

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

Abstract

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. Aid dependence can potentially undermine institutional quality, 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 indexes of bureaucratic quality, corruption, and the rule of law. This negative relationship 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.

(JEL: O10, O19)

Stephen Knack*
The World Bank

*1818 H St. NW, Washington DC 20433. E-mail: sknack@worldbank.org. Phone: 202-458-9712.
Fax: 202-522-1155.

Gary Anderson and Maria Buzdugan provided valuable research assistance. Helpful comments and suggestions were provided by Christopher Clague, Philip Keefer, Robert Klitgaard, and seminar participants at George Mason University, the World Bank, the 1999 ISNIE Conference, and the 2000 Public Choice Society meetings. This project originated from conversations with Deborah Brautigam, although I am solely responsible for any errors.

1. Introduction

Recent studies of aid and economic growth have found that aid has a positive and significant impact only in countries with sufficiently reformed policies and institutions (Burnside and Dollar, 1997). 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 indexes of bureaucratic quality, corruption, and the rule of law. This negative relationship 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 briefly outlined in section 6.

2. How Aid Can Influence Governance

“Windfall” revenues from foreign aid, favorable shifts in the terms of trade, and abundant natural resources would seem to provide opportunities for economic growth and development unavailable to other countries. However, the well-known “Dutch disease” phenomenon suggests that natural resource exports have counteracting effects on growth, by weakening the manufacturing and agricultural sectors. Sachs and Warner (1995) have found that countries with higher levels of primary-product exports tend to have lower rates of income growth.

Windfalls may also reduce growth through other political channels entirely unrelated to Dutch disease effects. Windfalls—in the form of natural resources, foreign aid, or favorable shifts in the terms

of trade--may also worsen the quality of governmental institutions, an important determinant of investment levels and income growth (Knack and Keefer, 1995; Mauro, 1995). This effect might appropriately be named "Zairean disease" after the nation in which "decades of large-scale foreign assistance left not a trace of progress" and enabled "incompetence, corruption, and misguided policies" (Dollar and Pritchett, 1998: 1).

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., Keefer and Knack, 1997). 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, 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. Foreign aid may be devoted in part in some nations to 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, 1997). The improved investment climate and higher tax collections in turn produce additional revenues, and improve the government's creditworthiness,

reversing a vicious circle.

Aid sometimes takes the form of programs intended to strengthen the legal system, public financial management, or other aspects of governance. Transferring developed-nation institutions to less-developed nations via technical assistance has proven very difficult, however. Judicial reform in Haiti 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 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: 31), 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: 31). Aid can even increase political instability, by making control of the government a more valuable prize. Instability shortens time

horizons, leading regimes to grab everything they can for themselves and their supporters during their turn in power. For example, 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 (Karl, 1997: 60). 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 suffrage¹ (North, 1990: 113-14.). Foreign aid may short-circuit these processes in developing countries, by reducing government's dependence on its citizenry for tax revenues² (Moore, 1998; Karl, 1997: 57, 190). The journalist and ex-aid worker Michael Maren (1997: 21, 171) 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: 11). Meyer (1992) describes the failure of a series of donor-funded projects,

¹The 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.

²A study of aid fungibility by Feyzioglu, Swaroop and Zhu (1998) finds that much foreign aid is used for tax reduction.

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 match (Brautigam, 2000: 40-41; Brautigam and Botchwey, 1998; Dollar and Pritchett, 1998: 88-89). 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: 84). As a resident of Equatorial Guinea described his country's neglect of facility maintenance to Klitgaard (1990: 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: 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: 38). As foreign aid expand, 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 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.³

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 (Svensson, forthcoming; Tornell and Lane, 1998). Case study evidence from primary product exporters that is consistent with these rent-

³This problem also arose in gold- and silver-rich 16th-century Spain. See Karl (1997: 35).

seeking models is presented in Tornell and Lane (1998). They note that several coffee exporters suffered deteriorating current account positions during the 1975-79 period of high coffee prices. Similarly, they point out that Nigeria and Mexico ran up sizeable foreign debt during the 1979-82 oil price shocks. In Svensson's (forthcoming) 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 relationship between foreign aid and the quality of governance. This evidence strongly supports pessimistic predictions regarding aid's impact.

3. Data on Foreign Aid and the Quality of Governance

The quality of governance is measured by subjective indexes from the International Country Risk Guide (ICRG), a commercial service providing information on political risks to overseas investors and lenders. 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 6-point scales: corruption in government, bureaucratic quality, and the rule of law.⁴ 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

⁴Brautigam and Botchwey (1998) report a simple correlation of -.12 between aid/GNP and this index for 31 African countries, using data only for a single year (1990).

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 years 1982 through the last year for which aid data are available, 1995.

Two alternative measures of aid intensity or dependence are used here: "official development assistance" as a percentage of GNP, and as a percentage of government expenditures. Data are available for the years 1975-95 from the 1998 *World Development Indicators*, based on 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, 1997). 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 valid measure of aid dependence.⁵ Aid/GNP and aid/government expenditures, averaged by country over the 1982-95 period, are correlated at .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.

"Official development assistance" (ODA) includes grants, and loans with a grant element of more than 25 percent. Burnside and Dollar (1998) and Svensson (forthcoming) use a newer data set, constructed by Chang et al. (1999), which includes only the grant component of loans. Chang et al. 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 which 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.

⁵Bauer (1984) asserts that aid/government expenditures is more appropriate than aid per capita, because "aid goes to governments, not people." Moore (1998) defines aid dependence as a characteristic "not of economies but of governments." Klitgaard (1990: 21) suggests (partly) facetiously that the most relevant measure might be aid per cabinet minister.

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 1982-95 period, EDA and ODA are correlated at .96.

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.

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.⁶

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

⁶Note that aid/government spending can and often does exceed 100%, because not all aid enters government budgets.

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 institutions, population increases could be associated with improvements in the ICRG index.⁷ 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. 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.⁸

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., 1998). 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 which are invariant over very long periods of time are unlikely to matter much.⁹ In contrast, it is unlikely that the quality of governance would have fully adjusted to aid dependence already by the beginning of

⁷ If on the other hand large countries are “ungovernable” this relationship could be negative.

⁸ Similar variables are also available from the Penn World Tables 5.6, but only through 1992 for most countries.

⁹ 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.

the sample period considered here. Aid is largely a post-war phenomenon, and is relatively non-persistent, 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 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 change in aid (using either aid measure) is associated with a .25 standard deviation change in the dependent variable, which exceeds the effect of a standard deviation 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, while 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 .55 to .45; in comparison omitting the change in per capita income instead reduces R^2 from .55 to .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 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 $-.058$ (.021) for aid/GNP and $-.027$ (.009) for aid/government spending. Corresponding estimates from median regression are $-.049$ (.022) for aid/GNP and $-.024$ (.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.¹⁰ Ordered logit estimates turn out to be very similar to OLS estimates: coefficients (and standard errors) for aid/GNP and aid/government spending are $-.052$ (.018) and $-.024$ (.009) respectively.

Aid coefficients in equations 1 and 2 conceivably reflect endogeneity bias: if donors direct aid toward countries experiencing deteriorations in the quality of governance, OLS estimates will 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 with improving institutional quality, as these arguably are the countries less likely to waste whatever aid they receive. This latter argument suggests that equation 1 and 2 estimates actually *understate* the true adverse impact of aid on governance. Equations 3 and 4 address these endogeneity issues through two-stage least squares estimation.

Exogenous instruments for aid are nearly identical to those used by Burnside and Dollar (1997). Infant mortality in 1980, and initial GDP per capita, are good indicators of recipient need. Initial

¹⁰There are 16 different values for ICRG index changes observed in the sample.

population¹¹, a Franc zone dummy, and a Central America dummy are measures of donors' interest. Of these instruments, infant mortality is easily the most important predictor of aid. These instruments not only predict aid very well, but are also valid: p values for tests of overidentifying restrictions in equations 3 and 4 are .52 and .81 respectively.¹²

Coefficients for each aid measure remain negative and statistically significant using 2SLS, as shown in equations 3 and 4. The estimated impact of aid roughly doubles, 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 towards 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. Based on the 2SLS coefficients for aid, a 20 percentage point rise in aid as a share of GNP (or 50-point rise in aid/government spending) is estimated to reduce the ICRG index by about 3 points. A Barro-type growth regression (for 1980-92) 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 non-governance channels, and its net impact on growth may well be positive.

Table 3 replicates the OLS regressions from Table 2, substituting as the dependent variable

¹¹ 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 US and USSR influenced (and was influenced by) votes in the UN General Assembly. Because each country regardless of size has one General Assembly vote, an efficient vote-buying strategy would target small countries.

¹² Burnside and Dollar (1997) 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.

changes in each of the three separate components of the ICRG index. Correlations among these three dependent variables range from .52 to .68,¹³ not so high that the strength of the aid-governance relationship 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 standard errors 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. Row 1 of Table 4 reproduces the aid coefficients and standard errors from equations 1 and 2 of Table 2, for comparison purposes. Succeeding rows show the corresponding results for aid, for various alternative samples.

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 was also deleted. Because there is

¹³Cronbach's alpha for the 3-variable index is .80, indicating high reliability.

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.¹⁴ 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.¹⁵ 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 percent or more, and only the 33 nations with aid/government expenditures averaging 15 percent or more. Aid remains significant, with very small changes in the size of coefficients.

Row 7 deletes countries which were Communist over most or all of the period.¹⁶ 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.

¹⁴These 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.

¹⁵These middle-income countries include Gabon, Israel, Malta, Oman, and Trinidad.

¹⁶These socialist countries include Albania, Bulgaria, China, Hungary, Poland, Romania, and Vietnam (the latter is missing data on aid/government spending).

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 inter-continental 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.¹⁷ Coefficients for aid/government spending decline, but standard errors 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. Coefficients for technical assistance are several times greater than those for aid overall, consistent with arguments stressing the undermining of local expertise and administrative capacity.¹⁸

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, 1997). Moreover, omitting the change in per capita income as a control variable does not substantially alter the

¹⁷Guinea-Bissau is included in all regressions using aid/GNP, and it does not even represent the maximum value for that variable.

¹⁸Aid 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. When technical assistance and the

aid coefficients.¹⁹

Aid Variability

Aid dependence is measured above by country mean values over the 1982-95 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 (forthcoming) 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 of aid, for the aid/GNP specification.²⁰ Equation 1 shows that, controlling for mean levels of aid, greater variability is associated with improvements in the quality of governance. A one standard deviation rise in the CV of aid is associated with a one-third standard deviation 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.²¹ This interaction permits a more direct test than in equation 1 of the

remainder of aid (which are correlated at .87) are included together, only the former is significant.

¹⁹Similarly, 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.

²⁰There 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.

²¹Taking 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

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 .78, higher than all but 15 out of 80 values in the sample.

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 standard error (.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 "depends on the pre-existing quality of governance." In this view, aid undermines institutional capacity only where it is relatively weak to begin with -- an argument consistent with the common view that the Marshall Plan 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

a value of zero (which is below the minimum observed value).

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 (forthcoming) 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 ethno-linguistic 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.²²

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

²²This variable is also used by Knack and Keefer (1997). Sullivan's measure is used here because it is available for all

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 when the homogeneity index equals 27 (43), and is negative for higher values of the homogeneity index.²³

Natural Resource Abundance

Several of the arguments in section 2 on aid's potential impact on governance apply to windfalls from other sources, such as natural resource abundance, as well as to foreign aid. Using a "bureaucratic efficiency" index from Business International for the early 1980s as constructed by Mauro (1995),²⁴ Sachs and Warner (1995) find no relationship between primary product exports as a share of GDP and the quality of governance. Leite and Weidmann (1999) find that higher fuel and minerals exports as a share of GDP (in 1970) are associated with worse ratings on the ICRG corruption scale (for the year 1982).

In the framework of this analysis, higher levels of natural resource exports are associated with declining quality of governance, but the relationship is not statistically significant.²⁵ The resource variable is the sum of mineral and fuel exports as a share of GDP, averaged over the 1982-95 period. This and other available measures are only highly imperfect proxies for resource abundance, for reasons discussed by Sachs and Warner (1995).

80 countries in the basic sample. About 10 observations are lost using the ELF index.

²³Interactions of aid and ELF produce positive but insignificant coefficients. The Sullivan*aid interactions are significant even in the (smaller) ELF sample.

²⁴Relative to the ICRG governance variables, the Business International data are available for many fewer countries and for many fewer years.

²⁵These results are not shown in tables for space reasons, but are available from the author on request.

6. 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, 1997, 1998). Results presented here indicate that the size of the institutional gap itself increases with aid levels.

Policy implications must be phrased very tentatively, pending additional research. Further analysis which 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: 49-53).

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: 55) 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.

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 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: 61).

Finally, donors can devote greater efforts to strengthen civil society and its links to government (Dollar and Pritchett, 1997: 58, 116). 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 micro-enterprise 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.

References

- Bauer, P.T. (1984). *Reality and Rhetoric: Studies in the Economics of Development*. Cambridge: Harvard University Press.
- Boone, Peter (1996). "Politics and the Effectiveness of Foreign Aid." *European Economic Review*, 40, 289-329.
- Brautigam, Deborah (2000). *Aid Dependence and Governance*. Stockholm: Almqvist & Wiksell International.
- Brautigam, Deborah (1992). "Governance, Economy, and Foreign Aid." *Studies in Comparative International Development*, 27(3), 3-25.
- Brautigam, Deborah and Kwesi Botchwey (1998). "The Institutional Impact of Aid Dependence on Recipients in Africa." Unpublished manuscript, American University School of International Service.
- Burnside, Craig and David Dollar (1997). "Aid, Policies, and Growth." Policy Research Working Paper #1777, World Bank.
- Burnside, Craig and David Dollar (1998). "Aid, the Incentive Regime, and Poverty Reduction." Policy Research Working Paper #1937, World Bank.
- Chang, Charles, Eduardo Fernandez-Arias, and Luis Servan and Charles Chang (1999). "Measuring Aid Flows: A New Approach." World Bank, Policy Research Working Paper No. 2050.
- Dollar, David and Lant Pritchett (1998). *Assessing Aid: What Works, What Doesn't, and Why*. New York: Oxford University Press.
- Feyzioglu, Tarhan; Vinaya Swaroop and Min Zhu (1998). "A Panel Data Analysis of the Fungibility of Foreign Aid." *World Bank Economic Review*, 12(1), 29-58.
- International Financial Institution Advisory Commission (2000). Final report to the Joint Economic Committee, Congress of the United States, March 8.
- Karl, Terry Lynn (1997). *The Paradox of Plenty: Oil Booms and Petro-States*. Berkeley: University of California Press.
- Keefer, Philip and Stephen Knack (1997). "Why Don't Poor Countries Catch Up? A Cross-National Test of an Institutional Explanation." *Economic Inquiry*, 35(3), 590-602.

- Klitgaard, Robert (1990). *Tropical Gangsters*. New York: Basic Books.
- Knack, Stephen (1999). "Is Good Governance Progressive?" Unpublished manuscript.
- Knack, Stephen and Philip Keefer (1997). "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation." *Quarterly Journal of Economics*, 112, 1252-88.
- Knack, Stephen and Philip Keefer (1995). "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics and Politics*, 7(3), 207-27.
- La Porta, Rafael; Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (1999). "The Quality of Government." *Journal of Law, Economics, and Organization*, 5(1), 222-79.
- Leite, Carlos and Jens Weidman (1999). "Does Mother Nature Corrupt?" IMF Working Paper 99-85.
- Lundborg, Per (1998). "Foreign Aid and International Support as a Gift Exchange." *Economics and Politics*, 10(2), 127-41.
- Maren, Michael (1997). *The Road to Hell: The Ravaging Effects of Foreign Aid and International Charity*. New York: The Free Press.
- Mauro, Paolo (1995). "Corruption and Growth." *Quarterly Journal of Economics*, 110, 681-712.
- Meyer, Carrie A. "The Irony of Donor Efforts to Build Institutions: A Case Study From the Dominican Republic." *Journal of Institutional and Theoretical Economics*, 148(4), 628-44.
- Moore, Mick (1998). "Death Without Taxes: Democracy, State Capacity, and Aid Dependence in the Fourth World." In G. White and M. Robinson (eds.), *Towards a Democratic Developmental State*. Oxford: Oxford University Press.
- North, Douglass (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- Rodrik, Dani (1996). "Understanding Economic Policy Reform." *Journal of Economic Literature* 34, 9-41.
- Sachs, Jeffrey and Andrew Warner (1995). "Natural Resource Abundance and Economic Growth." NBER Working Paper 5398.
- Sullivan, Michael (1991). *Measuring Global Values*. New York: Greenwood.
- Svensson, Jakob (forthcoming). "Foreign Aid and Rent-Seeking." *Journal of International*

Economics.

Tornell, Aaron and Philip R. Lane (1998). "Are Windfalls A Curse? A Non-representative Agent Model of the Current Account." *Journal of International Economics*, 44, 83-112.

Van Rijckeghem, Caroline and Beatrice Weder (1997). "Corruption and the Rate of Temptation: Do Low Wages in the Civil Service Cause Corruption?" IMF Working Paper 97-73.

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.

Table 1
Summary statistics for basic sample used in cross-sectional analyses

Variable	N	Mean	Std. dev.	Minimum	Maximum
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
Percent 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

Table 2
Aid Dependence and the ICRG Quality-of-Governance Index

Equation	1	2	3	4
Method	OLS		2SLS	
Aid variable	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)	-0.154 (0.037)	-0.054 (0.014)
N	80	68	80	68
Mean, dep. variable	+2.45	+2.75	+2.45	+2.75
Adj. R ²	.55	.54	.52	.53
Std. error of est.	2.29	2.2	2.54	2.33

Dependent variable is the ICRG quality-of-governance index. Standard errors are in parentheses. Other 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 .52 and .81. Note R² does not have its usual interpretation in 2SLS.

Table 3
Aid Dependence and ICRG Index Components

Equation	1	2	3	4	5	6
Dependent variable	Bureaucratic quality		Rule of law		Corruption in govt.	
Aid variable	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	.50	.53	.53	.51	.47	.47
Std. error of est.	0.85	0.82	1.05	1.03	0.91	0.89
Aid (2SLS estimates)	-0.057 (0.019)	-0.023 (0.007)	-0.068 (0.017)	-0.020 (0.007)	-0.029 (0.014)	-0.012 (0.006)

Standard errors are in parentheses.

Table 4
Aid Dependence and the ICRG Quality of Governance Index
Robustness to Sample Changes

	Aid variable	Aid/GNP		Aid/government expenditure	
Row #	Sample	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, 54	-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 (.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. Dependent variable is the change in the ICRG index, 1982-95. 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). Other 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 .31 to .89.

Table 5
Aid Variability, Initial Conditions, and Ethnic Homogeneity

Equation	1	2	3	4	5	6
Aid variable	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 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 p.c.	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)		
Percent in largest ethnic group					0.029 (0.011)	0.041 (0.011)
Aid*percent in largest ethnic group					-.0020 (.0009)	-.0012 (.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	.63	.65	.54	.54	.60	.64
Std. error of est.	2.05		2.30	2.20	2.15	1.94

Standard errors are in parentheses.

Figure 1

Aid/GNP and ICRG Change, 1982-95

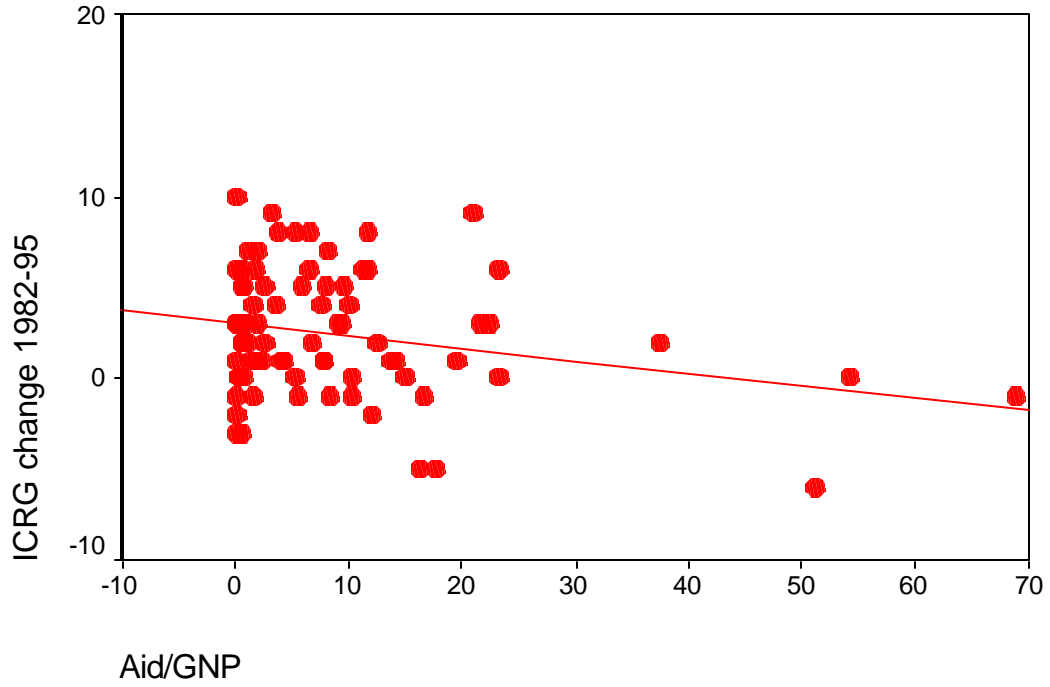


Figure 2

Aid/government spending & ICRG Change

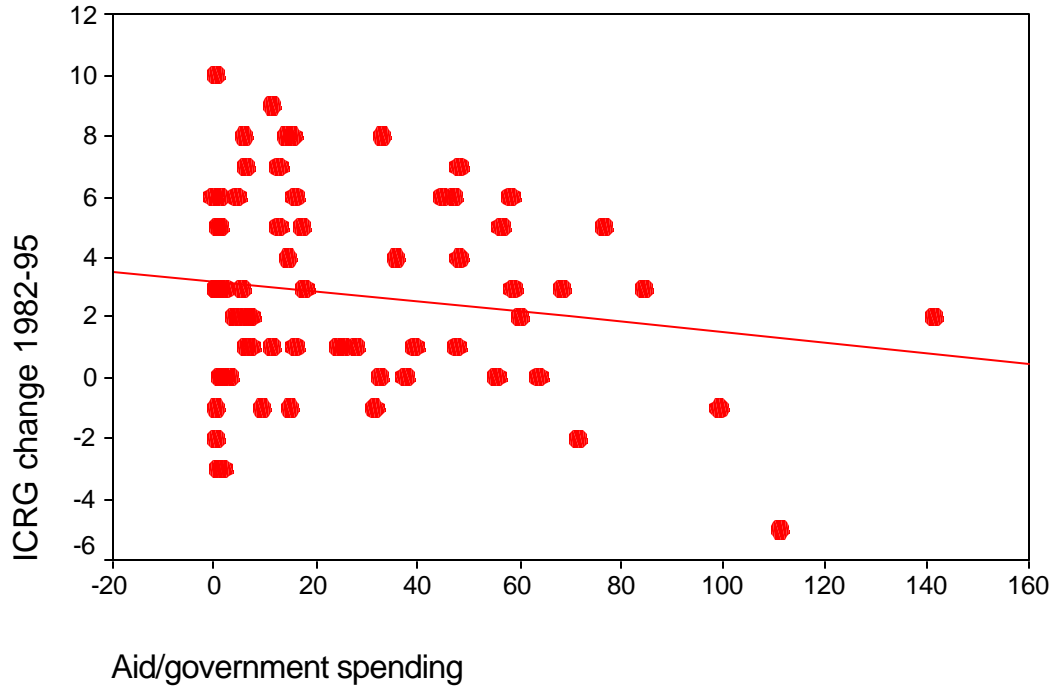


Figure 3

Aid/GNP and ICRG Change (partial plot)

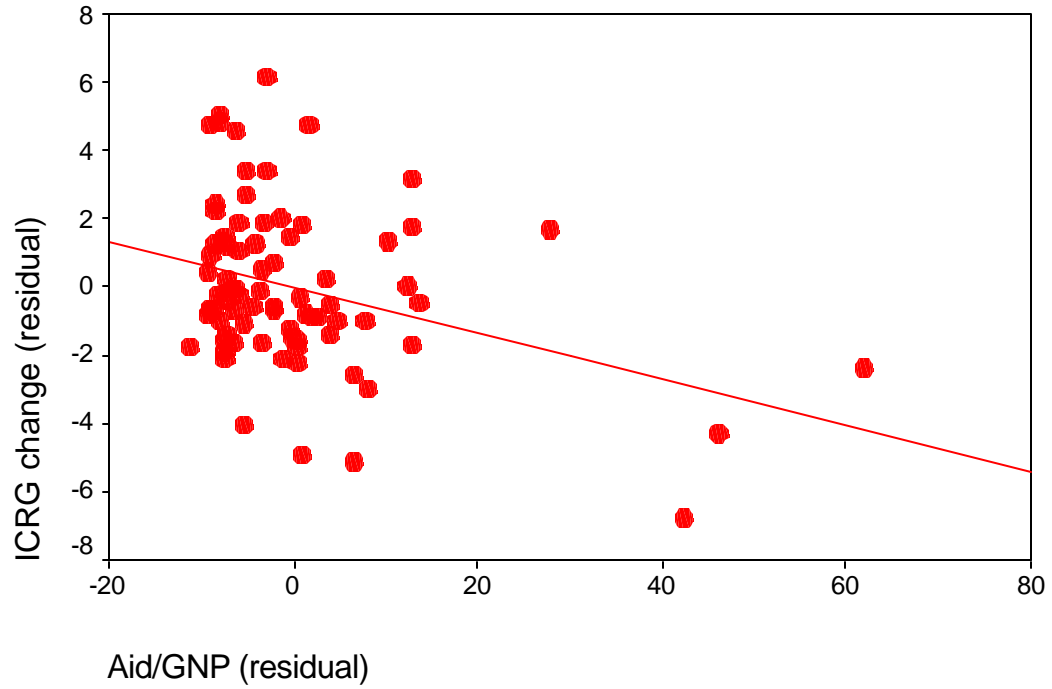


Figure 4

Aid/govt. and ICRG change (partial plot)

