46	2.21	2.40
	21	22	4	9	11	21	88
1975-79	-0.10	1.14	1.96	4.39	3.95	2.43	1.87
	3.99	3.33	0.60	1.54	4.37	2.52	3.55
	21	22	4	9	11	21	88
1980-84	-1.28	-2.09	3.33	3.54	1.18	1.82	0.27
	3.05	2.50	0.83	2.13	2.05	1.05	3.00
	21	22	4	9	11	21	88
1985-89	0.64	-1.01	2.50	3.52	0.43	1.92	0.89
	1.96	2.96	1.68	3.77	2.97	1.17	2.79
	21	22	4	9	11	21	88
1990-97	-1.55	0.51	2.22	4.94	1.03	1.67	0.89
	3.41	2.87	1.03	2.65	2.41	1.05	3.11
	21	22	4	9	11	21	88
Total	0.41	0.91	2.33	3.86	2.82	2.70	1.82
	3.16	3.11	1.44	2.78	3.42	1.97	3.07
	147	154	28	63	77	147	616

Notes: Each cell of the table shows the mean (in bold) for the corresponding region and halfdecade. The standard deviation is directly below the mean, and the number of observations in that cell is directly below the standard deviation. The bottom right-hand cell gives the mean, standard deviation, and number of observations for the full sample.

Table 4.2.2
Contribution of Growth in Physical Capital per Worker, bcko
Marginal Distribution by Region and Period
(balanced sample)

Region							
Period	Sub-Saharan Africa	Latin America & Caribbean	S. Asia	E. Asia & Pacific	Middle East & N. Africa	Industrial countries	Total
1960-64	0.86	0.90	1.98	1.84	1.94	1.83	1.39
	1.36	0.68	2.40	1.71	1.01	0.93	1.26
	21	22	4	9	11	21	88
1965-69	1.03	1.06	1.48	2.27	1.94	1.85	1.49
	0.99	0.68	0.96	1.73	1.13	0.87	1.09
	21	22	4	9	11	21	88
1970-74	1.22	1.18	0.67	2.51	1.65	1.59	1.46
	0.90	0.86	0.54	1.51	0.79	0.79	1.00
	21	22	4	9	11	21	88
1975-79	0.81	1.31	0.90	2.43	2.26	1.17	1.37
	1.27	1.00	0.89	1.06	1.19	0.50	1.13
	21	22	4	9	11	21	88
1980-84	0.41	0.43	1.27	2.40	1.37	0.99	0.91
	1.15	0.93	1.09	0.74	0.91	0.44	1.06
	21	22	4	9	11	21	88
1985-89	0.06	-0.20	1.04	1.69	0.54	0.65	0.40
	1.01	0.61	0.69	1.08	0.80	0.35	0.94
	21	22	4	9	11	21	88
1990-97	-0.14	0.00	0.82	2.29	0.76	0.92	0.55
	0.77	0.62	0.56	1.08	0.98	0.46	1.03
	21	22	4	9	11	21	88
Total	0.61	0.67	1.17	2.20	1.50	1.29	1.08
	1.16	0.95	1.12	1.29	1.12	0.78	1.15
	147	154	28	63	77	147	616

Notes: Each cell of the table shows the mean (in bold) for the corresponding region and halfdecade. The standard deviation is directly below the mean, and the number of observations in that cell is directly below the standard deviation. The bottom right-hand cell gives the mean, standard deviation, and number of observations for the full sample.

Table 4.2.3
Contribution of Growth in Education per Worker, bcho
Marginal Distribution by Region and Period
(balanced sample)

Region							
Period	Sub-Saharan Africa	Latin America & Caribbean	S. Asia	E. Asia & Pacific	Middle East & N. Africa	Industrial countries	Total
1960-64	0.14	0.21	0.40	0.40	0.19	0.24	0.22
	0.18	0.18	0.25	0.36	0.25	0.21	0.23
	21	22	4	9	11	21	88
1965-69	0.18	0.22	0.43	0.51	0.13	0.40	0.28
	0.20	0.19	0.40	0.27	0.31	0.49	0.33
	21	22	4	9	11	21	88
1970-74	0.20	0.40	0.26	0.40	0.46	0.54	0.39
	0.13	0.25	0.16	0.23	0.23	0.57	0.35
	21	22	4	9	11	21	88
1975-79	0.27	0.51	0.31	0.47	0.61	0.61	0.48
	0.20	0.31	0.34	0.36	0.29	0.50	0.37
	21	22	4	9	11	21	88
1980-84	0.30	0.46	0.28	0.67	0.58	0.25	0.40
	0.19	0.21	0.16	0.16	0.29	0.16	0.24
	21	22	4	9	11	21	88
1985-89	0.30	0.43	0.27	0.69	0.55	0.17	0.37
	0.21	0.24	0.10	0.19	0.33	0.22	0.28
	21	22	4	9	11	21	88
1990-97	0.18	0.25	0.16	0.39	0.32	0.09	0.21
	0.12	0.14	0.06	0.10	0.18	0.13	0.16
	21	22	4	9	11	21	88
Total	0.23	0.35	0.30	0.50	0.41	0.33	0.34
	0.19	0.25	0.23	0.27	0.32	0.40	0.30
	147	154	28	63	77	147	616

Notes: Each cell of the table shows the mean (in bold) for the corresponding region and halfdecade. The standard deviation is directly below the mean, and the number of observations in that cell is directly below the standard deviation. The bottom right-hand cell gives the mean, standard deviation, and number of observations for the full sample.

Table 4.2.4
Estimated Residual, bcro
Marginal Distribution by Region and Period
(balanced sample)

Region							
Period	Sub-Saharan Africa	Latin America & Caribbean	S. Asia	E. Asia & Pacific	Middle East & N. Africa	Industrial countries	Total
1960-64	0.26	1.43	0.72	-0.43	2.79	2.33	1.31
	2.77	1.84	1.73	2.82	3.91	1.07	2.56
	21	22	4	9	11	21	88
1965-69	0.39	1.23	0.68	1.51	2.58	1.61	1.29
	2.41	1.16	1.22	1.40	1.99	1.28	1.78
	21	22	4	9	11	21	88
1970-74	0.87	1.22	-0.35	1.64	1.44	0.65	1.00
	1.94	2.17	1.01	1.00	2.57	2.18	2.05
	21	22	4	9	11	21	88
1975-79	-1.18	-0.68	0.75	1.49	1.07	0.65	0.02
	3.35	2.69	0.36	0.69	4.54	2.68	3.06
	21	22	4	9	11	21	88
1980-84	-1.99	-2.97	1.78	0.47	-0.77	0.57	-1.05
	2.53	1.94	1.03	2.07	1.41	0.90	2.37
	21	22	4	9	11	21	88
1985-89	0.28	-1.23	1.19	1.15	-0.65	1.10	0.11
	2.22	2.74	1.56	2.87	2.72	0.94	2.40
	21	22	4	9	11	21	88
1990-97	-1.59	0.26	1.24	2.26	-0.06	0.65	0.12
	3.14	2.64	0.81	1.93	1.79	1.05	2.50
	21	22	4	9	11	21	88
Total	-0.42	-0.11	0.86	1.15	0.91	1.08	0.40
	2.81	2.66	1.22	2.06	3.10	1.67	2.53
	147	154	28	63	77	147	616

Notes: Each cell of the table shows the mean (in bold) for the corresponding region and halfdecade. The standard deviation is directly below the mean, and the number of observations in that cell is directly below the standard deviation. The bottom right-hand cell gives the mean, standard deviation, and number of observations for the full sample.

Table 4.3 Growth accounting decompositions.

Country and Period	Growth in Real GDP per worker	Contribution of:		
		Physical capital per worker	Education per worker	Residual
	bgno	bcko	bcho	bcro
Angola				
1960-64				
1965-69				
1970-74				
1975-79				
1980-84				
1985-89				
1990-97				
Total				
Benin				
1960-64				
1965-69				
1970-74				
1975-79				
1980-84				
1985-89				
1990-97				
Total				
Botswana				
1960-64				
1965-69				
1970-74				
1975-79				
1980-84				
1985-89				
1990-97				
Total				
Burkina Faso				
1960-64				
1965-69				
1970-74				
1975-79				
1980-84				
1985-89				
1990-97				
Total				
Burundi				
1960-64				
1965-69				
1970-74				

1975-79				
1980-84				
1985-89				
1990-97				
Total				
Cameroon				
1960-64	1.16	0.49	0.06	0.61
1965-69	-0.83	1.33	0.14	-2.30
1970-74	3.30	1.93	0.31	1.06
1975-79	6.00	2.45	0.46	3.09
1980-84	6.50	3.23	0.47	2.81
1985-89	-1.60	2.53	0.45	-4.57
1990-97	-7.54	-0.73	0.26	-7.07
Total	1.00	1.60	0.30	-0.91
C.A.R.				
1960-64				
1965-69				
1970-74				
1975-79				
1980-84				
1985-89				
1990-97				
Total				
Chad				
1960-64				
1970-74				
1975-79				
1980-84				
1985-89				
1990-97				
Total				
Congo, D. R.				
1960-64	1.31	-0.52	0.23	1.59
1965-69	2.88	-0.07	0.25	2.71
1975-79	-5.16	0.22	0.38	-5.76
1980-84	0.04	1.38	0.51	-1.84
1985-89	-1.03	0.76	0.52	-2.30
1990-97	-9.66	-0.18	0.30	-9.77
Total	-1.29	0.30	0.35	-1.95
Congo, Rep.				
1960-64				
1965-69				
1970-74				
1975-79				
1985-89				
1990-97				
Total				
Cote d'Ivoire				
1960-64	8.87	2.55	0.06	6.25
1965-69	3.88	2.14	0.18	1.56

1970-74	4.53	2.02	0.29	2.21
1975-79	3.78	3.03	0.30	0.45
1980-84	-3.38	1.39	0.35	-5.11
1985-89	-1.93	-0.66	0.38	-1.65
Total	1.82	1.33	0.25	0.24
Ethiopia				
1960-64	2.36	2.63	0.01	-0.28
1965-69	1.71	2.16	0.02	-0.47
1970-74	1.94	0.86	0.04	1.04
1975-79	0.13	-0.04	0.07	0.09
1980-84	0.00	1.81	0.12	-1.93
1985-89	0.47	1.69	0.14	-1.35
1990-97	-0.92	0.81	0.08	-1.81
Total	0.81	1.42	0.07	-0.67
Gabon				
1960-64				
1965-69				
1970-74				
1975-79				
1980-84				
1985-89				
1990-97				
Total				
Ghana				
1960-64	1.56	3.02	0.49	-1.96
1965-69	-0.28	0.94	0.78	-2.01
1970-74	2.41	0.40	0.20	1.81
1975-79	-4.22	-0.13	0.23	-4.32
1980-84	-3.94	-0.93	0.66	-3.66
1985-89	2.32	-0.40	0.72	2.01
1990-97	1.27	0.75	0.41	0.11
Total	-0.12	0.52	0.50	-1.15
Guinea				
1960-64				
1965-69				
1970-74				
1975-79				
1980-84				
1985-89				
1990-97				
Total				
Kenya				
1960-64	0.38	-1.03	-0.02	1.43
1965-69	3.67	-0.12	0.12	3.67
1970-74	4.85	0.98	0.12	3.76
1975-79	1.62	0.10	0.74	0.78
1980-84	-0.76	-0.48	0.57	-0.85
1985-89	1.99	-0.66	0.48	2.17
1990-97	-1.83	-0.72	0.28	-1.39
Total	1.42	-0.28	0.33	1.37

Madagascar				
1960-64	-0.07	0.51	0.01	-0.58
1965-69	1.50	0.74	0.06	0.70
1970-74	-0.66	0.53	0.18	-1.36
1975-79	-0.75	-0.04	0.25	-0.96
1980-84	-3.71	-0.29	0.33	-3.75
1985-89	0.27	-0.08	0.37	-0.02
1990-97	-2.04	-0.18	0.21	-2.07
Total	-0.78	0.17	0.20	-1.15
Malawi				
1960-64	0.28	1.54	0.03	-1.29
1965-69	5.06	3.12	0.18	1.76
1970-74	4.17	3.55	0.26	0.36
1975-79	3.49	2.49	0.09	0.90
1980-84	-1.28	0.05	0.18	-1.51
1985-89	-0.50	-0.59	0.22	-0.13
1990-97	-1.80	-0.55	0.13	-1.38
Total	1.35	1.37	0.16	-0.18
Mali				
1960-64	1.53	0.80	0.03	0.70
1965-69	0.75	0.86	0.01	-0.11
1970-74	0.32	0.34	0.10	-0.12
1975-79	6.17	0.41	0.21	5.55
1980-84	-4.81	0.07	0.23	-5.11
1985-89	3.11	0.31	0.22	2.58
1990-97	-1.27	0.44	0.13	-1.85
Total	0.83	0.46	0.13	0.23
Mauritius				
1960-64	3.82	-0.30	0.48	3.64
1965-69	-2.31	-0.68	0.42	-2.04
1970-74	4.57	0.27	0.42	3.88
1975-79	3.04	0.64	0.62	1.78
1980-84	-2.33	-0.65	0.33	-2.01
1985-89	4.90	0.56	0.24	4.10
1990-97	3.04	1.39	0.14	1.51
Total	2.10	0.18	0.38	1.55
Mozambique				
1960-64	0.77	1.16	0.06	-0.46
1965-69	4.94	1.66	0.35	2.93
1970-74	-0.34	1.50	0.16	-2.00
1975-79	-8.11	-1.03	0.12	-7.20
1980-84	-7.32	-0.74	0.26	-6.85
1985-89	3.37	0.03	0.29	3.05
1990-97	3.60	0.48	0.17	2.95
Total	-0.44	0.44	0.20	-1.08
Namibia				
1960-64				
1965-69				
1970-74				
1975-79				

1980-84				
1985-89				
1990-97				
Total				
Niger				
1960-64				
1965-69				
1970-74				
1975-79				
1980-84				
1985-89				
1990-97				
Total				
Nigeria				
1960-64	1.57	1.37	0.15	0.04
1965-69	-3.07	1.27	0.28	-4.61
1970-74	6.57	3.24	0.22	3.11
1975-79	-0.65	3.66	0.14	-4.45
1980-84	-6.06	0.51	0.28	-6.85
1985-89	1.94	-1.22	0.48	2.68
1990-97	0.60	-0.97	0.25	1.32
Total	0.13	1.12	0.26	-1.25
Rwanda				
1960-64	-6.67	0.46	0.10	-7.24
1965-69	4.96	0.36	0.13	4.47
1970-74	-0.55	0.69	0.13	-1.37
1975-79	3.34	1.52	0.24	1.59
1980-84	0.84	2.20	-0.08	-1.28
1985-89	0.02	1.80	-0.17	-1.61
1990-97	-7.37	-0.10	-0.10	-7.18
Total	-0.78	0.99	0.04	-1.80
Senegal				
1960-64	1.14	0.06	-0.20	1.28
1965-69	-1.70	-0.25	0.21	-1.65
1970-74	-0.35	0.28	0.27	-0.89
1975-79	0.05	-0.05	0.12	-0.02
1980-84	-0.31	-0.12	0.33	-0.52
1985-89	1.44	0.12	0.39	0.94
1990-97	-0.95	0.23	0.23	-1.40
Total	-0.10	0.04	0.19	-0.33
Sierra Leone				
1960-64	2.83	1.62	0.18	1.02
1965-69	4.12	2.40	0.19	1.53
1970-74	3.09	1.22	0.46	1.41
1975-79	-0.32	0.40	0.13	-0.85
1980-84	1.43	0.64	0.10	0.68
1985-89	-0.47	-0.21	0.12	-0.38
1990-97	-0.16	-0.24	0.07	0.00
Total	1.50	0.83	0.18	0.49
South Africa				

1960-64	2.21	0.49	0.07	1.65
1965-69	2.29	1.15	0.40	0.74
1970-74	2.70	1.95	0.05	0.70
1975-79	0.88	1.47	-0.05	-0.55
1980-84	0.37	0.83	0.20	-0.65
1985-89	-1.28	-0.29	0.26	-1.25
1990-97	-2.71	-0.53	0.15	-2.33
Total	0.64	0.72	0.15	-0.24
Sudan				
1960-64	-0.96	4.16	0.04	-5.16
1965-69	-1.18	1.88	0.08	-3.14
1970-74	-0.37	1.01	0.16	-1.54
1975-79	3.44	1.93	0.22	1.29
1980-84	-0.38	1.22	0.33	-1.92
1985-89	-2.42	-0.19	0.35	-2.58
1990-97	1.03	-0.42	0.21	1.24
Total	-0.12	1.37	0.20	-1.69
Tanzania				
1960-64	2.17	-0.19	0.46	1.89
1965-69	3.34	0.60	0.13	2.61
1970-74	2.42	1.27	-0.13	1.27
1975-79	-0.52	0.81	0.24	-1.57
1980-84	-1.81	0.21	-0.02	-2.00
1985-89	2.17	0.20	-0.12	2.09
1990-97	-0.17	0.79	-0.07	-0.89
Total	1.09	0.53	0.07	0.49
Togo				
1960-64				
1965-69				
1970-74				
1975-79				
1980-84				
1985-89				
1990-97				
Total				
Uganda				
1960-64	1.97	0.67	0.13	1.17
1965-69	0.35	1.24	-0.22	-0.67
1970-74	-0.55	0.78	0.14	-1.47
1975-79	-6.21	-0.24	0.35	-6.32
1980-84	0.22	-0.19	0.29	0.13
1985-89	0.13	-0.10	0.26	-0.03
1990-97	2.50	0.06	0.16	2.29
Total	-0.23	0.31	0.16	-0.70
Zambia				
1960-64	0.91	-0.54	0.40	1.05
1965-69	1.30	1.00	0.09	0.21
1970-74	1.22	0.88	0.28	0.06
1975-79	-3.48	-0.70	0.63	-3.41
1980-84	-2.36	-1.56	0.60	-1.40

1985-89	-1.27	-1.98	0.56	0.15
1990-97	-3.83	-1.89	0.32	-2.27
Total	-1.07	-0.68	0.41	-0.80
Zimbabwe				
1960-64	-0.65	-0.91	0.14	0.12
1965-69	2.31	-0.18	0.07	2.41
1970-74	6.34	1.38	0.25	4.71
1975-79	-4.58	0.10	0.28	-4.97
1980-84	2.08	0.09	0.25	1.74
1985-89	1.87	-0.41	0.24	2.04
1990-97	-1.41	-0.29	0.14	-1.26
Total	0.85	-0.03	0.20	0.68

Source: Collins and Bosworth (1996).

5. Hoeffler (1999) augmented Solow model.

Table 5.1 Definitions of variables

Variable	Definition	Units	Source
<i>Dependent variable</i>			
gyso	difference in ln of real GDP per capita in initial and final year of the period (e.g., 1960 and 1965).	see below for ln(ynin)	PWT5.6 as extended in GDN dataset
<i>Explanatory variables</i>			
ln(ynin)	ln of real GDP per capita in the initial year of the halfdecade (e.g., 1960)	(ynin) chained real dollars at 1985 international prices	same
ln(hi6)	ln of hi6 , the average ratio of investment to GDP for the periods 1960-65, 1965-70, etc. Note that overlapping averages are used (1965 enters both the first and second period).	I and GDP in real dollars at 1985 international prices.	PWT5.6
rpah	ln of $(n + 0.05)$ where n is the average log difference in population for the period. This is the replacement investment term used in the Hoeffler 1999 sample.		Population data from World Bank.
rpso	ln of $(n + 0.05)$ where n is the average log difference in population for the period. This variable is used in the tables below when the Hoeffler measure is missing. It differs from rpah only in using more recent population data.		Population data from World Bank.
ln(ty15)	ln of ty15 , average total years of schooling in the population of age 15 or higher, in the initial year of the period, e.g., 1960.	log of years.	Barro and Lee 1996.
i	Indicator variable = 1 if observation is in the Hoeffler WG sample, 0 otherwise. These observations are used to construct the regression-sample means used in calculating contributions in Table 5.3		

Notes: We thank Anke Hoeffler for access to her data. Variables identified in bold are provided in the country spreadsheets.

Table 5.2 Augmented Solow model: system-GMM results.

Dependent variable: growth in real GDP per capita		SYS-GMM
ln(y_{nin}) initial income	-0.151 (-2.874)	
ln(hi6) investment rate	0.249 (6.408)	
rpah ln(n + 0.05)	-0.419 (-2.897)	
ln(ty15) schooling attainment	0.011 (0.310)	
# of observations	404	
# of countries	85	
(TSS-RSS)/TSS	0.105	

Source: Hoeffler (1999), “The Augmented Solow Model and the African Growth Debate,” revised April 2000. Results differ from those reported in Hoeffler 1999 due to minor data revisions. *t*-statistics are in parentheses. The regression contains a full set of halfdecade dummy variables. Variables are defined in Appendix Table 3.1. We thank Anke Hoeffler for access to her data.

Table 5.3 Fits and residuals from SYS-GMM estimation of augmented Solow model.

Country and Period	i	Actual growth	Predicted growth	Residual	Actual deviation of growth from sample mean	Estimated contribution of:					Residual
						initial income	investment rate	initial educational attainment	replacement investment term	Time dummies	
						ln(y _{nin})	ln(hi6)	ln(ty15)	rpah (rps)		
gyso											
Angola											
1960-64	0	2.63			0.70	2.90	-8.21		0.67	0.60	
1965-69	0	1.85			-0.08	2.50	-6.17		0.60	0.63	
1970-74	0	-9.32			-11.26	2.22	-6.03		0.32	-0.06	
1975-79	0	-1.59			-3.53	3.63	-6.88		-0.85	0.26	
1980-84	0	1.04			-0.90	3.87	-6.98		-0.75	-1.44	
1985-89	0	-0.95			-2.88	3.71	-8.12		-0.90	0.10	
1990-97	0	-3.46			-5.40	3.86			-1.48	0.60	
Total	0	-1.40			-3.34	3.24	-7.07		-0.34	0.10	
Benin											
1960-64	0	1.59			-0.34	2.39	-6.40		-0.67	0.60	
1965-69	0	-1.27			-3.20	2.15	-5.93		-0.72	0.63	
1970-74	1	-1.22	-1.58	0.37	-3.15	2.34	-4.60	-0.45	-0.73	-0.06	0.34
1975-79	1	1.15	0.76	0.39	-0.79	2.53	-2.78	-0.36	-0.80	0.26	0.37
1980-84	1	-0.11	-0.21	0.11	-2.04	2.36	-1.55	-0.25	-1.23	-1.44	0.09
1985-89	1	-3.72	-0.89	-2.83	-5.65	2.37	-3.76	-0.19	-1.32	0.10	-2.85
1990-97	0	1.86	0.76	1.10	-0.07	2.93	-3.53	-0.14	-1.01	0.60	1.08
Total	0.57	-0.24	-0.23	-0.17	-2.18	2.44	-4.08	-0.28	-0.93	0.10	-0.19
Botswana											
1960-64	1	1.41	2.38	-0.98	-0.53	4.58	-3.80	-0.15	-0.76	0.60	-1.00
1965-69	1	7.21	6.28	0.93	5.27	4.36	0.20	-0.16	-0.66	0.63	0.91
1970-74	1	9.67	7.26	2.41	7.74	3.27	4.21	-0.12	-1.95	-0.06	2.39
1975-79	1	7.48	4.61	2.86	5.54	1.81	2.42	-0.09	-1.70	0.26	2.84
1980-84	1	3.72	1.62	2.10	1.79	0.68	2.14	-0.01	-1.65	-1.44	2.08
1985-89	0	-0.45	1.19	-1.64	-2.38	0.11	0.57	0.00	-1.51	0.10	-1.66

1990-97	0	2.28			0.35	0.18		0.03	-0.73	0.60	
Total	0.71	4.47	3.89	0.95	2.54	2.14	0.96	-0.07	-1.28	0.10	0.93
Burkina Faso											
1960-64	0	-4.02			-5.95	5.06	-7.05		0.05	0.60	
1965-69	0	0.05			-1.88	5.67	-5.29		0.01	0.63	
1970-74	0	2.13			0.19	5.66	-2.05		0.11	-0.06	
1975-79	0	1.88			-0.05	5.34	-2.46		-0.35	0.26	
1980-84	0	1.60			-0.34	5.05	-2.83		-0.58	-1.44	
1985-89	0	0.64			-1.30	4.81	-1.16		-0.48	0.10	
1990-97	0	0.52			-1.41	4.71	-1.03		-0.44	0.60	
Total	0	0.40			-1.53	5.19	-3.12		-0.24	0.10	
Burundi											
1960-64	0	-9.91			-11.84	4.03	-10.42		0.42	0.60	
1965-69	0	-2.69			-4.62	5.53	-8.55		0.09	0.63	
1970-74	0	5.41			3.48	5.94	-7.15		1.54	-0.06	
1975-79	0	1.42			-0.51	5.12	-4.33		-0.29	0.26	
1980-84	0	1.87			-0.07	4.90	-2.84		-0.87	-1.44	
1985-89	0	0.85			-1.08	4.62	-3.55		-0.94	0.10	
1990-97	0	-4.66			-6.59	4.49	-3.68		-0.44	0.60	
Total	0	-1.10			-3.03	4.95	-5.79		-0.07	0.10	
Cameroon											
1960-64	1	0.97	1.13	-0.15	-0.96	4.03	-5.53	-0.15	0.26	0.60	-0.17
1965-69	1	3.56	1.58	1.98	1.62	3.88	-4.44	-0.14	-0.27	0.63	1.96
1970-74	1	1.32	1.07	0.26	-0.61	3.34	-3.21	-0.12	-0.80	-0.06	0.24
1975-79	1	6.59	1.82	4.76	4.65	3.14	-2.12	-0.10	-1.28	0.26	4.74
1980-84	1	4.39	0.59	3.80	2.45	2.15	-1.11	-0.07	-0.84	-1.44	3.78
1985-89	1	-3.86	1.55	-5.41	-5.79	1.48	-0.87	-0.04	-1.03	0.10	-5.43
1990-97	0	-3.42	-0.56	-2.86	-5.35	2.07	-4.22	-0.02	-0.90	0.60	-2.88
Total	0.86	1.36	1.03	0.34	-0.57	2.87	-3.07	-0.09	-0.69	0.10	0.32
C.A.R.											
1960-64	1	-1.20	3.76	-4.96	-3.13	3.74	-2.34	-0.40	0.24	0.60	-4.98
1965-69	1	2.39	3.85	-1.47	0.45	3.93	-2.27	-0.39	0.04	0.63	-1.49
1970-74	1	-0.99	1.64	-2.62	-2.92	3.57	-3.54	-0.33	0.09	-0.06	-2.64

1975-79	1	-0.14	-1.80	1.66	-2.08	3.71	-6.75	-0.27	-0.68	0.26	1.64
1980-84	1	-2.28	-1.98	-0.30	-4.21	3.74	-5.29	-0.22	-0.68	-1.44	-0.32
1985-89	1	-1.69	0.09	-1.78	-3.62	4.08	-5.04	-0.17	-0.79	0.10	-1.80
1990-97	0	-1.32	0.57	-1.89	-3.25	4.34	-5.95	-0.14	-0.19	0.60	-1.91
Total	0.86	-0.75	0.87	-1.62	-2.68	3.87	-4.45	-0.27	-0.28	0.10	-1.64
Chad											
1960-64	0	-0.54			-2.47	3.53	-10.38		0.38	0.60	
1965-69	0	-2.18			-4.11	3.61	-10.06		0.23	0.63	
1970-74	0	-2.17			-4.11	3.94	-8.06		0.02	-0.06	
1975-79	0	-2.29			-4.22	4.27	-7.37		-0.06	0.26	
1980-84	0	-5.11			-7.04	4.62	-12.10		-0.82	-1.44	
1985-89	0	-0.50			-2.43	5.39	-11.19		-0.43	0.10	
1990-97	0	-0.25			-2.19	5.46	-12.58		-1.27	0.60	
Total	0	-1.86			-3.80	4.40	-10.25		-0.28	0.10	
Congo, D. R.											
1960-64	1	2.28	-3.61	5.89	0.34	4.85	-9.80	-0.34	-0.83	0.60	5.86
1965-69	1	4.49	-2.72	7.22	2.56	4.50	-8.49	-0.28	-1.00	0.63	7.19
1970-74	1	-1.48	-1.61	0.13	-3.42	3.82	-6.19	-0.23	-0.86	-0.06	0.11
1975-79	1	-5.83	-0.03	-5.79	-7.76	4.05	-4.95	-0.17	-1.13	0.26	-5.82
1980-84	1	-1.48	-0.32	-1.16	-3.42	4.93	-4.28	-0.11	-1.33	-1.44	-1.18
1985-89	0	-2.81	0.89	-3.70	-4.75	5.15	-4.77	-0.06	-1.46	0.10	-3.72
1990-97	0	-9.53			-11.47	5.58		-0.04	-1.33	0.60	
Total	0.71	-2.05	-1.24	0.43	-3.99	4.70	-6.41	-0.18	-1.14	0.10	0.41
Congo, Rep.											
1960-64	0	-0.71			-2.64	2.33	-0.43		-0.40	0.60	
1965-69	0	8.64			6.71	2.44	-0.91		-0.65	0.63	
1970-74	0	0.66			-1.27	1.13	-1.45		-0.82	-0.06	
1975-79	0	2.24			0.31	1.03	-2.23		-0.99	0.26	
1980-84	0	6.68			4.75	0.69	-1.12		-0.94	-1.44	
1985-89	0	-3.97	-4.50	0.52	-5.91	-0.32	-5.27	0.09	-1.01	0.10	0.50
1990-97	0	-1.59	-4.47	2.88	-3.53	0.28	-6.40	0.10	-0.96	0.60	2.86
Total	0	1.71	-4.48	1.70	-0.23	1.08	-2.54	0.10	-0.82	0.10	1.68

Cote d'Ivoire											
1960-64	0	4.46			2.53	2.34	-1.61		-1.71	0.60	
1965-69	0	2.86			0.92	1.66	-0.85		-2.06	0.63	
1970-74	0	2.35			0.41	1.23	-0.41		-2.19	-0.06	
1975-79	0	-0.29			-2.22	0.88	0.46		-2.00	0.26	
1980-84	0	-2.94			-4.88	0.92	-1.74		-1.92	-1.44	
1985-89	0	-4.84			-6.77	1.37	-3.94		-1.47	0.10	
1990-97	0	-0.31			-2.24	2.10	-5.27		-0.99	0.60	
Total	0	0.18			-1.75	1.50	-1.91		-1.76	0.10	
Ethiopia											
1960-64	0	2.42			0.48	6.80	-4.79		-0.16	0.60	
1965-69	0	0.41			-1.52	6.43	-4.41		-0.70	0.63	
1970-74	0	0.66			-1.27	6.37	-5.39		-0.70	-0.06	
1975-79	0	1.02			-0.92	6.27	-6.15		-0.81	0.26	
1980-84	0	-1.48			-3.42	6.11	-5.99		-0.90	-1.44	
1985-89	0	1.61			-0.33	6.34			-1.38	0.10	
1990-97	0	1.86			-0.08	6.09			-0.27	0.60	
Total	0	0.93			-1.01	6.34	-5.35		-0.70	0.10	
Gabon											
1960-64	0	7.38			5.44	0.92	0.96		1.80	0.60	
1965-69	0	7.18			5.24	-0.19	-0.13		2.70	0.63	
1970-74	0	8.59			6.65	-1.28	2.59		-1.37	-0.06	
1975-79	0	-3.41			-5.35	-2.58	3.77		-1.18	0.26	
1980-84	0	-3.28			-5.21	-2.06	3.20		-1.43	-1.44	
1985-89	0	-0.57			-2.50	-1.57	1.61		-1.45	0.10	
1990-97	0	-0.12			-2.05	-1.48	0.46		-0.72	0.60	
Total	0	2.25			0.32	-1.18	1.78		-0.24	0.10	
Ghana											
1960-64	1	-0.25	2.34	-2.59	-2.18	3.02	-1.88	-0.28	-1.03	0.60	-2.61
1965-69	1	3.64	2.29	1.34	1.70	3.06	-3.15	-0.25	0.09	0.63	1.32
1970-74	1	-2.94	-0.69	-2.26	-4.88	2.51	-4.28	0.00	-0.76	-0.06	-2.28
1975-79	1	1.31	0.39	0.92	-0.62	2.95	-5.01	0.00	0.27	0.26	0.90
1980-84	1	-4.18	-4.93	0.75	-6.11	2.76	-6.79	0.01	-1.37	-1.44	0.73

1985-89	1	2.60	-1.14	3.74	0.67	3.39	-5.14	0.02	-1.43	0.10	3.72
1990-97	0	1.91	-0.07	1.98	-0.02	2.99	-4.76	0.02	-0.84	0.60	1.96
Total	0.86	0.30	-0.26	0.56	-1.64	2.95	-4.43	-0.07	-0.72	0.10	0.53
Guinea											
1960-64	0	-0.51			-2.44	4.44	-4.00		-0.13	0.60	
1965-69	0	-3.09			-5.02	4.52	-3.35		-0.34	0.63	
1970-74	0	7.69			5.76	4.99	-3.25		0.92	-0.06	
1975-79	0	3.50			1.56	3.82	-4.60		0.76	0.26	
1980-84	0	-2.75			-4.69	3.29	-5.24		-0.19	-1.44	
1985-89	0	1.49			-0.45	3.71	-5.24		-0.97	0.10	
1990-97	0	1.35			-0.58	3.49	-4.79		-0.74	0.60	
Total	0	1.10			-0.84	4.04	-4.35		-0.10	0.10	
Kenya											
1960-64	1	-1.41	5.59	-7.01	-3.35	3.94	0.60	-0.18	-1.28	0.60	-7.03
1965-69	1	-0.93	6.36	-7.29	-2.87	4.16	1.25	-0.16	-1.45	0.63	-7.31
1970-74	1	7.13	5.85	1.28	5.20	4.30	1.50	-0.09	-1.71	-0.06	1.26
1975-79	1	1.69	3.64	-1.94	-0.24	3.22	0.29	-0.09	-1.95	0.26	-1.96
1980-84	1	-2.75	1.18	-3.93	-4.68	2.96	-0.21	0.01	-2.06	-1.44	-3.95
1985-89	1	2.75	2.75	0.00	0.81	3.38	-0.96	0.01	-1.68	0.10	-0.02
1990-97	0	0.08	2.53	-2.46	-1.86	2.96	-2.07	0.03	-0.90	0.60	-2.48
Total	0.86	0.94	3.99	-3.05	-1.00	3.56	0.06	-0.07	-1.58	0.10	-3.07
Madagascar											
1960-64	0	-1.39			-3.32	2.15	-12.37		-0.69	0.60	
1965-69	0	0.62			-1.31	2.36	-11.48		-0.43	0.63	
1970-74	0	-2.83			-4.76	2.27	-11.30		-0.73	-0.06	
1975-79	0	-0.22			-2.16	2.70	-11.36		-0.62	0.26	
1980-84	0	-4.93			-6.87	2.73	-12.10		-0.73	-1.44	
1985-89	0	-2.61			-4.54	3.48	-10.72		-0.90	0.10	
1990-97	0	-2.24			-4.18	3.87	-10.57		-0.92	0.60	
Total	0	-1.94			-3.88	2.79	-11.41		-0.72	0.10	
Malawi											
1960-64	1	1.62	3.32	-1.70	-0.32	5.61	-4.22	-0.13	-0.46	0.60	-1.72
1965-69	1	1.32	5.39	-4.08	-0.62	5.37	-1.74	-0.11	-0.66	0.63	-4.10

1970-74	1	2.91	5.84	-2.92	0.98	5.17	0.06	-0.13	-1.12	-0.06	-2.94	
1975-79	1	1.69	5.65	-3.96	-0.24	4.73	0.11	-0.06	-1.29	0.26	-3.98	
1980-84	1	-1.34	1.51	-2.85	-3.28	4.47	-2.08	-0.05	-1.30	-1.44	-2.87	
1985-89	1	0.04	1.32	-1.29	-1.90	4.67	-3.81	-0.04	-1.52	0.10	-1.31	
1990-97	0	1.36	2.62	-1.25	-0.57	4.67	-3.70	-0.04	-0.82	0.60	-1.27	
Total	0.86	1.09	3.66	-2.58	-0.85	4.95	-2.20	-0.08	-1.02	0.10	-2.60	
Mali												
1960-64	1	-4.14	0.77	-4.91	-6.07	4.58	-5.88	-0.51	0.07	0.60	-4.93	
1965-69	1	-0.75	3.40	-4.15	-2.68	5.20	-3.64	-0.51	-0.20	0.63	-4.17	
1970-74	1	1.91	2.70	-0.79	-0.02	5.32	-3.96	-0.45	-0.06	-0.06	-0.81	
1975-79	1	2.86	2.22	0.64	0.93	5.03	-4.34	-0.39	-0.25	0.26	0.62	
1980-84	1	0.00	-0.18	0.18	-1.93	4.59	-4.54	-0.35	-0.36	-1.44	0.16	
1985-89	1	-0.04	2.19	-2.22	-1.97	4.59	-3.28	-0.32	-0.82	0.10	-2.24	
1990-97	0	0.11	3.29	-3.18	-1.83	4.60	-2.59	-0.30	-0.92	0.60	-3.20	
Total	0.86	-0.01	2.05	-2.06	-1.94	4.84	-4.03	-0.40	-0.36	0.10	-2.08	
Mauritius												
1960-64	1	1.83	0.23	1.60	-0.11	-0.50	-1.03	-0.01	-0.74	0.60	1.58	
1965-69	1	-5.37	-0.95	-4.42	-7.30	-0.78	-2.87	0.01	0.14	0.63	-4.44	
1970-74	1	8.34	2.00	6.34	6.40	0.03	-0.86	0.06	0.91	-0.06	6.32	
1975-79	1	1.84	0.19	1.65	-0.10	-1.23	-1.04	0.06	0.23	0.26	1.63	
1980-84	1	1.16	-2.58	3.74	-0.78	-1.51	-2.81	0.11	1.15	-1.44	3.72	
1985-89	1	6.46	0.35	6.11	4.53	-1.68	-1.30	0.12	1.20	0.10	6.09	
1990-97	0	3.37	0.44	2.93	1.44	-2.66	-0.56	0.12	1.02	0.60	2.91	
Total	0.86	2.52	-0.05	2.56	0.58	-1.19	-1.49	0.07	0.56	0.10	2.54	
Mozambique												
1960-64	1	1.85	-6.33	8.19	-0.08	2.25	-10.57	-0.44	-0.09	0.60	8.17	
1965-69	1	3.37	-5.64	9.01	1.43	1.97	-9.48	-0.41	-0.27	0.63	8.99	
1970-74	1	-4.73	-6.78	2.05	-6.66	1.46	-9.17	-0.39	-0.52	-0.06	2.03	
1975-79	1	-4.95	-7.25	2.30	-6.88	2.18	-10.47	-0.38	-0.75	0.26	2.28	
1980-84	1	-4.18	-8.69	4.51	-6.11	2.92	-11.03	-0.34	-0.72	-1.44	4.49	
1985-89	1	0.29	-5.84	6.13	-1.64	3.56	-10.38	-0.32	-0.71	0.10	6.11	
1990-97	0	2.64	-4.01	6.65	0.70	3.51	-9.36	-0.29	-0.38	0.60	6.63	
Total	0.86	-0.81	-6.36	5.55	-2.75	2.55	-10.07	-0.37	-0.49	0.10	5.53	

Namibia												
1960-64	0	5.23			3.30	0.92	2.14			-0.39	0.60	
1965-69	0	2.56			0.62	0.13	3.34			-0.52	0.63	
1970-74	0	6.23			4.30	-0.26	4.87			-0.64	-0.06	
1975-79	0	-4.34			-6.28	-1.20	5.14			-0.82	0.26	
1980-84	0	-2.18			-4.12	-0.54	-0.32			-0.80	-1.44	
1985-89	0	1.83			-0.10	-0.21	-2.20			-0.84	0.10	
1990-97	0	-0.46			-2.39	-0.49	-3.65			-0.74	0.60	
Total	0	1.27			-0.67	-0.24	1.33			-0.68	0.10	
Niger												
1960-64	1	3.73	3.35	0.38	1.79	4.59	-2.17	-0.57	-1.02	0.60	0.36	
1965-69	1	4.56	2.79	1.76	2.62	4.03	-3.09	-0.57	-0.12	0.63	1.74	
1970-74	1	-6.01	1.88	-7.89	-7.95	3.34	-2.14	-0.55	-0.63	-0.06	-7.91	
1975-79	1	3.70	3.53	0.16	1.76	4.25	-1.11	-0.45	-1.32	0.26	0.14	
1980-84	1	-4.98	-0.66	-4.32	-6.91	3.69	-2.78	-0.41	-1.62	-1.44	-4.34	
1985-89	0	-2.92	0.54	-3.46	-4.86	4.44	-4.26	-0.36	-1.29	0.10	-3.48	
1990-97	0	-1.86			-3.80	4.89		-0.32	-1.53	0.60		
Total	0.71	-0.54	1.91	-2.23	-2.48	4.18	-2.59	-0.46	-1.08	0.10	-2.25	
Nigeria												
1960-64	0	1.92			-0.02	4.40	-2.32			-0.70	0.60	
1965-69	0	4.13			2.19	4.11	-1.34			-0.81	0.63	
1970-74	0	9.69			7.75	3.49	0.56			-0.92	-0.06	
1975-79	0	2.88			0.95	2.02	1.81			-1.11	0.26	
1980-84	0	-6.06			-8.00	1.58	-0.79			-1.29	-1.44	
1985-89	0	-1.30			-3.24	2.50	-3.00			-1.05	0.10	
1990-97	0	-0.51			-2.45	2.70	-2.76			-1.04	0.60	
Total	0	1.53			-0.40	2.97	-1.12			-0.99	0.10	
Rwanda												
1960-64	0	-8.56			-10.50	4.56	-9.72			-1.10	0.60	
1965-69	0	12.29			10.35	5.86	-8.49			-1.08	0.63	
1970-74	1	-0.22	-3.76	3.55	-2.15	4.00	-7.77	-0.28	-1.57	-0.06	3.52	
1975-79	1	3.36	-1.80	5.16	1.42	4.03	-6.38	-0.21	-1.42	0.26	5.14	
1980-84	1	0.50	-2.51	3.00	-1.44	3.53	-5.32	-0.18	-1.00	-1.44	2.98	

1985-89	0	-0.52	0.78	-1.30	-2.46	3.45	-3.53	-0.16	-0.99	0.10	-1.32	
1990-97	0	-3.81	0.24	-4.05	-5.74	3.53	-5.88	-0.13	0.21	0.60	-4.07	
Total	0.43	0.43	-1.41	1.27	-1.50	4.14	-6.73	-0.19	-0.99	0.10	1.25	
Senegal												
1960-64	1	1.75	-0.17	1.93	-0.18	2.54	-4.40	-0.15	-0.69	0.60	1.91	
1965-69	1	0.05	-1.30	1.35	-1.88	2.28	-5.11	-0.16	-0.86	0.63	1.33	
1970-74	1	-0.41	-0.89	0.48	-2.34	2.27	-3.82	-0.16	-1.03	-0.06	0.46	
1975-79	1	0.19	-1.13	1.32	-1.74	2.33	-4.58	-0.09	-0.96	0.26	1.30	
1980-84	1	0.51	-5.06	5.56	-1.43	2.30	-6.79	-0.09	-0.94	-1.44	5.54	
1985-89	1	-0.31	-3.55	3.24	-2.25	2.23	-6.57	-0.09	-1.13	0.10	3.22	
1990-97	0	0.01	-2.14	2.15	-1.92	2.27	-6.13	-0.08	-0.71	0.60	2.13	
Total	0.86	0.26	-2.03	2.29	-1.68	2.32	-5.34	-0.12	-0.90	0.10	2.27	
Sierra Leone												
1960-64	0	4.81	-5.23	10.03	2.87	3.08	-10.93	-0.37	0.48	0.60	10.01	
1965-69	0	5.06	-4.65	9.71	3.13	2.36	-9.44	-0.35	0.24	0.63	9.69	
1970-74	1	-3.58	-8.39	4.81	-5.51	1.59	-11.53	-0.31	0.02	-0.06	4.79	
1975-79	1	-1.04	-8.16	7.12	-2.98	2.13	-12.10	-0.18	-0.19	0.26	7.10	
1980-84	1	-4.60	-9.03	4.43	-6.53	2.29	-11.30	-0.16	-0.33	-1.44	4.41	
1985-89	1	-0.09	-8.00	7.92	-2.02	2.98	-12.30	-0.13	-0.57	0.10	7.90	
1990-97	0	-8.21	-6.91	-1.30	-10.15	3.00	-11.78	-0.10	-0.54	0.60	-1.32	
Total	0.57	-1.09	-7.20	6.10	-3.03	2.49	-11.34	-0.23	-0.13	0.10	6.08	
South Africa												
1960-64	1	3.55	3.17	0.39	1.62	0.31	1.02	0.06	-0.73	0.60	0.37	
1965-69	1	4.36	3.58	0.78	2.42	-0.23	1.80	0.04	-0.58	0.63	0.76	
1970-74	1	1.85	1.96	-0.12	-0.09	-0.89	1.86	0.08	-0.93	-0.06	-0.14	
1975-79	1	-0.41	1.91	-2.32	-2.35	-1.17	1.61	0.07	-0.78	0.26	-2.34	
1980-84	1	-1.02	0.30	-1.32	-2.96	-1.11	1.60	0.03	-0.69	-1.44	-1.34	
1985-89	1	-0.45	0.57	-1.02	-2.38	-0.95	-0.07	0.11	-0.53	0.10	-1.04	
1990-97	0	-0.51	0.69	-1.20	-2.44	-0.88	-0.98	0.11	-0.07	0.60	-1.22	
Total	0.86	1.05	1.74	-0.69	-0.88	-0.70	0.98	0.07	-0.62	0.10	-0.71	
Sudan												
1960-64	0	-0.16			-2.10	3.14		-0.48	-0.04	0.60		
1965-69	0	-0.89			-2.82	3.16		-0.43	-0.31	0.63		

1970-74	0	-0.57	2.95	-3.53	-2.51	3.29	-0.76	-0.38	-1.05	-0.06	-3.55
1975-79	1	1.74	4.57	-2.83	-0.20	3.38	0.38	-0.31	-1.05	0.26	-2.85
1980-84	1	-1.81	2.20	-4.01	-3.75	3.12	-0.31	-0.25	-0.83	-1.44	-4.03
1985-89	1	-0.88	3.39	-4.27	-2.81	3.39	-0.96	-0.22	-0.83	0.10	-4.29
1990-97	0	4.43	5.11	-0.68	2.49	3.53	-0.69	-0.18	-0.06	0.60	-0.70
Total	0.43	0.26	3.64	-3.06	-1.67	3.29	-0.47	-0.32	-0.60	0.10	-3.09
Tanzania											
1960-64	1	3.02	4.51	-1.49	1.09	6.14	-3.12	0.01	-1.02	0.60	-1.51
1965-69	1	2.67	5.59	-2.92	0.74	5.68	-1.40	-0.03	-1.22	0.63	-2.94
1970-74	1	3.65	5.69	-2.04	1.72	5.28	-0.69	-0.05	-0.69	-0.06	-2.06
1975-79	1	-1.17	4.38	-5.55	-3.11	4.73	-1.06	-0.07	-1.40	0.26	-5.57
1980-84	1	-0.29	2.83	-3.13	-2.23	4.90	-1.20	-0.07	-1.27	-1.44	-3.15
1985-89	0	3.02	4.69	-1.68	1.08	4.95	-0.93	-0.05	-1.29	0.10	-1.70
1990-97	0	-0.26			-2.20	4.49		-0.05	-1.09	0.60	
Total	0.71	1.52	4.62	-2.80	-0.42	5.17	-1.40	-0.04	-1.14	0.10	-2.82
Togo											
1960-64	1	5.74	7.32	-1.58	3.81	5.72	-0.96	-0.62	0.68	0.60	-1.60
1965-69	1	4.68	4.24	0.44	2.75	4.85	-0.28	-0.45	-2.42	0.63	0.42
1970-74	1	0.00	6.06	-6.06	-1.93	4.14	0.92	-0.33	-0.53	-0.06	-6.08
1975-79	1	3.36	8.08	-4.72	1.42	4.14	2.85	-0.24	-0.84	0.26	-4.74
1980-84	1	-2.75	3.24	-6.00	-4.69	3.63	0.36	-0.08	-1.14	-1.44	-6.02
1985-89	1	0.13	4.13	-4.00	-1.81	4.05	-0.14	-0.04	-1.75	0.10	-4.02
1990-97	0	-2.27	4.10	-6.36	-4.20	4.03	-1.24	-0.03	-1.18	0.60	-6.38
Total	0.86	1.27	5.31	-4.04	-0.66	4.36	0.22	-0.26	-1.03	0.10	-4.06
Uganda											
1960-64	1	0.53	-3.66	4.19	-1.41	4.24	-7.97	-0.24	-2.20	0.60	4.17
1965-69	1	1.05	-2.64	3.69	-0.89	4.16	-7.03	-0.23	-2.09	0.63	3.67
1970-74	1	-0.92	-3.83	2.92	-2.85	4.00	-8.68	-0.19	-0.81	-0.06	2.90
1975-79	1	-2.92	-4.10	1.18	-4.86	4.14	-9.48	-0.19	-0.74	0.26	1.16
1980-84	1	0.22	-5.05	5.27	-1.71	4.58	-9.93	-0.19	0.01	-1.44	5.25
1985-89	1	0.51	-5.45	5.96	-1.42	4.55	-10.82	-0.17	-1.02	0.10	5.94
1990-97	0	3.28	-4.44	7.72	1.35	4.47	-10.02	-0.14	-1.26	0.60	7.70
Total	0.86	0.25	-4.17	4.42	-1.68	4.31	-9.13	-0.19	-1.16	0.10	4.40

Zambia												
1960-64	1	2.80	7.91	-5.11	0.87	2.79	3.59	-0.05	-0.93	0.60	-5.13	
1965-69	1	0.13	7.75	-7.62	-1.81	2.37	3.95	-0.03	-1.09	0.63	-7.64	
1970-74	1	2.27	7.51	-5.24	0.33	2.35	4.36	-0.02	-1.02	-0.06	-5.27	
1975-79	1	-5.07	3.98	-9.04	-7.00	2.00	1.03	0.00	-1.22	0.26	-9.07	
1980-84	1	-3.68	0.16	-3.84	-5.61	2.77	-1.63	0.06	-1.51	-1.44	-3.86	
1985-89	1	-3.19	2.08	-5.26	-5.12	3.33	-2.14	0.07	-1.20	0.10	-5.28	
1990-97	0	-0.85	5.74	-6.60	-2.79	3.81	0.23	0.08	-0.88	0.60	-6.62	
Total	0.86	-1.08	5.02	-6.10	-3.02	2.77	1.34	0.01	-1.12	0.10	-6.12	
Zimbabwe												
1960-64	1	-0.89	5.44	-6.33	-2.82	2.72	2.36	-0.16	-1.99	0.60	-6.35	
1965-69	1	2.69	5.16	-2.47	0.75	2.85	1.70	-0.13	-1.80	0.63	-2.49	
1970-74	1	4.41	4.93	-0.52	2.48	2.44	1.78	-0.11	-1.02	-0.06	-0.54	
1975-79	1	-2.24	2.66	-4.90	-4.18	1.78	-0.16	-0.10	-1.02	0.26	-4.92	
1980-84	1	0.17	0.68	-0.51	-1.77	2.12	-0.23	-0.10	-1.57	-1.44	-0.53	
1985-89	1	-0.57	2.18	-2.75	-2.50	2.09	-0.56	-0.05	-1.31	0.10	-2.77	
1990-97	0	0.71	3.92	-3.22	-1.23	2.18	-0.38	0.01	-0.40	0.60	-3.24	
Total	0.86	0.61	3.57	-2.96	-1.32	2.31	0.64	-0.09	-1.30	0.10	-2.98	

Notes: i is an indicator for whether the observation is in the Hoeffler 1999 WG regression sample ($i=1$) or not ($i=0$). Contributions are calculated by multiplying the regression coefficients in Table 5.2 by the difference between the variable and its mean in the $i=1$ sample (489 observations); see Section 2 above. The sample used for the sys-GMM estimation is smaller (404 observations) due to missing instruments for the 85 countries from the initial halfdecade.

6. Pooled conditional growth model.

Table 6.1 Definitions of variables.

Variable	Definition	Units	Source
<i>Dependent variable</i>			
dyn	Average growth rate of real GDP per capita, e.g. for 1960-64.	percent	World Bank. Annual growth rates calculated as $100*[y-y(-1)]/y(-1)$ using national accounts data in constant local currency.
<i>Conditioning variables</i>			
Base variables			
ln(ynin)	log of real GDP per capita in the initial year of the halfdecade (e.g., 1960)	(ynin) chained real dollars at 1985 international prices	PWT5.6, as extended in GDN dataset.
lifx	life expectancy at birth, interpolated to the initial year of the halfdecade.	years	GDN dataset. Observations linearly interpolated to initial year of halfdecade.
adep	age dependency ratio = average ratio of population between 15 and 65 to total population.	percent	WDI99.
dlfp	growth in potential labor force participation = average difference between growth rate of population between 15 and 65 and growth rate of total population.	percent	Population data from WDI99.
ttc1	terms of trade shock = initial share of exports to GDP, multiplied by the average percentage difference between the terms of trade in each year of the halfdecade and the terms of trade in the initial year of the halfdecade	percent	Export share data from WDI99. Terms of trade data from GDN dataset, extended using data from S. Collins and B. Bosworth*
dynt	trading partner growth rate = average growth rate of real GDP per capita among trading partners, weighted by shares in total trade.	percent	GDN dataset.
lloc	dummy variable equal to 1 for landlocked countries and zero otherwise.		GDN dataset.

Political instability

pin Political instability index = average number of assassinations, revolutions, and strikes. GDN dataset; underlying variables from Banks.

Policy variables

infL	CPI inflation rate, if under 500% (otherwise entered as missing).	percent	GDN dataset, extended using national GDP deflators from IMF IFS.**
bmpL	Black market premium, if under 500% (otherwise entered as missing)	percent	GDN dataset
gxbx	Government spending exclusive of defense and education.	percent	Barro/Lee 1994, extended using IMF government spending data from GDN dataset.***
mty	Share of manufacturing trade in GDP = ratio of imports plus exports of manufactured goods to GDP.	percent	WDI99, underlying data in current dollars.
dfy	Ratio of central government deficit after grants to GDP.	percent	GDN dataset.

Notes: Variables in bold are provided in the country spreadsheets.

**The Barro/Lee variable is available in halfdecadal averages for 1960-64 through 1980-84. This variable is constructed as the ratio of real government consumption to real GDP (both in 1985 international prices), minus the ratios of nominal government spending on military and education to nominal GDP. Where the resulting variable is negative, Barro and Lee replace it with a value of .01. To extend this variable to 1985 and later, we constructed a proxy using IMF government spending data in nominal terms only. The proxy variable is the ratio of current spending to GDP, minus the ratios of spending on education and defense to GDP. We ‘spliced’ this with the Barro and Lee data by first rebasing the proxy ratio to ensure that it has the same mean, country by country, as the Barro/Lee variable for 1980-84. Then we filled in the Barro/Lee variable for 1985 and later using the rebased proxy ratio. The annual data spreadsheets contain the separate components of the proxy ratio on an annual basis.

Table 6.2 *Pooled conditional model* [Table 5.3.1 in Ndulu/O’C]

Dependent variable: growth in real GDP per capita	
	OLS
ln(y_{nit})	-1.765
initial income	<i>(-6.104)</i>
lifx	0.089
initial life expectancy	<i>(2.872)</i>
adep	-0.052
age dependency ratio	<i>(-4.222)</i>
dlfp	0.728
growth in potential LF participation	<i>(2.711)</i>
ttc1	0.004
terms of trade shock	<i>(0.146)</i>
dynt	0.540
trading partner growth	<i>(2.759)</i>
lloc	-0.912
landlocked	<i>(-2.725)</i>
pin	-0.975
political instability index,	<i>(-4.220)</i>
infL	-0.004
inflation (< 500%),	<i>(-1.830)</i>
bmpL	-0.007
black market premium (< 500%),	<i>(-2.403)</i>
gxbx	-0.113
govt nonprod. cons/GDP, (Barro/Lee)	<i>(-4.555)</i>
constant	15.347
	<i>(5.365)</i>
# of observations	422
F	15.58
Prob > F	0
R-squared	0.407
Root MSE	2.186

Notes: Variables in bold are provided in the country spreadsheets. All regressions include halfdecade dummy variables. *t*-statistics are in italics.

Table 6.3 Fits and residuals from pooled conditional model in Table 6.2.

Country and Period	Fits and Residuals			Actual and predicted growth deviation			Breakdown of policy contribution by variable			
				Actual growth deviation from sample mean	Contribution to predicted growth deviation					
	Actual growth, dyn	Fitted growth	Residual		Base variables	Political instability, pin	Policy	Inflation (>500%) infl	Black mkt premium (>500%) bmpL	B/L gov't spending/GDP gxbx
Angola										
1960-64								-0.04		
1965-69								0.04		
1970-74								-0.18		
1975-79						-0.13				
1980-84						0.00				
1985-89	1.38			-0.82	-0.36	-0.13	0.05			
1990-97	-2.78			-4.98	-0.78	-0.05				
Total	-0.70			-2.90	-0.57	-0.07	0.05	-0.06		
Benin										
1960-64	0.20			-2.00	-0.42		-1.63	0.06	0.13	-1.82
1965-69	0.70			-1.49	-0.84		-1.12	0.06	0.10	-1.28
1970-74	0.19			-2.01	0.20		-1.05	0.04	0.16	-1.26
1975-79	-0.86	1.06	-1.92	-3.06	-0.86	0.13	-0.62	0.02	0.14	-0.78
1980-84	1.44	-0.28	1.72	-0.75	-1.55	0.20	-0.41	0.03	0.15	-0.59
1985-89	0.08			-2.11	-0.56	0.20		0.08	0.15	
1990-97	0.97			-1.23	0.14	0.12		0.03	0.15	
Total	0.39	0.39	-0.10	-1.81	-0.56	0.16	-0.97	0.04	0.14	-1.15
Botswana										
1960-64	3.68			1.48				0.06	0.11	
1965-69	5.72			3.52		0.20		0.05	0.11	
1970-74	15.88			13.68		0.20	-0.52	0.04	0.08	-0.63
1975-79	7.71			5.52		0.20	-0.61	0.02	0.01	-0.64
1980-84	7.18			4.99		0.20	-0.93	0.02	0.06	-1.00
1985-89	6.60			4.40		0.20		0.03	-0.02	
1990-97	2.53			0.33		0.20		0.02	0.09	
Total	7.04			4.85		0.20	-0.69	0.03	0.06	-0.76
Burkina Faso										
1960-64	0.84			-1.36			0.22	0.05	0.13	0.04
1965-69	1.64			-0.56	-0.25		0.63	0.06	0.10	0.47
1970-74	0.60			-1.60	-0.22		0.26	0.04	0.16	0.05
1975-79	1.76			-0.44	-0.42		0.17	0.02	0.14	0.00
1980-84	0.16			-2.04	-2.09		0.12	0.03	0.15	-0.06
1985-89	2.18	1.46	0.72	-0.02	-0.51	0.00	0.22	0.06	0.15	0.00
1990-97	0.88	0.94	-0.06	-1.32	-1.06	-0.05	0.10	0.04	0.15	-0.09

Total	1.15	1.20	0.33	-1.05	-0.76	-0.02	0.24	0.05	0.14	0.06
Burundi										
1960-64	-0.24			-2.44			1.06	0.04	0.16	0.86
1965-69	2.10			-0.10		0.09	0.39	0.06	-0.12	0.46
1970-74	3.80			1.60	0.11	0.00		0.04		-0.70
1975-79	2.07	2.06	0.01	-0.13	-0.05	0.13	-0.43	-0.01	0.01	-0.44
1980-84	0.46	0.29	0.17	-1.74	-0.95	0.20	-0.45	0.03	-0.01	-0.47
1985-89	2.50			0.30	-0.69	0.13		0.04	0.01	
1990-97	-4.18			-6.37	-1.16	-0.13		0.00	-0.09	
Total	0.93	1.18	0.09	-1.27	-0.55	0.07	0.14	0.03	0.00	-0.06
Cameroon										
1960-64	0.79			-1.41		0.13	-0.01	0.05	0.13	-0.19
1965-69	-0.88	3.40	-4.28	-3.08	1.20	0.20	-0.24	0.04	0.10	-0.38
1970-74	2.47	3.58	-1.11	0.27	0.78	0.20	-0.21	0.03	0.16	-0.41
1975-79	6.56	2.12	4.44	4.36	-0.17	0.20	-0.33	0.02	0.14	-0.49
1980-84	4.44	0.23	4.21	2.24	-1.30	0.13	-0.10	0.01	0.15	-0.26
1985-89	-2.14	1.23	-3.37	-4.34	-0.63	0.20	-0.08	0.04	0.15	-0.28
1990-97	-3.35	1.67	-5.02	-5.55	-0.20	0.12	-0.20	0.04	0.15	-0.38
Total	1.12	2.04	-0.85	-1.07	-0.05	0.17	-0.17	0.03	0.14	-0.34
C. A. R.										
1960-64	-1.09	0.60	-1.70	-3.29	-0.20	0.20	-2.11	0.04	0.13	-2.28
1965-69	1.01	1.00	0.02	-1.18	0.57	0.07	-1.88	0.05	0.10	-2.03
1970-74	0.24	1.18	-0.94	-1.96	0.14	0.20	-1.97	0.05	0.16	-2.18
1975-79	-0.62			-2.82	-0.70		-1.05	0.00	0.14	-1.19
1980-84	-1.74	-0.41	-1.32	-3.94	-1.25	0.07	-0.72	0.03	0.15	-0.89
1985-89	-1.13			-3.33	-0.34	0.20		0.06	0.15	
1990-97	-1.59			-3.79	-0.89	0.20		0.04	0.15	
Total	-0.70	0.59	-0.99	-2.90	-0.38	0.15	-1.54	0.04	0.14	-1.71
Chad										
1960-64	-1.00	1.05	-2.04	-3.19	-0.50	0.20	-1.36	0.04	0.13	-1.54
1965-69	-0.58	0.27	-0.85	-2.77	-0.42	0.13	-1.69	0.05	0.10	-1.84
1970-74	-2.44	0.68	-3.12	-4.64	0.15	0.07	-2.35	0.04	0.16	-2.56
1975-79	-3.48			-5.68		-0.39	-1.50	0.03	0.14	-1.67
1980-84	-1.30			-3.50	0.16	-0.13		0.03	0.15	
1985-89	3.81			1.61	0.32	-0.26		0.07	0.15	
1990-97	1.53			-0.67	-2.07	-0.05		0.03	0.15	
Total	-0.49	0.67	-2.00	-2.69	-0.39	-0.06	-1.73	0.04	0.14	-1.90
Congo, D. R.										
1960-64	0.58			-1.62		-0.32	-1.70	-0.09	-1.14	-0.47
1965-69	1.16	1.48	-0.32	-1.04	0.60	-0.13	-1.24	-0.03	-0.43	-0.78
1970-74	0.70	1.94	-1.24	-1.50	-0.06	0.10	-0.91	0.00	-0.30	-0.62
1975-79	-5.67	-0.51	-5.16	-7.87	-0.96	-0.06	-1.90	-0.21	-1.35	-0.34
1980-84	-0.91	-0.10	-0.81	-3.11	-0.72	0.20	-1.07	-0.14	-0.55	-0.38
1985-89	-1.83			-4.03	-0.08	0.20		-0.20	0.11	

1990-97	-9.01			-11.20	0.03	-0.05			-0.07	-0.80
Total	-2.14	0.70	-1.88	-4.34	-0.20	-0.01	-1.36	-0.11	-0.53	-0.56
Congo, Rep.										
1960-64	0.99	1.68	-0.69	-1.21	0.35	0.07	-1.45	0.04	0.13	-1.62
1965-69	1.89	0.85	1.04	-0.31	0.25	-0.06	-1.57	0.05	0.10	-1.73
1970-74	4.95			2.75	-0.74		-1.49	0.05	0.17	-1.71
1975-79	0.32			-1.88	-1.04		-1.28	0.02	0.16	-1.46
1980-84	11.20			9.00	-1.87		-1.79	0.02	0.15	-1.96
1985-89	-3.47			-5.67	-1.83			0.05		
1990-97	-1.82			-4.01	-2.28			0.02	0.15	
Total	2.01	1.27	0.17	-0.19	-1.02	0.00	-1.52	0.04	0.14	-1.70
Cote d'Ivoire										
1960-64	6.99	2.98	4.01	4.79	-0.54	0.20	0.61	0.05	0.13	0.43
1965-69	3.01	2.42	0.59	0.82	-0.54	0.20	0.52	0.05	0.10	0.37
1970-74	2.69	2.35	0.34	0.50	-0.98	0.20	0.32	0.04	0.16	0.12
1975-79	4.30	0.83	3.47	2.10	-1.65	0.20	-0.13	0.00	0.14	-0.27
1980-84	-6.33			-8.52	-2.62	0.20		0.03	0.15	
1985-89	-1.04			-3.23	-1.10	0.20		0.04	0.15	
1990-97	-0.33			-2.53	-0.51	0.20		0.04	0.15	
Total	1.33	2.15	2.10	-0.87	-1.13	0.20	0.33	0.04	0.14	0.16
Ethiopia										
1960-64						0.13			0.05	-0.28
1965-69						0.20	-0.18	0.07	0.02	-0.26
1970-74						-0.32	-0.30	0.05	0.03	-0.38
1975-79						-1.04	-0.98	0.00	-0.43	-0.55
1980-84	-0.60			-2.80		-0.13	-0.73	0.05	-0.36	-0.41
1985-89	-1.72	1.44	-3.16	-3.92	1.59	-0.19	-1.70	0.05	-1.02	-0.73
1990-97	1.78			-0.42	0.44	0.03		0.03	-0.92	
Total	-0.18	1.44	-3.16	-2.38	1.01	-0.19	-0.78	0.04	-0.38	-0.44
Gabon										
1960-64	7.51			5.31	0.55	0.13		0.05		0.48
1965-69	5.61			3.41	0.08	0.20		0.06		0.54
1970-74	12.70	2.49	10.20	10.50	-1.20	0.20	0.68	0.04	0.16	0.48
1975-79	0.58	0.80	-0.22	-1.61	-2.36	0.20	0.55	0.00	0.15	0.40
1980-84	0.27	-1.03	1.30	-1.93	-2.72	0.20	0.01	0.02	0.15	-0.16
1985-89	-2.99			-5.19	-1.68	0.20		0.06	0.15	
1990-97	0.89			-1.31	-2.30	0.12		0.05	0.15	
Total	3.51	0.76	3.76	1.31	-1.38	0.18	0.42	0.04	0.15	0.35
Ghana										
1960-64	0.37	3.25	-2.88	-1.83	0.25	-0.06	0.35	0.04	-0.14	0.44
1965-69	-0.51	2.41	-2.91	-2.70	0.44	0.07	-0.34	0.03	-0.51	0.14
1970-74	1.75	2.94	-1.19	-0.45	0.01	0.13	-0.01	0.02	-0.08	0.05
1975-79	-3.23	-0.32	-2.91	-5.43	0.10	0.07	-2.90	-0.21	-2.16	-0.53
1980-84	-4.01			-6.21	-1.28	-0.06		-0.23		-1.15

1985-89	1.70			-0.50	1.31	0.20		-0.04	-0.36	
1990-97	1.40			-0.80	0.52	0.20		-0.06	0.14	
Total	-0.36	2.07	-2.47	-2.56	0.19	0.08	-0.73	-0.07	-0.52	-0.21
Guinea										
1960-64						0.20				
1965-69						0.13				
1970-74						0.00			-0.74	
1975-79						0.13			-0.71	
1980-84						0.07				
1985-89	0.80			-1.40		0.12		-0.04	-2.05	
1990-97	1.91			-0.28	-0.63	0.12		0.02		
Total	1.36			-0.84	-0.63	0.11		-0.01	-1.17	
Kenya										
1960-64	0.71			-1.49	0.14		0.13	0.06	0.16	-0.08
1965-69	3.82	2.05	1.77	1.62	0.04	0.09	-0.31	0.06	0.03	-0.41
1970-74	5.23	2.58	2.65	3.03	0.21	0.20	-0.64	0.03	-0.08	-0.60
1975-79	1.63	1.29	0.33	-0.57	-0.68	0.13	-0.57	0.01	0.10	-0.68
1980-84	-0.88	-0.70	-0.19	-3.08	-1.74	0.13	-0.57	0.01	0.01	-0.59
1985-89	2.14			-0.06	-0.19	0.20		0.02	0.09	
1990-97	-0.52			-2.72	0.81	0.12		-0.02	0.02	
Total	1.73	1.31	1.14	-0.47	-0.20	0.14	-0.39	0.02	0.05	-0.47
Madagascar										
1960-64	-0.72	2.86	-3.58	-2.92	-0.22	0.20	0.17	0.06	0.13	-0.01
1965-69	1.14	2.88	-1.74	-1.06	-0.09	0.20	0.53	0.06	0.10	0.38
1970-74	-1.07	2.89	-3.96	-3.27	-0.31	0.07	0.31	0.03	0.17	0.11
1975-79	-0.96	2.62	-3.59	-3.16	-0.27	0.20	0.28	0.04	0.02	0.22
1980-84	-4.12	0.17	-4.29	-6.32	-1.12	0.13	-0.33	-0.03	-0.20	-0.10
1985-89	-0.40			-2.60	0.51	0.20		0.00	0.07	
1990-97	-1.82			-4.02	0.77	-0.05		-0.02		
Total	-1.14	2.28	-3.43	-3.33	-0.10	0.13	0.19	0.02	0.05	0.12
Malawi										
1960-64	0.03			-2.17			-0.70	0.06	0.10	-0.86
1965-69	5.03	1.31	3.72	2.83	-0.53	0.20	-0.60	0.06	0.07	-0.72
1970-74	3.44	2.44	1.00	1.25	-0.15	0.20	-0.41	0.03	-0.04	-0.40
1975-79	2.67	0.16	2.51	0.47	-1.56	0.20	-0.89	0.04	-0.43	-0.49
1980-84	-1.62	-1.16	-0.45	-3.82	-1.53	0.13	-1.25	0.01	-0.36	-0.89
1985-89	-1.18			-3.38	-0.91	0.20		-0.01	-0.04	
1990-97	1.78			-0.42	-1.25	0.20		-0.06	-0.10	
Total	1.45	0.69	1.69	-0.75	-0.99	0.19	-0.77	0.02	-0.11	-0.67
Mali										
1960-64						0.13				
1965-69						0.13				-0.18
1970-74	0.22			-1.98	-0.25	0.20		0.04		-0.42
1975-79	5.84			3.64	-0.60	0.07		0.01	0.14	

1980-84	-3.01	-0.72	-2.29	-5.21	-2.55	0.13	0.21	0.02	0.12	0.07
1985-89	-0.77	1.07	-1.84	-2.97	-0.83	0.20	-0.05	0.07	0.15	-0.27
1990-97	0.29			-1.91	-0.98	0.12		0.03	0.15	
Total	0.51	0.17	-2.07	-1.69	-1.04	0.14	0.08	0.03	0.14	-0.20
Mauritius										
1960-64	4.78			2.58	-0.89			0.05		0.16
1965-69	-1.52			-3.72	-0.23			0.05		-0.01
1970-74	4.97			2.78	1.07	0.20		0.02		-0.11
1975-79	6.01	3.03	2.97	3.81	0.46	0.13	0.03	0.02	0.14	-0.13
1980-84	0.11	1.78	-1.67	-2.09	0.29	0.20	-0.19	0.00	0.12	-0.31
1985-89	6.55	3.60	2.94	4.35	1.55	0.20	0.11	0.04	0.14	-0.07
1990-97	4.12	3.02	1.10	1.92	0.72	0.20	0.15	0.03	0.11	0.01
Total	3.57	2.86	1.33	1.37	0.42	0.18	0.02	0.03	0.13	-0.07
Mozambique										
1960-64									0.16	
1965-69									0.17	
1970-74									-0.39	
1975-79						-0.13				
1980-84	-8.26			-10.46	-1.07	-0.13		0.01		
1985-89	4.54			2.35	0.12	0.00		-0.20		
1990-97	2.41			0.21	-1.16	-0.05		-0.11		
Total	-0.43			-2.63	-0.70	-0.07		-0.10	-0.02	
Namibia										
1960-64										
1965-69										
1970-74										
1975-79										
1980-84	-3.05			-5.25		-0.13		0.01		
1985-89	-0.67			-2.87		0.07		0.01		
1990-97	0.87			-1.33		0.20		0.02		
Total	-0.95			-3.15		0.05		0.01		
Niger										
1960-64	2.12	1.18	0.94	-0.08	-0.63	0.13	-1.03	0.06	0.13	-1.22
1965-69	-2.45	0.86	-3.31	-4.65	-0.96	0.20	-0.62	0.05	0.10	-0.77
1970-74	-3.44	1.77	-5.21	-5.63	-0.81	0.20	-0.43	0.04	0.16	-0.64
1975-79	2.11	0.39	1.72	-0.09	-1.41	0.13	-0.74	0.00	0.14	-0.89
1980-84	-7.43	-1.70	-5.73	-9.63	-2.97	0.13	-0.36	0.02	0.15	-0.53
1985-89	1.19			-1.01	-0.80	0.20		0.08	0.15	
1990-97	-2.10			-4.30	-1.28	-0.05		0.05		
Total	-1.43	0.50	-2.32	-3.63	-1.26	0.13	-0.64	0.04	0.14	-0.81
Nigeria										
1960-64	1.82	3.62	-1.80	-0.38	0.70	0.07	0.14	0.06	0.10	-0.02
1965-69	-1.09	2.47	-3.56	-3.29	0.61	-0.19	-0.19	0.05	-0.05	-0.19
1970-74	8.81	2.62	6.18	6.61	0.22	0.13	-0.54	0.02	-0.21	-0.35

1975-79	-0.77	0.39	-1.16	-2.97	-0.75	0.00	-1.27	-0.02	-0.33	-0.92
1980-84	-6.78	-2.78	-4.00	-8.98	-1.80	0.07	-2.53	-0.02	-1.29	-1.23
1985-89	2.70			0.50	-0.30	0.07		-0.04	-0.78	
1990-97	0.66			-1.54	-0.31	-0.29		-0.09	-0.80	
Total	0.76	1.27	-0.87	-1.43	-0.23	-0.02	-0.88	-0.01	-0.48	-0.54
Rwanda										
1960-64	-6.58			-8.77			-0.23	0.04	0.16	-0.43
1965-69	4.51	2.72	1.80	2.32	1.07	0.20	-0.79	0.03	-0.28	-0.54
1970-74	-0.74			-2.94	-1.16	0.13		0.03		-0.31
1975-79	4.66	-0.05	4.71	2.46	-1.44	0.20	-1.23	0.00	-0.13	-1.09
1980-84	0.40	-1.32	1.72	-1.80	-2.25	0.13	-0.69	0.03	-0.14	-0.59
1985-89	-0.10			-2.30	-0.75	0.20		0.06	-0.09	
1990-97	-2.40			-4.59	-1.89	-0.21		-0.01	-0.21	
Total	-0.03	0.45	2.74	-2.23	-1.07	0.11	-0.73	0.03	-0.11	-0.59
Senegal										
1960-64	-0.41	1.26	-1.67	-2.60	-0.22	0.20	-1.43	0.06	0.13	-1.62
1965-69	-2.10	1.13	-3.23	-4.30	-0.26	0.00	-0.85	0.06	0.10	-1.01
1970-74	-0.19	2.32	-2.51	-2.39	-0.47	0.20	-0.22	0.03	0.16	-0.42
1975-79	0.50	1.29	-0.79	-1.70	-0.98	0.20	-0.34	0.02	0.14	-0.50
1980-84	-0.98	-0.64	-0.34	-3.18	-1.83	0.20	-0.49	0.02	0.15	-0.66
1985-89	0.39			-1.81	-0.61	0.20		0.05	0.15	
1990-97	0.11			-2.09	-0.67	0.20		0.04	0.15	
Total	-0.38	1.07	-1.71	-2.58	-0.72	0.17	-0.67	0.04	0.14	-0.84
Sierra Leone										
1960-64	2.06			-0.14				0.05		-2.30
1965-69	2.11			-0.09	-0.88	-0.13		0.05		-1.87
1970-74	1.77			-0.43	-1.44	0.07		0.04		-2.35
1975-79	-0.33	-1.18	0.85	-2.53	-1.57	0.20	-2.22	0.00	0.16	-2.38
1980-84	-0.30	-3.64	3.34	-2.50	-3.01	0.07	-2.18	-0.10	-0.19	-1.90
1985-89	-1.56			-3.76	-0.56	0.13		-0.29	-2.82	
1990-97	-6.97			-9.17	-1.91	0.12		-0.14	-0.33	
Total	-0.46	-2.41	2.10	-2.66	-1.56	0.08	-2.20	-0.06	-0.79	-2.16
South Africa										
1960-64	3.53			1.33	-0.53	0.07		0.06	0.11	
1965-69	3.97	1.88	2.10	1.78	-0.37	0.13	-0.13	0.05	0.12	-0.30
1970-74	2.82			0.62	-0.92	0.00		0.03	0.12	
1975-79	-0.69	0.97	-1.66	-2.89	-1.10	-0.19	-0.15	0.02	0.13	-0.30
1980-84	0.80			-1.40	-1.45	0.07		0.01	0.24	
1985-89	-1.10			-3.30	0.12	-0.71		0.00	0.08	
1990-97	-0.92			-3.12	0.57	-0.53		0.02	0.13	
Total	1.20	1.42	0.22	-1.00	-0.52	-0.17	-0.14	0.03	0.13	-0.30
Sudan										
1960-64	-1.25			-3.45	0.25	0.20		0.05	-0.09	
1965-69	-0.61			-2.80	0.48	0.00		0.06	-0.20	

1970-74	0.26	1.01	-0.76	-1.94	0.23	-0.19	-1.83	0.02	-0.30	-1.56
1975-79	2.37	1.38	0.98	0.17	0.26	-0.06	-1.22	-0.01	-0.26	-0.95
1980-84	-1.06	-1.23	0.17	-3.26	-1.47	0.00	-1.26	-0.05	-0.25	-0.95
1985-89	-1.39			-3.58	0.48	-0.39		-0.12	-1.09	
1990-97	4.70			2.50		-0.13		-0.34	-1.37	
Total	0.43	0.39	0.13	-1.77	0.04	-0.08	-1.44	-0.06	-0.51	-1.15
Tanzania										
1960-64									0.16	-1.13
1965-69						0.20	-0.91	0.01	0.03	-0.96
1970-74						0.13	-1.82	0.03	-0.51	-1.34
1975-79						0.20	-1.86	0.01	-0.65	-1.22
1980-84						0.13	-3.22	-0.06	-1.59	-1.57
1985-89						0.20		-0.06	-1.00	
1990-97	0.18			-2.01	0.77	0.20		-0.04	-0.04	
Total	0.18			-2.01	0.77	0.18	-1.95	-0.02	-0.51	-1.24
Togo										
1960-64	7.26	3.58	3.68	5.06	1.67	0.13	-0.93	0.07	0.13	-1.13
1965-69	5.35	3.60	1.75	3.15	1.61	0.07	-0.32	0.06	0.10	-0.48
1970-74	0.93	3.48	-2.55	-1.27	0.92	0.13	-0.39	0.04	0.16	-0.59
1975-79	0.00	2.22	-2.22	-2.20	0.39	0.20	-0.78	0.02	0.14	-0.93
1980-84	-1.28	0.51	-1.79	-3.48	-0.70	0.20	-0.47	0.03	0.15	-0.65
1985-89	0.67			-1.52	0.83	0.13		0.07	0.15	
1990-97	-0.96			-3.15	0.57	-0.37		0.03	0.15	
Total	1.71	2.68	-0.23	-0.49	0.76	0.07	-0.58	0.04	0.14	-0.76
Uganda										
1960-64						-0.31			0.16	-0.90
1965-69						0.04	0.09		0.03	-0.77
1970-74						-0.18	-0.19		-0.79	-0.68
1975-79						-0.61	-0.06			-1.22
1980-84	3.16	-2.62	5.78	0.97	-1.33	-0.06	-2.71	-0.17	-1.85	-0.70
1985-89	0.52			-1.68	-0.30	-0.13		-0.58	-1.86	
1990-97	3.75			1.55	-1.41	0.12		-0.01	-0.01	
Total	2.48	-2.62	5.78	0.28	-0.59	-0.04	-2.71	-0.26	-0.72	-0.85
Zambia										
1960-64	0.81			-1.39			-0.62	0.06	0.10	-0.79
1965-69	0.96	0.02	0.94	-1.24	-0.84	0.20	-1.58	0.00	-0.03	-1.56
1970-74	1.01	-0.47	1.47	-1.19	-1.10	0.20	-2.38	0.05	-0.37	-2.06
1975-79	-3.85	-2.43	-1.42	-6.05	-2.55	0.20	-2.49	0.03	-0.85	-1.67
1980-84	-2.28	-3.50	1.22	-4.48	-2.66	0.13	-2.45	0.01	-0.23	-2.23
1985-89	-0.90			-3.09	-1.36	0.20		-0.20	-1.63	
1990-97	-1.66			-3.85	-0.77	0.12		-0.31	-0.41	
Total	-0.84	-1.59	0.55	-3.04	-1.55	0.17	-1.90	-0.05	-0.49	-1.66
Zimbabwe										
1960-64	0.08			-2.12			0.56	0.06	0.10	0.39

1965-69	2.48			0.28		0.20	0.72	0.06	-0.05	0.71
1970-74	6.67			4.47		0.20	0.73	0.05	-0.10	0.78
1975-79	-4.25			-6.45		-0.19	-0.08	0.02	-0.71	0.62
1980-84	2.41	-0.63	3.03	0.21	-1.62	-0.26	-0.24	0.01	-0.50	0.26
1985-89	1.28	1.56	-0.28	-0.92	-0.34	0.20	-0.04	0.02	-0.27	0.20
1990-97	0.29			-1.91	-0.75	0.20		-0.04	-0.03	
Total	1.28	0.47	1.38	-0.92	-0.90	0.06	0.27	0.03	-0.22	0.49

Notes: For calculation of contributions, see Section 2.