Courant Research Centre

'Poverty, Equity and Growth in Developing and Transition Countries: Statistical Methods and Empirical Analysis'

Georg-August-Universität Göttingen (founded in 1737)



Discussion Papers

No. 86

Does terror increase aid?

Axel Dreher, Andreas Fuchs

August 2011

Wilhelm-Weber-Str. 2 · 37073 Goettingen · Germany Phone: +49-(0)551-3914066 · Fax: +49-(0)551-3914059

Email: crc-peg@uni-goettingen.de Web: http://www.uni-goettingen.de/crc-peg

Does terror increase aid?

Axel Dreher^a

Andreas Fuchs^b

August 2011

Abstract This article empirically investigates whether, and in which ways, donors in the Development Assistance Committee respond to transnational terrorist incidents and the onset of the War on Terror through changes in aid effort and aid allocation. First, an analysis of 22 donor countries shows that aid effort increased during the War on Terror period, but did not respond to the actual number of terror events. Second, using aid allocation equations, we find that countries where terror originates are not more likely to receive aid as a consequence, but if they are selected, they receive larger amounts of aid.

JEL classification F35

Key words Foreign aid; Transnational terrorism; War on Terror and aid; DAC donors; Heckman selection model

Acknowledgments: We thank participants at the 2011 Workshop on Terrorism and Policy, University of Texas at Dallas, and in particular Todd Sandler and an anonymous referee for helpful comments on an earlier draft. Excellent research assistance was provided by Christin Dietrich, Scott Jobson, Jan Paulick and Timo Plaga. Each author blames the other for any remaining mistakes.

^a Heidelberg University, Alfred-Weber-Institute for Economics, Bergheimer Strasse 58, 69115 Heidelberg, Germany, University of Goettingen, Germany, CESifo, Germany, IZA, Germany, and KOF Swiss Economic Institute, Switzerland, e-mail: mail[at]axel-dreher.de.

^b Georg-August University Goettingen, Platz der Goettinger Sieben 3, 37073 Goettingen, Germany, Heidelberg University, Germany, e-mail: afuchs[at]uni-goettingen.de.

1 Introduction

In their fight against international terrorism, governments and international organizations rely on strategies that are intended to alter the motivations of terrorists and their supporters. Among these carrots and sticks, it has been claimed that development aid has become an increasingly popular weapon in the fight against terrorism, especially in the aftermath of the September 11, 2001 (hereafter, 9/11) attacks. Former president George W. Bush explained that the United States would "fight against poverty because hope is an answer to terror" (cited in Krueger and Maleckova 2003: 119). According to the OECD (2003: 11), donor countries "can reduce support for terrorism by working towards preventing the conditions that give rise to violent conflict in general and that convince disaffected groups to embrace terrorism in particular." The European Union and the United States announced that they "will target [their] external relations actions towards priority Third Countries where counter-terrorist capacity or commitment to combating terrorism needs to be enhanced" and "will mainstream counterterrorist objectives into the work of external assistance programmes" (Council of the European Union 2004: 7). According to Woods (2005), the shift in resources towards fighting poverty is also noticeable in the United Kingdom. As Woods points out, "[t]he strain on the DFID's [Department for International Development] resources and mandate to reduce poverty posed by the war on terror and the war in Iraq is already noticeable" (p. 404).

There is some evidence that aid is effective in fighting terrorism. While Campos and Gassebner (2009) do not find a robust effect of aid on terror, Azam and Delacroix (2006), and Azam and Thelen (2008, 2010, 2011) find that foreign aid does indeed reduce terror once the militancy of recipient countries is adequately controlled for. Bapat (2011) shows that military aid might not be effective in crushing terrorist organizations in the host country, but can prevent host governments from entering into negotiations with them.¹

Overall, it seems that aid – if properly designed – might be a useful carrot in the fight against terror. This puts a new emphasis on the aid effectiveness debate. Aid has been shown to be quite ineffective in raising living standards in the recipient country (e.g., Doucouliagos and Paldam 2008). It is often argued that the motivation of the donor country for giving aid has an impact on its effectiveness (Kilby and Dreher 2010). Some donors might be more effective in promoting growth than others because, for example, their aid is not given for strategic or commercial reasons.

_

¹ Preliminary empirical evidence in Sharma et al. (2009) however shows that terrorists increase the prevalence of their attacks as a consequence of aid flows.

With the end of the Cold War, many observers expected that the effectiveness of aid would increase. However, it seems the period when developmental considerations could have dominated the allocation of aid was short. To the extent that aid is now given to fight terror, the effectiveness of aid would have to be judged with respect to whether this goal is achieved, rather than asking whether or not aid increases economic growth. However, no systematic evidence exists as to whether, and to what extent, donor countries have actually shifted the focus of their aid to fight terror rather than poverty. The exception is Fleck and Kilby (2010). However, Fleck and Kilby focus on the United States exclusively and capture the War on Terror by using a dummy only, rather than measuring the degree of terror.

We extend Fleck and Kilby's analysis in several ways. Most importantly, we cover all donor countries in the Development Assistance Committee (DAC) rather than limiting the analysis to the United States. A second important difference with respect to Fleck and Kilby is that we take into account the degree of terrorism to which a particular donor is exposed in a specific year. Rather than investigating general trends in aid over time, we can thus analyze whether donors hit harder by terror at a particular point in time react to this by increasing (or decreasing) their aid.

We start with an investigation of 22 DAC donors' aggregate aid effort, i.e., the aid budget as a share of gross national income (GNI). As a next step, using a three-dimensional panel of our 22 donors and 140 recipient countries, we estimate bilateral aid flows to test whether donors adjust their aid to countries from which terror originates. On the one hand, donors might increase their aid flows to the country of the perpetrators if they see development aid as a useful tool for terror prevention. On the other hand, aid flows might be cut as a form of punishment if donors want to signal their dissatisfaction with the domestic anti-terror policies of the recipient country. Which of these two effects prevails might depend on the political regime of the recipient country, as well as on whether the recipient is perceived to be an ally or an enemy, or a state sponsor of terror. Finally, we investigate different donors and types of aid separately.

To foreshadow our results, we find that aid effort increased in the War on Terror period controlling for other determinants, on average. However, aid budgets as a share of GNI do not respond to the number of terrorist incidents. While countries where terror against a particular donor originates are not more likely to receive aid as a consequence, if they are

² The two might go together. However, Abadie (2006), among others, finds that there is no causality from poverty on terror, when controlling for other country characteristics.

selected, they receive larger amounts of aid. Terror against DAC countries as a group, however, reduces the probability of receiving aid, on average. Introducing models where we interact the number of terrorist incidents against DAC countries with other explanatory variables of interest, we find that this holds in particular for autocratic countries, for countries voting against the donor in the United Nations General Assembly and for state sponsors of terrorism, but not for the War on Terror period. Analyzing donors individually, we find that France and the United States increased their aid effort after 9/11. However, neither donor's aid effort was a function of the frequency of attack. In the allocation equation, we find that the United States increased aid to source countries of terror as a consequence of terrorist attacks, while France, Italy and Sweden reduce their aid to these countries. Disaggregating aid, we do not find that the share of aid tied to education or governance increases as a reaction to terrorism.

We proceed as follows. In Section 2, we briefly summarize the previous literature on aid and terror. Section 3 investigates the impact of terror on aid effort, while Section 4 provides a disaggregated analysis of the effect of terror on aid allocation. We present extensions of the basic analyses in Section 5. The final section concludes the paper.

2 Aid and terror

The literature on aid and terror is growing. However, with the exception of two papers (Moss et al. 2005; Fleck and Kilby 2010), the previous literature investigates the effect of aid on terror rather than that of terror on aid. According to the theory of Azam and Delacroix (2006), terrorist groups determine their activities in a country based on militancy and the recipient governments' effort against terror. Their model predicts a co-movement of terrorist attacks and aid, which is confirmed through a simple regression analysis. However, this positive correlation between terror and aid might only reflect that more aid is being allocated to countries where more violent terror comes from, rather than implying that more aid leads to more terrorist activity. Indeed, once Azam and Delacroix introduce dummies for certain groups of countries where militancy is arguably more prevalent than in others, the effect of aid on terror becomes negative. While therefore providing indirect evidence that aid might react to terror, a direct test is lacking.

In exchange for aid, recipient governments are sometimes asked to implement counterterrorism measures against domestic terrorist groups. In this context, Azam and Thelen (2008, 2010, 2011) stress the importance of aid for education as opposed to general budget support. Subsidizing education improves the recipient's human capital, which can either increase or reduce the degree of terrorism. While the theory is thus ambiguous, the empirical results in Azam and Thelen show that education reduces terror. Any type of aid can reduce terror because the recipient has to pursue counter-terrorism measures in exchange, yet aid for education has additional positive side effects and is therefore said to be particularly effective.³ The importance of aid for education is confirmed in Young and Findley (in press). According to their results, aid given to improve health, strengthen civil society and fight terror is also effective in reducing the number of terrorist attacks.

Bandyopadhyay et al.'s (2011) model stresses the relevance of distinguishing aid tied to fight terror from general assistance. In their model, aid can be tied to counter-terrorism measures of the recipient country. While such tied aid increases the recipient government's efforts in fighting resident terrorist groups, it also increases instability. This is because aid tied to fighting terrorism will meet resistance from some groups in the recipient country – e.g., Pakistan, Yemen, and Iraq. On the contrary, untied general aid is perceived as less intrusive as it does not directly involve the recipient government in the fight against terror, thus not posing a threat to the government's stability. To the extent that it helps in keeping US-friendly governments in power, it can be an effective (indirect) means of counter-terrorism. Donors face a trade-off between counter-terrorism aid and general budget support.

The two papers most similar to ours are Moss et al. (2005) and Fleck and Kilby (2010). Fleck and Kilby investigate whether US aid became less focused on poverty as a consequence of the United States' fight against terror. Rather than looking at the degree of terror directed at the United States, they investigate the poverty orientation of US aid in three periods, those being the Cold War, the War on Terror, and the period in between. During the War on Terror period, while the United States placed less emphasis on poverty when selecting countries for aid, once accounting for selection, per-capita GDP became more important for the allocation of aid. Overall, poor and less poor countries alike receive more aid in the War on Terror period in comparison to the interwar period. However, when analyzing year-to-year changes for core-recipients of aid, it became evident that the United States' responsiveness to need shows a decreasing trend since the onset of the War on Terror.

_

³ This assumes that aid for education can improve educational outcomes, implying that aid is not fully fungible. As Azam and Thelen (2008) explain, this might be due to differentiated inputs like highly qualified teachers. Dreher et al. (2008) provide empirical support for the effectiveness of aid for education. The positive effect of education on reducing terror stands in contrast to microeconomic evidence, for example reported in Krueger and Maleckova (2003). Azam and Thelen (2008) summarize the literature reconciling the macroeconomic with the microeconomic evidence.

Moss et al. (2005) also focus on the effect of the War on Terror on the allocation of United States Agency for International Development (USAID) funds, comparing the allocation of US aid across recipient countries over the 1998-2001 versus 2002-05 periods. Relying on the presence of foreign terrorist groups in a country, sharing a border with a state sponsor of terrorism, troop contribution in Iraq, and the relative share of Muslim population, Moss et al. find no systematic shift in US aid policies. However, their cross-section exclusively focuses on the United States. They do not look at the overall aid budget or its composition; neither do they control for the effect of terrorist attacks.

Overall, while the previous literature has not come to a consensus as to whether or not aid reduces terror, it predicts that aid increases as a consequence of terror. With respect to the United States, this prediction has been tested. Using different empirical strategies, Moss et al. (2005) find virtually no evidence of an increase of US aid in response to the onset of the War on Terror, while Fleck and Kilby (2010) do find the expected change in allocation behavior when analyzing year-to-year changes. Arguably, the reorientation of development policies after 9/11 is not restricted to the United States, but also affects most (if not all) donors in the DAC. For example, shortly after 9/11, the fight against terrorism became one of Germany's official objectives for development assistance. In October 2001, Federal Chancellor Gerhard Schröder declared that the "fight against hunger tops our list of the fight against terror" (own translation, taz 2001: 12). At the same time, Liz O'Donnell, Ireland's Minister of State at the Department of Foreign Affairs, attributed a "vital role" to play for "[d]evelopment coordination and the building of strong democracies [...] in the longer term in the fight against conflict and terrorism" (DFA 2001). In 2003, Australia's aid agency also incorporated the fight against terror into its objectives (AusAID 2003).

While these policy statements thus suggest that countries hosting terrorist groups should receive increased aid flows to assist them in the fight against terror, not all countries that host terrorism can equally expect increased aid inflows. Consider the terrorist attacks on Pan Am flight 103 and UTA flight 772 in 1988/89, which were attributed to state-sponsored terrorists from Libya. Rather than granting development aid to al-Gaddafi's regime, the United States imposed sanctions against the country. We think that this example can be generalized. If terrorist groups are supported by the government of their host country, or the attacks even originate within the government itself, we would expect aid to decrease, while

_

⁴ This is when some outlying countries are taken account of.

aid will arguably increase to those governments that are considered to be allies in the fight against terror. In the empirical analysis below, we will test for these differences.

Finally, we do not expect all types of aid to react to terror equally. As outlined above, Azam and Thelen (2008, 2010, 2011) and Young and Findley (in press) stress the importance of aid for education as opposed to general budget support. Bandyopadhyay et al. (2011) highlight the relevance of aid tied to the fight against terror. If donors anticipate the effectiveness of aid for education, we would expect this type of aid to react to terror in particular. If aid can effectively be tied to fight terror, we expect particularly visible effects with respect to this category of aid. We test these predictions below.

3 Aid effort and terror over time

3.1 Descriptive evidence

Our analysis covers the 22 DAC members in the 1971-2008 period. We use data on Official Development Assistance (ODA) as provided by the OECD. All values are transformed into constant 2000 US\$. In order to control for the size of the economy, we follow the previous literature and express aid budgets as a percentage of GNI ("aid effort"). Since aid disbursements also reflect ongoing aid projects partly determined over long periods of time, we make use of aid commitments instead.

[Figure 1 near here]

Figure 1 shows the decrease in DAC aid committed during the interwar period and the surge in aid since 9/11. The picture is in line with what we would expect. During the time of the Cold War, plenty of evidence reports that aid was used for strategic reasons. With the fall of the Iron Curtain, the need for such strategic aid became less prevalent. However, rather than sticking with the same level of aid and directing part of the money to where it could have been more effective in terms of other objectives, aid levels declined. Directly after 9/11, the trend reversed and aid levels increased markedly. Note that this is not driven by the United States, as is evident in the lower panel of the figure.

Turning to our measure of terrorist activity, we rely on "International Terrorism: Attributes of Terrorist Events" (ITERATE), collected by Mickolus et al. (2009). ITERATE

_

⁵ Korea joined the DAC in 2010 and is therefore excluded from the analysis.

provides data on global terrorist acts, including information on the type of attack, casualties and fatalities, and information about perpetrators and victims. The data are available over the 1968-2008 period. The definition of transnational terrorism applied in ITERATE follows Mickolus (1980: xiii), who defines transnational terrorism as "the use or threat of use, of anxiety, inducing extranormal violence for political purposes by any individual or group, whether acting for or in opposition to established government authority, when such action is intended to influence the attitudes and behavior of a target group wider than the immediate victims and when, through the nationality or foreign ties of its perpetrators, its location, the nature of its institutional or human victims, or the mechanics of its resolution, its ramifications transcend national boundaries."

The variable we extract from this database measures the number of transnational terror incidents originating from nationals of a particular recipient country, which are carried out on nationals of the donor country. We do not include domestic terrorism as we assume donors to be particularly interested in attacks potentially directed at them. While even al-Qaida engages in domestic attacks (Blomberg et al. in press), much of domestic terrorism is of little interest to the international community. In our sample, 86 of 140 recipient countries were source of a terrorist attack and, with the exception of Luxembourg, all DAC donors were hit by transnational terror. Interestingly, incidents of terror are decreasing over time, rather than increasing. In particular, the War on Terror period saw a relatively low number of terrorist attacks. Therefore, it seems to be the perceived threat from terrorist attacks that characterizes the War on Terror period, rather than the sheer number of terrorist incidents.

3.2 Method of estimation and main results

We start by pooling all donors. Our regressions are time-series cross-section analyses (panel data) covering the 1971-2008 period. We use robust standard errors clustered at the country level. Since some of the data are not available for all countries or years, the panel data are unbalanced and the number of observations depends on the choice of explanatory variables. Following the previous literature, we include the lag of the dependent variable (e.g., Bertoli et

⁶ We include attacks against a particular donor in its own country, against its people or facilities in the country of origin of the terrorist, or against its people or facilities in any third country. A potential shortcoming of our terror measure is that it does not capture the intensity of the terrorist incident. While not a priori superior to the number of fatalities for instance, terrorist incidents are commonly accepted as measure of terror in the literature (e.g., Gassebner et al. 2008, 2012). We thus assume that an attack can have important consequences even if no one is hurt or killed and leave a differential analysis of alternative measures of terrorism for future research.

⁷ Examples are the Irish Republican Army (IRA), the Basque Euskadi Ta Askatasuna (ETA) and the German Rote Armee Fraktion (RAF). In aid-receiving countries, Shining Path (Peru), National Democratic Front for the Liberation of Bodoland and the National Liberation Front of Tripura (India) come to mind.

al. 2008). Focusing on aggregate aid budgets as a share of GNI, the basic equation takes the following form:

$$y_{i,t} = \alpha + \beta_1 y_{i,t-1} + \beta_2 Cold War_t + \beta_3 War on Terror_t + \beta_4 X_{i,t-1} + \eta_i + \varepsilon_{i,t}, \tag{1}$$

where $y_{i,t}$ represents aid effort, i.e., total aid commitments as a share of GNI of donor country i in year t, and $Cold\ War_t$ and $War\ on\ Terror_t$ are dummies for the periods 1971-1990 and 2002-2008, respectively. $X_{i,t-1}$ is the vector of (lagged) control variables, η_i represents country fixed effects, while $\varepsilon_{i,t}$ represents the error term. We include additional variables related to the degree of terror in further regressions.

In choosing our control variables, we follow the literature on aid effort. The vector *X* includes the donors' general government debt (as a percentage of GDP), assuming countries with higher debt to be less generous. We expect countries to be more generous when they are richer, measured by (log) per-capita GDP. Adding (log) population as a further control variable, we expect aid efforts to decrease with population size since small countries might be more generous than larger countries as they need to surmount a minimum threshold from which giving aid is meaningful (Round and Odedokun 2004). Finally, we account for a donor country's government size. Since broad categorizations of welfare state attributes are generally stable over time, measures of government size may better reflect donor countries' stance towards redistribution. Table A1 in the Appendix shows the exact definitions of all variables with their sources, while Table A2 reports descriptive statistics.

Columns 1-4 of Table 1 show our results with the fixed effects model of equation (1). We find that a country's aid effort increases with per-capita GDP, at least at the ten percent level. The lagged dependent variable is highly significant. The coefficients on debt, population, and government size all exhibit the expected signs but they are not significant at conventional levels. Turning to our variables of interest, in column 1, both period dummies are significant. With respect to the interwar period, and ignoring longer-term effects via the lagged dependent variable, aid effort has been 0.065 percentage points higher during the Cold War period, at the one percent level of significance. At the ten percent level, the results also

⁸ Aid budgets evolve slowly over time because of the path dependence of decisions in the budgetary process.

⁹ For example, Bertoli et al. (2008) find a positive effect of government revenue (as a share of GDP) on aid effort as a larger government size gives "more room for aid granting" and mirrors the donor country's propensity to redistribute

¹⁰ This is with the exception of column 4, where the effect of population is significant at the ten percent level. Note that when we omit the lagged dependent variable, the coefficients of all control variables gain statistical significance, with their expected signs. The coefficients on the War on Terror dummy increase slightly, while their significance decreases somewhat.

show that aid effort significantly increased in the War on Terror period, on average. Compared to the Cold War, the increase is smaller; at 0.023 percentage points in the short-run (i.e., again ignoring the lagged dependent variable), it is not negligible but far from dramatic. In fact, the difference in the coefficients for the Cold War and War on Terror periods is not statistically significant at conventional levels.

In column 2, we control for the number of terror events which occurred over the last four years worldwide. ¹¹ While the dummy for the War on Terror stays significant, the number of terror incidents has no significant effect on aid effort at conventional levels. Taking the result at face value, while there has been a general increase in aid budgets as a share of GNI since 2001, aid effort did not rise in the aftermath of a high prevalence of terror. It thus seems that the aid regime shifted due to the increased risk of terror perceived after 9/11, while aid has not been systematically used to fight terror over the whole sample period.

Donor countries might be particularly concerned about terrorist attacks against allied nations or against the 'Western world' in general. Therefore, column 3 replaces the number of worldwide incidents with the number of incidents against citizens of DAC countries. Yet again, the coefficient is not significant at conventional levels. The same holds when we include terrorist attacks on the individual donor countries rather than total attacks against the country group (column 4). ¹²

Arguably, terror might be endogenous to aid. If aid does actually reduce terror, as shown by Azam and Thelen (2008, 2010, 2011), our estimates are likely to reflect a lower bound. As an attempt to address this issue, we proceed with the System GMM estimator, developed in Arellano and Bover (1995) and Blundell and Bond (1998). As we admittedly lack good external instruments for terror, we rely on internal instrumental variables. The results are based on the two-step estimator implemented by Roodman (2009) in Stata, including Windmeijer's (2005) finite sample correction. We treat the lagged dependent variable and terror incidents (as well as the interactions with attacks on a particular donor) as endogenous, and debt, GDP per capita, population and government size as exogenous instruments. In a comparably long panel like ours, the number of instruments is excessive if all possible lags are employed. In order to minimize the number of instruments in the

_

¹¹ We chose four years as this period corresponds to the typical planning horizon of the government budget.

¹² Although we do not find that aid effort responds to the number of terrorist incidents, it may be the case that governments started responding to the intensity of terror during the War on Terror period. However, when adding interaction terms between the period dummies and the number of terrorist attacks on a particular donor country, the interaction effects are not significant at conventional levels. This implies that the average donor did not adjust its aid effort during the War on Terror period as a response to terrorism against its citizens.

regressions, we restrict the matrix of instruments, using only lags t-2 to t-4, and collapse the matrix of instruments. Given that terrorist incidents are averaged over four years, we use lags t-5 to t-7 here. The Hansen test on the validity of the instruments used (amounting to a test for the exogeneity of the covariates), and the Arellano-Bond test of second-order autocorrelation (which must be absent from the data in order for the estimator to be consistent), do not reject the specifications at conventional levels and thus support our choice of the variables to be modeled as exogenous.

The results are shown in columns 5-8 of Table 1. Qualitatively, they are similar to those reported above. Aid effort is higher in the War on Terror period than in the interwar period. The number of terrorist incidents is again not significant at conventional levels.

4 Panel data analysis of aid allocation

Using bilateral ODA flows instead of aggregate aid amounts, we test for the impact of the War on Terror and transnational terrorist incidents on the allocation of aid. The basic equation changes to:

$$y_{i,j,t} = \alpha + \beta_1 Cold War_t + \beta_2 War on Terror_t + \beta_3 Budget_{i,t} + \beta_4 X_{i,j,t-1} + \eta_{i,j} + \varepsilon_{i,j,t},$$
(2)

where $y_{i,i,t}$ represents (log) aid commitments in constant 2000 US\$ of donor i to recipient j in year t, and $Cold War_t$ and $War on Terror_t$ are dummies for the periods 1971-1990 and 2002-2008 respectively, as was the case before. $X_{i,j,t-1}$ is the vector of (lagged) control variables. Rather than controlling for individual donor characteristics, we include the donors' (log) overall aid commitments $Budget_{i,t}$. As before, $\varepsilon_{i,i,t}$ represents the error term, while $\eta_{i,i}$ now represents donor-recipient-pair fixed effects. We again add additional variables related to the degree of terror in further regressions.

As Neumayer (2002) points out, there are essentially two options for dealing with the bounded nature of the dependent variable. The first option is based on the assumption that

¹³ Note that here and in the following we added 1 to the underlying variables before taking the log to avoid losing zero observations where appropriate (see also Appendix A1). Note that we do not include the lagged dependent variable here, in line with the literature on aid allocation (e.g., Kilby 2011). Focusing on individual recipient countries, it is not obvious whether the likelihood of receiving aid commitments in t increases or decreases with the amount of aid received in t-1. On the one hand, a country that has received an aid package in t-1 might receive even more in t because of strong aid ties, but on the other hand, a country might be excluded from new aid funds in t because of high aid commitments in t-1.

donors decide – in the first step – whether to allocate aid to a country at all, while – in the second step – they decide on the amount of aid to be given once recipients are selected. For the first step of this model, Probit (or Logit) is the adequate technique of estimation. Ideally, the second step should take account of information derived from the first step. This can be achieved if the inverse Mills ratio derived from the first step is included in an ordinary least squares estimation (OLS) of the sample of selected countries.

The second option is based on the assumption that the variables determine both whether a country is selected as an aid recipient, and how much aid is being allocated to that country in the same way. Tobit would then be the preferred method. Arguably, the underlying assumption is a strict one. Neumayer (2002) thus suggests OLS as an alternative method of estimation, ignoring the selection bias that tends to result from not considering the inverse Mills ratio. The bias associated with OLS might be moderate when the sample contains a limited number of zero observations.

With this in mind, we estimated a Heckman selection model and compared the selection to the allocation equation. This was done in order to see whether restricting their coefficients to be equal would be an option here, so that we could estimate Tobit regressions instead. We also tested whether the selection and allocation equations are independent from one another, so that separate selection and allocation equations could be estimated. The results show that neither independent equations, nor Tobit models are adequate. The results reported below therefore rely on the Heckman approach (with standard errors clustered by donor-recipient pairs). Note that the donor-recipient-pair fixed effects included in equation (2) can only be included in the (linear) allocation equation but not in the (non-linear) selection equation, due to the incidental parameter problem. We therefore replaced them by country and recipient fixed effects in the selection equation.

In line with the previous literature on aid allocation, X contains a set of possible determinants as explanatory variables (e.g., Dreher and Fuchs 2011). We control for (logged) population of recipient countries in order to control for the size of a country. Larger countries need more resources to develop. The recipient's (logged) per-capita GDP and the (logged) total number of people affected by a natural disaster in the recipient country are used as indicators for recipient need. Our measure for merit is a dummy for democracy, following the definition of Cheibub et al. (2009).

To proxy donors' political self-interests, the literature suggests a recipient country's voting behavior in the United Nations General Assembly (UNGA). Various empirical studies

show that developing countries receive more aid and better conditions from donors when they have closer political ties with the donor, as measured by their UNGA voting alignment (e.g., Kilby 2009, 2011). Relying on data from Voeten and Merdzanovic (2009), we calculate the number of times a country votes in line with the respective donor (either both voting yes, both voting no, both voting abstentions, or both being absent). We then divide it by the total number of votes in a particular year to derive a measure of voting coincidence between zero and one.

To account for commercial interests, we include the respective donor's (log) total exports to a particular recipient country in constant US\$, as well as a recipient country's (log) oil production in barrels per day. Again, all variables with their definitions and sources are provided in Table A1 in the Appendix, while Table A2 reports descriptive statistics.

Table 2 shows the results. While column 1 shows the selection equation of a Heckman model, column 2 reports the corresponding allocation equation. ¹⁴ Given the inclusion of fixed effects, note that the results for the selection equation have to be interpreted in terms of deviations from the donor and recipient means, and in terms of deviations from the average values of the donor-recipient pair in case of the allocation equation. The results for the control variables are largely in line with the previous literature. Both the estimated probability of receiving aid and the estimated amount of aid are below the recipient country's norm when its per capita GDP is above its norm, at the one percent level of significance. Also at the one percent level, countries receive more aid with rising population (and more frequently). In both equations, disasters increase aid. Countries are more likely to receive aid when they become a democracy, and receive more aid with democracy once selected (at the one percent level).

While the results indicate that need is important for the allocation of aid, the same holds for political and commercial motives. Countries voting in line with a particular donor in the UNGA are more likely to receive aid, at the five percent level of significance (but the positive coefficient in the allocation equation is not statistically significant). Bilateral exports are significant in both equations (at the one percent level), with the expected positive coefficient. The coefficient on oil production is not statistically significant at conventional levels, while larger donor budgets increase aid and the probability to be selected as aid recipient at the one percent level.

_

¹⁴ We do not impose an exclusion restriction on the allocation equation but identify the model based on the non-linearity inherent in the selection equation. Note that the Wald test for independent equations is highly significant, indicating the presence of selection bias when estimating Probit and OLS separately. When estimating them for comparison, the results are however very similar.

We now turn to our variables of main interest. Compared to the interwar period, countries are more likely to be selected as recipients of aid in the Cold War period and receive more aid once selected. The picture is different for the period after 9/11. At the one percent level, countries are more likely to be selected, but – once selected – the amount of aid they receive is less compared to the interwar period. In other words, the increased aid effort in the War on Terror period leads to a higher proliferation to more recipients with smaller individual aid portions (11.1% [=exp(-0.1172)-1] smaller compared to the interwar period).

Columns 3 and 4 of Table 2 replicate the model with the inclusion of the number of terrorist incidents on the individual donor countries. As can be seen, this has no substantial effect on the War on Terror dummy and the control variables. The number of incidents involving a particular donor country has no significant effect on the probability of giving aid to the country the terror attacks originate from. However, once a country is part of the victim's aid program, the donor country increases its aid flows to the country from which the terror attack originates by 7.3% per incident, on average. This provides initial evidence that countries who are already in good standing with donors through established aid relationships receive more aid in the fight against terror, while countries with weaker alliances do not.¹⁵

Next, we replicate the allocation equation with System GMM to control for endogeneity as discussed above. We treat the number of terrorist incidents as endogenous and all other control variables as exogenous. Again we use lags greater than t-4 given that terrorist incidents are averaged over four years. We find that neither the period after 9/11, nor terrorist incidents have a significant effect on the allocation of aid, but the Arellano-Bond test rejects the specification (results available on request). When we restrict the instrument matrix until t-15, the Arellano-Bond test does accept the specification and terrorist events increase aid commitments at the ten percent level (column 5). 17

Columns 6-8 focus on bilateral terror against DAC countries rather than against a particular donor exclusively. ¹⁸ The probability of receiving aid decreases at the five percent

¹⁵ As an additional explanation, the public good character of aid might dominate here, so that on average countries rely on other donors to increase their resources in the fight against terror. We thank Todd Sandler for pointing this out.

¹⁶ Given the higher number of observations compared to the analysis of aid budgets in Section 3, we do not need to restrict the number of lags to three in order to keep the number of instruments sufficiently low.

¹⁷ This result does not depend on the specific cut-off chosen. When using t-20 for example, the coefficient is significant at the five percent level.

¹⁸ Note that the number of observations is larger when we employ the DAC terror measure instead of the donor terror measure, since missing observations of terror incidents of individual donor-recipient pairs are disregarded in the calculation of the DAC total numbers. If we restrict the regressions of columns 6-8 to the sample of columns 3-5 the results are unchanged.

level when more terror originates from a particular country (column 6). The amount of aid is not affected however (columns 7 and 8). In other words, once a donor country provides aid to a particular recipient, a terror attack originating from citizens of the recipient country does not lead to a reduction in the amount of aid committed, but will make it less likely that a country is selected as an aid recipient in the first place. This is again in line with the idea that countries which are in no good standing with the donor through established aid relationships get punished for terror arising from their citizens. Comparing the results to those of columns 3 and 4, the difference in the effect of terror on the donor compared to the DAC as a whole might be explained by compositional effects. With an aid relationship already in place, it seems less likely that terror against the donor is, on average, state-sponsored. Such state-sponsored terror is more likely to arise from countries with which no friendly (aid-)relationships exist. Aid thus increases to countries with already established relationships, but does not go to additional countries. However, recipients of aid from a specific donor might well sponsor terrorist attacks on other DAC donors. As a consequence, other DAC donors interrupt their aid relationships with the state sponsor of terror.

In Tables 3a and 3b, we introduce several interactions to test for differential treatment of recipient countries. First, we investigate whether the impact of terror incidents on aid has changed in the War on Terror period. Second, as we argued above, it is more likely that some types of countries will receive more aid as a consequence of terror originating from their soil than others. We use three variables to test for this proposition. Arguably, democracies are less likely to be perceived as a threat to the average DAC donor country as their values are more in conjunction with the donor. On average, it seems reasonable to assume that government support for terrorism declines with democracy. We thus assume that aid as a reaction to terror surges in democracies in particular. For similar reasons, we also interact the number of terrorist incidents with a country's voting behavior in the United Nations General Assembly and a dummy for state sponsors of terror. For obvious reasons, we expect countries with similar political views to receive more aid in reaction to terror originating from their soil, and state sponsors of terror to receive less.

Table 3a shows the results for the selection equation of the Heckman model, while Table 3b reports the corresponding results for the allocation of aid. However, estimating an

⁻

¹⁹ The dummy is coded 1 if a recipient country in a particular year is classified by the US Secretary of State as a state sponsor of terror, i.e., "to have repeatedly provided support for acts of international terrorism" (see website of the US Department of State available at http://www.state.gov/s/ct/c14151.htm; see also a report on the list of state sponsors provided by the Korea Economic Institute at www.keia.org/SPOTGuide.pdf).

interaction term in a non-linear model – such as the selection model used here – is not straightforward (Ai and Norton 2003). While Table 3a shows coefficients rather than marginal effects, we also calculated the significance of the interaction terms in a linear probability model and rely on the resulting t-statistics of the linear model. The marginal effects of the linear allocation model shown in Table 3b can directly be interpreted.

As can be seen from the Heckman selection model reported in Tables 3a, the coefficients of the interaction terms exhibit the expected signs. However, they are not significant at conventional levels when focusing on terror directed at a particular donor country (columns 1-4). When analyzing aid addressed to all DAC donors (columns 5-8), the coefficients turn significant at the ten percent level at least. Specifically, the probability of receiving aid as a consequence of terror increases during the War on Terror period, with democracy and with increasing voting similarity in the UN General Assembly, but decreases when countries become state sponsors of terror. ²¹

Next, we turn to the corresponding results of the Heckman allocation model shown in Table 3b. The increase of aid as a reaction to terror attacks against the donor is significantly larger in the War on Terror period (16% overall per attack, according to column 1) compared to the interwar period (6.1%) and the Cold War period (0.3%). The other interaction effects again do not turn out to be significant when focusing on terror directed at the individual donor country (columns 2-4). Analyzing the impact of terror directed at the DAC community (columns 5-8), our results show that aid amounts decrease with terror from autocratic countries by 2% per attack, while they increase by 1.5% for democracies. Countries becoming state sponsors of terrorism receive 3.5% less aid per attack. Surprisingly, when countries vote in line with the donor more frequently, they receive less aid in reaction to terror. While this is puzzling, it is in line with the observation by Moss et al. (2005: 5) of "a possible trend of increases [in aid] in GWOT [Global War on Terror]-relevant countries [...], and decreases to more traditional U.S. allies in the Middle East, Europe, and Latin America that had received substantial aid in the 1990s."

²⁰ Column 4 seems to imply that state sponsors of terror are significantly less likely to be selected as recipients of aid as a consequence of terror. However, the interaction term is not significant at conventional levels in the linear probability model. The same applies to the Cold War coefficient in column 1. See Table A3 in the Appendix.

Note that the number of observations is lower when the state sponsor of terror dummy is introduced as this classification of countries was introduced in 1979 only. The negative coefficient of the state sponsor variable in column 8 is also noteworthy. However, when we calculate the marginal effect of state sponsorship for varying number of terror attacks, the dummy is not significant at conventional levels for any value (based on the linear probability model).

Overall, the evidence is in line with our expectations: While countries which are on friendly terms with the donor receive more aid as a consequence of terror arising from their soil, other countries do not (or less so).

5 Extensions

5.1 Disaggregating the DAC

Arguably, the average results for all donors pooled together might hide important differences between donors. Focusing on the G7 donors and the so-called 'good donors' (Denmark, Netherlands, Norway and Sweden) to reduce clutter, we estimate regressions for individual donors rather than aggregating all donors. We run nested regressions for these donors instead of performing regressions for each of them. Pooling the donors enables us to statistically test for differences and similarities among them. We introduce dummies for each individual donor and interact these dummies with our explanatory variables, mirroring individual regressions for the individual donors.

The results are reported in Table A4 in the Appendix. We find that, controlling for all other factors, the United States increased its annual aid budget as a share of GNI by 0.087 percentage points in the period after 9/11, at the five percent level of significance. In comparison to the UN target of 0.7 percent of GNI to be devoted to development assistance, and the average value for the United States of 0.16 percent over the 1991-2001 period, this effect is sizable. Among the other DAC donors, only France shows a significant increase in its budget after 9/11, also at the five percent level (and by more than one percentage point). When we control for terrorist attacks on the individual donor countries, the positive coefficient on the War on Terror dummy for Canada turns significant at the ten percent level. While the United States did increase its aid budget as a share of GNI following the perceived threat of terror after 9/11, the country did not adjust its aid effort in response to shorter periods of more numerous attacks. The United Kingdom is the only country to react to attacks against its citizens with significant decreases in its aid effort.

We also looked at differences between donors in their allocation of aid. Similar to the budget regressions, we run nested regressions for all donors. Controlling for donor-recipient fixed effects and in contrast to our findings for all DAC donors, we find that US aid amounts are significantly larger in the War on Terror period compared to the interwar period. The same holds for Norway and Sweden, while smaller aid portions come from Germany, Japan and the Netherlands. Among the countries we separated from the aggregate analysis, we find

that only the United States increases its foreign aid to countries where terror against its citizens originates, while France, Italy and Sweden even reduce their aid to these countries. To the extent that these donors are hit by terror from the same countries of origin, this could imply that the United States provide a public good, with European countries benefitting from increased safety even while reducing their aid to countries where terror originates.

5.2 Disaggregating aid

As outlined above, donors effectively fighting against the terrorist threat should especially rely on aid for education, or aid tied explicitly to the fight against terrorism. In this section, we test whether the mechanisms underlying the models by Azam and Thelen (2008, 2010, 2011) and Bandyopadhyay et al. (2011) are understood by the donor community. If aid for education, aid tied to the fight against terrorism, and general aid have differential effects on the fight against terror, we would expect donor governments to change their composition of aid as a consequence of terror. First, we consequently investigate whether terrorism affects the share of aid that a donor devotes to education. As a second step, we also employ the donors' share of aid for government and civil society (DAC purpose code 150), as most projects linked explicitly to (the prevention of) terrorist activities are included in this category.²² The detailed results are reported in Tables A5-A7 in the Appendix.

When we estimate the share of a donor's aid committed to education in a donor's aid budget as dependent variable, all coefficients on the War on Terror, as well as those on the number of terrorist incidents, are not significant at conventional levels.²³ In other words, we find no evidence that donors shifted their focus to the education sector where aid is expected to be particularly effective in preventing terror. When we use the share of aid granted to improve governance and strengthen civil society, the picture looks different. Rather than increasing the share of aid for governance, we find that a smaller share of total aid is committed to this sector when more incidents occur worldwide and in DAC countries, while the dummy for the War on Terror is insignificant.²⁴ Focusing on shares in bilateral aid flows

-

²² 77% of all projects reported by AidData that have 'terror', 'terrorism' or 'terrorist' in their title or description are classified as aid for government and civil society. Note that we do not use these terror-related projects from AidData in our regressions, because the available information covers only a limited number of countries and years (see http://www.aiddata.org/).

We control for (logged) per-capita GDP, the (logged) number of NGOs per 100,000 inhabitants present in a donor country as proxy for the strength of civil society, and tertiary school enrollment rates as an indicator of the importance that a donor country attaches to education.

²⁴ Note that the set of control variables includes (logged) per-capita GDP, the (logged) number of NGOs and civil liberties (taken from Freedom House 2009) as an indicator of the importance that a donor country attaches to related issues.

rather than in a donor's aggregate aid budget, the share of aid for education is not significantly affected by the terror variables either. The share of aid to strengthen governance and the civil sector is reduced rather than increased following bilateral attacks.²⁵ Overall, there is no evidence that the shares of these aid types increased as a reaction to terrorist attacks and the onset of the War on Terror.²⁶

6 Conclusions

Previous research has concluded that aid is surprisingly ineffective in reducing poverty in the recipient country. At the same time, a number of authors have argued that aid has not been given to fight poverty in the first place. The importance of political considerations for the allocation of aid during the Cold War is well known. With the fall of the Iron Curtain, many hoped that humanitarian motives would guide donors when choosing where to give aid, and how much. However, rather than devoting aid to where it could be most useful in terms of poverty reduction or the promotion of high-quality institutions, the amount of aid declined considerably with the end of the Cold War, despite some rhetoric suggesting the opposite. With the terrorist attacks of September 11, 2001, political motives to grant aid became fashionable once again. Leaders in the United States, the European Union, and other DAC countries publicly announced to substantially increase their aid to fight terror.

A number of previous papers have investigated whether aid is indeed effective in fighting terror. The results are ambiguous, theoretically and empirically. However, this is the first study to test whether, and to what extent, a large group of donors increased their aid effort during the War on Terror period, controlled for other determinants of aid. Although we find this to be the case on average, there is no evidence that donors increased their budgets after years with a particularly large number of attacks, or reduced their aid when terror decreased.

As a next step, we investigated whether countries where terror originates received increasing aid inflows, using a Heckman selection model. According to the results, while countries where terror originates are not more likely to receive aid as a consequence, if they are selected, they receive larger aid amounts from the donor hit by the attack. Terror against

_

²⁵ We control for (logged) per-capita GDP and democracy in the recipient country, the share of aid devoted to the particular sector in the donor's total budget as well as for sector-specific need indicators (logged school enrollment rates in the education model and logged number of international NGOs operating in the recipient country in the governance equation).

²⁶ As shown in Young and Findley (in press), targeting aid towards health might be equally crucial in reducing terrorism. Bandyopadhyay et al. (2011) also point to a trade-off between regime stability and aid tied to counterterrorism. We leave these issues for future investigations.

the Western world, proxied by the number of terrorist incidents against citizens of a DAC country, even reduces the probability to receive aid, on average. This holds in particular for autocratic countries, for countries voting against the donor in the United Nations General Assembly and for state sponsors of terrorism, but not for the War on Terror period.

We disaggregated the analysis across two dimensions to provide deeper insights than can be provided at the aggregate level. First, we investigated whether there are differences in how donor countries react to terror, finding that indeed there are. Specifically, we find that France and the United States increased their aid effort after 9/11, however, without responding to the actual number of terror events. Concerning the allocation of funds, we find that the United States increased aid to source countries of terror as a consequence of terrorist attacks, while France, Italy and Sweden reduced their aid to these countries. Our second disaggregation by type of aid shows no evidence that donors allocate a larger share of their budgets to education or government and civil society as a reaction to terrorism, which recent models suggest they should.

In summary, we find that politicians may still have to learn from economic research. To the extent that development aid can effectively combat terror across the world, as recent research suggests it does, politicians would be well-advised to target aid to those countries where terrorist groups exist in abundance, as well as promoting education and the fight against terror in particular. Our research also contributes to the aid effectiveness debate. When aid is given to fight terror rather than economic growth, its effectiveness would have to be judged by whether or not it is effective in fighting terror rather than promoting growth.

The analysis in this paper provides a starting point for more detailed investigations in to how donors react to the terrorist threat. It could be complemented by a study focusing on domestic terrorist events in addition to transnational ones. Investigating whether different types of terrorist events, particularly severe events or only those involving fatalities for example, have different effects on aid would also be useful. A more detailed disaggregation of aid according to donors, types of aid, and the specific conditions under which aid is used to fight terror might provide deeper insights than this study could provide. Finally, we suggest not only investigating how aid impacts countries where terror originates, but also looking at their neighbors, major trading partners, or their enemies. A spatial model employing a range of weighting matrices could prove to be fruitful in this context. We leave these questions for future research.

References

- Ai, C., & Norton, E.C. (2003). Interaction terms in logit and probit models. *Economics Letters*, 80(1), 123-129.
- Abadie, A. (2006). Poverty, political freedom, and the roots of terrorism. *American Economic Review*, 96(2), 50-56.
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1), 29-51.
- AusAID (2003). *Counter-terrorism and Australian aid*. Canberra: AusAID Public Affairs Group, http://www.ausaid.gov.au/publications/pdf/counterterrorism.pdf. Accessed May 15, 2011.
- Azam, J.-P., & Delacroix, A. (2006). Aid and the delegated fight against terrorism. *Review of Development Economics*, 10(2), 330-344.
- Azam, J.-P., & Thelen, V. (2008). The roles of foreign aid and education in the war on terror. *Public Choice* 135 (3-4), 375-397.
- Azam, J.-P., & Thelen, V. (2010). Foreign aid vs. military intervention in the war on terror. *Journal of Conflict Resolution*, 54(2), 237-261.
- Azam, J.-P., & Thelen, V. (2011). Where to spend foreign aid to counter terrorism, Paper presented at the EPCS, Rennes, 2011.
- Bandyopadhyay, S., Sandler, T., & Younas, J. (2011). Foreign aid as counterterrorism policy. *Oxford Economic Papers*, 63 (3), 423-447.
- Bapat, N.A. (2011). Transnational terrorism, US military aid, and the incentive to misrepresent. *Journal of Peace Research*, 48(3), 303-318.
- Barbieri, K, Keshk, O., & Pollins, B. (2008). Correlates of war project trade data set codebook, Version 2.0. http://correlatesofwar.org. Ohio: The Ohio State University. Accessed October 15, 2010.
- Bertoli, S., Cornia, G.A., & Manaresi, F. (2008). Aid effort and its determinants: A comparison of the Italian performance with other OECD donors. Working Paper 11/2008. Florence: Dipartimento di Scienze Economiche, Universita' degli Studi di Firenze.
- Blomberg, B., Gaibulloev, K., & Sandler, T. (in press). Terrorist group survival: Ideology, tactics, and base of operations. *Public Choice*.
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115-143.

- BP (2010). *BP Statistical Review of World Energy*. http://www.bp.com/statisticalreview. Accessed December 3, 2010.
- Campos, N., & Gassebner, M. (2009). *International terrorism, political instability and the escalation effect*. CEPR Discussion Paper 7226. London: Centre for Economic Policy Research.
- Cheibub, J.A., Gandhi, J., & Vreeland, J. R. (2009). Democracy and dictatorship revisited. *Public Choice*, *143*(1-2), 67-101.
- Council of the European Union (2004). EU-US Declaration on combating terrorism, Dromoland Castle, 26 June 2004, 10760/04 (Presse 205), available at: http://www.eurunion.org/partner/summit/Summit0406/2004SumTerror.pdf. Accessed May 2011.
- DFA (2001). EU development ministers respond to humanitarian crisis in Afghanistan, Press releases, Department of Foreign Affairs. http://www.dfa.ie/home/index.aspx?id=26383. Accessed May 27, 2011.
- Doucouliagos, H., & Paldam, M. (2008). Aid effectiveness on growth: A meta study. *European Journal of Political Economy*, 24(1), 1-24.
- Dreher, A., & Fuchs, A. (2011). Rogue aid? The determinants of China's aid allocation. Mimeo.
- Dreher, A., Thiele, R., & Nunnenkamp, P. (2008). Does aid for education educate children? Evidence from panel data. *World Bank Economic Review*, 22(2), 291-314.
- EM-DAT (2010). *The OFDA/CRED International Disaster Database*. Louvain: Université Catholique de Louvain. http://www.emdat.be. Accessed October 4, 2010.
- Fleck, R. K., & Kilby, C. (2010). Changing aid regimes? U.S. foreign aid from the cold war to the war on terror. *Journal of Development Economics*, 91 (2), 185-197.
- Freedom House (2009). *Freedom in the World 2009*. Washington, DC: Freedom House. http://www.freedomhouse.org. Accessed February 12, 2011.
- Gassebner, M., Jong-A-Pin, R., & Mierau, J. (2008). Terrorism and electoral accountability: One strike, you're out! *Economics Letters*, 100(1), 126-129.
- Gassebner, M., Jong-A-Pin R., & Mierau J. (2012). Terrorism and cabinet duration. *International Economic Review* (forthcoming).
- Humphreys, M. (2005). Natural resources, conflict, and conflict resolution: Uncovering the mechanisms. *Journal of Conflict Resolution*, 49(4), 508-537.

- Kilby, C. (2009). The political economy of conditionality: an empirical analysis of World Bank loan disbursements. *Journal of Development Economics*, 89(1), 51-61.
- Kilby, C. (2011). Informal influence in the Asian Development Bank. *Review of International Organizations* 3-4 (forthcoming).
- Kilby, C., & Dreher, A. (2010). The impact of aid on growth revisited: Do donor motives matter? *Economics Letters*, 107(3), 338-340.
- Krueger, A. B., & Maleckova, J. (2003). Education, poverty and terrorism: Is there a causal connection? *Journal of Economic Perspectives*, 17(4), 119-144.
- Mickolus, E. F. (1980). Transnational Terrorism. Westport CT: Greenwood Press.
- Mickolus, E.F., Sandler, T., Murdock, J. M., & Flemming, P. A. (2009). *International terrorism: Attributes of terrorist events, 1968-2008* (ITERATE 5), Dunn Loring, VA: Vinyard Software, Inc.
- Moss, T.J., Standley, S., & Roodman, D. (2005). *The global war on terror and U.S. development assistance: USAID allocation by country, 1998-2005.* CGD Working Paper 62. Washington, DC: Center for Global Development.
- Neumayer, E. (2002). Is good governance rewarded? A cross-national analysis of debt forgiveness. *World Development*, *30*(6), 913-930.
- OECD DAC (2003) A development co-operation lens on terrorism prevention: Key entry points for action. DAC Guidelines and Reference Series. Paris: Organisation for Economic Co-operation and Development Assistance Committee.
- Round, J.I., & Odedokun, M. (2004). Aid effort and its determinants. *International Review of Economics & Finance*, 13(3), 293-309.
- Roodman, D. (2009). How to do xtabond2: an introduction to difference and system GMM in Stata. *Stata Journal*, *9*(1), 86-136.
- Sharma, S., Davis, Z., & Findley, M. (2009). *Deadly gift? The effect of foreign aid on terrorism*, Provo, UT: Brigham Young University, mimeo.
- taz (2001). Das Ende der Almosen. die tageszeitung. 18 October 2001.
- Union of International Associations (1984-2007). *Yearbook of International Organizations*. Munich: K G Saur Verlag.
- Voeten, E., & Merdzanovic, A. (2009). *United Nations General Assembly Voting Data*. http://hdl.handle.net/1902.1/12379 UNF:3:Hpf6qOkDdzzvXF9m66yLTg==V1 [Version]. Accessed October 12, 2010.

- Windmeijer, F. (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. *Journal of Econometrics*, 126(1), 25-51.
- Woods, N. (2005). The shifting politics of foreign aid. *International Affairs*, 81(2), 393-409.
- Young, J.K., & Findley, M.G. (in press). Can peace be bought? A sectoral-level analysis of aid's influence on transnational terrorism. *Public Choice*.

Table 1 Aid effort, 1971-2008

	(1) OLS	(2)	(3) OLS	(4)	(5) GMM	(6)	(7) GMM	(8)
	ULS	OLS	ULS	OLS	GIVIIVI	GMM	GIVIIVI	GMM
Aid effort (t-1)	0.4745***	0.4535***	0.4534***	0.4532***	-0.2509	0.3805*	0.5705***	0.2424
	(0.00)	(0.00)	(0.00)	(0.00)	(0.82)	(1.92)	(4.24)	(0.99)
Debt (t-1)	-0.0008	-0.0008	-0.0008	-0.0008	0.0007	-0.0008	-0.0009*	-0.0006
	(0.12)	(0.13)	(0.14)	(0.13)	(0.34)	(1.43)	(1.82)	(0.64)
(log) GDP per capita (t-1)	0.1417*	0.1427**	0.1363**	0.1463*	0.6121***	0.1800**	0.0782	0.2617*
	(0.06)	(0.04)	(0.05)	(0.05)	(2.68)	(2.17)	(1.14)	(1.76)
(log) Population (t-1)	-0.2378	-0.2672	-0.2653	-0.2800*	-0.0777**	-0.0352**	-0.0208*	-0.0580*
	(0.12)	(0.11)	(0.12)	(0.10)	(2.47)	(2.09)	(1.88)	(1.83)
Government size (t-1)	0.0021	0.0020	0.0017	0.0020	0.0191***	0.0083*	0.0043	0.0109**
	(0.19)	(0.33)	(0.32)	(0.22)	(3.24)	(1.79)	(1.36)	(2.31)
Cold War	0.0653***	0.0661**	0.0627**	0.0664**	0.8721**	0.2184**	0.0821*	0.3339*
	(0.01)	(0.01)	(0.01)	(0.01)	(2.45)	(2.49)	(1.65)	(1.78)
War on Terror	0.0227*	0.0231*	0.0266**	0.0232*	0.3499**	0.1892*	0.2172**	0.2043**
	(0.07)	(0.08)	(0.01)	(0.07)	(1.98)	(1.95)	(2.08)	(2.10)
Terror worldwide (t-1)		-0.0000				0.0006		
		(0.94)				(1.00)		
Terror DAC (t-1)			0.0001				0.0019	
			(0.81)				(1.53)	
Terror donor (t-1)				-0.0005				0.0046
				(0.39)				(1.38)
Number of observations	614	603	603	603	614	603	603	603
Number of countries	22	22	22	22	22	22	22	22
Adjusted R-squared	0.34	0.32	0.32	0.32				
Number of instruments					9	13	13	13
Arellano-Bond test (Pr>z)					0.11	0.67	0.40	0.99
Hansen test (Prob>chi2)					0.72	0.43	0.44	0.41

Table 2 Aid allocation, 1971-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Heckr		Hecki		GMM	Hecki		GMM
	ODA>0	(log) ODA	ODA>0	(log) ODA	(log) ODA	ODA>0	(log) ODA	(log) ODA
(log) GDP per capita (t-1)	-0.1747***	-0.4324***	-0.2014***	-0.4522***	-0.3441***	-0.1783***	-0.4313***	-0.3379***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(log) Population (t-1)	0.9989***	0.3119***	1.0116***	0.3010***	0.4249***	1.0095***	0.3097***	0.4345***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
(log) Disaster (t-1)	0.0093***	0.0060***	0.0089***	0.0049***	-0.0073	0.0093***	0.0060***	-0.0008
	(0.00)	(0.00)	(0.00)	(0.00)	(0.31)	(0.00)	(0.00)	(0.89)
Democracy (t-1)	0.2745***	0.1967***	0.2481***	0.1757***	-0.3639**	0.2723***	0.1966***	-0.2122
	(0.00)	(0.00)	(0.00)	(0.00)	(0.04)	(0.00)	(0.00)	(0.12)
UNGA voting (t-1)	0.2691**	0.0558	0.0239	-0.2188	-0.6087	0.2645**	0.0575	-0.2257
	(0.02)	(0.68)	(0.86)	(0.13)	(0.22)	(0.02)	(0.67)	(0.39)
(log) Bilateral exports (t-1)	0.0633***	0.0212***	0.0627***	0.0167**	0.1259***	0.0634***	0.0211***	0.1152***
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
(log) Oil production (t-1)	-0.0052	0.0053	-0.0000	0.0085	-0.0443***	-0.0047	0.0052	-0.0456***
	(0.31)	(0.35)	(1.00)	(0.13)	(0.00)	(0.36)	(0.36)	(0.00)
(log) Donor total commitments (t-1)	0.3494***	0.9624***	0.3317***	0.9446***	0.8402***	0.3494***	0.9622***	0.8555***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Cold War	0.1354***	0.3249***	0.1353***	0.3136***	-2.0125	0.1375***	0.3247***	-0.7643
	(0.00)	(0.00)	(0.00)	(0.00)	(0.14)	(0.00)	(0.00)	(0.36)
War on Terror	0.0945***	-0.1172***	0.0747***	-0.1349***	-0.9438	0.0909***	-0.1163***	-0.4284*
	(0.00)	(0.00)	(0.01)	(0.00)	(0.31)	(0.00)	(0.00)	(0.07)
Bilateral terror donor (t-1)			-0.0428	0.0725***	0.3418*			
			(0.26)	(0.00)	(0.09)			
Bilateral terror DAC (t-1)						-0.0148**	0.0033	0.0335
						(0.03)	(0.61)	(0.33)
Donor dummies	Yes	No	Yes	No	No	Yes	No	No
Recipient dummies	Yes	No	Yes	No	No	Yes	No	No
Pair effects	No	Yes	No	Yes	No	No	Yes	No
Number of observations	71:	279	68	082	45694	712	79	47132
Number of country-pairs	28	856	2	794	2633	285	56	2699
Number of instruments					21			21
Arellano-Bond test (Pr>z)					0.39			0.37
Hansen test (Prob>chi2)					0.80			0.12

Table 3a Aid allocation and interactions, Heckman selection model, 1971-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ODA>0	ODA>0	ODA>0	ODA>0	ODA>0	ODA>0	ODA>0	ODA>0
(log) GDP per capita (t-1)	-0.2012***	-0.2024***			-0.1794***			-0.1920***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(log) Population (t-1)	1.0116***	1.0140***			1.0239***	1.0214***	1.0111***	0.6628***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(log) Disaster (t-1)	0.0089***	0.0089***			0.0091***			
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Democracy (t-1)	0.2480***	0.2448***	0.2488***	0.1529***	0.2749***	0.2504***	0.2727***	0.1920***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
UNGA voting (t-1)	0.0353	0.0254	0.0140	-0.1061	0.2568**	0.2658**	0.2192*	0.1447
	(0.80)	(0.85)	(0.92)	(0.47)	(0.03)	(0.02)	(0.06)	(0.24)
(log) Bilateral exports (t-1)	0.0627***	0.0627***	0.0627***	0.0667***	0.0636***	0.0634***	0.0633***	0.0682***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(log) Oil production (t-1)	0.0000	-0.0001	-0.0001	-0.0087	-0.0040	-0.0053	-0.0049	-0.0167***
	(1.00)	(0.99)	(0.99)	(0.12)	(0.44)	(0.30)	(0.34)	(0.00)
(log) Donor total commitments (t-1)	0.3339***	0.3322***	0.3312***	0.4503***	0.3493***	0.3494***	0.3495***	0.4626***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Cold War	0.1404***	0.1357***	0.1350***	0.1358***	0.1612***	0.1386***	0.1386***	0.1226***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
War on Terror	0.0735***	0.0743***	0.0748***	0.0733**	0.0800***	0.0894***	0.0906***	0.1039***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Bilateral terror donor (t-1)	0.1140	-0.1087	-0.1186	0.1008				
	(0.41)	(0.11)	(0.25)	(0.23)				
Bilateral terror DAC (t-1)	, ,	` ,	, ,	, ,	-0.0059	-0.0316***	-0.0767**	-0.0067
, ,					(0.40)	(0.00)	(0.04)	(0.30)
State sponsor of terror (t-1)				0.2574	, ,	, ,	, ,	0.3854*
, ,				(0.21)				(0.07)
				,				,
Interaction of terror with:	War on Terror	Democracy	UNGA voting	State Terror	War on Terror	Democracy	UNGA voting	State Terror
	0.3319	0.1048	0.1997	-0.4733***	0.0376***	0.0285***	0.0901*	-0.0423*
	(0.28)	(0.13)	(0.46)	(0.01)	(0.00)	(0.01)	(80.0)	(0.06)
	Cold War				Cold War			
	-0.2226*				-0.0312***			
	(0.06)				(0.00)			
Donor dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recipient dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	68082	68082	68082	58730	71279	71279	71279	60439
Number of country-pairs	2794	2794	2794	2794	2856	2856	2856	2856
Robust n-values in parentheses (***								

Table 3b Aid allocation and interactions, Heckman allocation model, 1971-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	(log) ODA	(log) ODA	(log) ODA	(log) ODA	(log) ODA	(log) ODA	(log) ODA	(log) ODA
(log) GDP per capita (t-1)	-0.4537***	-0.4526***	-0.4541***	-0.3532***	-0.4334***	-0.4380***	-0.4314***	-0.3059***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(log) Population (t-1)	0.3031***	0.3018***	0.3017***	0.1510	0.3378***	0.3255***	0.3097***	0.0353
	(0.00)	(0.01)	(0.01)	(0.25)	(0.00)	(0.00)	(0.00)	(0.79)
(log) Disaster (t-1)	0.0048***	0.0049***	0.0049***	0.0048***	0.0058***	0.0059***	0.0059***	0.0063***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Democracy (t-1)	0.1762***	0.1747***	0.1746***	0.0999**	0.2017***	0.1684***	0.1955***	0.1233***
	(0.00)	(0.00)	(0.00)	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)
UNGA voting (t-1)	-0.2066	-0.2178	-0.2021	-0.2093	0.0507	0.0583	0.1042	0.1229
	(0.15)	(0.13)	(0.16)	(0.18)	(0.71)	(0.67)	(0.46)	(0.41)
(log) Bilateral exports (t-1)	0.0166**	0.0167**	0.0167**	0.0110	0.0211***	0.0212***	0.0211***	0.0135**
	(0.01)	(0.01)	(0.01)	(0.11)	(0.00)	(0.00)	(0.00)	(0.04)
(log) Oil production (t-1)	0.0088	0.0085	0.0086	0.0057	0.0060	0.0041	0.0053	0.0006
	(0.12)	(0.13)	(0.12)	(0.35)	(0.29)	(0.46)	(0.34)	(0.92)
(log) Donor total commitments (t-1)	0.9460***	0.9449***	0.9453***	0.8803***	0.9615***	0.9631***	0.9620***	0.8849***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Cold War	0.3177***	0.3137***	0.3140***	0.2797***	0.3616***	0.3260***	0.3241***	0.2737***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
War on Terror	-0.1378***	-0.1350***	-0.1356***	-0.1182***	-0.1227***	-0.1185***	-0.1159***	-0.0857**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
Bilateral terror donor (t-1)	0.0611*	0.0593	0.1485**	0.0807***	•			
	(0.05)	(0.26)	(0.02)	(0.00)				
Bilateral terror DAC (t-1)					0.0141*	-0.0203**	0.0578*	0.0083
					(0.05)	(0.04)	(0.06)	(0.21)
State sponsor of terror (t-1)				-0.0210				0.0745
				(0.93)				(0.75)
Interaction of terror with:	War on Terror	Democracy	UNGA voting	State Terror	War on Terror	Democracy	UNGA voting	State Terror
	0.0993**	0.0180	-0.2141	-0.0573	0.0124	0.0356***	-0.0814*	-0.0347*
	(0.05)	(0.77)	(0.17)	(0.64)	(0.11)	(0.00)	(0.06)	(0.09)
	Cold War				Cold War			
	-0.0585				-0.0410***			
	(0.45)				(0.00)			
Pair effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	68082	68082	68082	58730	71279	71279	71279	60439
Number of country-pairs	2794	2794	2794	2794	2856	2856	2856	2856

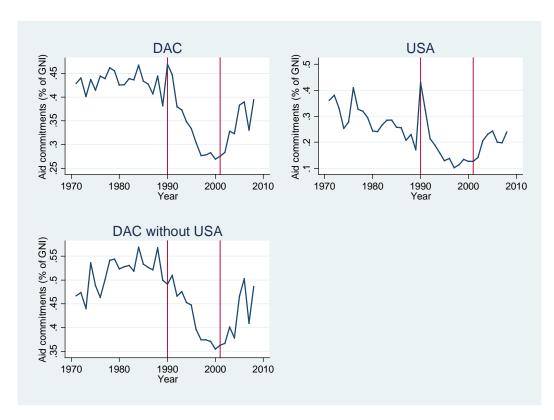


Figure 1 Aid effort over time

 Table A1 Variables and sources

Variable	Description	Source
Aid effort regressions		
Aid effort	Total Official Development Assistance as a share of GNI (commitments, in %)	OECD DAC (http://stats.oecd.org)
Debt	General government gross financial liabilities of donor country as a percentage of GDP (in %)	OECD Economic Outlook (http://stats.oecd.org)
(log) GDP per capita	(log) GDP of donor country divided by population (constant 2000 US\$)	WDI (http://databank.worldbank.org)
(log) Population	(log) Total population size of donor country	WDI (http://databank.worldbank.org)
Government size	Total disbursements of the general government as a share of GDP (in %)	OECD Economic Outlook (http://stats.oecd.org)
Cold War	1 if Cold War period (1971-1990)	-
War on Terror	1 if War on Terror period (2002-2008)	-
Terror worldwide	Number of terror incidents worldwide (4-year average)	ITERATE (Mickolus et al. 2009)
Terror DAC	Number of terror incidents with victims from DAC countries (4-year average)	ITERATE (Mickolus et al. 2009)
Terror donor	Number of terror incidents with victims from donor country (4-year average)	ITERATE (Mickolus et al. 2009)
Aid for education	Aid to education sector (CRS Purpose Code 110, % of total aid commitments)	OECD DAC (http://stats.oecd.org)
Aid for GCS	Aid to government and civil society sector (CRS Purpose Code 150, % of total aid commitments)	OECD DAC (http://stats.oecd.org)
(log) NGOs	(log) Number of international NGOs operating in donor country (per 100,000 inhabitants)	Union of International Associations (1984-2007)
(log) Tertiary school enrollment	(log) Gross enrollment ratio to tertiary education in donor country	WDI (http://databank.worldbank.org)
Civil liberties	Civil liberties rated on a seven-point scale, with 1 representing the most free and 7 the least free	Freedom House (2009)
Aid allocation regressions		
ODA>0	1 if aid is committed to recipient country by donor country	OECD DAC (http://stats.oecd.org)
(log) ODA	(log) Total aid commitments to recipient country (constant 2000 US\$)	OECD DAC (http://stats.oecd.org)
(log) GDP per capita	(log) GDP of recipient country divided by population (constant 2000 US\$)	WDI (http://databank.worldbank.org)
(log) Population	(log) Total population of recipient country	WDI (http://databank.worldbank.org)
(log) Disaster	(log) Number of people affected by disasters in recipient country	EM-DAT (2010)
Democracy	1 if the recipient regime qualifies as democratic	Cheibub, Gandhi and Vreeland (2009)
UNGA voting	UNGA voting alignment between donor and recipient	Voeten and Merdzanovic (2009)
(log) Bilateral exports	(log) Donor exports to recipient country (constant 2000 US\$)	COW (Barberini, Keshk and Pollins 2008)
(log) Oil production	(log) Oil production in recipient country in millions of barrels per day	Humphreys (2005), BP (2010)
(log) Donor total commitments	(log) Total aid commitments of donor country (constant 2000 US\$)	OECD DAC (http://stats.oecd.org)
Bilateral terror donor	Number of terror incidents with victims from donor country conducted by recipient citizens (4-year average)	,
Bilateral terror DAC	Number of terror incidents with victims from DAC countries conducted by recipient citizens (4-year average)	ITERATE (Mickolus et al. 2009)
State sponsor of terror	1 if a recipient country is classified by the US Secretary of State as a state sponsor of terror	U.S. Department of State
Aid for education	Aid to education sector (CRS Purpose Code 110, % of total aid allocated to recipient)	OECD DAC (http://stats.oecd.org)
Aid for GCS	Aid to government and civil society sector (CRS Purpose Code 150, % of total aid allocated to recipient)	OECD DAC (http://stats.oecd.org)
, ,	(log) Gross enrollment ratio to primary education in recipient country	WDI (http://databank.worldbank.org)
	(log) Gross enrollment ratio to tertiary education in recipient country	WDI (http://databank.worldbank.org)
(log) NGOs	(log) Number of international NGOs operating in recipient country (per 100,000 inhabitants)	Union of International Associations (1984-2007)
Donor aid for education	Total aid to education sector (CRS Purpose Code 110, % of donor's total aid commitments)	OECD DAC (http://stats.oecd.org)
Donor aid for GCS	Total aid to government and civil society sector (CRS Purpose Code 150, % of donor's total aid commitments)	OECD DAC (http://stats.oecd.org)

Notes

- Values that were only available in current US dollars have been transformed to constant 2000 US dollars using US Consumer Price Indices obtained from the World Development Indicators
- The value of 1 has been added to Bilateral exports, Oil production and Disaster before taking logarithms

 Table A2 Descriptive statistics

Variable	# obs	Mean	Std. Dev.	Min	Max
Aid effort regressions					
Aid effort	614	0.51	0.28	0.10	1.78
Debt	614	60.04	29.39	7.65	175.27
(log) GDP per capita	614	9.93	0.34	9.13	10.94
(log) Population	614	16.74	1.34	12.92	19.52
Government size	614	45.59	8.27	20.45	70.93
Cold War	614	0.40	0.49	0.00	1.00
War on Terror	614	0.25	0.43	0.00	1.00
Terror worldwide	603	126.44	42.56	57.25	207.50
Terror DAC	603	87.79	30.02	34.75	148.75
Terror donor	603	5.14	12.83	0.00	69.00
Aid for education	601	11.34	8.89	0.49	50.86
Aid for GCS	582	5.98	7.63	0.01	60.20
(log) NGOs	614	2.40	1.37	-1.08	5.69
(log) Tertiary school enrollment	554	3.70	0.48	2.26	4.58
Civil liberties	592	1.23	0.45	1.00	3.00
Aid allocation regressions					
ODA>0	71279	0.66	0.47	0.00	1.00
(log) ODA	47132	14.67	2.53	8.99	23.43
(log) GDP per capita	71279	6.91	1.23	4.13	10.81
(log) Population	71279	15.53	1.89	9.85	20.99
(log) Disaster	71279	5.22	5.59	0.00	19.65
Democracy	71279	0.38	0.49	0.00	1.00
UNGA voting	71279	0.66	0.12	0.01	0.97
(log) Bilateral exports	71279	15.69	4.39	0.00	25.67
(log) Oil production	71279	4.45	5.94	0.00	16.22
(log) Donor total commitments	71279	21.33	1.38	17.25	24.08
Bilateral terror donor	68082	0.03	0.33	0.00	26.25
Bilateral terror DAC	71279	0.52	1.91	0.00	31.75
State sponsor of terror	60439	0.02	0.15	0.00	1.00
Aid for education	16908	26.18	31.70	0.00	100.00
Aid for GCS	14885	21.12	28.44	0.00	100.00
(log) Primary school enrollment	57212	4.48		2.43	5.15
(log) Tertiary school enrollment	42573	1.64	1.39	-4.36	4.29
(log) NGOs	60771	1.79	1.51	-3.60	5.87
Donor aid for education	65760	11.77	8.90	0.39	52.62
Donor aid for GCS	63782	5.55	7.23	0.01	60.20

Notes:

⁻ Aid effort regressions: statistics for estimation sample as in Table 2 (column 1)

⁻ Aid allocation regressions: statistics for esimation sample as in Table 2 (column 2)

Table A3 Aid allocation and interactions, OLS, 1971-2008

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ODA>0	ODA>0	ODA>0	ODA>0	ODA>0	ODA>0	ODA>0	ODA>0
(log) CDD per cepite (t.1)	-0.0644***	-0.0646***	0.0040***	-0.0702***	0.0500***	0.0507***	0.0502***	0.0020***
(log) GDP per capita (t-1)	(0.00)	(0.00)	-0.0640*** (0.00)	(0.00)	-0.0590*** (0.00)	-0.0597***	-0.0583***	-0.0636***
(log) Population (t-1)	0.2148***	0.2148***		0.1784***	0.2217***	(0.00) 0.2207***	(0.00) 0.2178***	(0.00) 0.1493***
(log) Fobulation (t-1)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(log) Disaster (t-1)	0.0020***	0.0020***	` ,	0.0015***	0.000)	0.0021***	0.0022***	0.0016***
(log) Disaster (t-1)	(0.00)	(0.00)	(0.00)	(0.00)	(0.002)	(0.00)	(0.00)	(0.00)
Democracy (t-1)	0.0519***	0.0510***			0.0589***	0.0518***	0.0582***	0.0387***
Democracy (t-1)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
UNGA voting (t-1)	0.0018	0.0011	-0.0026	-0.0335	0.0604**	0.0630**	0.0484*	0.0304
ONOA willing (t-1)	(0.95)	(0.97)	(0.93)	(0.32)	(0.03)	(0.03)	(0.09)	(0.31)
(log) Bilateral exports (t-1)	0.0195***	0.0195***	` '	0.0201***	0.0195***	0.0195***	0.0194***	
(log) Bilateral exports (t 1)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(log) Oil production (t-1)	-0.0004	-0.0004	-0.0004	-0.0019	-0.0009	-0.0014	-0.0012	-0.0034***
(log) On production (t-1)	(0.74)	(0.72)	(0.72)	(0.11)	(0.41)	(0.23)	(0.29)	(0.00)
(log) Donor total commitments (t-1)	, ,	0.1043***		0.1264***	0.1117***	0.1116***	0.1117***	0.1326***
(log) Bollor total communicitis (t-1)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Cold War	0.0310***	0.0302***		0.0334***	0.0385***	0.0319***		, ,
Cold Wall	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
War on Terror	0.0150**	0.0149**	0.0151**	0.0133**	0.0150**	0.0173***	0.0175***	0.0201***
Wai on Telloi	(0.02)	(0.02)	(0.02)	(0.04)	(0.02)	(0.01)	(0.01)	(0.00)
Bilateral terror donor (t-1)	-0.0046	-0.0266	-0.0295	-0.0043	(0.02)	(0.01)	(0.01)	(0.00)
Bilateral terror donor (t 1)	(0.37)	(0.12)	(0.19)	(0.34)				
Bilateral terror DAC (t-1)	(0.37)	(0.12)	(0.19)	(0.54)	-0.0018	-0.0087***	-0.0228**	-0.0017
Bilateral terior BAC (t-1)					(0.28)	(0.00)	(0.02)	(0.22)
State sponsor of terror (t-1)				0.0594	(0.20)	(0.00)	(0.02)	0.0956**
State sponsor of terror (t-1)				(0.18)				(0.04)
				(0.18)				(0.04)
Interaction of terror with:	War on Terror	Democracy	UNGA voting	State Terror \	War on Terror	Democracy	UNGA voting	State Terror
	-0.0017	0.0199	0.0473	-0.0770	0.0071***	0.0078***	0.0277**	-0.0124*
	(0.75)	(0.23)	(0.40)	(0.18)	(0.00)	(0.00)	(0.05)	(0.05)
	Cold War				Cold War			
	-0.0198				-0.0084***			
	(0.11)				(0.00)			
Donor dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recipient dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R squared	0.37	0.37	0.37	0.38	0.37	0.37	0.37	0.37
Number of observations	68082	68082	68082	58730	71279	71279	71279	60439
Number of country-pairs	2794	2794	2794	2794	2856	2856	2856	2856
Robust p-values in parentheses (***				2.0.				

Table A4 Aid effort and aid allocation by donor, selected results, 1971-2008

		,	<u> </u>	
	(1)	(2)	(3)	(4)
	OLS	OLS	Heckman	Heckman
	Aid effort	Aid effort	(log) ODA	(log) ODA
War on Terror				_
Canada	0.0612	0.0881*	-0.1774	-0.1412
	(0.18) [0.66]	(0.06) [0.60]	(0.10) [0.01]	(0.21) [0.01]
Germany	0.0332	0.0258	-0.3998***	-0.4417***
	(0.47) [0.37]	(0.57) [0.56]	(0.00) [0.00]	(0.00)[0.00]
Denmark	0.042	-0.0341	0.0003	-0.0095
	(0.71) [0.71]	(0.72)[0.36]	(1.00) [0.21]	(0.96) [0.17]
France	0.1122**	0.2051***	0.1083	0.0739
	(0.01) [0.67]	(0.00) [0.03]	(0.15) [0.25]	(0.31) [0.13]
United Kingdom	0.0861	0.0541	0.0537	0.0186
	(0.11) [0.99]	(0.27) [0.94]	(0.72) [0.25]	(0.90) [0.15]
Italy	-0.0477	-0.0507	-0.2123	-0.1961
	(0.36) [0.04]	(0.23) [0.03]	(0.10) [0.01]	(0.13) [0.01]
Japan	-0.0085	-0.0080	-0.2475*	-0.3457***
	(0.89) [0.17]	(0.89) [0.32]	(0.05) [0.00]	(0.00)[0.00]
Netherlands	-0.0434	-0.0308	-0.3874***	-0.3867***
	(0.78) [0.41]	(0.90) [0.72]	(0.01) [0.00]	(0.01) [0.00]
Norway	-0.0328	0.0034	0.2941**	0.3281**
	(0.78) [0.33]	(0.98)[0.69]	(0.05) [0.98]	(0.03) [0.92]
Sweden	-0.0083	0.0547	0.4007***	0.4093***
	(0.95) [0.48]	(0.70) [0.98]	(0.00) [0.56]	(0.00) [0.59]
United States	0.0871**	0.0583*	0.2901**	0.3089**
	(0.02)	(0.09)	(0.04)	(0.03)
Terror donor (t-1)				
Canada		0.0267		0.7430
		(0.46) [0.45]		(0.17) [0.24]
Germany		-0.0025		-0.0273
		(88.0) (0.88]		(0.90) [0.57]
Denmark		0.1823		-0.1613
_		(0.18) [0.18]		(0.84) [0.74]
France		0.0059		-0.1014***
		(0.21) [0.21]		(0.00) [0.00]
United Kingdom		-0.0177*		-0.1107
		(0.06) [0.06]		(0.40) [0.11]
Italy		-0.0118		-0.3156**
		(0.24) [0.25]		(0.04) [0.01]
Japan		0.0085		-0.0891
N. d. I. I.		(0.34) [0.34]		(0.80) [0.59]
Netherlands		0.0650		0.2080
Name		(0.10) [0.10]		(0.46) [0.70]
Norway		-0.0703		3.0461
Coura da a		(0.54) [0.54]		(0.18) [0.20]
Sweden		0.0432		-3.9207**
United States		(0.72) [0.72]		(0.03) [0.03]
United States		-0.0001 (0.92)		0.1002***
Control variables	Yes	(0.92) Yes	Yes	(0.00) Yes
Donor dummies	Yes	Yes	1 62	162
Pair effects	165	162	Yes	Yes
Observations	207	270		
Observations	387	378	32325	31589

Notes: The control variables of Table 1 (colums 1 and 2) or Table 2 (columns 3 and 4) are included but not shown. Columns 3 and 4 report the results of the Heckman allocation equation. Robust p-values indicating the significance of the coefficients are shown in parentheses (*** p<0.01, ** p<0.05, * p<0.1), while the squared brackets report p-values indicating whether the respective coefficient is different compared to the United States according to a Wald test.

Table A5 Share of aid for education (% of aid budget), OLS, 1971-2008

	(1)	(2)	(3)	(4)	(5)
Aid for education (t-1)	0.5258***	0.5290***	0.5285***	0.5257***	0.5264***
, ,	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(log) GDP per capita (t-1)	-6.1521*	-5.6129*	-5.8025*	-6.1525*	-6.3575*
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
(log) NGOs (t-1)	5.5604*	3.5903	4.0712*	5.5642*	5.6723*
	(0.06)	(0.10)	(0.07)	(0.06)	(0.05)
(log) Tertiary school enrollment (t-1)	0.1149	0.2246	0.2916	0.1330	0.2213
	(0.92)	(0.85)	(0.81)	(0.92)	(0.87)
Cold War	1.2539	0.2629	0.4508	1.2693	1.3456
	(0.20)	(0.76)	(0.64)	(0.21)	(0.22)
War on Terror	-0.4843	0.5724	0.3043	-0.4982	-0.5488
	(0.46)	(0.46)	(0.68)	(0.49)	(0.48)
Terror worldwide (t-1)		0.0147			
		(0.11)			
Terror DAC (t-1)			0.0176		
			(0.16)		
Terror donor (t-1)				-0.0040	0.0081
				(0.88)	(0.75)
Cold War * Terror donor (t-1)					-0.0049
					(0.77)
War on Terror * Terror donor (t-1)					0.0253
					(0.50)
Number of observations	606	606	606	606	606
Number of countries	22	22	22	22	22
Adjusted R-squared	0.35	0.35	0.35	0.35	0.35

Table A6 Share of aid for government and civil society (% of aid budget), OLS, 1971-2008

	(1)	(2)	(3)	(4)	(5)
Aid for GCS (t-1)	0.6585***	0.6433***	0.6484***	0.6585***	0.6579***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
(log) GDP per capita (t-1)	5.0342*	4.2099	4.3013	5.0357*	4.8531*
	(0.05)	(0.15)	(0.13)	(0.05)	(0.06)
(log) NGOs (t-1)	-0.5150	1.7484	1.2377	-0.5123	-0.3520
	(0.71)	(0.42)	(0.52)	(0.71)	(0.81)
Civil liberties (t-1)	0.7722	0.7563	0.7324	0.7731	0.7613
	(0.52)	(0.53)	(0.54)	(0.52)	(0.52)
Cold War	-0.6012	0.6075	0.4708	-0.5986	-0.6156
	(0.17)	(0.34)	(0.39)	(0.16)	(0.17)
War on Terror	0.8890	-0.3869	-0.1404	0.8869	0.7878
	(0.10)	(0.62)	(0.85)	(0.11)	(0.18)
Terror worldwide (t-1)		-0.0196**			
		(0.01)			
Terror DAC (t-1)			-0.0251***		
			(0.01)		
Terror donor (t-1)				-0.0009	0.0024
				(0.97)	(0.91)
Cold War * Terror donor (t-1)					0.0076
					(0.72)
War on Terror * Terror donor (t-1)					0.0418
					(0.30)
Number of observations	617	617	617	617	617
Number of countries	22	22	22	22	22
Adjusted R-squared	0.67	0.68	0.67	0.67	0.67

Table A7 Share of aid for education and government and civil society (% of total aid allocated to recipient), OLS, 1971-2008

	(1)	(2)	(3)	(4)	(5)	(6)
	Aid	d for education			Aid for GCS	
(log) GDP per capita (t-1)	6.6539***	6.9416***	6.5250***	1.8423	0.616	1.6712
	(0.01)	(0.01)	(0.01)	(0.36)	(0.77)	(0.41)
Democracy (t-1)	-2.3438	-2.3680	-2.3313	-0.1745	-0.6705	-0.163
	(0.14)	(0.13)	(0.14)	(0.85)	(0.48)	(0.86)
(log) Primary school enrollment (t-1)	3.4211	3.5475	3.4709			
	(0.29)	(0.27)	(0.28)			
(log) Tertiary school enrollment (t-1)	-6.0532***	-6.1107***	-6.0433***			
	(0.00)	(0.00)	(0.00)			
Donor aid for education (t-1)	0.1097	0.1128	0.1123			
	(0.15)	(0.14)	(0.14)			
(log) NGOs (t-1)				-0.3385	16,808	-0.2921
				(0.84)	(0.40)	(0.86)
Donor aid for GCS (t-1)				0.3003***	0.3075***	0.2996***
				(0.00)	(0.00)	(0.00)
Cold War	4.7978***	4.7007***	4.7455***	1.8434*	2.0826**	1.8173*
	(0.00)	(0.00)	(0.00)	(0.07)	(0.04)	(0.07)
War on Terror	-0.8434	-0.8482	-0.9254	0.4244	0.438	0.3785
	(0.37)	(0.37)	(0.33)	(0.47)	(0.46)	(0.52)
Bilateral terror donor (t-1)		-1.2459			-0.8614	
		(0.14)			(0.20)	
Bilateral terror DAC (t-1)			-0.2157			-0.2348**
			(0.11)			(0.03)
Number of observations	11124	10970	11124	16854	16455	16854
Number of countries	1851	1791	1851	2046	1979	2046
R-Squared	0.02	0.02	0.02	0.01	0.01	0.01