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Aid Dependence and the Quality of Governance: Cross-Country Empirical Tests

Stephen Knack*

Aid dependence can potentially undermine the quality of governance and public sector institutions by weakening accountability, encouraging rent-seeking and corruption, fomenting conflict over control of aid funds, siphoning off scarce talent from the bureaucracy, and alleviating pressures to reform inefficient policies and institutions. Analyses of cross-country data in this paper provide evidence that higher aid levels erode the quality of governance, as measured by indices of bureaucratic quality, corruption, and the rule of law. These findings support the need for donors to develop less costly and less intrusive ways of disseminating state-of-the-art knowledge on public sector reform in developing countries.

1. Introduction

Research on aid effectiveness to date has focused on the impact of aid on growth, infant mortality, and the composition of government spending (e.g., Boone 1996; Feyzioglu, Swaroop, and Zhu 1998; Burnside and Dollar 1998, 2000). This study examines a different but related issue: Does aid influence the quality of governance? Analyses of cross-country data provide evidence that higher aid levels erode the quality of governance, as measured by indices of bureaucratic quality, corruption, and the rule of law. This negative relation strengthens when instruments for aid are used to correct for potential reverse causality, and is robust to changes in the sample and to several alternative forms of estimation.

Section 2 summarizes previous arguments in the literature on how aid can improve or impair the quality of governance. Section 3 describes the data. Empirical evidence is presented in section 4, including results of various robustness exercises. Policy implications are described in section 5, including the need for developing less intrusive and less costly strategies for technical assistance.

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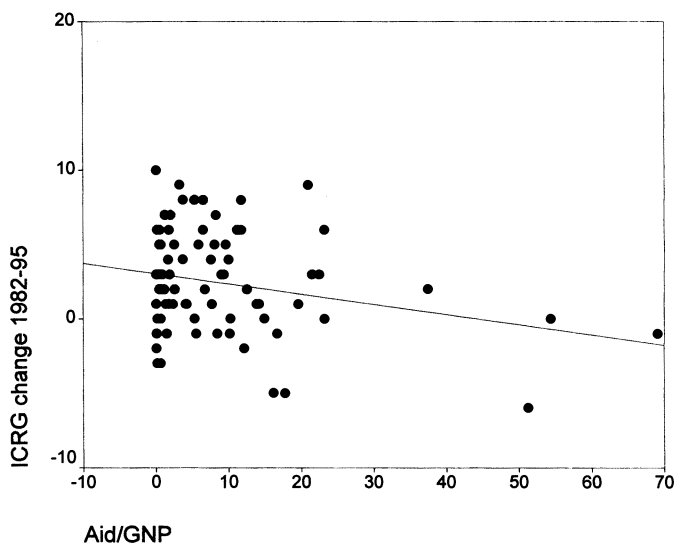


Figure 1. International Country Risk Guide Change, 1982–1995, and Aid/GNP

2. How Aid Can Influence Governance

Good governance—in the form of institutions that establish a predictable, impartial, and consistently enforced set of rules for investors—is crucial for the sustained and rapid growth in per capita incomes of poor countries (e.g., North 1990; Knack and Keefer 1995; Keefer and Knack 1997; Clague et al. 1999). Moreover, the impact of good governance appears to be progressive, with at worst neutral effects on the distribution of incomes within countries, and some evidence of egalitarian effects on income distributions (Knack and Anderson 1999). Thus, the question of foreign aid’s impact on the quality of governance is potentially of great importance for the incidence of poverty.

Theory is ambiguous with respect to aid’s impact on the quality of governance. There are several reasons to expect that aid might be associated with improved governance. Inefficient institutions and policies are often deliberately chosen by self-interested leaders with short time horizons. But in some cases low government revenues could be a binding constraint on the development of well-functioning bureaucracies and legal systems. For example, a \$100,000 U.S. Agency for International Development (USAID) project resulted in a dramatic increase in the number of cases heard annually by the Costa Rican constitutional chamber, by purchasing computers for a new case tracking system and hiring court clerks (a new concept at the time in that country) to support the seven judges. Foreign aid is sometimes used for improved training and increased salaries for public employees, including police, judges, and tax collectors. As salaries increase, more competent bureaucrats can be recruited and bribe solicitation reduced (Van Rijckeghem and Weder 2001). Resulting improvements in the investment climate and higher tax collections in turn produce additional revenues, and improve the government’s credibility, reversing a vicious circle.

Aid sometimes takes the form of programs intended to strengthen the legal system, public financial management, and other responsibilities of the public sector. In recent years particularly, multilateral institutions such as the World Bank and IMF, and bilateral donors such as USAID, have made governance reforms a priority. Transferring developed-nation institutions to less-

developed nations via technical assistance has proven very difficult, however. Judicial reform in Haiti funded by USAID has been a particularly expensive and abject failure. Sweden's aid agency expended large resources over 15 years to build Tanzania's auditing capacity, but with no impact on public sector accountability, because the Auditor General's office still does not use auditing firms to audit government expenditures (Brautigam 2000).

Aid could also improve the quality of governance through conditionality effects. For example, the World Bank's International Development Association lends about \$6 billion per year to its poorest members on highly concessionary terms, with allocations based in large part on the Bank's assessments of the quality of policies and public sector institutions. At the margin, such conditionalities can increase the incentives of aid-recipient governments to implement public sector reforms.

However, analysts generally conclude that conditioning aid on policy and governance reform is largely ineffective (Collier 1997; Dollar and Pritchett 1998; Stiglitz 1999; Kapur and Webb 2000), raising doubts about the ability of donors to strengthen the quality of governance in recipient nations through imposing governance-related conditions on aid. In an examination of 29 cases in which politically motivated aid sanctions were applied, Crawford (1997) concludes that political conditionality is usually ineffective.¹

Aid revenues could be associated with improved governance even if they are expended entirely on consumption, by facilitating the survival of reform-minded governments. Aid can be used for adjustment costs, compensating groups favored under the inefficient policy regime who lose rents when corrupt practices are curbed by reforms. As Rodrik (1996) notes, however, external resources can help bad as well as good governments survive, by reducing the cost of doing nothing as well as reducing the costs of reforming. By providing an alternative source of revenues, aid can relieve pressure on recipient governments to establish the efficient policies and institutions necessary for attracting private capital. Large-scale foreign aid was originally justified largely as a means of overcoming capital shortages, yet many aid recipients maintain policies that have the effect of restricting inflows of private capital (Bauer 1984, Ch. 3). Similarly, the end of U.S. aid—which had been generous in the 1950s—is often credited for the Korean and Taiwanese reforms of the 1960s (Rodrik 1996).

Aid can even increase political instability, by making control of the government a more valuable prize (Grossman 1992). Maren (1997) blames Somalia's civil wars on competition for control of large-scale food aid.

Political scientists have argued that aid weakens governmental accountability, by retarding the development of a healthy "civil society" underpinning democracy and the rule of law. The evolution of democracy and the rule of law in the West was critically related to monarchs' needs for tax revenues, particularly for fighting wars (Tilly 1985). Elites who provided monarchs with most of their tax revenues in turn demanded accountability from government. Accountability was gradually extended from the elite to the people at large (Brautigam 1992). England is the prototypical example, with the Magna Carta and the Glorious Revolution being two of the most prominent events in the process of increasing accountability of monarchs to elites, followed eventually by gradual extension of the suffrage² (North 1990). Foreign aid may short-

¹ Studies of economic sanctions more generally (including trade sanctions or freezing of financial assets) conclude that sanctions more often than not are unsuccessful (e.g., see Hufbauer, Schott, and Elliott 1990).

² The slower development of Spain's Cortes relative to England's Parliament in the 16th and 17th centuries may have been influenced by enormous windfall revenues accruing to monarchs from New World gold and silver.

circuit these processes in developing countries by reducing government's dependence on its citizenry for tax revenues³ (Karl 1997; Moore 1998). The journalist and ex-aid worker Michael Maren (1997) has written extensively on how large-scale aid methodically undermined Somalia's civil society in the 1980s. With high levels of aid, recipient governments are accountable primarily to foreign donors rather than to taxpayers: "those with the loudest single voice on revenue and expenditure decisions are international lending agencies" (Brautigam 1992, p. 11; see also Morss 1984). Meyer (1992) describes the failure of a series of donor-funded projects designed to build rural institutions in the Dominican Republic but which served short-term donor rather than domestic needs and undermined existing institutions. The payoff to government officials of building institutions according to donor specifications exceeded their payoff from building them according to domestic demands. When external funding ended, the new institutions broke down.

Foreign aid can also weaken the state bureaucracies of recipient governments. This can occur most directly by siphoning away scarce talent from the civil service, as donor organizations often hire away the most skilled public officials at salaries many times greater than those offered by the recipient-nation government (Brautigam and Botchwey 1998; Dollar and Pritchett 1998; Brautigam 2000). Particularly when donors implement projects that local governments would have undertaken anyway, foreign aid can prevent local bureaucracies from building administrative capacity: "At times, donors have hindered the creation of effective public sectors because they saw end runs around local institutions as the easiest way to achieve project success" (Dollar and Pritchett 1998, p. 84). As a resident of Equatorial Guinea described his country's neglect of facility maintenance to Klitgaard (1990, p. 98): "Everything is given to them, they don't take care of anything and don't have to."

Perhaps most importantly, foreign aid represents a potential source of rents, with adverse effects on the quality of the public sector and on the incidence of corruption. Rent-seeking often takes the form of increased public-sector employment. Aid is commonly used for patronage purposes, by subsidizing employment in the public sector, or in state-operated enterprises, as foreign aid can provide funds for government to undertake investments that would otherwise be made by private investors:

Twenty or so years ago, donors willingly financed almost anything in which the government chose to try its hand—textile plants, shoe factories, steel mills, and all sorts of manufacturing. Not only were developing world parastatals financed through donor credits and loans; many government corporations were created because donor financing was available (Dollar and Pritchett 1998, p. 74).

In Tanzania, for example, large and rising aid levels in the 1970s and 80s helped sustain large government subsidies to state-owned enterprises and parastatals. Larger public sectors create more opportunities for corruption. If public firms displace private investment, a weakened private sector produces less pressure on government to establish accountable and transparent procedures and institutions.

As rents available to those controlling the government increase, resources devoted to obtaining political influence increase; thus a "pervasive consequence of aid has been to promote or exacerbate the politicization of life in aid-receiving countries" (Bauer 1984, p. 38). As foreign aid expands, workers face incentives to reallocate time from acquiring knowledge and skills specific to manufacturing, toward knowledge and skills useful for obtaining a share of aid revenues. Because of the crucial role of the state in allocating aid revenues (or other public

³ A study of aid fungibility by Feyzioglu, Swaroop, and Zhu (1998) finds that much foreign aid is used for tax reduction.

funds freed up by the availability of aid), the private returns to acquiring political connections and lobbying skills will increase. Talent is reallocated from productive to redistributive activities.⁴

Depending on assumptions about the nature of competition among rent-seeking groups, increased consumption by these groups could exceed the windfall revenues, so that government resources available for productive public spending actually fall (Tornell and Lane 1998; Svensson 2000). Case-study evidence from primary product exporters that is consistent with these rent-seeking models is presented in Tornell and Lane (1998). They note that several coffee exporters suffered deteriorating current account positions during the 1975–1979 period of high coffee prices. Similarly, they point out that Nigeria and Mexico ran up sizeable foreign debt during the 1979–1982 oil price shocks. In Svensson's (2000) model, greater competition among social groups increases rent dissipation. Using cross-country data, he finds that foreign aid and natural resource exports worsen corruption in nations that are more ethnically diverse (his proxy for competition).

Sections 3 and 4 below bring empirical evidence to bear on the theoretically ambiguous relation between foreign aid and the quality of governance. This evidence on balance provides support for the more pessimistic predictions regarding aid's impact.

3. Data on Foreign Aid and the Quality of Governance

The quality of governance is measured by subjective indices from the International Country Risk Guide (ICRG), a commercial service providing information on political risks to overseas investors and lenders. Among the various governance indicators used in the literature, the ICRG data are unique in covering the majority of nations over a relatively long period of time.

These ICRG data have been previously used by Knack and Keefer (1995) and others in explaining cross-country differences in economic performance. The quality-of-governance index from ICRG used here is an 18-point scale, created by summing the following three six-point scales: corruption in government, bureaucratic quality, and the rule of law.⁵ The criteria used by ICRG in coding these measures are detailed in the Appendix. The rationale for corruption and bureaucratic quality is obvious. The rule-of-law definition indicates that this measure reflects the government's administrative capacity in enforcing the law, as well as the potential for rent-seeking associated with weak legal systems and insecure property rights. The ICRG index is available for the year 1982 through the period for which aid data are available.

Two alternative measures of aid intensity or dependence are used here: "official development assistance" (ODA) as a percentage of GNP, and as a percentage of government expenditures. Data are available for the years 1975–1995 from the 1998 *World Development Indicators*, on the basis of aid data provided by the OECD's Development Assistance Committee. Most analyses of the impacts of aid use aid as a percentage of GNP (e.g., Boone 1996) or GDP (Burnside and Dollar 2000). Several of the arguments on aid's impact on governance outlined above suggest that aid as a percentage of government expenditures would be perhaps an equally

⁴ This problem also arose in gold- and silver-rich 16th-century Spain. See Karl (1997).

⁵ Brautigam and Botchwey (1998) report a simple correlation of -0.12 between aid/GNP and this index for 31 African countries, using data only for a single year (1990).

valid measure of aid dependence.⁶ Aid/GNP and aid/government expenditures, averaged by country over the 1982–1995 period, are correlated at 0.64. Tests below will report results using both measures. Aid/GNP is available for more countries, and there are fewer gaps in the time series, for countries with some data available on both measures.

ODA includes grants, and loans with a grant element of more than 25%. Burnside and Dollar (1998) and Svensson (2000) use a newer data set, constructed by Chang, Fernandez-Arias, and Servan (1999), which includes only the grant component of loans. Chang, Fernandez-Arias, and Servan, in their measure of “effective development assistance” (EDA), make several adjustments intended primarily to reflect more accurately the real cost to donors of providing aid, a concept that is not of concern to this analysis. In particular, grants tied to technical assistance were excluded from EDA because of the *quid pro quo* nature of such aid. Technical assistance, however, could have important effects on the administrative capacity of recipient governments, as discussed in the previous section.

Although results reported below are based on ODA rather than EDA data, all of the findings are robust to the use of EDA. As a share of national income averaged over the 1982–1995 period, EDA and ODA are correlated at 0.96, so it is not surprising that results would be similar.

4. Empirical Evidence

If aid dependence erodes the quality of governance, then countries with higher aid levels should exhibit declining scores on the ICRG index over time, relative to other countries. Accordingly, the dependent variable analyzed is the end-of-period (1995) ICRG value minus the initial (1982 for most countries, and 1984 for most others) value.⁷

Figures 1 and 2 display the simple correlation between the ICRG index change and, respectively, aid/GNP and aid/government spending. Table 1 presents summary statistics for the ICRG index and the aid variables. The last two rows of Table 1 present summary statistics for aid/government spending with and without Guinea-Bissau. The latter country is omitted from Figure 2 and from all tests reported below in which aid/government spending is used, because it is an extreme outlier on that variable.⁸

Figures 3 and 4 display partial correlations between aid and changes in ICRG, controlling for other determinants of changes in institutional quality. These determinants include the initial ICRG value, and changes over the period in GDP and in population (expressed as a fraction of their initial values).

Inclusion of the initial ICRG value captures regression-to-the-mean effects, and controls for the limited opportunity of highly rated countries to increase their scores (recall that the ICRG index has an upper bound of 18). If there are economies of scale in establishing effective

⁶ Bauer (1984, p. 28) asserts that aid/government expenditures is more appropriate than a third possible measure of aid intensity, aid per capita, because “aid goes to governments, not people.” Similarly, Moore (1998) defines aid dependence as a characteristic of governments, not of economies. Aid per capita is not strongly correlated with either aid/GNP (0.27) or aid’s share of government spending (0.19), mostly because Israel and a few other middle-income countries have high aid per capita but low aid relative to GNP or government spending. Klitgaard (1990) facetiously proposes aid per cabinet minister as an appropriate indicator.

⁷ Annual variation in the data is not used, because effects on governance may show up only with substantial lags, and because of the lack of good instruments for aid for which annual data are available.

⁸ Note that aid/government spending can and often does exceed 100%, because not all aid enters government budgets.

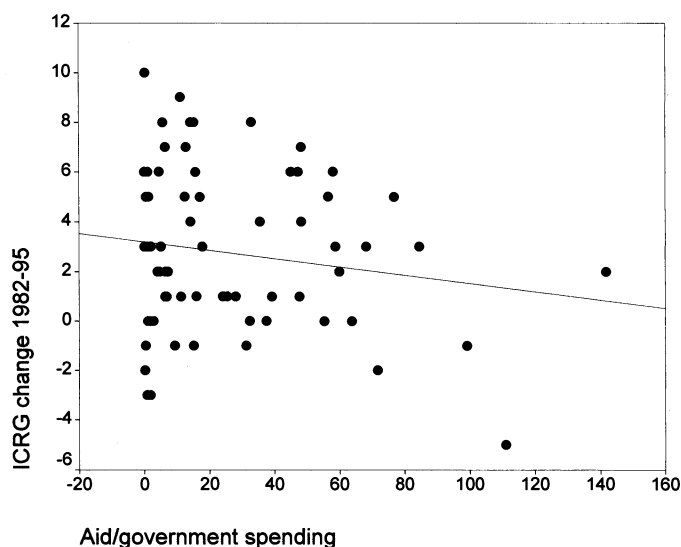


Figure 2. International Country Risk Guide Change, 1982–1995, and Aid/Government Spending

institutions, as Srinivasan (1986) suggests, population increases could be associated with improvements in the ICRG index.⁹ Increases in per capita income could improve the quality of governance by increasing tax revenues, if government funds are a binding constraint. Higher income levels could also reflect a greater volume and size of transactions, increasing the benefits of developing institutions such as commercial codes and their associated adjudication and enforcement mechanisms (Rosenberg and Birdzell 1986). If institutional quality is inferred by ICRG in part from observations of economic performance, controlling for changes in per capita income may have the effect of removing spurious changes in scores. If rapidly growing countries have increasing institutional quality and low levels of aid, failing to control for changes in per capita income would build in a spurious negative relation between aid dependence and the quality of governance. Population and GDP data are taken from the 1998 World Development Indicators.¹⁰

The quality of governance may be influenced by numerous other factors such as religious or legal traditions, or colonial heritage (see La Porta et al. 1999; Treisman 2000; Swamy et al. 2001). A convenient implication of using the *change* in the ICRG index from 1982 to 1995 as the dependent variable is that factors such as these that are invariant over very long periods of time are unlikely to matter much.¹¹ In contrast, it is unlikely that the quality of governance would have fully adjusted to aid dependence already by the beginning of the sample period considered here. Aid is largely a postwar phenomenon, and is relatively nonpersistent, with some recipients eventually becoming donors.

Results using OLS are presented in Equations 1 and 2 of Table 2, which test the effects of aid/GNP and aid/government spending, respectively, on the quality of governance. A very

⁹ On the other hand, arguments that smaller nations can be governed more effectively date to Aristotle. Jalan (1982) suggests that smaller nations benefit from greater social cohesion and fewer vested interests.

¹⁰ Similar variables are also available from the Penn World Tables 5.6, but only through 1992 for most countries.

¹¹ This supposition was confirmed empirically, as percent Muslim, percent Catholic, a former British colony dummy, and other cultural/historical variables that have been linked in cross-sectional studies to good governance are not significant when added to the regressions reported below, and do not affect the aid coefficients.

Table 1. Summary statistics for basic sample

Variable	N	Mean	Std. Dev.	Minimum	Maximum
International Country Risk Guide (ICRG) change	80	+2.47	3.38	−6	+10
ICRG, initial	80	7.03	3.30	0	15
Pop. change/initial pop.	80	0.33	0.15	−0.06	0.78
GDP change/initial GDP	80	0.09	0.37	−0.76	1.57
GDP, initial	80	1312	1436	80	7881
Infant mortality, 1980	80	85.6	46.1	15.1	190.2
Percentage in largest ethnic group	80	64.5	25.3	17	100
Aid/GNP, mean	80	8.7	12.4	0.05	69.1
Aid/govt. spending, mean	68	26.3	30.5	0.001	141.8
Aid/govt. with Guinea-Bissau	69	106.5	666.6	0.001	5557.5

strong regression-to-the-mean effect is found: Other things equal, a country with an initial ICRG value 1 unit greater than a second country will experience a decline of about three-quarters of a point. Changes in population have no significant effect. Increases in GDP per capita are associated with improvements in the ICRG index; this effect is significant in the larger sample (Equation 1, with aid/GNP), with each 10% increase in income associated with a one-fifth point increase in the quality of governance index.

Aid coefficients are negative and highly significant. A one-standard-deviation (SD) change in aid (using either aid measure) is associated with a 0.25-SD change in the dependent variable, which exceeds the effect of a SD change in per capita income. The aid coefficient in Equation 1 indicates that a 15 percentage point rise in aid’s share of GNP reduces the ICRG index by 1 point. The aid coefficient in Equation 2 indicates that a similar impact is felt when aid as a share of government spending rises by 35 percentage points. Such increases in aid, although large, are well within the observed range of aid values in the sample. Aid explains a substantial part of the variation in the dependent variable: Omitting aid from Equation 1 reduces R^2 from

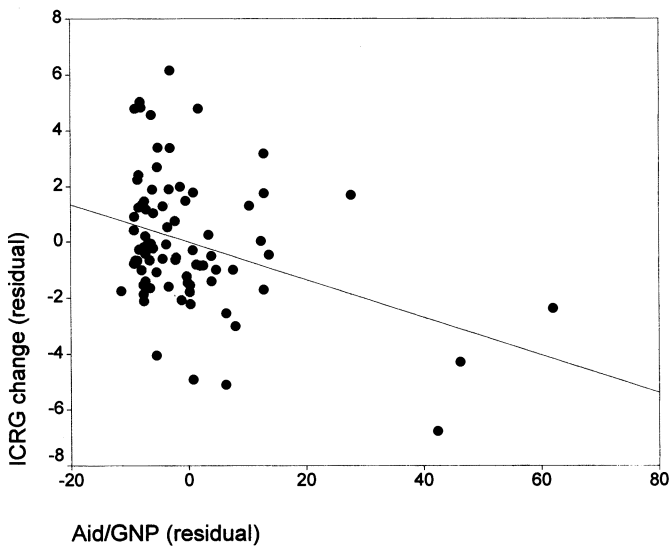


Figure 3. International Country Risk Guide Change, 1982–1995, and Aid/GNP (Partial Plot)

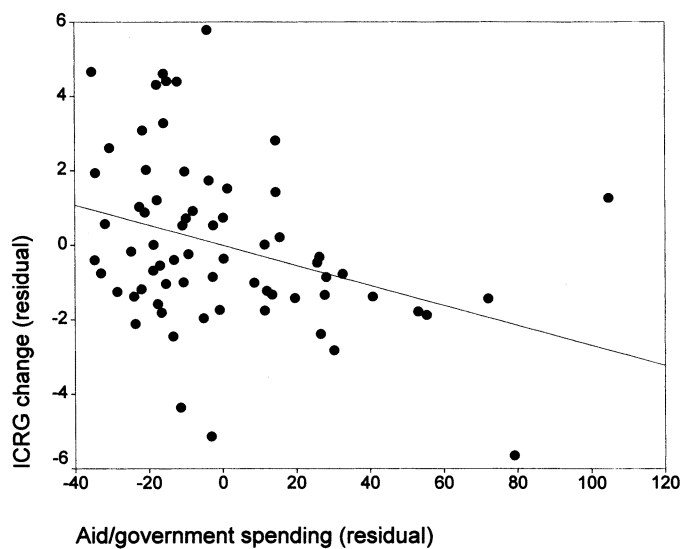


Figure 4. International Country Risk Guide Change, 1982–1995, and Aid/Government Spending (Partial Plot)

0.55 to 0.45; in comparison, omitting the change in per capita income instead reduces R^2 from 0.55 to 0.50.

Alternative Estimation Procedures

The partial plots in Figures 3 and (especially) 4, corresponding to Equations 1 and 2 respectively, provide little indication that the major findings are driven by a small number of

Table 2. Aid Dependence and the International Country Risk Guide (ICRG) Quality-of-Governance Index

Equation Method	1		2		3		4	
	OLS		2SLS		2SLS		2SLS	
Aid variable	Aid/GNP	Aid/govt.	Aid/GNP	Aid/govt.	Aid/GNP	Aid/govt.	Aid/GNP	Aid/govt.
Constant	8.475 (0.984)	8.535 (1.051)	9.178 (1.116)	9.044 (1.133)				
Initial ICRG index value	−0.770 (0.083)	−0.740 (0.087)	−0.766 (0.092)	−0.749 (0.093)				
Population change/initial population	−0.640 (1.837)	0.027 (1.933)	−0.484 (2.040)	1.056 (2.089)				
GDP p.c. change/initial GDP p.c.	2.027 (0.748)	1.231 (0.801)	1.757 (0.835)	0.635 (0.879)				
Aid	−0.067 (0.021)	−0.027 (0.010)	−0.119 (0.028)	−0.048 (0.012)				
N	80	68	80	68				
Mean, dep. variable	+2.45	+2.75	+2.45	+2.75				
Adj. R^2	0.55	0.54	0.55	0.54				
Std. error of est.	2.29	2.2	2.54	2.33				

The dependent variable is the change in the ICRG quality-of-governance index, 1982–1995. Standard errors are in parentheses. Exogenous instruments in 2SLS include infant mortality in 1980, initial population, initial GDP per capita, a Franc Zone dummy, and a Central America dummy. P -Values for tests of overidentifying restrictions in Equations 3 and 4 respectively are 0.10 and 0.47. Note R^2 does not have its usual interpretation in 2SLS.

outliers. These impressions are confirmed by the results of median and robust regressions, which reduce the influence of outliers. Robust regression estimation produces regression coefficients (and standard errors) of -0.058 (0.021) for aid/GNP and -0.027 (0.009) for aid/government spending. Corresponding estimates from median regression are -0.049 (0.022) for aid/GNP and -0.024 (0.011) for aid/government spending.

If the ICRG variables are viewed as only ordinal and not cardinal measures, then ordered logit would be the preferred estimation method.¹² Ordered logit estimates turn out to be very similar to OLS estimates: Coefficients (and standard errors [SE]) for aid/GNP and aid/government spending are -0.052 (0.018) and -0.024 (0.009) respectively.

Aid coefficients in Equations 1 and 2 conceivably reflect endogeneity bias: If donors were to direct aid toward countries experiencing deteriorations in the quality of governance, OLS estimates would overstate the adverse impact of aid on governance. Controlling for need as measured by changes in per capita income, it is perhaps more plausible that donors reward nations that exhibit improving institutional quality, as these arguably are the countries less likely to waste whatever aid they receive. This latter argument suggests that estimates from Equations 1 and 2 actually *understate* the true adverse impact of aid on governance. Equations 3 and 4 address these endogeneity issues through 2SLS estimation.

Exogenous instruments for aid are nearly identical to those used by Burnside and Dollar (2000). Infant mortality in 1980 and (log of) initial GDP per capita are good indicators of recipient need. Initial population (in logs),¹³ a Franc zone dummy, and a Central America dummy are measures of donors' interest. Of these instruments, population, per capita income, and infant mortality are the most significant predictors of aid. Collectively the instruments predict aid remarkably well: The R^2 for first-stage regressions of aid/GNP and aid/government spending respectively are 0.61 and 0.71; excluding the instruments and regressing aid only on the other right-hand-side variables (initial quality of governance, change in per capita GDP, and change in population) produces R^2 s of only 0.01 (for aid/GNP) and 0.15 (aid/government spending). The instruments are also reasonably valid, as p -values for tests of overidentifying restrictions in Equations 3 and 4 are 0.10 and 0.47, respectively.¹⁴

Coefficients for each aid measure remain negative and statistically significant using 2SLS, as shown in Equations 3 and 4. The estimated impact of aid increases, relative to Equations 1 and 2. These results are consistent with the view that, controlling for changes in recipient need as measured by per capita income changes, donors direct aid toward countries with improving rather than deteriorating institutional quality.

These estimates imply that aid's impact on the quality of governance potentially has serious consequences for economic growth. On the basis of the 2SLS coefficients for aid, a 25-percentage-point rise in aid as a share of GNP (or 60-point rise in aid/government spending) is

¹² There are 16 different values for ICRG index changes observed in the sample.

¹³ Smaller countries tend to receive proportionately more aid, as donors want to "show the flag" widely. Another explanation for smaller countries receiving proportionately more aid is suggested by Lundborg's (1998) finding that aid from the United States and USSR influenced (and was influenced by) votes in the United Nations General Assembly. Because each country regardless of size has one General Assembly vote, an efficient vote-buying strategy would target small countries.

¹⁴ Burnside and Dollar (2000) also use arms imports as a fraction of total imports as an instrument. Adding it to those used here has only trivial effects on the estimates, but reduces the sample by several countries. Colonial ties and United Nations voting patterns are significant determinants of aid flows from donor i to recipient j (e.g., Alesina and Dollar 2000; van der Heen 2000), but are of little importance, for the sum of aid flows from all donors to recipient j , the relevant variable here.

estimated to reduce the ICRG index by about 3 points. A Barro-type growth regression (for 1980–1992) indicates that a decline of that magnitude in the 18-point ICRG index is associated with a 1 percentage point drop in the average annual rate of per capita income growth. Of course, aid may influence growth through nongovernance channels as well, and its net impact on growth is generally found to be small and insignificant (e.g., Boone 1996).

Table 3 replicates the OLS regressions from Table 2, substituting as the dependent variable changes in each of the three separate components of the ICRG index. Correlations among these three dependent variables range from 0.52 to 0.68,¹⁵ not so high that the strength of the aid–governance relation could not vary substantially across the three governance indicators. Table 3 contains a few notable differences from the findings in Table 2. Population increases are associated with improving bureaucratic quality, but are unrelated to changes in the rule of law or corruption in government. Per capita income is associated with improving bureaucratic quality and the rule of law, but is unrelated to changes in corruption. Similarly, aid levels are significantly related to the former two index components but not to corruption. The bottom row of Table 3 presents 2SLS coefficients and SEs for the aid variable, using the same set of instruments as in Table 2. In these tests, changes in each of the three index components, including corruption, are all significantly and inversely related to aid levels.

Robustness to Sample and Specification Changes

Results from Table 2 are robust to reasonable changes in the sample and specification. Row 1 of Table 4 reproduces the aid coefficients and SEs from the 80- and 68-country samples in Equations 1 and 2 of Table 2, for comparison purposes. Succeeding rows show the corresponding results for aid for various alternative samples or specifications.

A handful of oil exporters and other relatively wealthy countries with extremely small or even negative values for net aid disbursements were deleted from the sample examined in Table 2. These countries include the Bahamas, Bahrain, Cyprus, Greece, Korea, Kuwait, Singapore, Brunei, Hong Kong, and Saudi Arabia (the latter 4 are missing data on aid/government expenditures anyway). South Africa received small amounts of aid, and only beginning in 1993, so it was also deleted. Because there is inevitably some arbitrariness in the selection of countries to delete, it is worth adding them all back in to determine whether or not results are affected by their deletion. The “extended sample” results in row 2 of Table 4 indicate that aid coefficients rise marginally in absolute value.

Row 3 deletes from the basic sample a handful of countries with initial population below one million, to ensure that results are not driven by a small number of relatively unimportant countries.¹⁶ Aid coefficients rise somewhat in absolute value, relative to the basic sample case.

Row 4 of Table 4 deletes from the basic sample all countries with initial per capita incomes of \$4000 or greater.¹⁷ Coefficients are marginally lower than in the basic sample case, but remain statistically significant in all four regressions. Row 5 deletes all countries with incomes less than \$2000, again with little change in results.

Results of regressions that include only high-aid countries are reported in row 6. These samples include only the 40 nations with aid/GNP averaging 5% or more, and only the 33

¹⁵ Cronbach’s α for the 3-variable index is 0.80, indicating high reliability.

¹⁶ These small countries are Gabon, Gambia, Malta, Guinea-Bissau, and Guyana. The latter two are missing data on aid/government expenditures and appear only in the aid/GNP tests in Table 1.

¹⁷ These middle-income countries include Gabon, Israel, Malta, Oman, and Trinidad.

Table 3. Aid Dependence and International Country Risk Guide (ICRG) Index Components

Equation Dependent variable	1		2		3		4		5		6	
	Bureaucratic quality		Rule of law		Corruption in gov.		Corruption in gov.		Corruption in gov.		Corruption in gov.	
Aid variable	GNP	Govt.	GNP	Govt.	GNP	Govt.	GNP	Govt.	GNP	Govt.	GNP	Govt.
Constant	2.028 (0.342)	2.074 (0.368)	3.730 (0.439)	3.688 (0.475)	2.655 (0.359)	2.750 (0.376)						
Initial index component value	-0.723 (0.086)	-0.705 (0.093)	-0.839 (0.096)	-0.806 (0.103)	-0.710 (0.086)	-0.687 (0.088)						
Pop. change/initial pop.	0.950 (0.678)	1.532 (0.707)	-0.761 (0.865)	-0.585 (0.941)	-0.902 (0.721)	-1.034 (0.757)						
GDP p.c. change/initial GDP p.c.	0.736 (0.280)	0.410 (0.298)	0.892 (0.337)	0.670 (0.369)	0.335 (0.301)	0.073 (0.327)						
Aid	-0.023 (0.008)	-0.014 (0.004)	-0.035 (0.010)	-0.008 (0.004)	-0.010 (0.008)	-0.004 (0.004)						
N	80	68	80	68	80	68						
Mean, dep. var.	+0.63	+0.71	+1.34	+1.49	+0.49	+0.56						
Adj. R ²	0.50	0.53	0.53	0.51	0.47	0.47						
Std. error of est.	0.85	0.82	1.05	1.03	0.91	0.89						
Aid (2SLS estimates)	-0.044 (0.011)	-0.021 (0.005)	-0.047 (0.013)	-0.015 (0.006)	-0.027 (0.011)	-0.011 (0.005)						

The dependent variable is the change in the relevant ICRG index component, 1982-95. Standard errors are in parentheses.

Table 4. Aid Dependence and the International Country Risk Guide (ICRG) Quality-of-Governance Index Robustness to Sample Changes

Row #	Aid variable Sample method	Aid/GNP		Aid/Government expenditure	
		OLS	2SLS	OLS	2SLS
1	Basic: 80, 68	−0.067 (0.021)	−0.154 (0.045)	−0.027 (0.010)	−0.054 (0.014)
2	Extended sample: 91, 76	−0.079 (0.020)	−0.177 (0.036)	−0.029 (0.009)	−0.058 (0.014)
3	>1 Million pop.: 75, 65	−0.077 (0.025)	−0.190 (0.047)	−0.039 (0.011)	−0.061 (0.015)
4	<\$4000 p.c. GDP: 75, 63	−0.063 (0.021)	−0.140 (0.036)	−0.026 (0.010)	−0.050 (0.014)
5	<\$2000 p.c. GDP: 64, 45	−0.064 (0.021)	−0.146 (0.036)	−0.023 (0.010)	−0.047 (0.014)
6	Aid/GNP > 5: 40 Aid/govt. > 15: 33	−0.060 (0.030)	−0.168 (0.063)	−0.024 (0.015)	−0.062 (0.023)
7	Non-Socialist: 73, 62	−0.057 (0.020)	−0.129 (0.034)	−0.021 (0.009)	−0.044 (0.013)
8	Africa only: 31, 24	−0.074 (0.030)	−0.126 (0.057)	−0.017 (0.016)	−0.035 (0.022)
9	Technical assistance only	−0.346 (0.089)	−0.699 (0.159)	−0.119 (0.044)	−0.226 (0.059)

Cell entries indicate coefficients and standard errors for aid variables. The dependent variable is the change in the ICRG index, 1982–1995. Other independent variables include the initial ICRG index level, change in population (divided by initial population), and change in per capita GDP (divided by initial GDP). Exogenous instruments in 2SLS include infant mortality in 1980, initial population, initial GDP per capita, a Franc Zone dummy, and a Central America dummy. *P*-Values in tests of overidentifying restrictions vary from 0.31 to 0.89.

nations with aid/government expenditures averaging 15% or more. Aid remains significant, with very small changes in the size of coefficients.

Row 7 deletes countries that were Communist over most or all of the period.¹⁸ Many of these received no aid until after 1990, late in the sample period. Aid coefficients drop by roughly one-fifth, relative to the basic sample tests, but remain significant in every case.

Row 8 of Table 4 examines only sub-Saharan Africa. Even with a drastic reduction in sample size, aid/GNP remains statistically significant. This result is of interest for two reasons. First, it demonstrates that the negative impact of aid is not merely the product of intercontinental variation; variations in aid within Africa matter for the quality of governance. Second, Africa is the most important single region in examining the impact of aid, because it is far more aid dependent than other regions.

A final sample change, not shown in Table 4, includes Guinea-Bissau in regressions using aid/government spending, a variable on which that nation is an extreme outlier.¹⁹ Coefficients for aid/government spending decline, but SEs do also, and it remains statistically significant.

The bottom row of Table 4 examines the impact of technical assistance only, which constitutes a little more than one-fifth of all aid in the sample. Technical assistance is the type of aid for which endogeneity bias may be most problematic: Donors may be more likely to offer

¹⁸ These socialist countries include Albania, Bulgaria, China, Hungary, Poland, Romania, and Vietnam (the latter is missing data on aid/government spending).

¹⁹ Guinea-Bissau is included in all regressions using aid/GNP, and it does not even represent the maximum value for that variable.

aid in this form where they observe governance deteriorating. Coefficients for technical assistance are several times greater than those for aid overall, both in OLS and in 2SLS results. Standard coefficients are also somewhat greater for technical assistance than for aid overall. The 2SLS results are consistent with the interpretation that aid's association with deteriorations in governance is not attributable to reverse causation, but rather with arguments summarized above stressing aid's role in undermining local expertise and administrative capacity.

Aid exclusive of technical assistance is also significantly associated with declining quality-of-governance scores, with coefficients and standard errors very similar to those for aid overall (results not shown in the table). However, when technical assistance and the remainder of aid (which are correlated at 0.87) are included together, only the former is significant.

Conceivably, aid has some positive effects on the quality of governance that are captured by the control variables. Suppose aid increases per capita income, which in turn improves institutional quality. Controlling for changes in per capita income could then bias the aid coefficients downwards. However, aid is not correlated with improvements in income in other studies (Burnside and Dollar 2000). Moreover, omitting the change in per capita income as a control variable does not substantially alter the aid coefficients.²⁰

Aid Variability

Aid dependence is measured above by country mean values over the 1982–1995 period. If aid is highly variable over time within a country, dependence might be lessened in the sense that aid cannot be relied on as a stable source of funds. This reduced reliance could diminish the harmful impact of aid on the quality of governance. In Svensson's (2000) model, the expectation of aid increases rent-seeking and corruption. On the other hand, high aid variability in a country may indicate that donors have a shorter-term, project-oriented emphasis that disrupts existing institutions, replacing them with new ones that collapse when funding ends (Meyer 1992).

Evidence on aid variability suggests that it tempers rather than reinforces the effects of aid levels. Table 5 adds the coefficient of variation (CV) of aid, for the aid/GNP specification.²¹ Equation 1 shows that, controlling for mean levels of aid, greater variability is associated with improvements in the quality of governance. A 1 SD rise in the CV of aid is associated with a $\frac{1}{3}$ SD increase in the dependent variable.

Equation 2 adds an interaction term equal to the product of the deviations of aid/GNP and the CV from their sample means.²² This interaction permits a more direct test than in Equation 1 of the hypothesis that the impact of aid levels on the quality of governance depends on the variability of aid. The interaction coefficient is positive and significant, indicating that aid levels are less harmful to the quality of governance when aid is more variable. The size of the interaction coefficient indicates that the negative effects of aid levels disappear when the CV is about 0.78, higher than all but 15 of 80 values in the sample.

²⁰ Similarly, the aid coefficients are not sensitive to omitting either of the other control variables, population change or the initial level of the quality of governance.

²¹ There are very few gaps in the data for aid/GNP over time within countries, unlike the case for aid/government spending, making it the preferred variable from which to construct a country-level measure of dispersion.

²² Taking deviations from means leaves the interaction coefficient and standard error unchanged. The advantage is that the coefficient on the aid level indicates aid's impact conditional on the mean value of aid variability, rather than a value of zero (which is below the minimum observed value).

Table 5. Aid Variability, Initial Conditions, and Ethnic Homogeneity

Equation Aid variable						
	1	2	3	4	5	6
		GNP		Govt.	GNP	Govt.
Constant	6.097 (1.041)	6.451 (1.032)	8.445 (1.000)	8.675 (1.064)	5.823 (1.345)	4.910 (1.379)
Initial International Country Risk Guide (ICRG) index value	-0.821 (0.076)	-0.808 (0.074)	-0.771 (0.084)	-0.739 (0.088)	-0.762 (0.078)	-0.777 (0.080)
Pop. change/initial pop.	2.516 (1.806)	2.019 (1.782)	-0.574 (1.878)	-0.173 (1.948)	1.393 (1.856)	2.944 (1.854)
GDP p.c. change/initial GDP pc.	2.970 (0.707)	2.922 (0.692)	2.028 (0.752)	1.303 (0.806)	1.341 (0.737)	0.804 (0.716)
Aid (mean)	-0.049 (0.019)	-0.031 (0.021)	-0.065 (0.023)	-0.028 (0.010)	-0.076 (0.022)	-0.029 (0.009)
Aid, coefficient of variation	2.569 (0.593)	3.326 (0.685)				
Aid mean × aid CV		0.145 (0.070)				
Aid × initial ICRG			-0.002 (0.008)	0.003 (0.003)		
Percentage in largest ethnic group					0.029 (0.011)	0.041 (0.011)
Aid × percent in largest ethnic group					-0.0020 (0.0009)	-0.0012 (0.0004)
N	80	80	80	68	80	68
Mean, dep. variable	+2.45	+2.45	+2.45	+2.75	+2.45	+2.75
Adj. R ²	0.63	0.65	0.54	0.54	0.60	0.64
Std. error of est.	2.05		2.30	2.20	2.15	1.94

Dependent variable is the change in the ICRG index, 1982–1995. Standard errors in parentheses.

A high CV does not necessarily indicate that aid varies unpredictably; it could be the product of a strong and steady upward or downward trend in aid levels over time. When aid/GNP is regressed on time for each of the 80 countries, a significant time trend is found in 43 cases, with 30 positive and 13 negative. When dummies for these two sets of countries are added to the regression, neither dummy coefficient is significant, and the CV slope (2.656) and SE (0.607) change very little from their values in Equation 1. Variability in aid matters, but trends—i.e., “predictable variability”—do not. Interaction terms constructed from aid/GNP and the trend variables also are not significant.

Aid and Initial Conditions

Brautigam and Botchwey (1998) argue that the extent to which aid undermines institutions varies with the preexisting quality of governance.²³ In this view, aid undermines institutional capacity only where it is relatively weak to begin with—an argument consistent with the common view that Marshall Plan aid for Western Europe was an unambiguous success. The association between high levels of aid and declines in the ICRG index should be weaker, the higher is the initial ICRG index value, in this view. This hypothesis is tested in Equations 3 and 4 of Table 5, using an interaction term equal to the product of the deviations of aid/GNP (or aid/government spending) and the initial ICRG index value from their sample means. Results provide no support for the hypothesis that initial conditions matter, as neither interaction term is significant.

Aid and Ethnic Divisions

Svensson (2000) found that higher aid levels were associated with more severe corruption, but only where the degree of competition for rents among social groups was sufficiently strong, as measured by an index of ethnolinguistic fractionalization (ELF). Svensson’s analysis differs from the current one in several ways. He uses only the corruption indicator from ICRG—the one with the weakest relation to aid of the three components of the ICRG index used here. He uses corruption levels rather than changes as the dependent variable. His analysis includes three observations per country, where each observation is averaged over a 5-year period. Standard errors were adjusted for country-specific random effects.

Evidence from the cross-sectional tests here provide no support for the hypothesis that ethnic divisions exacerbate the destructive impact of aid on the quality of governance. The ethnicity measure used here is from Sullivan (1991), who ascertained the percentage of a country’s population belonging to the largest group, where groups are defined by race, language, or religion depending on which is determined to be the most important source of cleavages.²⁴

In Equations 5 and 6 of Table 5, the homogeneity index and interactions with aid are added as regressors. Interaction coefficients are significantly negative in both regressions, indicating that the corrosive impact of aid dependence on the quality of governance *worsens* with greater ethnic *homogeneity*. The estimated impact of aid/GNP (aid/government spending) drops to 0

²³ See also Morss (1984, p. 468).

²⁴ This variable is also used by Knack and Keefer (1997). Sullivan’s measure is used here because it is available for all 80 countries in the basic sample. About 10 observations are lost using the ELF index.

when the homogeneity index equals 27 (43), and is negative for higher values of the homogeneity index.²⁵

5. Policy Implications

Recent studies have concluded that the impact of aid on growth and infant mortality is conditional on policy and institutional gaps (Dollar and Pritchett 1998; Burnside and Dollar 1998, 2000). Results presented here indicate that the size of the institutional gap itself can increase with aid levels, particularly technical assistance.

Policy implications must be phrased very tentatively, pending additional research. Further analysis that disaggregates aid by source (e.g., multilateral vs. bilateral) may provide more insight into the precise mechanisms by which aid appears to undermine the quality of governance. Such data would also permit tests of the hypothesis that a given quantity of aid is more destructive when there is a proliferation of donors (Brautigam and Botchwey 1998; Moore 1998). Finally, a case-study approach should examine more closely the recent experience of high-aid countries with deteriorating institutional quality, such as Burkina Faso, Guinea-Bissau, and Somalia, as well as aid successes such as Taiwan and Botswana (Brautigam 2000).

Findings of this analysis suggest several possible policy approaches. First, a larger fraction of aid could be tied or dedicated to improvements in the quality of governance, for example, in the form of programs to establish meritocratic bureaucracies and strong, independent court systems. This approach was advocated by the Meltzer Commission's report to the U.S. Congress on reforming the IMF, World Bank, and other international financial institutions (International Financial Institution Advisory Commission 2000). Brautigam (2000) advocates greater selectivity by donors, targeting aid to countries that take specific steps to reduce corruption, improve fiscal accountability, and implement meritocratic recruitment and promotion in the civil service. Major donors have in fact taken steps in these directions in the last few years—a period too recent to show up in the data analyzed above. For example, most new projects funded by the World Bank involve one or more public sector reform components in areas such as public expenditure management, the civil service, and legal and judicial systems (World Bank 2000a). The Bank in recent years has undertaken more than 600 anticorruption and governance initiatives in nearly 100 borrowing countries. Lending in support of public sector institutional reform rose from \$4 billion to \$7.5 billion from 1997 to 1999. The percentage of approved projects with public expenditure and financial reform components increased from 9% in 1997 to 28% in 1999, whereas the percentage of adjustment loans with anticorruption or fiscal transparency components rose from 8% in 1998 to 50% in 2000 (World Bank 2000b).

For recipient nations undertaking these reforms, aid should more often be provided in the form of direct budgetary support, or in the form of debt relief. If donors are not designing and implementing projects, or providing tied aid and technical assistance, recipient governments may face greater opportunities to build administrative capacity, and to negotiate with civil society over service provision, if not over revenues.

Donors should also attempt to identify ways of depoliticizing the distribution of rents from

²⁵ Interactions of aid and ELF produce positive but insignificant coefficients. The Sullivan \times aid interactions are significant even in the (smaller) ELF sample.

aid funds. “Selective allocation of aid... would reduce its propensity to politicize life, and thereby reduce the extent and intensity of political conflict” (Bauer 1984, p. 61).

Donors can also devote greater efforts to strengthen civil society and its links to government (Dollar and Pritchett 1998). Recent emphases on citizen participation and on “social capital” within the World Bank and other donor agencies are consistent with this approach. Aid in the form of microenterprise loans may improve government accountability in the medium or long term by building up the private sector, thereby increasing the demand locally for good governance. Aid targeted directly to the start-up of small businesses is also less fungible, and more difficult for governments to expropriate. Making aid to governments conditional on streamlining procedures for starting up and operating new businesses could reinforce such policies.

Finally, technological advance—in the form of the Internet—may mitigate the negative consequences of expensive technical assistance, often blamed for undermining local capacity. For example, a Governance Knowledge-Sharing Program is being developed by the World Bank with funding from the government of the Netherlands. This program is designed to exploit the Web and the development of interactive toolkits and could supplement or even replace many traditional approaches to technical assistance in the governance area. The program will develop a set of public sector reform toolkits, freely accessible on the Bank’s Web site, providing best-practice examples and state-of-the-art knowledge on reform of public sector institutions in the areas of tax administration, public expenditure management, legal and judicial systems, civil service, and decentralization. The intention is to improve the capacity of client governments, through better knowledge, to use donor technical assistance effectively, and where necessary to challenge donor-proposed solutions.

Appendix: ICRG Index (Ranges from 0 to 18)

Corruption in Government (0–6)

Lower scores indicate that “high government officials are likely to demand special payments,” “illegal payments are generally expected throughout lower levels of government” in the form of “bribes connected with import and export licenses, exchange controls, tax assessment, police protection, or loans.”

Quality of the Bureaucracy (0–6)

High scores indicate “an established mechanism for recruitment and training,” “autonomy from political pressure,” “strength and expertise to govern without drastic changes in policy or interruptions in government services” when governments change, and “established mechanisms for recruiting and training.”

Rule of Law (0–6)

This variable “reflects the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes.” Higher scores indicate “sound political institutions, a strong court system, and provisions for an orderly succession of power.” Lower scores indicate “a tradition of depending on physical force or illegal means to settle claims.” Upon changes in government new leaders “may be less likely to accept the obligations of the previous regime” in low-scoring countries.

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