

FREEDOM, OPPRESSION AND CORRUPTION IN SUB-SAHARAN AFRICA

David Braddock

ABSTRACT

Official Development Aid, (ODA) has improved neither the economy of most Sub-Saharan African Nations nor the lot of their citizens.¹ Corruption has been accepted as the official reason.²

An alternative theory has been advanced. Those nations that were not democratically governed were most responsible for misusing ODA funds. People advocating this develop indexes of freedom and correlate these with GDP.³

This paper shows that the natural logarithm of educational expense divided by the population of children fourteen years old and less (LNEE/14) is closely related to both indices of freedom and corruption implying that oppression, the opposite of freedom, and corruption are linked.

INTRODUCTION

The Second World War bled Europe dry. In order to jump start Europe's economies President Truman initiated The Marshall Plan. This was a success: some called it a miracle. Later, Solow in a brilliant article proves that America's growth is explained by an economic production function modified by a technological growth coefficient. Solow's production model must have driven Europe's economic recovery. Development Economists realized that Africa was depressed economically and thought its nations would benefit from a cash and resource infusion similar to the Marshall plan. Fifty years have passed since the success of the Marshall plan and its initial application to Sub-Saharan Africa, still most African states are not responding to this economic inducement. Why?

Nation to nation aid is called Official Development Aid, ODA. This distinguishes it from aid that is given directly to a nation's people, known as Non-Governmental Aid, NGA. The statistic used in this study is actually Net ODA, ODA minus repayments by African nations of principal and interest. Three years ago using cross sectional data, this author found that Sub-Saharan Africa Net ODA increased mortality and decreased Gross Domestic Product.⁴ (Braddock, 2002) Public welfare was not a goal of the leadership of most African states. Lowered public welfare had to be caused by mismanagement and fraud.⁵ Solow's production model explained growth in a free society where leadership's goals were aligned with those of its citizens. Leadership in most African states does not function this way.

The leaders of Sub-Saharan Africa may be separated into two groups; those that seek personal wealth by forcefully controlling political institutions and leaders of more democratic societies who must openly allocate revenues to retain political power. Aid given to democratic Third World Countries is used to benefit the target society and probably conform to some production model. However, there is a cost to

giving aid directly to third world tyrannies. Despots use ODA to forcefully retain political power and lower public welfare. These do not conform to some production model. First World leaders who seek to aid Third World countries must learn to differentiate between democracies and tyrannies.

Currently, there are two approaches used to identify rogue administrations. Transparency International has directed its efforts toward measuring corruption. The less corrupt a regime, the more likely ODA is to be wisely used. Another approach, led mostly by political scientists, argues that corruption emanates directly from political leaders. They define various indicators of freedom then rank political administrations accordingly.⁶

Both of these approaches suffer from being rankings, estimates of freedom or corruption requiring non-parametric methods to correlate them with perceived human behavior. Is there a naturally occurring social statistic that may be used to rank political administrations and that will differentiate between free and tyrannical states? Because tyrannies cause corruption, this social statistic should be both easy to audit and difficult to forge.

Four years ago the author tested a business model. (Braddock, 2003) Bureaucrats and soldiers were employed to secure revenues from private citizens. Government leaders, acting as entrepreneurs, paid bureaucrats and soldiers and retained the balance as profits. While the statistics generally supported the model, the paper suffered from three faults.

- In order to separate countries that conformed to a production (Solow) model from those that did not, it was necessary to develop an index of freedom. This index was not a dichotomous variable and the results it supported were unsound.
- The correlation between the index of freedom and corruption was so close that it defied belief. There seemed to be some implicit relationship.
- Educational Expense was significantly correlated positively with Illiteracy. This was quite strange.

This paper:

- Defines a Level of Freedom but forces it to be dichotomous. Its significance is then tested.
- Defines a social statistic, the natural logarithm of educational expense divided by the population of children fourteen years old and less (LNEE/14) and shows that it is related to both indices of freedom and corruption.
- Presents a table of oppression (the opposite of freedom) and LNEE/14 and indicates where the separation between free and oppressive states is likely to exist. That is, for some countries The Level of Freedom is redefined and its significance again tested.
- Uses LNEE/14 as an indicator of freedom and shows its impact upon GDP.
- Uses non-parametric statistics, to relate both The Level of Freedom and The Index of Corruption to LNEE/14, thus showing a relationship between oppression and corruption.

DATA CITATIONS

Transparency International provided corruption data. Traveldocs.com provided useful political and economic reviews. All other data was found on the web site nationmaster.com. The data is included in the Data section of this paper. Results were obtained using SPSS.

THE INDEX OF FREEDOM

Assume states are either free or not free. It is necessary to reduce many separate rankings into one dichotomous data element. Its development is shown in Table 1. In creating a dichotomous variable by separating countries into free states or tyrannical states, three different political measures of freedom were used initially, economic freedom, democratic institutions, and civil and political liberties. The rankings were added then compared with The Level of Freedom and personal evaluation (labeled basket case in Table 1), rankings used previously. The author developed personal evaluations by reading reviews located on TravelDocs.com, then assigning zero for not free, 1 for unknown, and 2 for free. The author developed Level of Freedom from an existing ranking found in *World Resources 2002-2004*.

Development of the dichotomous variable is shown in Table 1. The lower the number, the more likely the country is free. For example consider Benin. Adding columns E, F, and G of Table 1 gives 28 in Column H. Columns C and D for Benin contain 1 and 2, respectively, indicating that the country is probably free. Initially a 1 was placed in Column H. Later, after the relationship of Level of Freedom and LNEE/14 was established, Benin was changed to 0. Consider Angola as another example. Columns E, F, and G add to 29, shown in Column H. Columns C and D are both 0, and a 0 was placed in column H. The missing rankings in Columns E and F would have given a much higher score. Angola was given a 0 and defined as not free.

**TABLE 1
CALCULATION OF DICHOTOMOUS INDEX OF LEVEL OF FREEDOM**

	Basket Case	Level of Freedom	Economic Freedom	Civil and Political Liberties	Democratic Institutions	Totals	Assigned
Country	C1	D1	E1	F1	G1	H1	I1
Angola	0	0			29	29	0
Benin	1	2	22	2	4	28	1
Botswana	2	2	1	3	1	5	1
Burkina-Faso	0	1	19	14	21	54	0
Burundi	0	0		35	26	61	0
Cameroon	0	0	24	38	30	92	0
Cape Verde	2						1
Central African Republic	0	1	11	11	8	30	1
Chad	0	0	27	27	25	79	0
Comoros	1						
Congo-Brazzaville	0	1					0
Cote d'Ivoire	0	1	12	33	39	84	0
Djibouti	1		20				

Equatorial Guinea Malabo	0	0	33				0
Eritrea	1	0					0
Ethiopia	0	1	30	21	15	66	0
Gabon	1	1	16	19	31	66	0
Gambia	1	1	21	36	33	90	0
Ghana	2	2	28	6	14	48	0
Guinea-Bissau	1	1	38	16	9	63	0
Guinea Conakry	0	0	14	29	19	62	0
Kenya	1	0	15	32	27	74	0
Lesotho	1	1	23				
Liberia	0	0		30	17		0
Madagascar	1	1	2	7	7	16	1
Malawi	1	1	34	8	3	45	0
Mali	1	2	9	5	11	25	1
Maritania	1	1	13	28	35	76	0
Mauritius	1						
Mozambique	1	1	17	9	6	32	1
Namibia	0	2	4	4	5	13	1
Niger	1	1	29	15	13	57	0
Nigeria	0	1	36	12	10	58	0
Rwanda	0	0	35	39	32	106	0
Senegal	2	1	10	10	18	38	0
Seychelles	1						
Sierra Leone	0	1	37	17	12	66	0
Somalia	0	0		37	40		0
South Africa	2	2	3	1	2	6	1
Sudan	0	0		40	41		0
Swaziland	1		8				
Tanzania	1		25	13	20	58	0
Togo	0	1	32	22	23	77	0
Uganda	0	1	5	34	22	61	0
Zaire-Dem. Rep.Kinshasa	0	0		23	36		0
Zambia	0	1	31	18	16	65	0
Zimbabwe	0	0	40	24	34	98	0

TESTING THE DICHOTOMOUS VARIABLE

Several regressions were conducted to test this dichotomous variable. The first regression shows that freedom positively affects GDP while Net ODA negatively affects GDP. Here B is Freedom and J is Net ODA. The second regression shows that freedom negatively affects mortality but Net ODA is not significant. This insignificance might be because Mortality should be 2002 or 2003 to correspond with Net ODA. It also might be that the donor countries have learned not to give to tyrannical states. In any event Freedom is significant and its betas strong and in the correct direction.

Relationship of Net ODA, Level of Freedom and GDP

Net ODA is negative and significant at the 6.2 % level. Higher Net ODA implies lower GDP.

Regression I

GDP per Capita 2003 = f (Dichotomous Level of Freedom, Net ODA 2002)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2249.466	570.394		3.944	.000
	B	2812.060	774.604	.477	3.630	.001
	J	-26.171	13.656	-.252	-1.916	.062

a Dependent Variable: D

Relationship of Net ODA, Level of Freedom, and Mortality

This year mortality and Net ODA shows no relationship. The mortality figures for 2003 are not available. A higher Level of Freedom is very significant in reducing mortality.

Regression II

Mortality 2001 = f (Dichotomous Level of Freedom, Net ODA 2002)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	164.410	15.311		10.738	.000
	B	-60.271	20.877	-.433	-2.887	.007
	J	.133	.357	.056	.373	.711

a Dependent Variable: Under 5

Educational Expenditure is Related to Level of Freedom

The variable, Educational Expenditure, is Educational Expenditure divided by population aged 14 years and younger (EE/14). Since Level of Freedom is now a dichotomous variable, it can be regressed on Educational Expenditure. It is highly positively significant. Freedom drives educational expenditure. Since last year Educational Expense was significantly positively correlated with Illiteracy it is hypothesized that a free society affords equal educational access to all its children. (Braddock, 2003) Conversely, an oppressive state might be expected to educate only those destined in the future to hold responsible government positions. An oppressive state could tax all people for the educational benefit of only a few, thus leading to high levels of illiteracy in the general population.

Regression III
EE/14 = f (Level of Freedom)

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta		
1	(Constant)	42.998	73.372		.586	.562
	B	360.037	136.173	.441	2.644	.013

a Dependent Variable: AK

The Natural Logarithm of Educational Expenditure Related to Level of Freedom

This step was necessary because in the relationship between educational expense and corruption the error term was not independently identically distributed (iid). This is explained below in the section relating corruption and educational expense. The constant term becomes significant.

Regression IV
LNEE/14 = f (Level of Freedom)

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta		
1	(Constant)	2.968	.332		8.943	.000
	B	1.580	.616	.430	2.565	.016

a Dependent Variable: lnak

Revised Relationship of Net ODA, Level of Freedom and GDP

After all regressions were completed five countries were changed from free to oppressive based upon the LNEE/14 statistic. The initial test regression was rerun. While The Level of Freedom gained significance and importance, the significance of Net ODA was reduced. This suggests that there is a middle (marginal) group of countries that may be unable to educate their children but also do not use Net ODA to oppress their citizens. This type of analysis may be a way of identifying countries without using a classification scheme.

Regression V
GDP per Capita 2003 = f (Dichotomous Level of Freedom, Net ODA 2002)

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	
		B	Std. Error			Beta
1	(Constant)	1674.436	509.780		3.285	.002
	B	4593.659	804.475	.677	5.710	.000
	J	-7.968	12.304	-.077	-.648	.521

a Dependent Variable: D

CORRUPTION IS RELATED TO EDUCATIONAL EXPENDITURE

A Spearman rank correlation test was used to establish the relationship between corruption and educational expenditure. The relevant data series are EE/14 and an index of corruption developed by Transparency International. There are only nineteen countries that had both series.

Regression VI
Educational Expenditure Divided by Pop 14 and Under = f (Corruption)

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta		
1	(Constant)	-569.099	284.233		-2.002	.061
	AE	251.840	86.559	.577	2.909	.010

a Dependent Variable: AK

If the regression is linear and given the following additional assumption to the linear model that the “residual” $Y-E(Y|X)$ is independent of X. A non-parametric linear regression test may be used only when the errors are independently identically distributed (iid).⁷ Regress Educational Expenditure divided by population 14 years old and younger on corruption. Using a Spearman Rank correlation, then test whether the residual is independent of the regressor. Unfortunately the residual, significant at the 10% level, is only marginally uncorrelated. The residuals are not iid indicating a curvilinear relationship. Thus EE/14 cannot be used as a substitute for Corruption. In this case consider a mathematical transform of the relevant statistic.[7, p.265]

Corruption is Related to the Natural Logarithm of Educational Expenditure

Regression VII
LNEE/14 = f (Corruption)

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta		
1	(Constant)	-.152	.879		-.172	.865
	AE	1.253	.267	.751	4.694	.000

a Dependent Variable: lnak

Here the Spearman Rank test shows no correlation between the residual of this regression and corruption. LNEE/14 is a better fit with corruption and its errors are iid. Educational expense is a good measure of corruption. Since The Level of Freedom is also correlated to LNEE/14; then, for the African states considered, corruption is related to oppression and LNEE/14 may be used as a substitute (proxy) for both.

Oppression and Corruption

Oppression and corruption are statistically related, but what is the exact nature of this relationship?

Consider a service business model. A businessman hires employees, sells a service, receives revenue, pays his employees and retains the balance as profit. A despot hires bureaucrats and military, services his country, taxes his citizens, pays his bureaucrats and military, and retains the balance as profit. He is not required to account for the taxes or revenue from state owned resources.

Consider an open democratic economy. Arrow proved that a dictator is unable to satisfy citizen's utility functions. Clarke showed that a two step taxing procedure was necessary to achieve a Pareto superior position. A small tax is used to force taxpayers to reveal their preferences, then a proper tax administered. In this way the initial public budget is modified to account for every one's utility function.

An example of this would be a preliminary budget proposal modified by all citizens acting as a congress. Practical circumstances require that citizens elect representatives who then openly negotiate. Some economic efficiency is lost to obtain a workable government.

A despot must use employees to secure revenue. These employees individually bargain with citizens to determine the value of the public service they offer. The employee extracts as tax a maximum from some citizens, passes the required tax to the despot and retains the balance. This is a business relationship and the employee a businessman operating a service franchise.⁸ Bargaining is hidden and society is forced to a Pareto inferior position. Corruption in a tyranny modifies welfare it is the antithesis to The Clarke Tax in a democratic society.

RESULTS

Table 2 orders the results by LNEE/14. Included is The Revised Level of Freedom together with the five countries changed from free to not free, and the Index of Corruption. This author believes Transparency International transposed its numbers to show lack of corruption. The Level of Freedom series was modified based on the LNEE/14 variable. Regressions concerning GDP used this modification. This author did not alter Lesotho even though its Educational Expense is low because it was one of the countries Easterly (2002) found that responded to economic development aid.

TABLE 2
LEVEL OF FREEDOM, EDUCATIONAL EXPENSE, AND CORRUPTION

Country	Assigned Level of Freedom Change	Natural Logarithm of Normalized Educational Expense	2003-4 Index of Corruption
Cape Verde	1		
Central African Republic	1		
Mauritius	1		4.1
Seychelles	1	7.60	4.4
South Africa	1	6.41	4.6
Botswana	1	6.38	6

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Namibia		1	5.71	4.1
Gabon		0	5.28	3.3
Equitorial Guinea Malabo		0	5.11	
Swaziland		0	4.85	
Angola		0	4.66	2
Cote d'Ivoire		0	4.23	2
Lesotho		1	4.18	
Senegal		0	3.61	3
Comoros		0	3.55	
Ghana		0	3.44	3.6
Maritania	x	0	3.29	
Togo		0	3.19	
Benin	x	0	3.09	3.2
Tanzania		0	3.08	2.8
Gambia		0	2.92	2.8
Mali	x	0	2.57	3.2
Mozambique	x	0	2.54	
Zaire-Dem. Rep. Of Congo		0	2.51	2
Kinshasa				
Burkino-Faso		0	2.50	
Madagascar	x	0	2.45	3.1
Sudan		0	2.42	2.2
Uganda		0	2.37	2.6
Burundi		0	2.29	
Ethiopia		0	1.71	
Eritrea		0	1.53	2.6
Rwanda		0	1.44	
Nigeria		0	1.32	1.6
Malawi		0		2.8
Zambia		0		2.6
Congo-Brazzaville		0		2.3
Sierra Leone		0		2.3
Zimbabwe		0		2.3
Niger		0		2.2
Cameroon		0		2.1
Chad		0		1.7
Guinea-Bissau		0		
Guinea Conakry		0		
Kenya		0		
Liberia		0	0.00	
Somalia		0		

FREEDOM AND EDUCATION ARE RELATED TO GROSS DOMESTIC PRODUCT.

This regression measures the causal relationships of literacy, health, external trade and level of freedom upon Gross Domestic Product per Capita. Literacy measured as the ability to read and write at a specified age is not significant. The proxy for health is mortality of children under the age of five. It is significant at the 8% level with a negative beta. The proxy for trade is taxes on exports and imports and is significant at the 10% level with a negative beta. Neither trade nor health is significant statistically. The level of freedom, B, is highly significant with a large positive beta. Political freedom is important to the economic health of a nation.

Regression VIII
GDP per Capita = f(Literacy, Mortality, Foreign Trade, Level of Freedom)

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta		
1	(Constant)	3634.857	2448.665		1.484	.147
	AC	1774.565	2201.896	.131	.806	.426
	Under 5	-13.062	7.063	-.305	-1.849	.073
	AF	-40.849	23.854	-.234	-1.712	.096
	B	2314.361	842.046	.386	2.748	.009

a Dependent Variable: D

LNEE/14, lnak, was substituted for Level of Freedom, B. Its insertion into the regression equation reduced to complete insignificance the other three explanatory variables.

Regression IX
GDP per Capita = f(LNEE/14, Mortality, Literacy, Foreign Trade)

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta		
1	(Constant)	-1262.214	1982.897		-.637	.531
	lnak	1366.251	208.341	.759	6.558	.000
	Under 5	-7.977	6.034	-.162	-1.322	.200
	AC	1086.149	1778.962	.072	.611	.548
	AF	-19.409	17.689	-.123	-1.097	.284

a Dependent Variable: D

SUMMARY

By correlating The Index of Corruption to LNEE/14 and regressing LNEE/14 on the Level of Freedom this paper has linked these three variables. This addresses the three problems associated with work done last year. Table 2 shows the results. These results suggest that a despotic government does not educate its

children. By comparing the three related variables, Corruption, Level of Freedom and LNEE/14 in Table 2, countries above LNEE/14 of about 6 are free and would benefit from ODA. Those below a LNEE/14 of about 5 are probably not free and its citizens would be impoverished by ODA. Values between 5 and 6 are indeterminate. Regression models including both the Level of Freedom and its LNEE/14 substitute indicate that education is important to freedom and freedom is important to economic growth.

How should ODA be administered? To prevent theft and misuse all aid should be carefully and thoroughly audited. Table 2 measures the honesty of a country's leaders. Of course, it is always possible to put money into the educational system, let the sums be accounted for at the educational level, then take the money out before it is truly spent on education. Where a society is not free, honesty may be tested in lower wholly contained bureaucracies. Where no level is safe, NGOs providing direct non-monetary relief may be employed.

For some reason, despotic governments reward and promote self-serving individuals. How can a donor country transform a society so that a more altruistic leader emerges?

DATA

Country	Level of Freedom	GDP per Capita	GDP	Aid % GDP	Net ODA	Mortality
A	B	D	F	AM	J	Z
Angola	0	1,705.29	11.2000	3.5	39.20	260
Benin	0	1,048.07	2.7000	11	29.70	158
Botswana	1	8,568.15	5.3000	0.6	3.18	110
Burkina-Faso	0	1,096.87	3.1000	15.3	47.43	197
Burundi	0	516.06	0.7190	13.5	9.71	190
Cameroon	0	1,704.54	9.1000	4.3	39.13	155
Cape Verde	1	1,400.00	0.6162	16.9	10.41	
Central African Republic	1	1,166.27	1.0000	7.9	7.90	180
Chad	0	1,004.70	2.0000	9.3	18.60	200
Comoros	0	696.73	0.2259	9.2	2.08	
Congo-Brazzaville	0	846.23	3.0000			108
Cote d'Ivoire	0	1,416.65	11.7000	3.8	44.46	175
Djibouti		1,354.10	0.5966	12.9	7.70	
Equatorial Guinea Malabo	0	2,487.88	2.1000	1.6	3.36	
Eritrea	0	756.48	0.6424	29	18.63	111
Ethiopia	0	729.14	6.1000	10.8	65.88	172
Gabon	0	6,321.31	5.0000	0.2	1.00	90
Gambia	0	1,720.12	0.3566	11.6	4.14	126
Ghana	0	2,015.36	6.2000	11.7	72.54	100
Guinea-Bissau	0	662.39	0.2034	37.3	7.59	211
Guinea Conakry	0	2,069.71	3.2000	5.1	16.32	169
Kenya	0	1,039.53	12.3000	4.9	60.27	122
Lesotho	1	2,742.27	0.7144	4.6	3.29	132
Liberia	0	939.35	0.5618			235
Madagascar	0	741.47	4.4000	8.3	36.52	136
Malawi	0	584.57	1.9000	26.2	49.78	183
Mali	0	840.77	3.4000	15.7	53.38	8
Maritania	0	1,679.26	0.9688	22.7	21.99	183
Mauritius	1	11,000.00	4.5000	0.5	2.25	19
Mozambique	0	1,116.75	3.6000	23.3	83.88	197
Namibia	1	6,822.49	2.9000	4.4	12.76	67
Niger	0	787.89	2.2000	11.6	25.52	265
Nigeria	0	840.29	43.5000	0.4	17.40	183
Rwanda	0	1,142.11	1.7000	17.9	30.43	183
Senegal	0	1,478.21	5.0000	9.7	48.50	138
Seychelles	1	7,779.39	0.6989	3	2.10	
Sierra Leone	0	492.96	0.7829	28.7	22.47	316
Somalia	0	532.07				225
South Africa	1	10,000.30	104.2000	0.4	41.68	71
Sudan	0	1,387.93	13.5000	2	27.00	107

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Swaziland	0	4,772.57	1.2000	0.9	1.08	149
Tanzania	0	568.44	9.4000			104
Togo	0	1,398.70	1.4000	5.7	7.98	141
Uganda	0	1,189.49	5.8000	13.3	77.14	124
Zaire-Dem. Rep. Of	0	600.44	5.7000	1	5.70	205
Congo Kinshasa						
Zambia	0	799.43	3.7000	27.3	101.01	202
Zimbabwe	0	2,072.87	8.3000	2.4		123
Country	Edu. Exp.	Edu.Exp.	Literacy	Corruptio	Foreign	Male 0-14
	% GDP	Total		n	Trade	
A	AA	Calc.	AC	AE	AF	AH
		AB				
Angola	0.044	492.8	0.420	2	3	2,363,829
Benin	0.027	72.9	0.409	3.2	48.4	1,668,817
Botswana	0.069	365.7	0.798	6	10.2	314,764
Burkino-Faso	0.024	74.4	0.266		25.3	3,057,855
Burundi	0.039	28.041	0.516		21.7	1,438,759
Cameroon			0.790	2.1	16.9	3,372,129
Cape Verde					43.5	
Central African Republic			0.510		38	799,241
Chad			0.475	1.7	29.5	2,228,605
Comoros	0.042	9.4878	0.565		31.3	136,060
Congo-Brazzaville			0.838	2.3	5.6	570,491
Cote d'Ivoire	0.045	526.5	0.509	2	38.4	3,796,393
Djibouti			0.679			98,796
Equatorial Guinea Malabo	0.017	35.7	0.857		8	108,179
Eritrea	0.014	8.9936	0.586	2.6	13	977,447
Ethiopia	0.027	164.7	0.427		25.2	14,944,168
Gabon	0.022	110	0.632	3.3	25.6	280,218
Gambia	0.035	12.481	0.401	2.8	56.3	338,497
Ghana	0.040	248	0.748	3.6	23.3	4,021,570
Guinea-Bissau			0.424		29.3	284,150
Guinea Conakry			0.359		15.6	2,027,970
Kenya			0.851	8.1	16	6,609,904
Lesotho	0.064	45.7216	0.848		46.1	353,554
Liberia	0.000	0	0.575			724,960
Madagascar	0.020	88	0.689	3.1	55.6	3,822,823
Malawi			0.672	2.8	13.3	2,748,058
Mali	0.021	71.4	0.464	3.2	49.7	2,759,802
Maritania	0.037	35.8456	0.471		9.6	671,080
Mauritius			0.856	4.1	28.5	
Mozambique	0.026	93.6	0.478		16.9	3,634,173
Namibia	0.085	246.5	0.840	4.1	30.1	414,559
Niger			0.176	2.2	48.8	2,686,169

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Nigeria	0.005	217.5	0.680	1.6	9.3	29,322,774
Rwanda	0.035	59.5	0.704		17.3	1,667,128
Senegal	0.034	170	0.402	3	23.7	2,330,395
Seychelles	0.063	44.0307	0.058	4.4	30.4	11,116
Sierra Leone			0.314	2.3	47.7	1,259,421
Somalia			0.378			1,802,154
South Africa	0.075	7815	0.864	4.6	3.4	6,460,273
Sudan	0.014	189	0.611	2.2	40.8	8,562,412
Swaziland	0.051	61.2	0.816		40.4	242,762
Tanzania	0.037	347.8	0.782	2.8	31.7	7,988,898
Togo	0.042	58.8	0.609		42.9	1,211,252
Uganda	0.024	139.2	0.699	2.6	44.1	6,528,724
Zaire-Dem. Rep. Of Congo Kinshasa	0.059	336.3	0.655	2	19.2	13,734,706
Zambia			0.806	2.6	25.5	2,396,313
Zimbabwe			0.907	2.3	14	2,517,608

Country	Female 0-14	Total 0-14	Edu. Exp. % 14 Below	LNEE/14
A	AI	AJ	AK	AL
Angola	2,317,610	4,681,439	105.26678	4.6564
Benin	1,638,291	3,307,108	22.043429	3.093
Botswana	307,024	621,788	588.14258	6.377
Burkina-Faso	3,036,705	6,094,560	12.207608	2.5021
Burundi	1,409,567	2,848,326	9.8447299	2.2869
Cameroon	3,291,295	6,663,424		
Cape Verde				
Central African Republic	788,370	1,587,611		
Chad	2,201,368	4,429,973		
Comoros	135,277	271,337	34.966849	3.5544
Congo-Brazzaville	563,079	1,133,570		
Cote d'Ivoire	3,902,210	7,698,603	68.389031	4.2252
Djibouti	98,202	196,998		
Equatorial Guinea Malabo	107,164	215,343	165.78203	5.1107
Eritrea	972,068	1,949,515	4.61325	1.5289
Ethiopia	14,871,164	29,815,332	5.5240036	1.7091
Gabon	278,808	559,026	196.77081	5.282
Gambia	335,503	674,000	18.517804	2.9187
Ghana	3,938,454	7,960,024	31.155685	3.439
Guinea-Bissau	285,370	569,520		
Guinea Conakry	1,986,300	4,014,270		
Kenya	6,461,945	13,071,849		
Lesotho	349,092	702,646	65.070605	4.1755
Liberia	716,831	1,441,791	0	0

Madagascar	3,807,958	7,630,781	11.53224	2.4452
Malawi	2,698,052	5,446,110		
Mali	2,727,226	5,487,028	13.012509	2.5659
Maritania	668,408	1,339,488	26.760673	3.2869
Mauritius				
Mozambique	3,725,396	7,359,569	12.718136	2.543
Namibia	404,346	818,905	301.01172	5.7071
Niger	2,581,785	5,267,954		
Nigeria	28,990,702	58,313,476	3.7298411	1.3164
Rwanda	1,651,422	3,318,550	17.929517	1.4399
Senegal	2,289,706	4,620,101	36.795732	3.6054
Seychelles	10,844	21,960	2005.041	7.6034
Sierra Leone	1,310,516	2,569,937		
Somalia	1,792,749	3,594,903		
South Africa	6,377,090	12,837,363	608.76989	6.4144
Sudan	8,195,201	16,757,613	11.278456	2.4229
Swaziland	238,141	480,903	127.26059	4.8462
Tanzania	7,938,979	15,927,877	21.83593	3.0836
Togo	1,203,564	2,414,816	24.349681	3.1925
Uganda	6,486,736	13,015,460	10.694974	2.3698
Zaire-Dem. Rep. Of Congo	13,624,579	27,359,285	12.291988	2.5089
Kinshasa				
Zambia	2,378,567	4,774,880		
Zimbabwe	2,471,342	4,988,950		

ENDNOTES

¹ Easterly (1997) has documented this. Most economic papers posted on The World Bank web site find no relationship between ODA and welfare.

² Wolfensohn was quite blunt in his lecture.

³ The World Resources Institute publishes these. There are several different rankings based on different political criteria.

⁴ Braddock, 2004. These findings were significant at the 0.05 level. All unpublished work is available on request.

⁵ Klitgaard's book is based on his actual experience in the field. He wrote it as a novel to disguise the names of the people involved.

⁶ These rankings and the definitions used to create them are found in **World Resources 2002-2004: Decisions for the Earth**.

⁷ This is discussed in more detail in Conover, p. 265.

⁸ Braddock, 2002, 2003.

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