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New Data, New Doubts: Revisiting "Aid, Policies, and Growth"

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Abstract

The Burnside and Dollar (2000) finding that aid raises growth in a good policy environment has had an important influence on policy and academic debates. We conduct a data gathering exercise that updates their data from 1970–93 to 1970–97, as well as filling in missing data for the original period 1970–93. We find that the BD finding is not robust to the use of this additional data. (JEL F350, O230, O400)

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New Data, New Doubts:

A Comment on Burnside and Dollar's "Aid, Policies, and Growth" (2000)

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* We are grateful to Craig Burnside for supplying data and assisting in the reconstruction of previous results, without holding him responsible in any way for the work in this paper. Thanks also to Francis Ng and Prarthna Dayal for generous assistance with updating the Sachs-Warner openness variable, and to 3 anonymous referees, Craig Burnside, and Henrik Hansen for helpful comments. Easterly: New York University, Center for Global Development, and Institute for International Economics. Levine: Carlson School of Management, University of Minnesota and the National Bureau of Economic Research, Roodman: Center for Global Development.

In an extraordinarily influential paper, Burnside and Dollar (2000, p. 847) find that "… aid has a positive impact on growth in developing countries with good fiscal, monetary, and trade policies but has little effect in the presence of poor policies." This finding has enormous policy implications. The Burnside and Dollar (2000, henceforth BD) result provides a role and strategy for foreign aid. If aid stimulates growth only in countries with good policies, this suggests that (1) aid can promote economic growth and (2) it is crucial that foreign aid be distributed selectively to countries that have adopted sound policies. International aid agencies, public policymakers, and the press quickly recognized the importance of the BD findings.[1]

This paper reassesses the links between aid, policy, and growth using more data. The BD data end in 1993. We reconstruct the BD database from original sources and thus (1) add additional countries and observations to the BD dataset because new information has become available since they conducted their analyses and (2) extend the data through 1997. Thus, using the BD methodology, we reexamine whether aid influences growth in the presence of good policies.

Given our focus on retesting BD, we do not summarize the vast pre-BD literature on aid and growth. We just note that there was a long and inconclusive literature that was hampered by limited data availability, debates about the mechanisms through which aid would affect growth, and disagreements over econometric specification (See, Papanek, 1972; Cassen, 1986; Mosely et al., 1987; Boone, 1994, 1996; and Hansen and Tarp's 2000 review).

Since BD found that aid boosts growth in good policy environments, there have been a number of other papers reacting to their results, including Collier and Dehn (2001), Collier and Dollar (2001), Dalgaard and Hansen (2001), Guillaumont and Chauvet (2001), Hansen and Tarp (2001), and Lensink and White (2001). These papers conduct useful variations and extensions (some of which had already figured in the pre-BD literature), such as introducing additional control variables, using non-linear specifications, etc. Some of these papers confirm the message that aid only works in a good policy environment, while others drive out the aid*policy interaction term with other variables. This literature has the usual limitations of how to choose

the appropriate specification without clear guidance from theory, which often means there are more plausible specifications than there are data points in the sample.

We differentiate our paper from these others by NOT deviating from the BD specification. Thus, we do not test the robustness of the results to an unlimited number of variations, but instead maintain the BD methodology. This paper conducts a very simple robustness check by adding new data that were unavailable to BD. Thus, we expand the sample used over their time period and extend the data from 1993 to 1997.

I. Robustness checks on the aid-policy-growth relationship

BD's preferred specification is a growth regression with several control variables common to the literature, plus terms for the amount of international aid provided to a country (Aid), an index of the quality of the policy environment (Policy), and an aid-policy interaction term (Aid*Policy). As control variables, BD include the logarithm of initial Gross Domestic Product per capita (Log initial GDP), a measure of ethnic fractionalization (Ethnic), the rate of political assassinations (Assassinations), the interaction between ethnic fractionalization and political assassinations (Ethnic*Assassinations), regional dummy variables for Sub-Saharan Africa and fast-growing East Asian countries (Sub-Saharan Africa and Fast-growing E. Asia respectively), an index of institutional quality (Institutional Quality), and a measure of financial depth (M2/GDP lagged). The BD policy index, Policy, is constructed from measures of budget balance, inflation, and the Sachs-Warner openness index. This specification corresponds to regression 5 (all developing countries) and 8 (low income countries only) in the BD paper. In Table 1, we first show regression 5 from BD using ordinary least squares (OLS). The sample here is middle-income and low-income developing countries, and five outliers are omitted. These are the five outliers omitted by BD. We reproduce exactly their results in column (1).

Since BD exclude observations that they consider outliers and since we want to follow the BD methodology as closely as possible, we adopt the Hadi method for identifying and eliminating outliers as we add new data. The Hadi method measures the distance of data points

from the main body of data and then iteratively reduces the sample to exclude distant data points. Critically, when we apply the Hadi method to the BD data, we confirm their results. We will continue to use the Hadi procedure in all the regressions in this paper except where we explicitly note otherwise. In the spirit of the original BD methodology, we choose a Hadi significance level of 0.05 that excludes only a handful of outliers (between 5 and 11). (See Table 2.) Note, however, that keeping the outliers in the regressions does not change this paper's conclusion.

To test the robustness of the BD results, we undertook an extensive data gathering exercise. We collected annual data on all the variables in the BD sample. We went back to the original sources and reconstructed the entire database and extended the data through 1997. As part of this exercise, we updated the Sachs and Warner openness index. To construct the policy index, we follow the BD regression procedure and we always include the budget balance, inflation, and Sachs-Warner openness as components of Policy. In addition to extending the sample through to 1997, we were able to expand the original BD data. For example, we found broader coverage on International Country Risk Guide institutional quality for 1982 by using the original source of the data. Considering both the cross-section and the time series expansion, we have increased the sample size from their original 275 observations in 56 countries to 356 observations in 62 countries (before excluding outliers). An appendix describing the methodology we used and the new dataset itself are available on the Internet at www.cgdev.org. Although our data did not match up exactly with theirs (there are inevitably data revisions, where values change, new data become available, and some values are reclassified as missing), the correlations are all above 0.95 within their sample, except for budget balance, which is 0.92., and institutional quality, which is 0.90. Moreover, we were able to reproduce their results with our data when we restrict the sample to their time period and their countries as discussed below.

The BD results do not hold when we use new data that includes additional countries and extends the coverage through 1997. The aid*policy interaction term enters insignificantly when using data from 1970–1997 (Column 2). In fact, the coefficient on the aid*policy term turns negative, with a t-statistic of –1.09. Figure 1 shows both the partial scatter plot of the original BD

sample between growth and aid*policy and the partial scatter plot using our new, expanded data. As shown, the positive relationship between growth and aid*policy vanishes when using new data. In these analyses, we continue to use the Hadi method for eliminating outliers since this method reproduced the original BD results. However, when we do not use Hadi and run the results on the full sample, we again find that the aid*policy variable enters insignificantly (we will show these results below).

We perform the same exercise with BD regression 8 for the sample of low income countries (also following them in omitting outliers). BD note that low income countries might be a preferred sample to detect the effects of aid, and indeed their aid-policy interaction term is significant in both OLS and two-stage least squares (2SLS) in their regression 8. In order to check the robustness of the estimates of the instrumental variables estimates, we do the exercise in two-stage least squares as shown in columns (3) and (4) of Table 1. We use the same set of instruments as BD. We are again able to reproduce their results with our dataset (see Table 2 below).

The aid*policy term is insignificant in their regression 8 when we simply add all the data for low-income countries that we can collect for 1970–93 and the data for 1994–97 (column 4). The coefficient not only becomes insignificant, but changes sign. Our sample is 52 observations larger than the BD sample for regression 8.

The fragile results on aid effectiveness remain evident when varying the sample. For brevity, table 2 shows only the aid*policy coefficients, t-statistics, and number of observations for OLS and 2SLS for regressions 5 and 8 for various combinations of sample periods, country samples, and when including and excluding outliers. We reproduce statistical significance when restricting our data to the Burnside-Dollar sample period and sample of countries, though the coefficient sizes are larger when using the new data. The significance of the relationship between growth and the aid*policy interaction term vanishes, however, if we relax either the sample period constraint or the country selection constraint for either regression 5 or 8 (i.e. the whole sample and only the low income sample). The significance vanishes for both OLS and

2SLS in either regression, for using their countries but the whole period sample or for their sample period but all countries, and for samples excluding outliers and for samples including outliers. Not only does significance vanish, but the magnitude of the coefficient changes greatly across the different permutations.

The only significant coefficient out of our various permutations was for OLS for regression 8 (the low income sample) using the Burnside-Dollar countries for the full sample period. Since this is one significant coefficient at the 5 percent level out of twenty permutations, we do not think this provides strong support for the robustness of the Burnside-Dollar results.

We tried all of these same exercises for the other aid*policy regressions that BD report in the paper. Burnside and Dollar found the aid*policy term to be significant and positive when they did NOT exclude outliers but added another term aid^2*policy (which was significant and negative). Their results were significant in OLS for the whole sample and the low income sample, but not in 2SLS, so we report only the OLS results. We are able to reproduce their results with our dataset using their sample period and sample of countries (Table 3). When we try these specifications with our expanded dataset, the previous pattern holds: the aid-policy interaction term is not robust to the use of new data, including various permutations of period and country selection. In our full sample and in some of the other permutations, the coefficients on the aid*policy and aid^2*policy reverse sign from the BD results

Thus, the result of our paper is as follows: adding new data creates new doubts about the BD conclusion. When we extend the sample forward to 1997, we no longer find that aid promotes growth in good policy environments. Similarly, when we expand the BD data by using the full set of data available over the original BD period, we no longer find that aid promotes growth in good policy environments. Our findings regarding the fragility of the aid-policy-growth nexus is unaffected by excluding or including outliers.

We also experimented with alternative definitions of "aid" and "good policies", as well as trying different period lengths (from annual data all the way up to the cross-section for the full

sample). These exercises (available upon request) did not change our conclusion about the fragility of the aid*policy term – the aid-policy term is not robust to alternative equally plausible definitions of aid and policy, or to alternative period lengths.

II. Conclusions

This paper reduces the confidence that one can have in the conclusion that aid promotes growth in countries with sound policies. The paper does not argue that aid is ineffective. We make a much more limited claim. We simply note that adding additional data to the BD study of aid effectiveness raises new doubts about the effectiveness of aid and suggests that economists and policymakers should be less sanguine about concluding that foreign aid will boost growth in countries with good policies. We believe that BD should be a seminal paper that stimulates additional work on aid effectiveness, but not yet the final answer on this critical issue. We hope that further research will continue to explore pressing macroeconomic and microeconomic questions surrounding foreign aid, such as whether aid can foment reforms in policies and institutions that in turn foster economic growth, whether some foreign aid delivery mechanisms work better than others, and what is the political economy of aid in both the donor and the recipient.

Table 1: Testing the robustness of Burnside and Dollar panel regressions 5 and 8 to more data (dependent variable: growth of GDP/capita)

Regression	1	2	3	4
Sampling universe:	All developing countries, outliers omitted		Only low income countries, outliers omitted	
Burnside-Dollar Regression:	Regression 5, OLS		Regression 8, 2SLS	
Right-hand side variable:	BD data, BD sample, 1970–93	new data set, full sample, 1970–97	BD data, BD sample, 1970–93	new data set, full sample, 1970–97
Aid	-0.02	0.20	-0.24	-0.16
	(0.13)	(0.75)	(-0.89)	(-0.26)
Aid * policy	0.19**	-0.15	0.25*	-0.20
	(2.61)	(-1.09)	(1.99)	(-0.65)
Log initial GDP per capita	-0.60	-0.40	-0.83	-1.21*
	(-1.02)	(-1.06)	(-1.02)	(-2.02)
Ethnic	-0.42	-0.01	-0.67	-0.75
	(-0.57)	(-0.02)	(-0.76)	(-0.82)
Assassinations	-0.45	-0.37	-0.76	-0.69
	(-1.68)	(-1.43)	(-1.63)	(-1.68)
Ethnic * Assassinations.	0.79	0.18	0.63	0.69
	(1.74)	(0.29)	(0.67)	(0.78)
Sub-Saharan Africa	-1.87*	-1.68**	-2.11**	-1.20
	(-2.41)	(-3.07)	(-2.77)	(-1.79)
Fast-growing E. Asia	1.31*	1.18*	1.46	1.01
	(2.19)	(2.33)	(1.95)	(1.40)
Institutional quality	0.69**	0.31*	0.85**	0.38*
	(3.90)	(2.53)	(4.17)	(2.46)
M2/GDP lagged	0.01	0.00	0.03	0.01
	(0.84)	(0.16)	(1.39)	(1.00)
Policy	0.71**	1.22**	0.59	1.61**
	(3.63)	(5.51)	(1.49)	(2.93)
Observations	270	345	184	236
R-squared	0.39	0.33	0.47	0.35

* indicates that the coefficient is significant at the 5% level and ** indicates significance at the 1% level. Robust t-statistics are given in parentheses. The regressions omit outliers, either as described in Burnside and Dollar (2000) or using the Hadi method as discussed in the text. Variable definitions: Aid is Development Assistance/GDP, Policy is a regression-weighted average of macroeconomic policies described in BD, Ethnic is ethnic fractionalization, Assassinations is per million population, Sub-Saharan Africa and Fast-growing E. Asia are dummy variables, Institutional quality is from Knack and Keefer (1995).

Table 2: Coefficient on aid*policy in alternative regressions for growth of GDP/capita

	5/OLS	5/2SLS	8/OLS	8/2SLS
Burnside and Dollar original	0.19**	0.18	0.27**	0.25*
	(2.61)	-1.63	(2.97)	(1.99)
observations	270	270	184	184
ELR data, BD countries, 1970-93	0.34*	0.56**	0.38*	0.56*
	(2.41)	(2.87)	(2.36)	(2.28)
observations	268	268	178	178
ELR data, full sample, 1970-93	-0.08	0.11	-0.13	0.01
	(-0.65)	(0.52)	(-0.9)	(0.05)
observations	291	291	199	199
ELR data, BD countries, 1970-97	0.30	0.38	0.40*	0.47
	(1.96)	(0.75)	(2.38)	(1.52)
observations	310	310	207	207
ELR data, full sample, 1970-97	-0.15	0.01	-0.20	-0.20
	(-1.09)	(0.05)	(-1.26)	(-0.65)
observations	345	345	236	236
ELR data, full sample, outliers included, 1970-93	0.05	0.07	0.00	-0.06
	(0.82)	(0.86)	(0.03)	(-0.52)
observations	300	300	205	205
ELR data, full sample, outliers included, 1970-97	0.05	0.06	-0.01	-0.08
	(0.81)	(0.79)	(-0.06)	(-0.73)
observations	356	356	244	244

Note: ELR data refers to dataset constructed for this paper as described in text. All regressions omit outliers, either in the original Burnside and Dollar results as described in their paper, or in the ELR results using the Hadi method, except where otherwise noted. Robust t-statistics are in parentheses. The number of observations is given below the t-statistics. *indicates significant at 5% level **indicates significant at 1% level.

Table 3: Testing Burnside-Dollar specification of growth of GDP/capita regressions adding aid squared*policy (robust t-statistics in parentheses, observations below t-statistic)

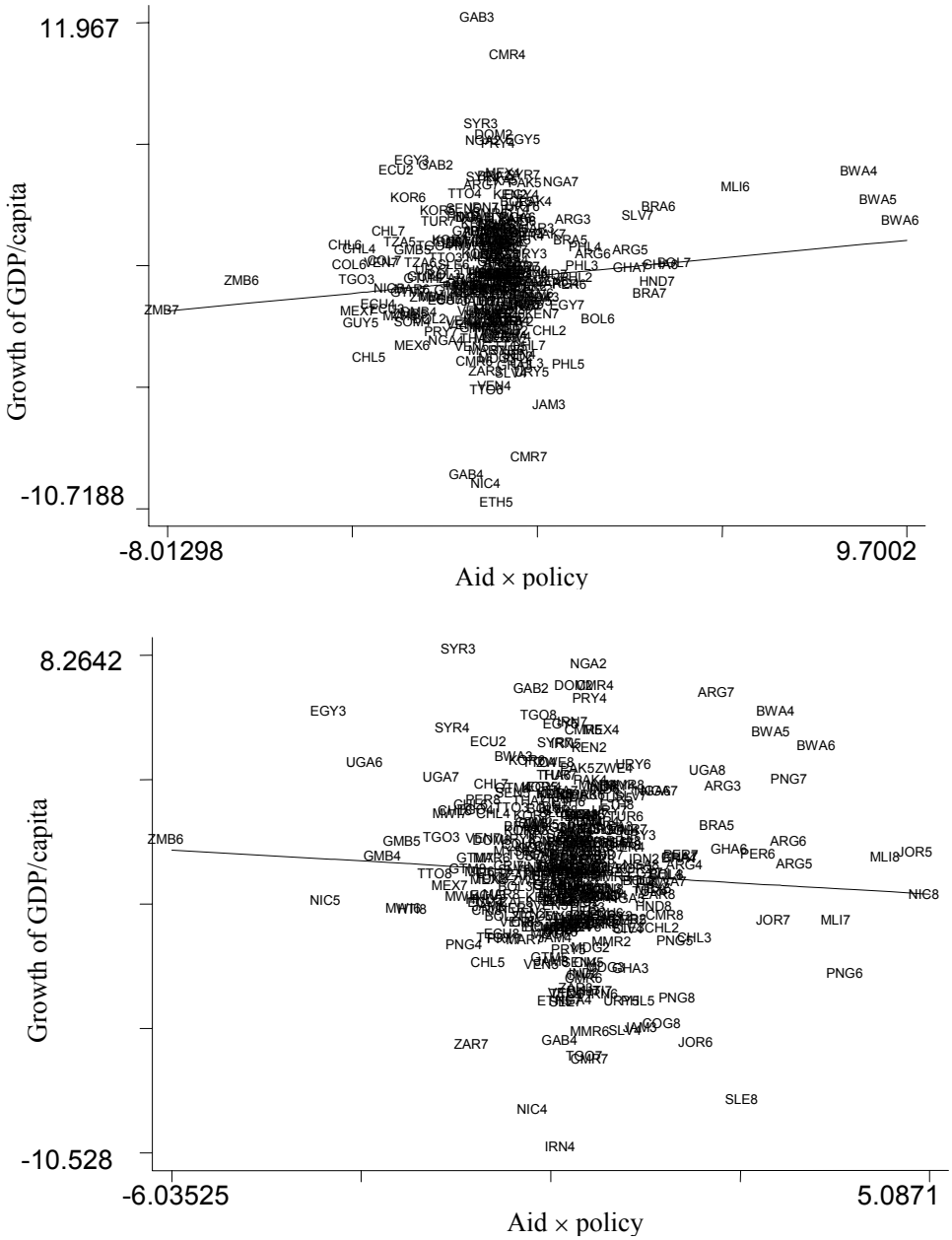
		4/OLS	7/OLS
Burnside and Dollar original	aid*policy	0.20*	0.27*
		(2.07)	(2.03)
	aid^2*policy	-0.02*	-0.02*
		(-2.22)	(-2.45)
	Observations	275	189
ELR data, BD countries, 1970-93	aid*policy	0.31*	0.28
		(2.30)	(1.81)
	aid^2*policy	-0.05*	-0.05*
		(-2.35)	(-2.41)
	Observations	274	183
ELR data, full sample, 1970-93	aid*policy	-0.11	-0.27
		(-1.10)	(-1.94)
	aid^2*policy	0.02	0.03*
		(1.92)	(2.34)
	Observations	300	205
ELR data, BD countries, 1970-97	aid*policy	0.20	0.15
		(1.64)	(1.11)
	aid^2*policy	-0.03	-0.03
		(-1.58)	(-1.56)
	Observations	322	216
ELR data, full sample, 1970-97	aid*policy	-0.14	-0.27
		(-1.31)	(-1.89)
	aid^2*policy	0.03*	0.03*
		(2.25)	(2.35)
	Observations	356	244

Note: ELR data refers to dataset constructed for this paper as described in text.
*significant at 5% level **significant at 1% level.

Figure 1: Partial scatter plots of growth against aid*policy

Top graph: Burnside-Dollar original results

Bottom graph: Results using new dataset



Note: These partial scatter plots are from regressions 1 and 3 in Table 1. The partial scatter plot involves the two-dimensional representation of the relationship between growth and aid*policy controlling for the other regressors. Thus, we regress growth against the all of the regressors listed in Table 1 except aid*policy and collect these growth residuals. Then, we regress aid*policy against the same regressors and collect these aid*policy residuals. The figures plot the growth residuals against the aid*policy residuals along with the regression line.

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Footnotes

[1] See, for instance, the World Bank (1998, 2002a, b), the U.K. Department for International Development (2000), President Bush's speech (March 16, 2002), the announcement by the White House on creating the Millennium Challenge Corporation (2002), as well as the Economist (March 16, 2002), a Washington Post editorial (February 9, 2002), and a Financial Times column by Alan Beattie (March 11, 2002).

Appendix: Data set construction

In assembling a new data set for the present study, we imitated as closely as possible the process followed by BD, consulting also the authors (although they are of course not responsible for any errors we make). We collected all data available from standard cross-country sources. We also collected new data on black market premium. (See Table A–1.)

The BD and new data sets differ somewhat. Each contains observations for certain variables that the other lacks, and the two do not agree perfectly on overlaps. (See Table A–2.) BD have some observations that we were not able to reproduce for 1970-93 with our more recent data sources, perhaps because data was reclassified as missing in subsequent updates.

Table A–1. Construction of data set[1]

Variable	**Code**	**Correlation with BD[1]**	**Data source**	**Notes[2]**
Per-capita GDP growth	GDPG	0.962	World Bank 2002c	
Initial GDP per capita	LGDP	1.000	Summers and Heston 1991, updated using GDPG	Natural logarithm of GDP/capita for first year of period; constant 1985 dollars
Ethnic fractionalization	ETHNF	1.000	Easterly and Levine 1997	Probability that two individuals will belong to different ethnic groups; based on original Soviet data
Assassinations	ASSAS	1.000	Banks 2002	
Institutional quality	ICRGE	0.897	PRS Group's IRIS III data set (see Knack and Keefer 1995)	Based on 1982 values, the earliest available. BD say they use 1980 values. Computed as the average of five variables
M2/GDP, lagged one period	M2–1	0.967	World Bank 2002c	
Sub-Saharan Africa	SSA	1.000	World Bank 2002c	Codes nations in the southern Sahara as sub-Saharan
East Asia	EASIA	1.000		Dummy for China, Indonesia, South Korea, Malaysia, Philippines, and Thailand only

Budget surplus	BB	0.918	World Bank 2002c; IMF 2002	World Bank primary data source. Additional values extrapolated from IMF, using series 80 and 99b (local-currency budget surplus and GDP)
Inflation	INFL	1.000	World Bank 2002c	Natural logarithm of 1 + inflation rate
Black market premium	LBMP	BD do not use data on BMP because they take the Sachs-Warner openness measure directly	Global Development Network database for all years expect 1994-95; black market exchange rate for 1994-95 from ICA, various editions; CDI, various editions; official exchange rate from IMF 2002	.Natural logarithm of 1+ black market premium
Sachs-Warner, updated	SACW	0.962	See Table A-4 below	Based on variables described in Table A-4. Extended to 1998. Slightly revised pre-1993
Aid (Effective Development Assistance)/ GDP	AID	0.953	Chang et al. 1998; IMF 2002; DAC 2002	Values available from Chang et al. for 1975–95. Values for 1970–74, 1996–97, extrapolated based on correlation of EDA with Net ODA. Converted to 1985 dollars with World Import Unit Value index from IMF 2002, series 75. GDP computed like LGDP above
Population	LPOP	1.000	World Bank 2002c	Natural logarithm
Arms imports/total imports lagged	ARMS-1	0.986	U.S. Department of State, various years	Underlying source of World Bank 2002c, which BD use

[1]For four-year aggregates, restricted within the 275 complete observations in BD. [2]All variables aggregated over time using arithmetic averages.

Table A–2. Differences in Sample between Burnside and Dollar and New Data Set

	Burnside and Dollar	New Data Set
Observations unique to set	Brazil 1970–73, 1974–77 Algeria 1970–73, 1974–77 Gambia 1986–89 Guyana 1970–73, 1974–77, 1978–81, 1982–85, 1986–89, 1990–93 Somalia 1974–77, 1978–81 Tanzania 1982–85, 1986–89 Zambia 1970–73, 1974–77, 1978–81, 1982–85	Argentina 1982–85, 1986–89, 1990–93 Botswana 1974–77, 1990–93 Burkina Faso 1982–85, 1986–89, 1990–93 Congo, Dem. Rep. 1990–93, 1990–93 Cote d'Ivoire 1982–85, 1986–89, 1990–93 Ethiopia 1990–93 Haiti 1990–93 Iran 1978–81, 1982–85, 1986–89, 1990–93 Jamaica 1990–93 Jordan 1974–77, 1978–81, 1982–85, 1986–89, 1990–93 Mali 1990–93 Myanmar 1970–73, 1974–77, 1978–81, 1982–85, 1986–89, 1990–93 Papua New Guinea 1978–81, 1982–85, 1986–89, 1990–93 Togo 1990–93 Trinidad and Tobago 1990–93 Turkey 1970–73, 1974–77, 1978–81, 1982–85, 1986–89 Uganda 1982–85, 1986–89, 1990–93 Zimbabwe 1978–81
Observations for 1994–97	None	Algeria, Argentina, Bolivia, Botswana, Brazil, Burkina Faso, Cameroon, Chile, Colombia, Democratic Republic of Congo, Republic of Congo, Costa Rica, Cote d'Ivoire, Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, Ghana, Guatemala, Guyana, Haiti, Honduras, India, Indonesia, Iran, Jamaica, Jordan, Kenya, Madagascar, Malaysia, Mali, Mexico, Morocco, Myanmar, Nicaragua, Nigeria, Pakistan, Papua New Guinea, Peru, Philippines, Sierra Leone, South Africa, South Korea, Sri Lanka, Syria, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Uganda, Uruguay, Venezuela, Zambia, Zimbabwe
Number of observations	275	356

Table A-3: Outliers Excluded from Regressions

Regressions	Outliers
BD data, BD sample, 1970–93	Gambia 1986-89, 1990-93
	Guyana 1990-1993
	Nicaragua 1986-89, 1990-93
new data set, BD country sample, 1970–93	Gabon 1974-77
	Gambia 1990-93,
	Mali 1990-93
	Nicaragua 1986-89, 1990-93
	Zambia 1990-93
new data set, full sample, 1970–97	Brazil 1986-89,1990-93
	Gabon 1974-77
	Gambia 1990-93
	Guyana 1994-97
	Jordan 1974-77, 1978-81
	Nicaragua 1986-89, 1990-93
	Zambia 1990-93, 1994-97

Updating the Sachs-Warner openness variable

The set of Sachs-Warner values from Harvard's Center for International Development stops in 1992. In order to extend the study period, we updated the Sachs-Warner (1995) openness variable for 1993–98 for those countries with otherwise complete observations for 1994–97, and for some other countries. The process of updating also led us to revise pre-1993 values for ten countries.

The Sachs-Warner variable is based principally on five components. When a country is rated "closed" on any one of the components, it is rated closed overall. Sachs and Warner also drew on other sources on an ad hoc basis. Table A–4 describes the five components and how they were updated for countries in the present study.

Table A–4. Synopsis of update to Sachs-Warner

Component	Updating method
Black market premium > 20 percent	Global Development Network database for all years expect 1994-95; black market exchange rate for 1994-95 from ICA, various editions; CDI, various editions; official exchange rate from IMF 2002. Algeria, Haiti, Iran, Myanmar, Nigeria, Syria rated closed through 1998. Ethiopia rated closed 1993–96. Kenya and Uganda rated closed 1993–94. Zambia rated closed 1993 and 1998.
Export marketing: "closed" if government has a purchasing monopoly on a major export crop and delinks purchase prices from international prices. Sub-Saharan Africa only.	Based on late-1992 status from World Bank 1994, p. 239, and on late-1990's IMF country reports. Absence of evidence in IMF documents of such intervention is interpreted as evidence of absence. Cameroon and Republic of Congo rated open 1993–98. Madagascar rated open 1997–98. All other countries in present study unchanged since 1992.
Socialist	Based on CIA 2002. Republic of Congo rated non-socialist 1991–97 but socialist in 1998. Ethiopia rated non-socialist 1992–98. Nicaragua rated non-socialist for 1991–98. All other countries in study unchanged since 1992.
Own-imported-weighted average frequency of non-tariff measures (licenses, prohibitions, and quotas) on capital goods and intermediates > 0.4	Single estimates for late 1990's derived from UNCTAD 2001. Data year for imports: 1999. Data year for non-tariff measures: varies by country, between 1992 and 2000, mostly late-1990's. Only Argentina, Bangladesh, China, and India rated closed.
Own-imported-weighted average tariff on capital goods and intermediates > 0.4	Single estimates for late 1990's derived from UNCTAD 2001. Only Pakistan rated closed.