

## Supplementary Appendix

### Did Aid Promote Democracy in Africa? The Role of Technical Assistance in Africa's Transitions

Table 1A: The Effect of Technical Assistance on Government Spending, 1980-2000

|                           | (1)     | (2)     | (3)     | (4)      | (5)     |
|---------------------------|---------|---------|---------|----------|---------|
| Log(TA/GDP)               | -3.58** | -3.88** | -4.58** | -4.52*** | -8.14** |
|                           | 1.65    | 1.64    | 1.76    | 1.61     | 1.49    |
| <b>Observations</b>       | 713     | 713     | 416     | 673      | 250     |
| <b>R-Squared</b>          | 0.10    | 0.12    | 0.22    | 0.09     | 0.16    |
| Aid Type Controls         | Yes     | No      | No      | No       | No      |
| Financial Crisis Controls | No      | Yes     | No      | No       | No      |
| Civil Crisis Controls     | No      | No      | Yes     | No       | No      |
| IMF Agreement Control     | No      | No      | No      | Yes      | No      |
| No IMF Agreements         | No      | No      | No      | No       | Yes     |

\*p<10%; \*\*p<5%; \*\*\*p<1%. Estimated using country fixed effects. Standard errors are clustered on country. All models include the control variables included in other models, Model 1 also includes controls for budget support, democracy aid, multilateral aid and bilateral aid. Model 2 includes controls for budget balance, public debt and growth crises. Model 3 includes controls for riots, revolutions, anti-government demonstrations and strikes. Model 3 includes a control for whether a state is under an IMF agreement.

Table 2A: The Effect of Technical Assistance on Public Wages, 1980-2000

|                           | (1)      | (2)      | (3)      | (4)      | (5)      |
|---------------------------|----------|----------|----------|----------|----------|
| Log(TA/GDP)               | -11.87** | -10.01** | -10.82** | -12.05** | -15.96** |
|                           | 4.44     | 4.22     | 4.62     | 4.57     | 3.88     |
| <b>Observations</b>       | 292      | 293      | 194      | 279      | 122      |
| <b>R-Squared</b>          | 0.44     | 0.45     | 0.50     | 0.45     | 0.63     |
| Aid Type Controls         | Yes      | No       | No       | No       | No       |
| Financial Crisis Controls | No       | Yes      | No       | No       | No       |
| Civil Crisis Controls     | No       | No       | Yes      | No       | No       |
| IMF Agreement Control     | No       | No       | No       | Yes      | No       |
| No IMF Agreements         | No       | No       | No       | No       | Yes      |

\*p<10%; \*\*p<5%; \*\*\*p<1%. Estimated using country fixed effects. Standard errors are clustered on country. All models include the control variables included in other models, Model 1 also includes controls for budget support, democracy aid, multilateral aid and bilateral aid. Model 2 includes controls for budget balance, public debt and growth crises. Model 3 includes controls for riots, revolutions, anti-government demonstrations and strikes. Model 3 includes a control for whether a state is under an IMF agreement.

Table 3A: The Effect of Technical Assistance on Political Concessions,  
Alternate Coding of TA with Interaction

|                           | (1)      | (2)     | (3)      | (4)     |
|---------------------------|----------|---------|----------|---------|
| Log(TA/ODA)*Log(ODA/GDP)  | 14.11*** | 23.18** | 17.30*** | 3.36**  |
|                           | 5.14     | 11.49   | 6.29     | 1.58    |
| Log(TA/ODA)               | -0.31    | -0.87   | -1.23*   | -0.07   |
|                           | 0.41     | 1.40    | 0.74     | 0.08    |
| Log(ODA/GDP)              | -0.93    | -0.08   | -0.54    | -0.33   |
|                           | 1.35     | 2.90    | 1.73     | 0.30    |
| Political Terror Scale    | -0.16**  | -0.29** | -0.16**  | -0.01   |
|                           | 0.07     | 0.12    | 0.08     | 0.01    |
| U.S. Affinity             | -0.53    | -0.71   | -0.24    | 0.09    |
|                           | 0.38     | 0.80    | 0.43     | 0.08    |
| Log(Urban/Pop)            | 1.44**   | 3.45**  | 2.22*    | 0.11    |
|                           | 0.69     | 1.60    | 1.14     | 0.08    |
| Log(GDP/Pop)              | -0.85**  | -1.84** | -1.05*   | -0.01   |
|                           | 0.32     | 0.78    | 0.58     | 0.05    |
| Log(Pop)                  | 0.53***  | 1.54*** | 0.44     | -0.02   |
|                           | 0.19     | 0.47    | 0.32     | 0.04    |
| Cold War                  | -0.39**  | -0.47   | -0.44**  | -0.08** |
|                           | 0.16     | 0.30    | 0.19     | 0.03    |
| GDP Growth                | -0.002   | -0.008* | -0.002   | -0.001* |
|                           | 0.002    | 0.005   | 0.003    | 0.0004  |
| Political Concessions t-1 | 0.66***  | 0.82*** | 4.56***  | 0.85*** |
|                           | 0.05     | 0.12    | 0.07     | 0.03    |
| <b>Observations</b>       | 515      | 515     | 466      | 721     |
| <b>R-Squared</b>          | 0.73     |         |          | 0.84    |
| OLS                       | Yes      | No      | No       | Yes     |
| Ordered Probit            | No       | Yes     | No       | No      |
| Arellano-Bond GMM         | No       | No      | Yes      | No      |
| NELDA Concessions Coding  | No       | No      | No       | Yes     |

\*p<10%; \*\*p<5%; \*\*\*p<1%. Estimated using country fixed effects. Standard errors are clustered on country.

Table 4A: The Effect of Technical Assistance on Political Concessions,  
with Year and Country Fixed Effects

|                          | (1)     | (2)      | (3)     | (4)    |
|--------------------------|---------|----------|---------|--------|
| Log(TA/GDP)              | 15.55** | 16.47*** | 15.87** | 6.16** |
|                          | 6.04    | 5.24     | 7.47    | 2.51   |
| Log(ODA/GDP)             | -1.74   | -0.91    | 0.74    | -0.95  |
|                          | 2.28    | 2.19     | 3.20    | 0.63   |
| Political Terror Scale   |         | -0.30**  | -0.23   | -0.03  |
|                          |         | 0.11     | 0.15    | 0.05   |
| U.S. Affinity            |         | -1.04    | -0.73   | -0.21  |
|                          |         | 0.97     | 1.04    | 0.24   |
| Log(Urban/Pop)           |         | 1.35     | -0.99   | 1.09** |
|                          |         | 2.41     | 3.40    | 0.52   |
| Log(GDP/Pop)             | -0.00   | -1.15    | 0.58    | -0.38  |
|                          | 0.75    | 0.76     | 1.22    | 0.23   |
| Log(Pop)                 |         | 0.54     | 0.72    | 0.01   |
|                          |         | 0.58     | 0.90    | 0.16   |
| Cold War                 |         | -1.73**  | -1.82** | -0.05  |
|                          |         | 0.68     | 0.83    | 0.20   |
| GDP Growth               |         | 0.0002   | -0.003  | 0.001  |
|                          |         | 0.004    | 0.008   | 0.001  |
| <b>Observations</b>      | 567     | 550      | 550     | 721    |
| <b>R-Squared</b>         | 0.53    | 0.56     |         | 0.44   |
| OLS                      | Yes     | Yes      | No      | Yes    |
| Ordered Probit           | No      | No       | Yes     | No     |
| Nelda Concessions Coding | No      | No       | No      | Yes    |

\*p<10%; \*\*p<5%; \*\*\*p<1%. Estimated using country fixed effects and year fixed effects.  
Excludes a lagged dependent variable. Standard errors are clustered on country.

Table 5A: The Effect of Technical Assistance on Political Concessions,  
Parsimonious Controls

|                          | (1)      | (2)      | (3)     | (4)     |
|--------------------------|----------|----------|---------|---------|
| Log(TA/GDP)              | 16.34*** | 16.21**  | 7.37**  | 5.46**  |
|                          | 5.33     | 7.31     | 3.27    | 2.65    |
| Log(ODA/GDP)             | -1.05    | 0.72     | -1.14   | -0.85   |
|                          | 2.16     | 3.21     | 1.27    | 0.58    |
| Political Terror Scale   | -0.31*** | -0.24*   | -0.12*  | -0.03   |
|                          | 0.11     | 0.14     | 0.07    | 0.05    |
| U.S. Affinity            | -1.02    | -0.78    | -0.74   | -0.13   |
|                          | 0.95     | 0.98     | 0.64    | 0.27    |
| Log(GDP/Pop)             | -0.95    | 0.53     | -0.19   | -0.18   |
|                          | 0.72     | 1.22     | 0.49    | 0.27    |
| Log(Pop)                 | 0.50     | 0.61     | 0.05    | -0.02   |
|                          | 0.50     | 0.77     | 0.34    | 0.15    |
| Cold War                 | -2.05*** | -1.65*** | -0.70** | -0.62** |
|                          | 0.44     | 0.55     | 0.30    | 0.24    |
| <b>Observations</b>      | 554      | 554      | 466     | 754     |
| <b>R-Squared</b>         | 0.56     |          |         | 0.42    |
| OLS                      | Yes      | No       | No      | Yes     |
| Ordered Probit           | No       | Yes      | No      | No      |
| Arellano-Bond GMM        | No       | No       | Yes     | No      |
| NELDA Concessions Coding | No       | No       | No      | Yes     |

\*p<10%; \*\*p<5%; \*\*\*p<1%. Estimated using country fixed effects. Standard errors are clustered on country.

Table 6A: The Effect of Technical Assistance on Political Concessions,  
Corrected LSDV Estimator from Bruno (2005)

|                        | (1)        |
|------------------------|------------|
| Log(TA/GDP)            | 7.82**     |
|                        | 3.78       |
| Log(ODA/GDP)           | -0.70      |
|                        | 1.40       |
| Political Terror Scale | -0.15**    |
|                        | 0.07       |
| U.S. Affinity          | -0.50      |
|                        | 0.50       |
| Log(Urban/Pop)         | 0.81       |
|                        | 1.18       |
| Log(GDP/Pop)           | -0.78      |
|                        | 0.58       |
| Log(Pop)               | 0.40       |
|                        | 0.31       |
| Cold War               | 0.34*      |
|                        | 0.19       |
| GDP Growth             | -0.002     |
|                        | 0.002      |
| <b>Observations</b>    | <b>466</b> |

\*p<10%; \*\*p<5%; \*\*\*p<1%. Estimated using country fixed effects.

Standard errors are clustered on country. The Bruno (2005) estimator corrects for small T (Nickell) bias. This is an extension of the Bun and Kiviet (2001) estimator for small unbalanced panels.

Table 7A: The Effect of Technical Assistance on Political Concessions,  
Linear TA Specification

|                                      | (1)     | (2)     | (3)      | (4)     |
|--------------------------------------|---------|---------|----------|---------|
| TA/ODA                               | 7.91**  | 11.10*  | -171.17* | 1.82*   |
|                                      | 3.29    | 6.30    | 89.70    | 0.94    |
| ODA/GDP                              | -0.49   | 1.14    | -1.17    | -0.19   |
|                                      | 1.11    | 2.18    | 1.65     | 0.26    |
| Political Terror Scale               | -0.16** | -0.29** | -0.11    | -0.01   |
|                                      | 0.07    | 0.12    | 0.07     | 0.01    |
| U.S. Affinity                        | -0.57   | -0.78   | -0.35    | 0.09    |
|                                      | 0.39    | 0.83    | 0.51     | 0.08    |
| Log(Urban/Pop)                       | 1.44**  | 3.34**  | 3.62***  | 0.11    |
|                                      | 0.69    | 1.60    | 1.16     | 0.08    |
| Log(GDP/Pop)                         | -0.84** | -1.79** | -0.59    | -0.01   |
|                                      | 0.32    | 0.79    | 0.57     | 0.05    |
| Log(Pop)                             | 0.49**  | 1.48*** | 0.34     | -0.03   |
|                                      | 0.19    | 0.47    | 0.34     | 0.04    |
| Cold War                             | -0.38** | -0.47   | -0.30    | -0.08** |
|                                      | 0.16    | 0.30    | 0.18     | 0.03    |
| GDP Growth                           | -0.00   | -0.01   | -0.00    | -0.00*  |
|                                      | 0.00    | 0.00    | 0.00     | 0.00    |
| Political Concessions <sub>t-1</sub> | 0.67*** | 0.83*** | 0.44***  | 0.85*** |
|                                      | 0.05    | 0.12    | 0.08     | 0.03    |
| <b>Observations</b>                  | 515     | 515     | 466      | 721     |
| <b>R-Squared</b>                     | 0.73    |         |          | 0.84    |
| OLS                                  | Yes     | No      | No       | Yes     |
| Ordered Probit                       | No      | Yes     | No       | No      |
| Arellano-Bond GMM                    | No      | No      | Yes      | No      |
| NELDA Concessions Coding             | No      | No      | No       | Yes     |

\*p<10%; \*\*p<5%; \*\*\*p<1%. Estimated using country fixed effects. Standard errors are clustered on country.

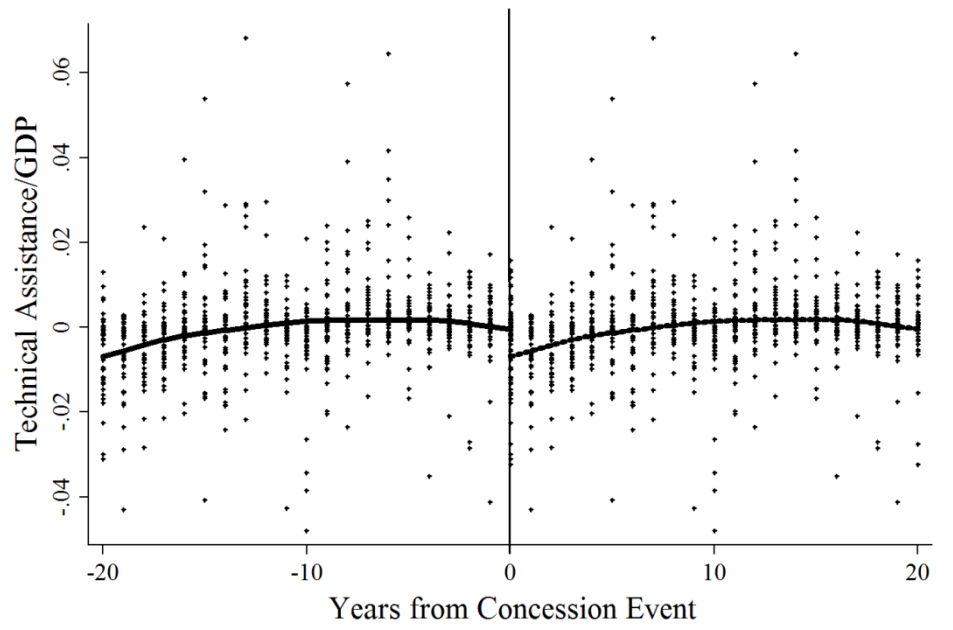
Table 8A: The Effect of Technical Assistance on Government Spending and Public Wages,  
Linear Specification for TA and Government Spending and Wages

|                          | Government<br>Spending<br>(1) | Public<br>Wages<br>(2) | Government<br>Spending<br>(3) | Public<br>Wages<br>(4) |
|--------------------------|-------------------------------|------------------------|-------------------------------|------------------------|
| TA/GDP                   | -75.88***                     | -172.92                | -110.18***                    | -217.11*               |
|                          | 25.93                         | 102.97                 | 31.76                         | 116.88                 |
| ODA/GDP                  | 18.37**                       | 2.59                   | 20.61**                       | -7.73                  |
|                          | 6.92                          | 35.50                  | 7.51                          | 49.84                  |
| Political Terror Scale   | 0.44                          | 2.97**                 | 0.40                          | 4.20**                 |
|                          | 0.45                          | 1.43                   | 0.45                          | 2.03                   |
| U.S. Affinity            | -0.65                         | 3.13                   | -1.76                         | 11.81                  |
|                          | 2.16                          | 7.04                   | 2.98                          | 10.67                  |
| Log(Urban/Pop)           | -0.11                         | -14.38                 | 5.67                          | -20.64                 |
|                          | 4.42                          | 17.80                  | 4.43                          | 30.07                  |
| Log(GDP/Pop)             | 2.86                          | -35.01*                | 2.91                          | -30.34                 |
|                          | 2.49                          | 20.57                  | 2.54                          | 27.57                  |
| Log(Pop)                 | -1.27                         | -5.21                  | -2.30                         | -9.96                  |
|                          | 1.35                          | 5.53                   | 1.64                          | 10.55                  |
| Cold War                 | 1.10                          | 1.18                   | 0.78                          | 4.28                   |
|                          | 0.94                          | 4.41                   | 1.18                          | 5.98                   |
| GDP Growth               | -0.03**                       | -0.08                  | -0.04**                       | -0.13**                |
|                          | 0.01                          | 0.05                   | 0.01                          | 0.06                   |
| Log(Tax Income/GDP)      |                               |                        | -2.26                         | -1.58                  |
|                          |                               |                        | 1.72                          | 6.57                   |
| Log(Public Debt/GDP)     |                               |                        | -0.40                         | 8.24                   |
|                          |                               |                        | 2.04                          | 20.49                  |
| Log(Budget Support Aid)  |                               |                        | -0.02                         | 0.09                   |
|                          |                               |                        | 0.05                          | 0.14                   |
| IMF Agreement            |                               |                        | -0.47                         | -0.74                  |
|                          |                               |                        | 0.56                          | 6.38                   |
| Log(Government Spending) |                               |                        |                               | 0.88                   |
|                          |                               |                        |                               | 10.24                  |
| <b>Observations</b>      | 734                           | 297                    | 403                           | 196                    |
| <b>R-Squared</b>         | 0.08                          | 0.25                   | 0.15                          | 0.27                   |

\*p<10%; \*\*p<5%; \*\*\*p<1%. Estimated using country fixed effects. Standard errors are clustered on country.

Figure A1: The Level of Technical Assistance by Years from Concession Event





This figure shows the distribution of technical assistance by the number of years away from a concession event. We control for  $\text{Log}(\text{ODA}/\text{GDP})$  and country fixed effects.

Table 9A: Data Appendix

| Name                          | Mean | SD   | Min  | Max  | Description  | Source(s)  |
|-------------------------------|------|------|------|------|--|--|
| Political Concessions         | 1.67 | 1.67 | 0.00 | 4.00 | Equals zero if there are strict limits on political organization and the president has announced no intention to change. Equals one if there is an announcement by the President that political liberalization will take place or an announcement that an election will take place. Equals two if there are formal changes of constitution to open political system or formal lifting of a ban on political organization. Equals three if there was a multiparty presidential election. Equals four if there was a free and fair multiparty presidential election. | Nohlen, Krennerich, and Thibaut (1999); <i>Africa south of the Sahara</i> (various issues) |
| Political Concessions (NELDA) | 1.42 | 0.73 | 0.00 | 2.00 | Equals zero if a country has never held an election for the incumbent office in our time frame, one if an election is held, and two if an election is held in which contestation with multiple parties was allowed.  | Hyde and Marinov (2012)  |
| Log(Government Spending/GDP)  | 2.76 | 0.41 | 1.68 | 4.26 | Equals the natural log of the yearly value of government in USD expenditures divided by gross domestic product (+1).   | World Bank (2012)  |
| Log(Public Wages/GDP)         | 1.45 | 1.45 | 0.00 | 4.95 | Equals the natural log of the yearly value of public wages in USD divided by gross domestic product (+1).  | World Bank (2012); International Monetary Fund, (1989, 2013)                               |
| Log(TA/GDP)                   | 0.03 | 0.03 | 0.00 | 0.19 | Equals the natural log of the yearly value of technical assistance in USD divided by gross domestic product (+1).  | World Bank (2012)  |
| Log(ODA/GDP)                  | 0.12 | 0.11 | 0.00 | 0.73 | Equals natural log of the yearly value of official development assistance in USD divided by gross  | World Bank (2012)  |

|                           |        |       |        |       |   |                        |
|---------------------------|--------|-------|--------|-------|---|------------------------|
|                           |        |       |        |       | domestic product (+1).  |                        |
| Political Terror Scale    | 2.67   | 1.07  | 1.00   | 5.00  | The Political Terror Scale is a one to five scale coded from U.S. State Department and Amnesty International Report which captures “violations of physical or personal integrity rights carried out by a state or its agents” | Wood and Gibney (2010) |
| U.S. Affinity             | -0.39  | 0.14  | -1.00  | 0.33  | This variable is from the Affinity of Nations dataset. It varies from -1 and 1 and measures the voting affinity of each nation with the United States in the UN General Assembly.   | Gartzke and Jo (2006)  |
| Log(Urban/Pop)            | 3.28   | 0.55  | 1.46   | 4.40  | Equals the natural log of number of individuals living in urban areas divided by the overall population.  | World Bank (2012)      |
| Log(GDP per Capita)       | 6.44   | 1.01  | 4.78   | 9.26  | Equals natural log of GDP divided by population in year 2000 dollars.   | World Bank (2012)      |
| Log(Pop)                  | 21.83  | 1.35  | 18.82  | 25.86 | Equals the natural log of the national population.  | World Bank (2012)      |
| Cold War                  | 0.56   | 0.50  | 0.00   | 1.00  | Equal to zero prior to 1992 and one afterwards.   |                        |
| GDP Growth                | -0.48  | 15.93 | -62.72 | 81.47 | Equals the yearly growth in GDP.  | World Bank (2012)      |
| Log(Tax Income/GDP)       | 2.68   | 0.57  | 0.00   | 4.25  | Equals the natural log of the yearly tax income of a government divided by GDP.   | World Bank (2012)      |
| Log(Public Debt/GDP)      | 0.64   | 0.95  | -0.03  | 7.71  | Equals the natural log of public debt divided by GDP.   | World Bank (2012)      |
| Log(Donor Budget Support) | -10.37 | 7.47  | -25.83 | -2.59 | Equals the natural log of budget support provided in each year by all donors in year 2000 USD (+1)  | Tierney et al. (2011)  |
| IMF Agreement             | 0.60   | 0.49  | 0.00   | 1.00  | Equals one if a country is under an IMF agreement in a year and zero otherwise.   | Vreeland (2003)        |

Table 10A: Specifications Used by Other Aid and Democratization Studies

| Article                    | Estimator             | Lagged Dependent Variable                              | Instrumental Variable                            | Dependent Variable                           | Independent Variable   | Control Variables   |
|----------------------------|-----------------------|--|--|--|--|---|
| Dietrich and Wright (2014) | Random Effects Probit | No   | No   | Multiparty transitions (Cheibub et al. 2010) | Economic Aid (log) and Democracy Aid (log)                             | Population (log), Urbanization, Civil War, IMF Program, Ethnic Fractionalization, Oil Rents, Neighbor Democracy, GDP Growth, GDP per Capita (log), time trend                       |
| Wright (2009)              | Logit                 | Yes  | No   | Change in Polity2 index                      | Aid/GNI and Aid per Capita   | Growth, regime type, Conflict, Log(GDP per Capita), Growth, Neighboring Democracy, Winning Coalition Size   |
| Cornell (2012)             | OLS                   | Yes  | No   | Polity And Freedom House Indices             | Democracy Aid, Other Aid   | GDP per Capita, Trade Openness, GDP Growth, Religious Fractionalization, Ethnic Fractionalization, Regime Type  |
| Bermeo (2011)              | Logit                 | Yes  | No   | Multiparty transitions (Cheibub et al. 2010) | Aid per Capita, Democracy Aid per Capita, Authoritarian Aid per Capita | Oil Wealth per Capita, GDP Growth, Previous Transitions, Polity Lag, Regime Age, Regime Age Polynomials   |
| Morrison (2009)            | Logit                 | Yes  | No   | Regime stability (Polity 2)                  | Non-Tax Revenue  | GDP Growth, Urbanization, Time splines, Ethnolinguistic Fractionalization, Population Density, Grants per Capita, State Owned Enterprise Revenue, Other Non-Tax Revenue, Regime Age |
| Knack (2004)               | OLS                   | No (though initial democracy is included as a control) | No   | Change in Freedom House Index and Polity     | Aid/GDP, Aid/Government Spending                                       | Initial democracy, regional dummies, illiteracy, GDP Growth, GDP per Capita, Urbanization, Population (log), Infant Mortality, Change Urban Population, Religion                    |
| Dunning (2004)             | 2SLS                  | No   | Yes, population and French colony as instruments | Freedom House                                | ODA/GNP  | GDP per Capita, English Common Law, Ethnic Fractionalization,   |

Table 11A: Coding of Concession

| Country       | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Angola        | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 3    | 0    | 2    | 0    | 0    | 0    | 0    |
| Benin         | 0    | 0    | 0    | 0    | 0    | 2    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 0    |
| Botswana      | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| Burkina Faso  | 0    | 0    | 0    | 0    | 0    | 1    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    |
| Burundi       | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 3    | 0    | 0    | 2    | 2    | 2    |
| CAR           | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 3    | 3    | 3    | 3    | 3    | 3    | 3    |
| Cameroon      | 0    | 0    | 0    | 0    | 0    | 2    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| Cape Verde    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 4    | 4    | 4    | 4    | 4    | 4    |
| Chad          | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 2    | 3    | 3    | 3    |
| Comoros       | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 3    | 3    | 1    | 4    | 4    | 4    |
| Congo, DR     | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |
| Congo, Rep.   | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 4    | 4    | 4    | 4    | 4    | 0    | 1    |
| Cote d'Ivoire | 0    | 0    | 0    | 0    | 0    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    |
| Eq. Guinea    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 3    | 3    | 3    | 3    | 3    | 3    |
| Eritrea       | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 2    | 2    | 2    |
| Ethiopia      | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 2    | 2    | 2    | 2    | 2    |
| Gabon         | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 2    | 3    | 3    | 3    | 3    | 3    | 3    |
| Gambia        | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 0    | 1    | 3    | 3    | 3    |
| Ghana         | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 3    | 3    | 3    | 3    | 4    | 4    | 4    |
| Guinea        | 0    | 0    | 0    | 1    | 1    | 1    | 2    | 2    | 3    | 3    | 3    | 3    | 3    | 3    |
| Guinea-Bissau | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 2    | 4    | 4    | 4    | 4    | 4    |
| Kenya         | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 3    | 3    | 3    | 3    | 3    | 3    | 3    |
| Lesotho       | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 1    | 4    | 1    | 1    | 1    | 1    | 1    |
| Liberia       | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 4    | 4    |
| Madagascar    | 0    | 0    | 0    | 0    | 1    | 2    | 2    | 2    | 4    | 4    | 4    | 3    | 3    | 3    |
| Malawi        | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 4    | 4    | 4    | 4    | 4    |
| Mali          | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 3    | 3    | 3    | 3    | 3    | 3    | 3    |
| Mauritania    | 0    | 0    | 0    | 0    | 0    | 0    | 2    | 3    | 3    | 3    | 3    | 3    | 3    | 3    |
| Mauritius     | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    |

|                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <b>Mozambique</b>     | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 4 | 4 | 4 | 4 |
| <b>Namibia</b>        | 0 | 0 | 0 | 1 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| <b>Niger</b>          | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 4 | 4 | 4 | 3 | 3 | 3 |
| <b>Nigeria</b>        | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 1 | 2 | 2 | 2 |
| <b>Rwanda</b>         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| <b>Sao Tome and P</b> | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 4 | 4 | 4 | 2 | 3 | 3 | 3 |
| <b>Senegal</b>        | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| <b>Seychelles</b>     | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 4 | 4 | 4 | 4 | 4 |
| <b>Sierra Leone</b>   | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 3 | 0 | 3 |
| <b>Somalia</b>        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <b>South Africa</b>   | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 4 |
| <b>Sudan</b>          | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <b>Swaziland</b>      | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <b>Tanzania</b>       | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| <b>Togo</b>           | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 3 |
| <b>Uganda</b>         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 4 |
| <b>Zambia</b>         | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| <b>Zimbabwe</b>       | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 |

Source: Africa South of the Sahara, Nohlen, Krennerich, and Thibaut (1999)