

Using Donor-Driven Changes to Identify the Impact of Aid on African Governance

Clark Gibson
University of California at San Diego

Barak Hoffman
Georgetown University

Craig McIntosh*
University of California at San Diego

December 2007

Abstract: We propose and implement a new empirical strategy to measure the causal impact of foreign aid on the quality of governance in Africa. We present a simple theoretical model which illustrates the endogeneity problem present in much of the extant literature, and use this model to motivate a method for calculating the component of fluctuations in aid which is driven solely by changes in donor generosity and not by events at the recipient level. Using this instrumented measure, we find that aid has strong negative impacts on the quality of governance. This relationship is however primarily driven by a ‘Cold War’ effect which saw donor generosity peak at the moment at which governance was at its nadir, and is not robust to the inclusion of a full set of time fixed effects. We find that donors are likely to increase aid in response to economic disaster if the incumbent government falls, and to decrease it if the incumbent stays in power.

*School of International Relations and Pacific Studies, University of California at San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0519, e-mail: ctmcintosh@ucsd.edu.

1. INTRODUCTION:

Does foreign aid promote democracy? The academic literature is inconclusive: some case studies cite the decisive nature of aid in periods of political change that enabled a successful democratic transition (McFaul). Other cases point in the opposite direction, however, and the quantitative evidence has been mixed. Where effects are found at all, they appear to be small (Knack 2004, Goldsmith 2001). The positive effects of democracy assistance, for the most part, appear in countries where there is already the political will to reform (Carothers 1999). The more recent quantitative analyses are also contradictory: Knack (2004) finds no relationship, Goldsmith (2001) finds statistically significant but very small effects, while Finkel et al. (2007) find that USAID's democracy-targeted assistance leads to large increases in democracy.

The primary issue that bedevils the empirical study of the relationship between aid and governance is endogeneity: donors respond to changes in recipient countries in complex and contradictory ways, and so it is difficult to interpret even panel co-variation between aid and governance as causal. Without explicit modeling of these relationships, scholars – even when attempting to control for endogeneity – may miss the important strategic interactions that undoubtedly affect the provision and consequences of foreign aid for democracy. In what follows, we present a simple theoretical model which is deliberately phrased in terms of innovations into a dynamic system in order to illustrate that serious and complex forms of endogeneity remain even in the panel variation. We model the two-level game between recipient country politicians and their electorates, and between donors and citizens in recipient countries. This motivates several ways in which donors face competing objectives, and suggests that there is a 'Samaritan's dilemma' present both in the giving and in the targeting of aid.

As a means to solving this endogeneity problem, we suggest a method for decomposing fluctuations in aid into a 'donor-driven' component which is generated by aggregate changes in generosity among a country's donors, and a 'recipient-driven' component which picks up reapportionment of aid across recipient countries from year to year. This technique, which is similar in spirit to the Blanchard & Katz (1992) instrumentation technique now widely used in the labor economics literature, allows us to sidestep the complex process through which aid responds to recipient-level changes in

wealth and governance. Rather, it gives us a structural source of fluctuation in aid which is much less likely to be responding in an endogenous way to governance, and hence provides a superior form of identification for the causal relationship between governance and aid. We investigate the assumptions required to use the donor-driven component of aid to form a test of the causal impact of governance on aid which is not biased by reverse causality from the process through which donors target aid.

This method provides a new way of addressing the causal relationship between governance and aid. While the case studies in this area have provided essential insights into the causes and processes of the aid-democracy link, they cannot tell us much about the overall nature of this relationship. More recent quantitative work, on the other hand, may augment the generalizability of findings (Toye 1992, Bates 1994, Collier 1997, Rodrik 1996, Brautigam 2000, van de Walle 2001, World Bank 2001, Easterly 2002, Alesina and Weder 2002, Martens 2002, Brautigam and Knack 2004), but we show that the weak and contradictory impacts found across this literature are consistent with the reverse causality generated by endogenous placement of aid.

The most recent papers in this literature address the endogeneity problem, but tend to try to tackle it with instruments of dubious exogeneity when we consider the panel responsiveness of governance to aid. For example, the Perez et al (2007) paper uses the number of times that the *New York Times* quotes the Secretary of State as mentioning a given country in a given year as a metric of 'foreign policy priority'. But variation in this country-specific focus of U.S. policy is most likely driven by contemporaneous political shocks in the recipient country, and so the instrument predicts precisely the component of aid changes which is endogenous to political changes.¹ Knack (2004) and Goldsmith (2001) use instruments which are open to similar criticisms. Because our model makes the panel endogeneity problem very explicit, it helps to guide us towards the sources of variation in aid which are not themselves being driven by changes in governance.

To preview our results, we find a strong negative link between the quality of governance and increases in aid which are driven by donor-level fluctuations. This

¹ We also find strong evidence of serial autocorrelation in the errors, which should preclude the use of the Arellano-Bond estimator as employed in Perez et al.

negative effect is present in both the levels and the changes of the governance variables, and is robust to the inclusion of country-level fixed effects. There is insufficient cross-country, cross-time variation in donor behavior to identify this effect when we include fine-grained time controls however, indicating that this relationship comes from aggregate changes over time in the quantity of total aid and the average quality of governance in Sub-Saharan Africa. We conclude by considering alternative hypotheses which could explain this relationship.

2. THEORY:

2.1. Domestic political optimization.

We model citizens in a country through a representative agent/median voter, who has a utility which is a function of two arguments: governance quality G_{it} and consumption C_{it} . Consumption is determined by a game with domestic politicians, who decide how much of the combination of aggregate national income Y_{it} and the sum of total aid A_{it} they wish to pass on to citizens. The share of total resources passed through is denoted by p_{it} , and so $C_{it} = p_{it}(Y_{it} + A_{it})$. Utility $U_{it} = U(p_{it}(Y_{it} + A_{it}), G_{it})$ is monotonically increasing in all of its arguments, and is concave in consumption ($U'_C > 0, U''_C < 0, U'_G > 0$).

We model a world of venal politicians in recipient countries who prefer bad policies (this assumption is relaxed in the appendix). These politicians face an opposition, however, and in order to retain power they must keep citizen welfare above the reservation level offered by the opposition. We denote this opposition opportunity cost by Ω_{it} , and in order to stay in power it must be the case that

$$(1) \quad U(p_{it}(Y_{it} + A_{it}), G_{it}) \geq \Omega_{it}.$$

In equilibrium this constraint will bind, and so this equation provides incumbent politicians with a contour in (p, G) -space which will just allow them to stay in power. Incumbents would like to have bad policy and low pass-through, but they cannot get away with both of them simultaneously.

This simple setup induces a symmetric ‘resource curse’ and ‘aid curse’; presuming we start from an interior equilibrium, positive shocks to *either* income Y_{it} or aid A_{it} create breathing room for politicians which allows them to offer a worse (p, G) combination to citizens without violating (1). This suggests that, *ceteris paribus*, exogenous increases in national income from whatever source will result in lower-quality governance and a smaller share (although not necessarily a smaller total quantity) of resources passed through to citizens. The model of venal recipient governments therefore generates a world in which both governance and pass-through are a decreasing function of aid, or one in which $G_{it} = G(A_{it})$ with $G' < 0$, and $p_{it} = p(A_{it})$, with $p' < 0$.

Because utility is concave in consumption, any specific quantity of aid creates larger potential utility increases in poorer countries than in richer countries. Recipient politicians take advantage of this by extracting well-being in (p, G) -space in a manner that is increasing in the poverty of the country. G' and p' , the adverse response of governance and pass-through to a dollar unit of aid, is thus the strongest in the poorest countries.

2.2. Donor optimization.

We model donors as desiring to use a scarce aid budget to maximize total benefit among citizens in recipient countries. In order to simplify the model we assume that donor governments do not hold direct preferences over recipient country governance G_{it} , but rather care only about creating welfare through consumption increases in recipient countries.²

A donor maximizes the sum of utilities across recipients subject to an aggregate budget constraint on total aid, B_j (donor countries are indexed by j). The donor problem is thus:

² The possibility of direct donor preferences over policy is considered in the appendix; including a donor preference for good governance reinforces their tendency to punish poorly-performing recipient countries and hence makes it more likely that the aggregate correlation between aid and governance is positive.

$$\begin{aligned} \text{Max}_{A_{ijt}} \quad & \sum_i U(p_{it}(A_{ijt})(Y_{it} + A_{ijt}), G_{it}(A_{ijt})) \\ \text{s.t.} \quad & \sum_i A_{ijt} \leq B_{jt} \end{aligned}$$

The first-order condition for this optimization problem is that:

$$(2) \quad U'_C(p_{it} + p'(Y_{it} + A_{ijt})) + U'_G G' = \lambda_{jt}$$

for all i and t , where λ_{jt} gives the shadow value of aid money to the donor in each time period.

Equation (2) tells us that poor countries will receive more aid than rich countries (because U'_C is highest where $p_{it}(Y_{it} + A_{ijt})$ is lowest). Consequently, a low pass-through rate induces a conflicted response in donors: on the one hand it makes them desirous to give aid because it generates impoverished citizens, but on the other it makes aid ineffective at creating welfare benefits because donors know it will not reach those they desire to help.

This simple expression also illustrates several flavors of ‘Samaritan’s dilemma’. The first of these is that the direct, intended effect of aid on welfare which is given by the positive term $U'_C p_{it}$ is counteracted by the corrosive effects of aid on pass-through and on governance, given by the negative terms $U'_C(p'(Y_{it} + A_{ijt}))$ and $U'_G G'$, respectively. Thus, donors want to give money to raise utility, but in doing so they indirectly undermine governance which decreases utility.

Secondly, because marginal utility is highest where C_{it} is lowest, donors are most eager to give aid to the poorest countries. Exactly because of the concavity of utility in consumption, however, the slope of p' and G' are most steeply negative in the poorest countries. Therefore there is a ‘Samaritan’s dilemma’ also in poverty targeting. Just as donors want to target precisely those countries in which their money is likely to do the least, they distort governance most in those countries they most badly want to help.

The upshot of these dilemmas is that the recipient countries in which the greatest welfare effects of aid are seen are those which are exogenously poor (low Y_{it}) but well-governed (high p_{it}), a combination which can only result in our model from a strong

opposition Ω_{it} which forces even an impoverished government to make large transfers to citizens.

2.3. Dynamics.

Given these optimizing behaviors by donors and by domestic politicians, we can now specify the equations of motion of governance and aid. We write the discrete-time changes in our variables in lower-case letters, so that $\Delta A_{it} = a_{it}$ and $\Delta G_{it} = g_{it}$. We model the dynamic variation in the system as arising from responses to three exogenous, stochastic sources of variation. Each of these processes follows a random walk over time, and hence features white noise innovations. The first of these is an income shock $\Delta Y_{it} = y_{it}$. The second is the quality of the opposition Ω_{it} , whose innovations are denoted by ω_{it} . The third is a change in the aggregate aid budget of the donor which scales aid proportionally across countries and is denoted by β_{it} . The first two sources of variation are at the recipient level, whereas the third is at the donor level.

Income shocks y_{it} trigger a ‘charity’ effect from donors; in order to maintain the equilibrium given by (2), they must increase aid to a country which receives a negative income shock because the marginal utility of income (at the old level of aid) increases. We denote this charity response to aid by the term $\alpha(y_{it})$, with $\alpha' < 0$.

Because the shocks to the quality of the opposition ω_{it} trigger changes in the welfare of citizens, they can be thought of as being direct shocks to the quality of governance. The improvement in G_{it} which results from an increase in ω_{it} is given by $\gamma(\omega_{it})$ with $\gamma' > 0$, and we simplify the positive relationship between g_{it} and p_{it} by writing $\Delta p_{it} = \rho(g_{it})$, with $\rho' > 0$.

Changes in aid are thus driven by three factors. The simplest are shocks to aggregate donor aid budgets, which pass directly into aid received by each country i . The second is the charity effect, driven by exogenous shocks to consumption. The third and most complex is the endogenous response to changes in governance; the term $\rho(g_{it})$ gives the extent to which governance innovations effect pass-through, and this term has the two component effects created by the Samaritan’s dilemma. The first response to a

positive governance shock is to cause donors to want to *decrease* aid because citizens are better off and therefore less needy. The other is the desire to *increase* aid because the higher pass-through causes a unit of aid to be transferred to citizens more efficiently. We can then write the equations of motion for aid and governance, respectively:

$$(3) \quad a_{it} = \beta_{it} + \alpha(y_{it} + \rho(g_{it})) + \rho(g_{it})$$

$$(4) \quad g_{it} = \gamma(\omega_{it}) + G'(a_{it}).$$

Changes in governance are driven by the direct response to innovations in the quality of opposition, as well as the endogenous response of recipient incumbents to changes in aid. Virtually all extant studies of the impact of aid on governance consist of estimating some variant of equation (4), while ignoring the complex reverse causality of governance on the flow of aid given by (3).

2.4. An instrument for the relationship between aid and governance.

Because this system of simultaneous equations has governance and aid feeding back on each other, the relationship cannot be identified without instruments. We motivate our empirical strategy through the assumption that country-level innovations ω_{it} and y_{it} are mean-zero within the sample each period, and so they will wash out across recipient countries in each year. This means that donor-level innovations β_{it} will be orthogonal to country-level effects, or $\beta_{it} \perp \{\omega_{it}, y_{it}\}$. This implies that if we can form an estimate of changes in aid which are unrelated to local-level swings in giving, that we can decompose total aid changes a_{it} into the donor-driven component β_{it} and the recipient-specific component $\alpha(y_{it} + \rho(g_{it})) + \rho(g_{it})$.

Further, these assumptions imply that b_{it} is not responding to g_{it} , and so the only reason that changes in governance would be correlated with changes in donor-driven aid is through the causal effect $g_{it} = \gamma(\omega_{it}) + G'(a_{it})$. Put differently,

$$\frac{dg_{it}}{d\beta_{it}} = G' \Big|_{A_{ij}^*},$$

or donor-driven aid β_{it} provides an instrument for the casual impact of aid on governance.

To construct a measure of donor-driven aid, we wish to purge out the fluctuations in giving which come from contemporaneous recipient-level consumption or governance shocks. We pursue a technique which is similar in spirit to Blanchard & Katz (1992), who instrument for observed local-level economic shocks using the product of national-level fluctuations and lagged local production shares. They calculate sector-level economic employment, and predict changes to this series by multiplying period-on-period changes in national employment times the share each industry made up in the local economy the previous period. The resulting change in labor demand is used to explain intra-national migration. One can map their sectors onto our donors, and the endogeneity of aid and governance on to the endogeneity in migration and local employment.

Consequently, we wish to construct a measure of the fluctuation in aid to recipients which is driven only by the aggregate generosity of their donors and not by reapportionment of aid across recipients within each year. This is done as follows: first, sum aid over all recipients for each donor and year, calculating the aggregate donor aid budget B_{jt} for each period. We then take the ratio of the recipient's individual aid budget over the aggregate donor aid budget in that year, which is the recipient's share S_{ijt} , so decomposing $A_{ijt} = S_{ijt}B_{jt}$. We can then write the change in aid $a_{ijt} = S_{ijt}B_{jt} - S_{ijt-1}B_{jt-1}$, and the period-on-period changes as b_{jt} and s_{ijt} . Adding and subtracting $S_{ijt-1}B_{jt}$ from this gives $a_{ijt} = S_{ijt-1}b_{jt} + s_{ijt}B_{jt}$, where the first term is the 'donor-driven' change from a specific donor (the change in aggregate donor giving multiplied times the lagged share received by a specific recipient) and the latter is the recipient-driven share. From here it is straightforward to calculate aggregate aid changes for each recipient $a_{it} = \sum_j a_{ijt}$, the aggregate donor-driven change for each year for each recipient $\beta_{it} = \sum_j S_{ijt-1}b_{jt}$, and the aggregate recipient-driven change is the residual $a_{it} - \beta_{it} = \alpha(y_{it} + \rho(g_{it})) + \rho(g_{it}) = \sum_j s_{ijt}B_{jt}$. These fluctuations are driven by donor responses to recipient-level income and governance shocks.

In summary, we have several key predictions from this model:

1. The regression of g_{it} on β_{it} gives G' , the causal effect of aid on governance. When venal governments use aid to buy off the electorate, this relationship will be negative.
2. Recipient-focused aid should increase when countries undergo economic shocks which are *not* a direct product of bad governance.
3. Recipient-focused aid may either increase or decrease when countries undergo economic shocks which *are* a direct product of bad governance.
4. The correlation between aggregate aid changes and aggregate governance changes is ambiguous.

3. EMPIRICS:

3.1 Summary statistics.

We now proceed to take these predictions to the data. Our data on foreign aid comes from the OECD's Donor Assistance Committee (DAC) Development Database on Aid from DAC Members

(http://www.oecd.org/document/33/0,3343,en_2649_34485_36661793_1_1_1_1,00.html)

.This database contains annual disaggregated data on foreign aid by donor and recipient for all DAC member countries as well as multilateral organizations. Our data on measures of governance, which we explain in detail below, come from Africa South of the Sahara, Freedom House, and Polity IV. All other data comes from the World Bank's World Development Indicators.

Figures 1-4 in the appendix provide time-plots of the changes in donor-driven and recipient-specific aid for Rwanda, Kenya, Ethiopia, and Somalia, respectively. As a preliminary take, many of the predictions outlined above are generally confirmed by these pictures. First off, we see that in these countries, each of which has had a tempestuous history across these two decades, recipient-specific aid responds dramatically and contemporaneously to political and economic shocks. Donor-driven aid fluctuates much less, however, and appears to respond not at all even to such catastrophic recipient-level shocks as the genocide in Rwanda. In a pattern which turns out to be dominant in the data, donor-driven aid in all four countries is at its highest in the late '80s and reaches its nadir in the mid-'90s.

At a more nuanced level, the fluctuations in recipient-specific aid illustrate the competing objectives of donors. Perhaps the simplest way to state the patterns observed in the data is as follows: donors punish the deterioration of governance if the responsible government remains in power (Kenya 1991) but will rush *in* to environments where governance deteriorates if the state collapses entirely (Somalia 1992, Rwanda 1994). Further, if there are economic collapses which are caused by factors not under the control of governments, such as weather, then the charity motive dominates and aid will increase rapidly regardless of the nature of the government currently in power. This can be seen by the spiking of aid during famines to a socialist 1980s Ethiopia, a more capitalist mid-'90s Ethiopia, and anarchic 1992 Somalia alike. Freedom House worsens by 3 points during the 1994 Rwandan spike in aid, and it worsens by 1 point from 1990 to 1995 during the Kenyan aid freeze-out; in the latter case a standing government was held responsible and in the former it was not, but in either case the correlation between recipient-specific aid and governance would seem to be ambiguous.

Although the core purpose of the decomposition of aid is to test causal effects through donor-driven aid, the complex fluctuations in the recipient-specific component are of real interest in their own right because they give an objective criterion of changes in donor priorities across countries. The recipient-specific change gives the reallocation of aid based entirely on changes in the weighting of aid across potential recipient countries, and so identifies disproportionate swings to specific countries in specific years which cannot be explained by overall patterns in generosity by donors.. As a way of digging deeper into what these fluctuations mean, Table 1 shows the top ten and bottom ten country/decades in the data using Polity2, Freedom House, and recipient-specific aid as metrics.

The data provide further evidence that the recipient-specific component of aid is driven by contradictory motives. The top set of countries give the 'darlings', by various measures, and the bottom set the 'outcasts'. 13 out of 40 of these are the same, and 23 out of 40 match within 10 years. Resource-rich countries (Nigeria, Congo, and Angola) display fluctuations in aid which are less closely related to changes in governance. Aid money moves in to improving environments earlier than their governance indicators improve (Mozambique) and gets out of deteriorating ones later than the indicators worsen

(Kenya, Sudan, and Burundi), implying that donors are optimists and give the benefit of the doubt to recipient countries both on the upswing and the downswing. The right-hand column divides the swings in aid by GDP, giving the change in donor behavior as a proportion of local economic activity. The divergence here between changes in governance and aid seems driven entirely by devastated economies which are ‘given a chance’ by the aid community before they become true multiparty democracies; Eritrea, Sierra Leone, Rwanda, and Uganda.

In sum, then, the recipient-specific component of aid provides an illuminating and hitherto unexplored metric of swings in governance and donor priorities. Given the subjectivity and internal inconsistencies with our available governance indicators, this suggests that swings in recipient-specific aid provide important, objective information in a panel context. This measure is complex, however, being driven by directly contradictory forces as laid out in the theoretical section. We now turn to the identification of causal impacts using donor-driven aid.

3.2. Analysis.

The theory generates the prediction that the instrumented changes in aid should be negatively correlated with changes in governance, while recipient-specific aid has a more complex relationship with governance (a direct negative causal effect, and a reverse causality story going in either direction). As a first pass at this question, we calculate the changes in three governance indicators and the donor- and recipient-specific components of aid over the ten-year periods 1981-1990 and 1991-2000.³ The governance indicators used are Polity 2, Freedom House (inverted so that high numbers indicate better governance) and a measure of political liberty using the public announcements of an incumbent regime about his intentions to liberalize, such as the introduction of multiparty politics or the declaration of the date for a multiparty election.⁴ Table 2

³ The decadal change in the governance indicators is calculated as the final observation in the period minus the first. The decomposed aid components are inherently measured in flows, and so we calculate the aggregate decadal changes by summing the annual changes across all years in the decade.

⁴ Gibson and Hoffman create a measure of political liberties that consists of a scale from 0 to 4 that assumes incumbents do not want to give up power: each shift to a larger number on the scale represents an increase in concessions to opposition groups. The cardinal values in this scale are not important; our analysis is based on the order of these phenomena.

presents the simple pairwise correlations between our decomposed aid measures and these governance indicators. The governance indicators are all relatively highly correlated with each other during this period, and consistent with theory we see relatively strong negative correlations between governance and donor-driven aid (with correlations running from just under -.3 to just under -.5) while recipient-specific aid is weakly positively correlated with changes in governance. Figure 5 shows a scatterplot and trend line of the pairwise relationship between 10-year donor-driven aid changes and 10-year governance changes and illustrates this negative effect.

Table 3 uses the same decadal data to run regressions on both the levels and the changes of all three governance indicators. Standard errors are clustered at the country level. The results in this table are consistent with what we find in other, more robust specifications to follow: the donor-driven component of aid is strongly negatively correlated with governance in both levels and changes, and this result is robust to the inclusion of country-level fixed effects. This relationship disappears, however, when we control for time in a way that flexibly dummies out all time-series variation in the data. Recipient-specific aid shows a weak negative correlation with governance which is sensitive to specification. Taken together, these results imply that the variation in governance over time within countries is strongly negatively correlated with flows of donor-driven aid, but that this relationship is present across all countries in the data at the same time and hence is not robust to the inclusion of time fixed effects.

In order to push the identification further, Table 4 moves to 5-year time intervals and includes an expanded set of covariates as controls. These additional controls include population, PPP per capita GDP, percent urban, taxes as a percent of GDP, and military expenditures as a percent of GDP. Because several of these regressors are arguably endogenous to the quality of governance (particularly wealth, taxation, and military expenditures) we must take some care in interpreting these coefficients. Military

-
- Zero: Strict limits on political organization; President has announced no intention to change.
 - One: Announcement by President that an election or political liberalization will occur.
 - Two: Formal change of constitution to open political system or formal lifting of ban on political organization.
 - Three: Multiparty presidential election.
 - Four: Free and fair multiparty presidential election

expenditure is clearly correlated with lower-quality governance, and there is some evidence that populous and wealthy countries are better governed. The inclusion of these controls does very little, however, to alter the relationships with our decomposed aid measures: donor-driven aid is strongly negatively correlated with governance but this result is not robust to the inclusion of dummies for each five-year period. Recipient-specific aid shows a positive correlation with governance which is significant in some specifications.

Table 5 moves all the way to annual data, and repeats the exercise from Table 1. The results are basically identical; including country-level fixed effects we get a strong negative correlation with donor-driven aid using all three governance metrics. Including a linear and quadratic time trend kills this relationship for all but Polity 2, and inclusion of year fixed effects eliminates the relationship entirely. The implication is that the true panel variation in the data, meaning cross-country *and* cross-time variation, is not strongly correlated with changes in governance.

Why might this be the case? One answer is that the causal story is not borne out in the panel, and the other is that there *is* no true panel variation in donor-driven aid. To understand this better, we take a variety of approaches. The first of these is to regress the two aid measures on nothing but a set of fixed effects; first at the country level and then at the year level. Table 6 presents the R-squared and the joint F-tests from this exercise. We see that the donor-driven aid is orthogonal to recipient-country fixed effects by construction, and that recipient-specific aid is very close to orthogonal to both country and time fixed effects. Given that this metric is exactly a set of residuals above what can be predicted by a dynamic process at the country level, this is not surprising. The time fixed effects, on the other hand, explain almost half of the total variation in donor-driven aid and are jointly significant at the 99.9% level. In other words, our two-way fixed effects are almost orthogonal to recipient-specific fluctuations in aid but the time-level fixed effects may leave little variation in donor-driven aid off of which to identify causal effects.

A different way of understanding the strongly negative raw correlations between donor-driven aid and governance is illustrated in Figure 6. Here we plot the mean change in donor-driven aid across the sample by year on the mean change in governance. This

picture illustrates what might be referred to as the ‘Cold War’ effect: during the late 1980s bilateral aid to Africa was at its peak as the strategic importance of these otherwise poor and marginalized countries was at its peak. With the demise of the Cold War aid plunges, and this decrease coincides with a rapid improvement in the quality of governance. A more recent upturn in total donor-driven aid subsequent to 1996 has corresponded with a slowing of the speed of improvement in governance in Sub-Saharan Africa.

Figure 7 shows bilateral aid by donor for the top twelve donors to Sub-Saharan Africa; it is clear that the large Continental donors (France, Germany, and Italy) as well as Japan were all at their most generous during the peak of the Cold War. While this trend is less pronounced in the U.S. and the U.K., this reveals the primary limitation of the decomposition technique suggested in this paper for the sample at hand. Donor behavior has been quite coordinated, with large donors increasing and decreasing aid at similar times. Hence, despite the strong correlations found in models with country-level fixed effects, the relationships we observe are open to alternative interpretations. Indeed, any other reason which one could think of which would explain the pattern in Figure 6 is consistent with our results. If, for example, donors didn’t care about governance at all during the peak of the Cold War and only found religion during the 1990s when they also cut aid budgets, many of the patterns that we observe would be present. Therefore we conclude that while the evidence is consistent with a causal negative impact of aid on governance, there are reasonable alternative explanations that cannot be excluded.

4. Conclusion.

We present a theoretical model which illustrates the problem of panel endogeneity in causal estimation of the relationship between aid and governance. From this model we develop a novel instrumentation strategy which allows us to decompose aid into the component which is driven by fluctuations in behavior at the donor level, and a residual component which comes from responses to recipient-level changes. Our theory predicts that the former source of variation provides a straightforward test for a causal relationship between aid and governance, whereas the latter is confounded by the contradictory

motives of donors to help those in need, even if it is precisely the mismanagement of their own government that has made them needy.

Using dyadic data on donor-recipient flows for the period 1981-2000, we test and broadly confirm the theory. A series of case studies illustrate the complex motivations which underlie fluctuations in the residual component of aid, while regression results confirm that the donor-driven component of aid is strongly negatively correlated with the quality of governance. This relationship is not robust to the inclusion of fine-grained time controls, however, which we suggest is likely to arise as a result of coordinated swings in generosity across donors making most of the variation in donor-driven aid time-series, rather than panel, in nature. Hence the methodology laid out in this paper provides a well-specified test for the causal impact of aid but the variation present in our data makes this a low-power test. The links between aid and governance are complex. Existing studies compound the difficulty by insufficiently isolating the effect of governance on aid. Our strategy, thus, marks a strong step forward in understanding this complex relationship by offering an effective method for separating aid exogenous to governance from aid endogenous to it.

Tables.

Table 1

Rankings of best & worst African performers, by Country & Decade (1980s & 1990s).

Top 10 Performers by different metrics, where 1 is the best:

BEST 10	Freedom house		Polity2		Biggest increase in recipient-specific aid:		On one of other lists?		Biggest % increase (of GDP) in recipient-specific aid		On one of other lists?	
	Country:	Dec:	Country:	Dec:	Country:	Dec:	Country:	Dec:	Country:	Dec:	Country:	Dec:
1	capeverde	90	malawi	90	southafrica	90	Yes		saotomeprincipe	80	10 yrs late	
2	saotomeprincipe	90	centralafricanrep	90	mozambique	80	10 yrs early		eritrea	90	no	
3	malawi	90	madagascar	90	nigeria	80	no		sierraleone	90	no	
4	southafrica	90	mali	90	cotedivoire	80	10 yrs late		mozambique	80	Yes	
5	benin	90	mozambique	90	uganda	90	no		benin	90	Yes	
6	mali	90	guineabissau	90	mozambique	90	10 yrs early		mozambique	90	Yes	
7	ghana	90	cotedivoire	90	angola	90	no		rwanda	90	no	
8	seychelles	90	niger	90	congo-demrep	80	no		mali	90	Yes	
9	mozambique	90	zambia	90	ghana	90	Yes		zambia	90	Yes	
10	ethiopia	90	ethiopia	90	benin	90	Yes		uganda	90	no	

Bottom 10 Performers by different metrics, where 1 is the worst:

WORST	Freedom house		Polity2		Biggest increase in recipient-specific aid:		On one of other lists?		Biggest % increase (of GDP) in recipient-specific aid		On one of other lists?	
	Country:	Dec:	Country:	Dec:	Country:	Dec:	Country:	Dec:	Country:	Dec:	Country:	Dec:
1	gambia	90	gambia	90	kenya	90	10 yrs late		somalia	80	no	
2	ghana	80	nigeria	80	congo-demrep	90	no		gambia	90	Yes	
3	nigeria	80	zimbabwe	80	sudan	90	10 yrs late		saotomeprincipe	90	no	
4	sudan	80	uganda	80	tanzania	80	no		capeverde	80	no	
5	zimbabwe	80	chad	80	somalia	80	no		mauritania	80	no	
6	uganda	80	ghana	80	sudan	80	Yes		liberia	80	Yes	
7	kenya	80	comoros	90	nigeria	90	10 yrs late		burundi	90	10 yrs late	
8	liberia	80	ethiopia	80	liberia	80	Yes		comoros	80	10 yrs early	
9	lesotho	80	kenya	80	mauritania	80	no		centralafricanrep	80	no	
10	sierraleone	80	burundi	80	burundi	90	10 yrs late		lesotho	80	Yes	

Table 2

Correlations, ten-year changes in all variables.

	Donor-driven	Recipient-specific	Freedom House	Polity 2	Political Liberties
Donor-driven	1				
Recipient-specific	-0.1504	1			
Freedom House	-0.288	0.2292	1		
Polity 2	-0.4019	0.1194	0.8447	1	
Political Liberties	-0.4769	0.1158	0.7357	0.7214	1

Table 3

Basic Results, ten-year intervals across '80s and across '90s.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
LEVEL of Political Measure	Polity 2			Freedom House (inverted)			Political Liberties		
Country Fixed Effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Donor-driven Aid Change	-0.014 (4.73)**	-0.015 (3.42)**	-0.007 (1.24)	-0.005 (3.44)**	-0.005 (2.43)*	0.000 (0.06)	-0.005 (6.21)**	-0.005 (4.04)**	0.000 (0.33)
Recipient-specific Aid Change	0.003 (0.72)	0.004 (0.64)	0.005 (0.87)	0.004 (2.13)*	0.005 (1.60)	0.005 (2.13)*	0.001 (0.53)	0.001 (0.65)	0.002 (1.11)
Dummy for '90s			3.091 (1.93)			2.071 (2.11)*			1.795 (4.85)**
Observations	87	87	87	93	93	93	94	94	94
R-squared	0.17	0.75	0.79	0.11	0.69	0.76	0.22	0.67	0.84

CHANGE in Political Measure:	Polity 2			Freedom House (inverted)			Political Liberties		
Country Fixed Effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Donor-driven Aid Change	-0.018 (7.87)**	-0.019 (6.09)**	-0.010 (1.18)	-0.003 (2.15)*	-0.004 (1.84)	0.002 (0.73)	-0.001 (0.61)	-0.001 (0.53)	0.001 (0.30)
Recipient-specific Aid Change	-0.002 (0.54)	-0.004 (0.44)	-0.003 (0.42)	0.003 (1.55)	0.002 (0.36)	0.002 (0.62)	0.001 (0.93)	-0.001 (0.33)	-0.001 (0.26)
Dummy for '90s			3.605 (1.11)			2.314 (1.90)			0.606 (0.83)
Observations	84	84	84	91	91	91	94	94	94
R-squared	0.24	0.57	0.62	0.07	0.52	0.6	0.01	0.36	0.39

Robust t statistics in parentheses, SEs clustered at recipient level

* significant at 5%; ** significant at 1%

Table 4**Expanded Controls, five-year intervals across '80s and across '90s.**

	Political Measure:					
	(1)	(2)	(3)	(4)	(5)	(6)
	Polity 2			Freedom House (inverted)		
Country Fixed Effects	No	Yes	Yes	No	Yes	Yes
Donor-driven Aid Change	-0.0167 (4.37)**	-0.0142 (2.64)*	-0.0027 (0.44)	-0.0049 (2.92)**	-0.0044 (2.11)*	0.0006 (0.22)
Recipient-specific Aid Change	0 0.00	0.0008 (0.34)	0.0006 (0.27)	0.0025 (2.22)*	0.0025 (2.08)*	0.0024 (2.42)*
Population	0 (1.78)	0.0002 (3.10)**	0.0002 (2.26)*	0 (0.36)	0.0001 (2.63)*	0.0001 (3.09)**
Per capita GDP, PPP	0.0011 (3.46)**	-0.0003 (0.86)	-0.0008 (1.58)	0.0005 (2.36)*	0.0002 (0.81)	0 (0.20)
% Urban	-0.014 (0.29)	0.207 (1.59)	-0.0659 (0.47)	0.0135 (0.59)	0.0767 (1.44)	-0.0603 (0.86)
Taxes as % of GDP	0.0832 (0.97)	-0.1129 (1.12)	-0.1206 (1.21)	0.0616 (1.54)	-0.0376 (0.71)	-0.0406 (0.87)
Military expenditures as % GDP	-0.3044 (2.38)*	-0.6014 (1.28)	-0.8185 (1.93)	-0.311 (4.64)**	-0.469 (2.91)**	-0.5733 (3.51)**
Dummy, 1986-1990			-0.4437 (0.35)			0.0369 (0.07)
Dummy, 1991-1995			3.7186 (2.35)*			1.9427 (3.33)**
Dummy, 1996-2000			4.972 (2.43)*			2.5 (2.80)**
Observations	140	140	140	142	142	142
R-squared	0.31	0.73	0.77	0.37	0.78	0.82

Robust t statistics in parentheses, SEs clustered at recipient level

* significant at 5%; ** significant at 1%

Table 5**Basic Results, annual data:**

Governance Measure:	Polity 2			Freedom House (inverted)			Political Liberties		
Donor-driven Aid Change	-0.0335 (4.38)**	-0.0143 (2.33)*	-0.0038 (0.60)	-0.0115 (3.77)**	-0.0032 (1.33)	0.0021 (0.59)	-0.0126 (5.64)**	-0.0013 (0.92)	0.0009 (0.51)
Recipient-specific Aid Change	0.0028 (1.37)	0.0023 (1.19)	0.002 (1.06)	0.0012 (1.32)	0.001 (1.17)	0.0008 (0.97)	0.0009 (1.23)	0.0006 (1.15)	0.0006 (1.10)
Time period		-45.2511 (1.66)			-16.41 (1.43)			23.9387 (1.56)	
Time period squared		0.0115 (1.67)			0.0042 (1.45)			-0.006 (1.54)	
Observations	842	842	842	905	905	905	638	638	638
R-squared	0.49	0.6	0.63	0.54	0.62	0.64	0.43	0.67	0.7

All regressions use country-level fixed effects.

Robust t statistics in parentheses, SEs clustered at recipient level

* significant at 5%; ** significant at 1%

Table 6**R-squared in regression of aid on Fixed Effects:**

Fixed Effects:	Type of Aid	
	Donor-Driven	Recipient-Specific
Period	0.445 (.000)***	0.002 (0.997)
Country	0.0086 (1.000)	0.1725 (0.959)

(5-year periods)

FIGURES:

Figure 1.

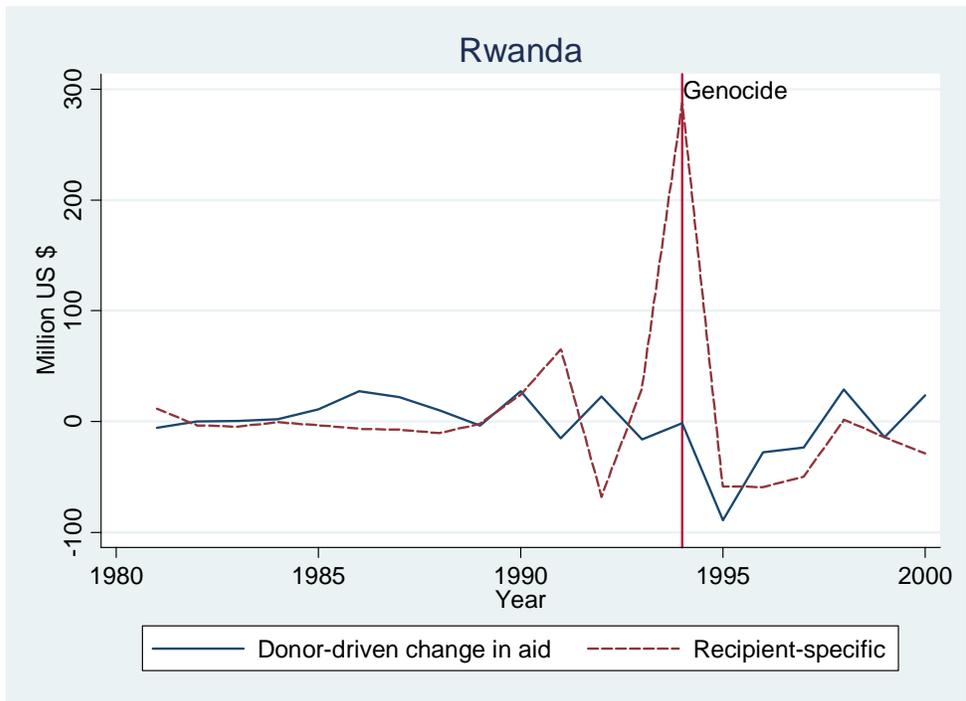


Figure 2.

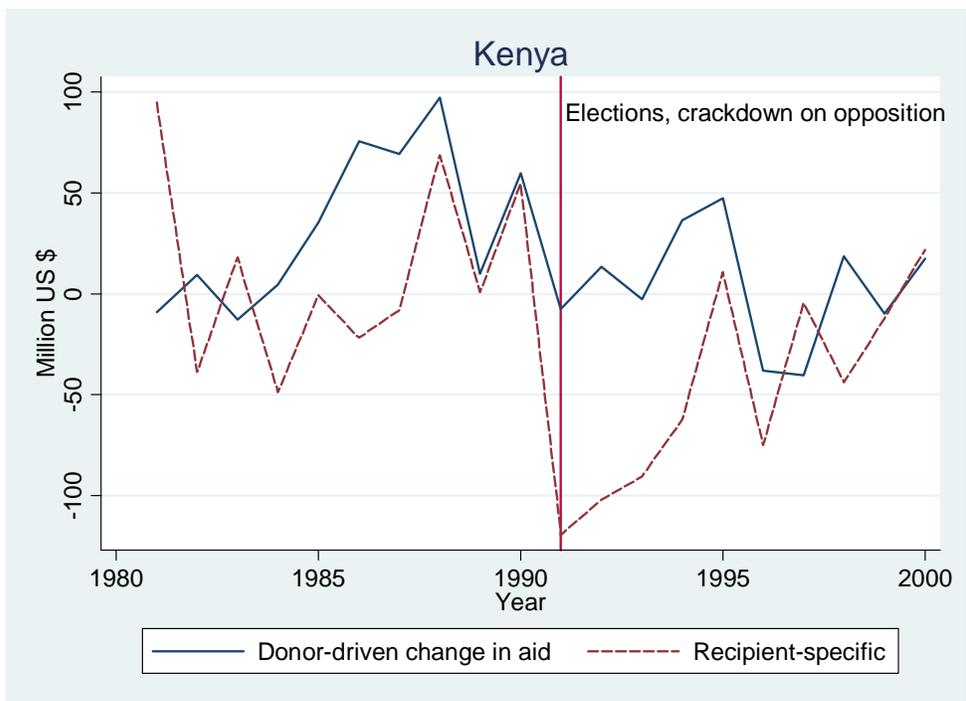


Figure 3.

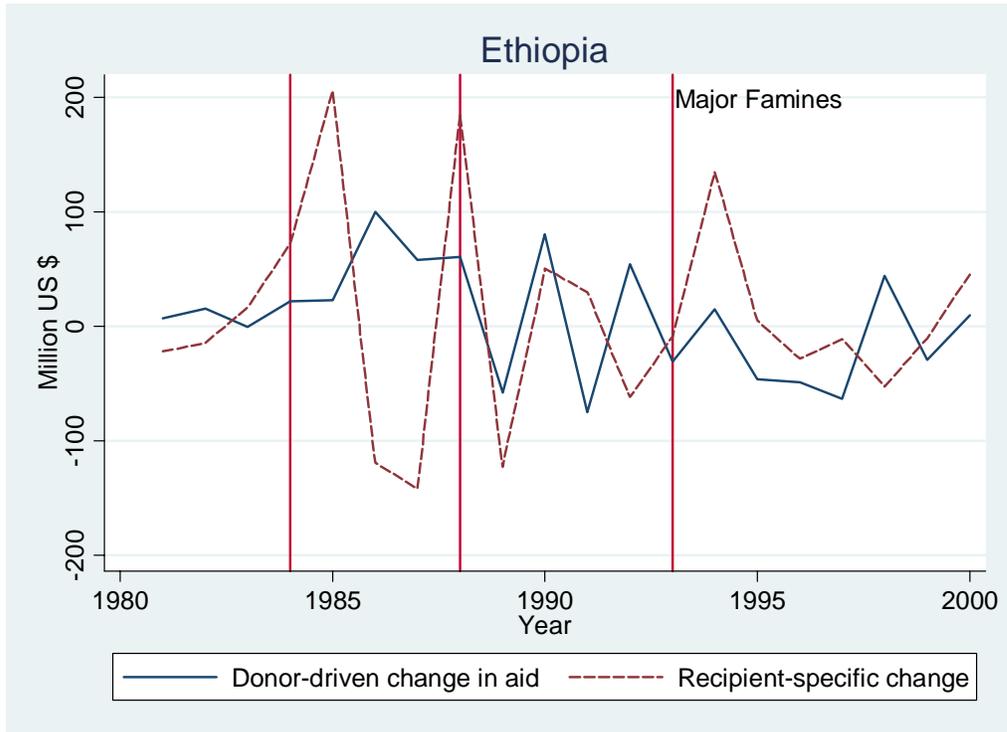


Figure 4.

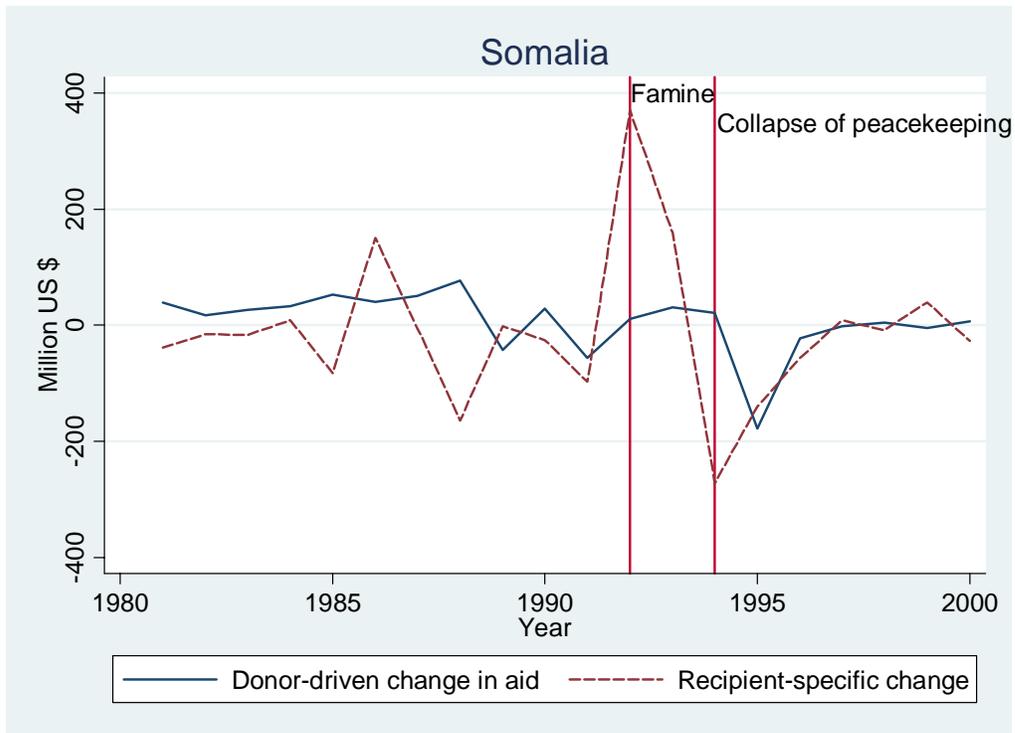
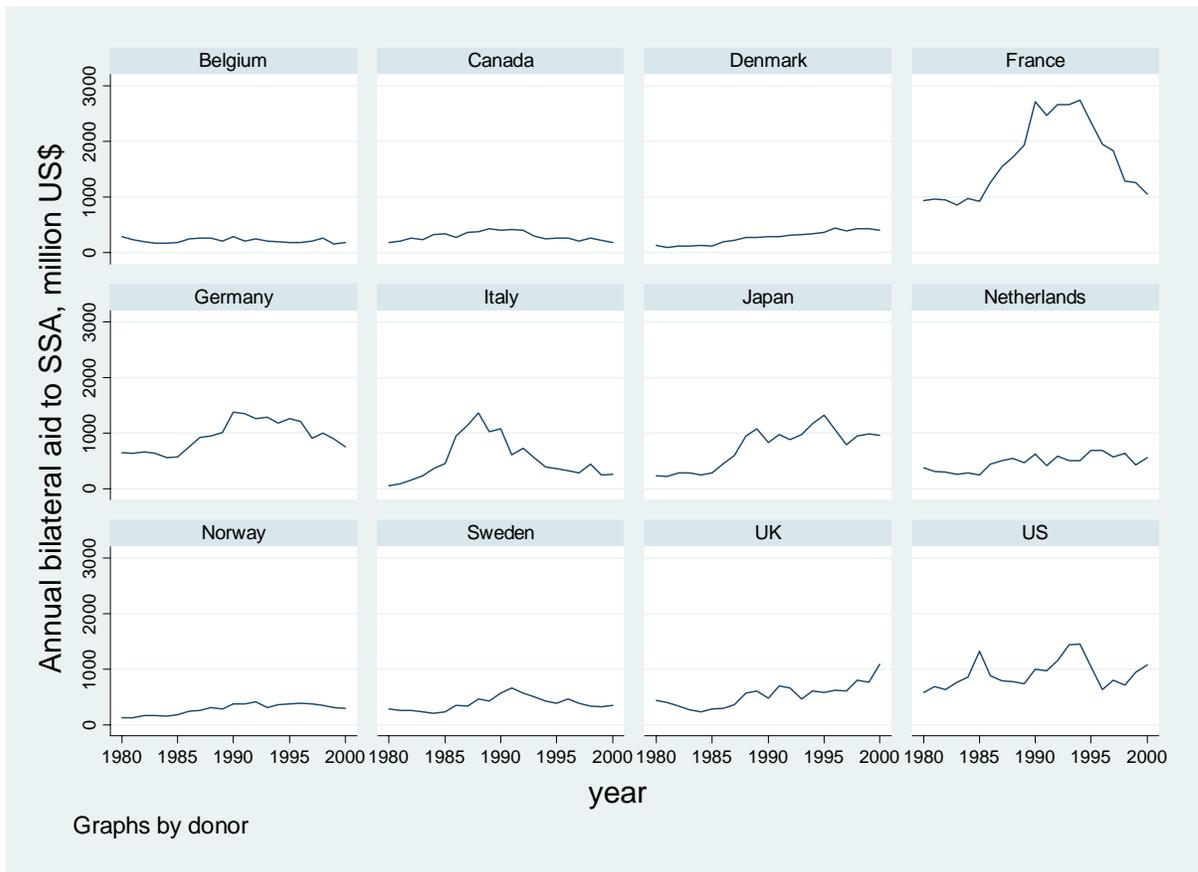


Figure 7. Annual Bilateral Aid to Sub-Saharan Africa from the Top 12 Donors.



Appendix: Aid in a bipolar world.

We can write a more flexible model of the role that aid plays in recipient domestic politics by taking a simplified Dixit & Londregan model, and thinking of aid as relaxing the pork budget constraint of the incumbent politician facing re-election. A share γ_j of the aid budget can be used to influence local elections; this share will be highest if politicians are able either to divert aid budgets to their own uses, or to claim credit for public works paid for by aid as particularistic benefits of political support.

To begin with, take aid as exogenous to the recipient. With only a single donor country, the incumbent politician in the recipient country will use transfers to the electorate to maximize his own chance of re-election. The CDF of the re-election probability is given by $\Phi_{it}(U_{it}(X_{it}, t_{it}))$, where $U_{it}(X_{it}, t_{it})$ gives voter utility as a function of political policy X_{it} and pork t_{it} . The optimal transfer thus maximizes

$$(1) \quad L = \Phi_{it}(U_{it}(X_{it}, t_{it})) + \lambda_{it}(\gamma_i \sum_j A_{ijt} - t_{it})$$

which has the first-order condition

(2) $\phi_{it} \gamma_i U'_{it} = \lambda_{it}(A_{it})$, meaning that aid money is used to pull the electoral outcome away from the ‘true’ median voter, and therefore represents a distortion to the outcome of democratic elections.⁵ Equilibrium is where (2) is satisfied and the recipient politician’s budget constraint binds.

Let X_i^{med} denote the preferences of the median national voter in the absence of transfers, or the policy position for which $\Phi_{it}(U_i(0)) = .5$. Letting X_i^{dec} represent the preferences of the ‘decider’ of the actual outcome with aid, we can linearize (2) by writing $X_i^{dec} = X_i^{med} - U'_i \phi_i \gamma_i \sum_j A_{ijt}$, so the receipt of aid generates $X_i^{dec} \neq X_i^{med}$, with the difference between the two monotonically increasing in the quantity of aid received. We can naturally think of the distortion in domestic politics by the difference between these two policy platforms; $|X_i^{dec} - X_i^{med}|$

⁵ If we include sub-national electoral units as in Dixit & Londregan, the first-order condition specifies an equal slope of the transfer for voting function in all units, so it is innocuous to abstract away from sub-national preferences as long as electoral systems are strictly majoritarian.

If all donors are at the same pole of the policy continuum and all domestic politicians lie on the *opposite side* of the median voter from the donors, this world is equivalent to the simpler model derived at the beginning of the paper. If there are donors at each pole, however, or if recipient incumbents lie to the same side of the median voter as the donors, then we get different results.

A competitive election features a politician on each side of X_i^{med} . If donors can only funnel aid to incumbent politicians, then they will realize that by giving resources to politicians whose preferences are to their own liking, they will be tilt democratic elections towards their own (the donors') policy objectives. This creates a natural alignment between domestic & international governments with the same social aims. Because aid inherently confers an incumbency advantage, if we begin with some initial distribution of X_i^{med} across countries then the use of aid will lock in place these initial advantages, and aid creates a world in which incumbents of either stripe are advantaged. Aid therefore has the fundamental effect of decreasing the probability of party change. While aid will always increase political distortion in this world, it will not necessarily decrease the quality of governance.

If, on the other hand, we assume that aid money from competing bipolar donors can be funneled into *both sides* of an electoral campaign (rather than just to the incumbent), a very different relationship emerges. Each national race now becomes a battleground on which aid from the two poles competes. Because the flow of funds from donors at opposite poles is working in opposite directions on the domestic political spectrum, simultaneous bipolar aid cancels itself out. We may therefore see huge quantities of aid being fed into a country with no resulting political distortions if the donors at the two poles are evenly matched.

This more flexible model allows us to consider these three additional cases, which can be summarized as follows:

1. If all donors and all recipient governments have preferences for 'better' government than the median voter, aid will have a direct causal effect of improving governance.
2. If there are donors at both poles who can only support incumbent governments, then aid will lock in an incumbency advantage, it will distort government away from the preferences of the median voter, but the direction of the distortion is indeterminate.

3. If there are donors at both poles who can support both incumbents and challengers, aid may result in no distortions to policy outcomes at all; the distortion will be increasing in the size of the *mismatch* between the total giving from each pole.

This theoretical ambiguity of the causal effect of aid on governance motivates the necessity of a well identified empirical test. The use of donor-driven aid suggests that the causal effect is either negative or insignificant, which is consistent with unipolar donors preferring better governance, and incumbents preferring worse governance, than the median voter.