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## Determinants of donor generosity: A survey of the aid budget literature

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## **Working Papers**

**Kiel Institute  
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### **Determinants of Donor Generosity: A Survey of the Aid Budget Literature**

by Andreas Fuchs, Axel Dreher and  
Peter Nunnenkamp

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## Determinants of Donor Generosity: A Survey of the Aid Budget Literature \*

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Abstract:

What determines the foreign aid effort of donor countries? We review the existing literature on donors' aid budgets and examine which of the suggested variables robustly determine aid effort, measured as Official Development Assistance (ODA) as a share of gross national income. More specifically, we empirically test 16 hypotheses using panel econometric methods for member countries of the Development Assistance Committee (DAC) in the 1976-2008 period. To test for the robustness of our results, we extend our dataset to 48 possible determinants of aid budgets and apply an Extreme Bounds Analysis (EBA). In our fixed effects regressions, we find that aid inertia, the donor country's GDP per capita, the existence of an independent aid agency, and colonial history have a robust and quantitatively relevant impact on countries' aid efforts. Among the potential substitutes for aid, remittances exert a robust effect. Excluding year fixed effects, political globalization, Russian military capacity, peer effects, aid effectiveness, and government debt also play a significant role.

Keywords: Foreign aid, Official Development Assistance, Aid budget, Extreme Bounds Analysis

JEL classification: F35, H81, H87

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## 1. Introduction

The Monterrey Consensus reached at the United Nations (UN) summit on Financing for Development in 2002 asked for a substantial increase in Official Development Assistance (ODA) to help developing countries achieve the Millennium Development Goals (MDGs).<sup>1</sup> Estimates by the World Bank and the UN suggested that additional annual ODA in the order of US\$ 40-60 billion had to be raised to finance the MDGs (Clift 2007). At the G8 meeting in Gleneagles in November 2005, the major donor countries promised to scale up ODA by US\$ 50 billion and specifically to double annual aid to Africa by 2010.<sup>2</sup> However, with the advent of the recent financial crisis and economic slowdown, concerns mounted that donors would once again renege on earlier promises.<sup>3</sup> Frot (2009: 1) expected aid efforts to weaken significantly in the aftermath of the global financial crisis “unless preventive action is taken.” Indeed, according to critics, recent ODA data released by the OECD reveal “a massive shortfall” of more than one third of the US\$50 billion committed in Gleneagles.<sup>4</sup>

The question of which factors are driving donor generosity or causing frugality is thus of considerable relevance to the international development community, notably the aid recipient countries. All the more surprisingly, only scant empirical evidence exists on what determines the size of donor countries’ overall aid budgets. This is in striking contrast to the extensive literature on the allocation of ODA across recipient countries (e.g., Kuziemko and Werker 2006) and on aid effectiveness (e.g., Doucouliagos and Paldam 2009). What is more, the few existing studies analyzing the donors’ overall aid effort differ substantially with respect to the countries and time periods covered so that their results are hardly comparable.

We contribute to the aid literature in several important ways. Section 2 reviews previous work and collects hypotheses on various economic and political factors underlying donors’ aid efforts. Section 3 introduces our dataset covering 48 possible determinants of aid budgets. We employ panel econometric methods for 22 donor countries of the OECD’s Development Assistance Committee (DAC) over the 1976-2008 period, and present the

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<sup>1</sup> See <http://www.un.org/esa/ffd/documents/Building%20on%20Monterrey.pdf> (accessed: May 2011). Jeffrey Sachs, the major driving force of the UN Millennium Project, emphasized that financing is “the most crucial obstacle for achieving the MDGs by 2015” (<http://www.un.org/en/ga/second/64/1210summary.pdf>; accessed: June 2012).

<sup>2</sup> See <http://www.g8.utoronto.ca/summit/2005gleneagles/index.html> (accessed: June 2012).

<sup>3</sup> For instance, the Secretary-General of the OECD and the Chair of the OECD’s Development Assistance Committee issued an urgent call to the donor countries: “Let us not repeat the mistakes we made following the recession of the early 1990s when many OECD governments let aid efforts decline, with the consequent impacts on developing countries in such areas as agricultural production, infrastructure, social welfare and political stability” ([http://www.oecd.org/document/2/0,3746,en\\_2649\\_201185\\_41601282\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/2/0,3746,en_2649_201185_41601282_1_1_1_1,00.html); accessed: June 2012).

<sup>4</sup> See [http://www.oxfam.org.uk/applications/blogs/scotland/2011/04/gleneagles\\_aid\\_commitments\\_mis.html](http://www.oxfam.org.uk/applications/blogs/scotland/2011/04/gleneagles_aid_commitments_mis.html); accessed: June 2012.

results in Section 4. To test for robustness, in Section 5, we vary the definition of the dependent variable and perform an Extreme Bounds Analysis (EBA). Finally, Section 6 concludes and derives policy implications.

In our fixed effects regressions, we find that aid inertia, the donor country's GDP per capita, the existence of an independent aid agency, and colonial history have a robust and quantitatively relevant impact on countries' aid efforts. Among the potential substitutes for aid, remittances exert a robust effect. Excluding time dummies, political globalization, Russian military capacity, peer effects, aid effectiveness, and government debt also play a significant role. Regressions with varying definitions of the dependent variable and the results of the EBA reveal that no additional variable is a robust determinant of aid efforts.

## 2. Literature Review and Hypotheses

### *Demand and supply for a public good*

ODA is a public good supplied by the (governments of) donor countries. According to Mosley (1985), however, the determinants of donor generosity can be modeled appropriately only if the demand for ODA by the taxpayers in the donor countries is also taken into account. This is even though taxpayers are typically assumed to be ignorant about the "price" of ODA, i.e., the part of total tax obligations needed per unit of "output." Mosley (1985: 375) argues, based on public opinion polls, that "taxpayers' demand for aid expenditures emerges [...] as a humanitarian one, constrained by perceptions of whether the country could afford it or not." The proviso of affordability invites a *first hypothesis* on the determinants of aid budgets: The willingness of taxpayers to pay for ODA, and thus the size of the aid budget, is likely to increase with their average per-capita income. This also follows from Dudley (1979) who likens ODA to a luxury good demanded only when more basic needs are fulfilled. Nevertheless, previous empirical results on the role of average incomes in the donor countries for their aid budgets are ambiguous. Two out of seven empirical studies do not find a statistically significant positive effect of per-capita income on aid effort (see summary in Table 1).

The humanitarian motive of taxpayers' demand for ODA suggests that their willingness to pay also depends on perceived needs in recipient countries. Olsen (1998: 608) introduces the concept of 'humane internationalism' in this context – the "acceptance of the principle that citizens of the industrial nations have moral obligations towards peoples and

events beyond their borders.” This may be most obvious in the case of famines and other major and well publicized disasters and emergencies, which tend to boost public and private giving. At the same time, taxpayers may be aware of more structural and persistent aspects of the need for aid. Hence, our *second hypothesis* maintains that aid budgets will increase with recipient need for ODA, revealed by temporary disasters as well as persistent poverty. Surprisingly, this hypothesis has hardly received attention in previous empirical studies, with Boschini and Olofsgård (2007) providing a notable exception.

The taxpayers’ willingness to pay may decrease, however, if the effectiveness of ODA to help overcome poverty in the recipient countries is in doubt. Especially in the 1990s, skepticism on the effectiveness of aid became widespread. According to our *third hypothesis*, the resulting ‘aid fatigue’ is likely to be one of the major determinants of aid budgets. Boschini and Olofsgård (2007) proxy aid effectiveness by the share of evaluated World Bank projects with a satisfactory outcome and find this success rate to be a statistically significant determinant of donors’ aid budgets. Mosley’s (1985) aid demand function considers indicators of the quality of ODA such as the degree of poverty-orientation and the degree of concessionality (grant element), supposing that a higher quality of aid increases taxpayers’ willingness to pay.

Public support from taxpayers is crucial for democratically elected donor governments to supply ODA (OECD 2009). Yet, the reasoning of Mosley (1985) points to a more complex relationship between demand and supply in the “market” for ODA as a public good. In addition to demand pressures as discussed above, donor governments’ supply of ODA can be expected to depend on several factors. Similar to other public expenditure items, inertia is likely to play an important role for the size of annual aid budgets (*hypothesis 4*). Since aid projects are typically carried out over several years, aid disbursements should evolve only slowly. Furthermore, the budgetary decision process in the donor countries is complex so that aid budgets are unlikely to change drastically on short notice. Short-term budget adjustments are also constrained to the extent that donors want to be reliable partners in international development cooperation.<sup>5</sup> Indeed, previous studies find a largely consistent positive effect of past aid effort on current budget size (see again Table 1).

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<sup>5</sup> This is not to ignore that aid volatility is a major issue at the level of individual recipient countries (see Bulir and Hamann 2003).

Another implication of the public good character of ODA is more controversial. Several analysts have argued that, from this perspective, the governments of larger donor countries would supply more ODA than those of small countries since the latter could free-ride on the aid efforts of the former (e.g., Dudley 1979; Mosley 1985). Nevertheless, our *fifth hypothesis* predicts a negative impact of the donor countries' population size on their aid efforts.<sup>6</sup> Round and Odedokun (2004) argue that larger countries are able to exploit economies of scale, e.g., with regard to the administrative costs of aid, so that they could achieve specified objectives with less relative effort. Conversely, small countries might be more generous in relative terms if the supply of ODA is cost-effective only beyond a certain threshold. Additionally, according to Bertoli et al. (2008), larger and more heterogeneous countries are characterized by less social cohesion when compared to smaller countries, which could imply that they are less inclined to redistribute income. Most of the available empirical evidence confirms a negative relationship between population and aid effort (see Table 1).

Finally, the public good character of ODA might result in peer effects independently of the size of the various donor countries. The supply of ODA by one particular donor could be negatively correlated with the aid efforts of other donors if ODA is viewed as an international public good (Schweinberger and Lahiri 2006). However, the correlation could also be positive if donors regard ODA as a "national public good with interaction between countries" (Dudley 1979: 565). Complementarities would result from donors increasing their aid effort in line with the efforts of peers (Mosley 1985). They might be strengthened through joint membership of donor countries in multilateral aid agencies. In their analysis of the allocation of aid, Davis and Klasen (2011) find that increases in the bilateral aid flows of one donor significantly increase those of others. As summarized in Table 1, the available evidence on this *sixth hypothesis* is inconclusive.

#### *International and domestic politics*

Another set of hypotheses on the determinants of donor generosity is derived from political economy considerations. In the aid allocation literature, it has often been shown that donor countries grant more aid to former colonies (e.g., Alesina and Dollar 2000). This might imply

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<sup>6</sup> See Schweinberger and Lahiri (2006) for a theoretical model according to which ODA per household decreases with population.

that the overall aid effort of former colonial powers is larger than that of donors without such historical legacies. However, according to Bertoli et al. (2008: 13), ODA may also be seen as “a substitute for colonial history, as it allows donor countries to strengthen those ties with developing countries that other donors have inherited from their colonial past” (*hypothesis 7*).

A more recent break with the past, the end of the Cold War, may have weakened the strategic motives for giving aid (*hypothesis 8*). To assess this hypothesis, several studies make use of a dummy variable to distinguish the Cold War period from the more recent past, with ambiguous results (Table 1). Boschini and Olofsgård (2007) introduce a more sophisticated measure of the intensity of the Cold War, namely the military expenditures of the Warsaw Pact (until 1990) and the Russian Federation (since 1991). They find this proxy of perceived military threat to be positively correlated with Western aid efforts during the Cold War, while there is no link to Russian military expenditures in the 1990s.

Fleck and Kilby (2010) and Dreher and Fuchs (2011) stress the importance of the “War on Terror” for a recent increase in selected donors’ aid budgets. Fleck and Kilby find that the United States markedly increased their aid budget after the terror attacks of September 11, 2001. Dreher and Fuchs show for 22 donor countries that their aid effort increased during the War on Terror period, but did not respond to the actual number of terror events.

In addition to historical factors, the current degree of global engagement of donor countries is likely to shape their aid budgets (*hypothesis 9*). The number of international organizations in which a donor country is a member, the number of international non-governmental organizations operating in a donor country, and the KOF Index of Globalization have been proposed as relevant political indicators (Lundsgaarde et al. 2007; Brech and Potrafke 2012).<sup>7</sup> However, there is no empirical evidence that these indicators increase aid budgets. This could be because “international normative influences” (Lundsgaarde et al. 2007: 157) are relatively weak compared to political convictions held domestically.<sup>8</sup>

Domestic political ideology could be revealed by “outcome” variables such as spending on social welfare and the overall size of government. According to Noël and Thérien (1995), political preferences leading to higher social spending and more redistribution at home would also result in a stronger effort in international development cooperation (*hypothesis 10*). Larger governments mirror a higher propensity to redistribute and provide more room for granting aid (Bertoli et al. 2008). Previous empirical studies find a positive

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<sup>7</sup> KOF is the acronym of the Swiss Economic Institute.

<sup>8</sup> Alternatively, Lundsgaarde et al. (2007) explain this (non)finding by the fact that more globalized countries transmit ideas in favor and against foreign aid.



relationship between government size and aid (Bertoli et al. 2008; Round and Odedokun 2004), whereas conclusive evidence on domestic transfers and social spending as determinants of aid budgets does not exist (Table 1). Alternatively, Bertoli et al. (2008: 11) propose using the Gini coefficient as “a proxy of domestic solidarity that may influence the attitude towards international redistribution” and find the expected negative effect on aid generosity. While their results for the Gini coefficient are ambiguous, Round and Odedokun (2004) also find that inequality impacts upon aid budgets if the Gini coefficient is replaced by the income share held by the poorest 20 percent of the population.

Alternatively, the role political ideology plays regarding the size of aid budgets can be assessed by classifying the parties in power and/or the institutions in charge (Thérien and Noël 2000). In particular, right-wing governments are often expected to provide less aid than left-wing governments, whose trust in markets is more limited and who are more prone to redistribution (*hypothesis 11*). On the other hand, right-wing governments may supply more aid as a means of promoting commercial and political self-interest.<sup>9</sup> Previous empirical findings appear to be inconclusive (Table 1). Moreover, the impact of government ideology on aid budgets may not be confined to the cabinet currently in office. To capture the footprint of previous cabinets, Thérien and Noël (2000) propose cumulative scores of left and right-wing cabinet members as a possible determinant of current aid effort.<sup>10</sup>

As stressed by Round and Odedokun (2004), the effect of the general classification of governments on the size of aid budgets becomes more ambiguous once specific aspects of the executive branch and its relations with other branches of the political and institutional system are taken into account. For instance, Round and Odedokun expect the aid budget to increase when incongruent ideologies are represented within the government (e.g., coalition of parties in power), the opposition is strong, and the system of checks and balances involves considerable veto power. Under such conditions, more aid could be the result of various diverging interests that need to be satisfied in the budget (*hypothesis 12*).<sup>11</sup> The OECD (2009) considers the role of parliamentarians to be decisive. Specifically, female parliamentarians are

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<sup>9</sup> Furthermore, the frequently made implicit assumption that left-wing governments are more altruistic does not necessarily hold. For instance, international solidarity may guide conservative parties with Christian roots as much as socialist parties (Thérien and Noël 2000). As shown by Potrafke (2011), government ideology does not generally affect the composition of government budgets in OECD countries.

<sup>10</sup> While Lundsgaarde et al. (2007) do not find empirical support for this proposition, Tingley (2010) finds that aid decreases with the cumulative measure of right-wing party seats.

<sup>11</sup> This idea is supported by the empirical analysis in Round and Odedokun (2003, 2004).

expected to have a stronger commitment to international solidarity and support higher amounts of aid to developing countries (Togeby 1994).<sup>12</sup>

In contrast to the argument that conflicting interests within the political system may result in more aid, Bertoli et al. (2008) expect that aid efforts could be strengthened if domestic aid agencies are institutionally protected from political interference (*hypothesis 13*).<sup>13</sup> It remains open to question, however, whether having independent aid agencies leads to a permanent increase in the level of aid. In fact, the findings of Bertoli et al. (2008) instead suggest that less exposure to the political-electoral cycle may help constrain short-term reductions in aid during economic downturns.

### *Macroeconomic factors*

Bureaucratic inertia, persistent political preferences and institutional constraints may work against drastic short-run changes in the size of aid budgets. Nevertheless, aid efforts are likely to vary in accordance with macroeconomic conditions in the donor country. Early contributions to the literature such as Beenstock (1980) focused on such macroeconomic determinants. In particular, overall budget constraints are widely supposed to reduce aid effort (*hypothesis 14*). Faini (2006) models ODA as a discretionary item depending on current government finances. Specifically, he expects ODA to decline with rising public debt and larger fiscal deficits. Empirical studies tend to find the expected pattern with regards to public debt, though this is not necessarily the case for fiscal deficits (Table 1). Bertoli et al. (2008) even find a positive effect of the fiscal deficit and conjecture that primary surpluses, rather than signaling more space for aid, often result from strict fiscal policies that were implemented to reduce a heavy debt burden. Aid efforts by members of the European Monetary Union could decline particularly when the Maastricht criteria on public debt and fiscal deficit are violated (Faini 2006; Bertoli et al. 2008). The financial turmoil which has been experienced recently is likely to affect the aid efforts of both European and non-European donor countries (Frot 2009).

Even if government accounts are not particularly strained, ODA may be curtailed when general macroeconomic conditions deteriorate in the donor country (*hypothesis 15*). Aid provision can be expected to give rise to fiercer political opposition at times of lower or even negative GDP growth and increasing unemployment.<sup>14</sup> In other words, the affordability of aid

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<sup>12</sup> Once again, empirical support is not available (Lundsgaarde et al. 2007).

<sup>13</sup> See Olsen (1998) on the example of the Danish aid agency Danida.

<sup>14</sup> Boschini and Olofsgård (2007) also account for the world business cycle, finding that ODA increases with the (weighted) average growth rate of G7 countries.

may be questioned at least temporarily by taxpayers and the electorate during economic downturns, similar to the persistent effects of lower income per capita noted above. While some studies find empirical support for the pro-cyclical behavior of aid budgets, none of the hypothesized variables, i.e., GDP growth, output gap, and unemployment, seem to be a robust determinant of aid effort (Table 1). The current account situation represents another macroeconomic factor that could be relevant for the supply of ODA. In the shorter run, increasing current account deficits may negatively affect aid for similar reasons as the cyclical behavior noted above. This idea is supported by the results in Beenstock (1980) and Bertoli et al. (2008).

#### *Substitutes and complements of ODA*

Most other transnational financial flows could be perceived as substitutes of aid, rather than complements of aid (*hypothesis 16*). Most obviously perhaps, Official Aid (OA) to post-socialist transition countries could have crowded out traditional financial assistance counted as ODA in the OECD's Creditor Reporting System. However, Boschini and Olofsgård (2007) do not find evidence that the heightened interest of donors in transition countries during the 1990s came at the expense of ODA recipients.

It is also disputed whether foreign direct investment (FDI) in developing host countries replaces ODA. On the one hand, FDI may reduce the need for aid, while on the other it could be associated with more ODA if FDI is officially supported through aid provision.<sup>15</sup> Similarly, foreign aid could also be seen as a tool to promote trade. Accordingly, Tingley (2010) suspects trade-dependent countries, with trade dependency measured by the sum of exports and imports relative to GDP, to be more 'generous' donors. This is, however, not supported by empirical evidence (Table 1). Following a slightly different approach, Lundsgaarde et al. (2007: 162) conjecture that a larger trade deficit with developing countries, a perceived indicator of job exports, "triggers domestic opposition to aid, thereby creating pressures for politicians to pare down aid budgets." Moreover, Bertoli et al. (2008) consider remittances to developing countries as a possible alternative to ODA. However, using the share of immigrants in the donor country's population as a proxy, ODA does not appear to be affected by remittances in to Bertoli et al. (2008).

It would also be desirable to test for complementarities and substitution effects between ODA and private aid. Private charities and companies are widely believed to play an

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<sup>15</sup> The insignificant finding of Lundsgaarde et al. (2007) might suggest that opposing effects of FDI on ODA cancel out each other.

increasingly important role in international development financing (e.g., Büthe et al. 2012).<sup>16</sup> Crowding-out effects are analyzed theoretically in the model of Schweinberger and Lahiri (2006) on the supply of official and private aid. However, it is almost impossible to subject theoretical predictions to rigorous empirical tests since comprehensive and consistent data on private aid hardly exist.

Finally, domestic expenditure items may also replace aid. For instance, Boschini and Olofsgård (2007) regard military expenditures as a substitute for aid in achieving security interests. By contrast, Round and Odedokun (2004: 299) hypothesize that aid and military expenditures are complements since aid can be used “to promote donor military adventurism,” for example to buy support to build a military base on the recipient’s territory. This hypothesis is not rejected in their empirical analysis, at conventional levels of significance.

### 3. Method and Data

We now turn to the empirical test of these 16 hypotheses. Our analysis covers all 22 countries that were members of the DAC in the last year of the period under investigation (2008). To estimate a balanced panel, we impute the missing data on the control variables. Specifically, we employ multivariate normal regression, with 20 imputations.<sup>17</sup> Most regressions then include 690 yearly observations over the 1976-2008 period. The main specification includes dummies for the individual donors and years, and clusters standard errors at the country level.

As a measure for the generosity of donors, we use data on the donor countries’ ODA as provided by the DAC.<sup>18</sup> In order to control for the size of the economy, we follow the previous literature and express aid budgets as a percentage of gross national income.<sup>19</sup> Obviously, this variable does not only vary with a country’s supply of foreign aid, but also with its economic cycle. In an economic recession, for example, this measure will rise even if the amount of aid is constant. However, it is a good proxy for a donor’s aid generosity as it is

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<sup>16</sup> To promote food security and nutrition in Africa, the G-8 countries agreed at their 38<sup>th</sup> summit in Camp David to strengthen the role of private capital in their development strategy (see <http://www.usaid.gov/press/factsheets/2012/fs120518.html>; accessed May 2012).

<sup>17</sup> Coefficients and standard errors are adjusted according to Rubin’s (1987) combination rules. Note that we use logistic regression to impute dummy variables.

<sup>18</sup> The DAC statistics do not include loans repayable within one year, grants and loans for military purposes, nor transfer payments to private individuals.

<sup>19</sup> The use of ODA divided by GNI or GDP is standard in the literature. Boschini and Olofsgård (2007), however, use log aid instead of the share. As an alternative variable, Roodman (2004) uses net aid transfer (which nets out interest payments). Also see Appendix C for the various definitions of the dependent variable in the aid budget literature.

more ‘painful’ to spend the same amount of foreign aid during a recession. Moreover, the measure is easy to interpret as it is comparable with the UN target to provide 0.7 percent of GNI as development aid. Figure 1 provides an overview of how each donor’s aid effort evolved over the 1976-2008 period.

In our baseline regressions, we use net disbursements, i.e., aid flows net of loan principal repayments at the time the actual transfer took place. To test for the robustness of our results, we later replace aid disbursements with commitments. We also run separate regressions for bilateral and multilateral aid disbursements to analyze differences in the determinants of aid effort between these two aid channels. In addition, we rerun our regressions after excluding debt relief from net disbursements, as in Bertoli et al. (2008).

To test *hypothesis 1*, we take data on GDP per capita from the World Development Indicators (World Bank 2009). We capture the role of recipient need (*hypothesis 2*) with (logged) *life expectancy* (in years), the (logged) number of fixed line and mobile *phone subscribers* (per 100 people) (both from World Bank 2009) and the (logged) total number of people affected by *disasters* in the developing world.<sup>20</sup> To test *hypothesis 3*, we proxy *aid effectiveness* by the share of evaluated World Bank projects with a satisfactory performance assessment in the evaluation year (as reported by the World Bank Independent Evaluation Group). In order to control for the *inertia* of aid budgets (*hypothesis 4*), we follow the previous literature and include the lagged dependent variable (*lagged DV*). *Population* data to test *hypothesis 5* are from the World Bank (2009). We use the average aid effort of all other DAC donors to test for a *peer effect* (*hypothesis 6*).

To assess the role of *colonial history* (*hypothesis 7*), we compute a measure similar to that used in Bertoli et al. (2008). Combining data on colonial linkages from CEPII (Mayer and Zignago 2006) and on population size (World Bank 2009), we use the (logged) population size of a donor country’s former colonies with a GNI per capita of less than 2,000 US\$. To proxy for the *Cold War threat* (*hypothesis 8*), we construct an index of total military expenditure of the former Warsaw Bloc countries up to 1990, and Russia thereafter. Specifically, we extend the dataset in Boschini and Olofsgård (2007) with information taken from the Stockholm International Peace Research Institute (SIPRI).<sup>21</sup> In addition to a dummy variable that takes a value of 1 after the onset of the *War on Terror* (2002-2008), we follow Dreher and Fuchs (2011) and employ both the number of transnational *terror incidents*

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<sup>20</sup> Since the poverty headcount ratio at \$2 a day is highly correlated with life expectancy (98.2 percent), we do not include it.

<sup>21</sup> We prefer this measure over a simple dummy variable that indicates the Cold War period. However, the correlation between these two measures is 98.5 percent.

carried out on nationals of the donor country, as well as the sum over all DAC countries (*DAC terror incidents*) to test for the response of donors to terrorist activity.

We capture the global engagement of a donor country (*hypothesis 9*) by including the KOF Index of Globalization (Dreher 2006). More specifically, we use the index of *political globalization* in our baseline regression and add *social globalization* as well as *economic globalization* to the EBA. As an alternative variable, we follow Lundsgaarde et al. (2007) and include the number of memberships a country has in international governmental organizations (*number of IGOs*), and the number of international non-governmental organizations (*number of NGOs*) operating in a donor country. Data are obtained from the Yearbook of International Organizations (Union of International Associations 1983-2007). We proxy a donor country's willingness to redistribute (*hypothesis 10*) by *government size* in terms of total expenditures of the general government as a share of GDP, taken from the OECD Economic Outlook. *Social spending* as a share of GDP, obtained from the same source, is highly correlated with government size (84.2 percent) and therefore only included in the EBA as a test for robustness. As a further proxy for the willingness to redistribute, we add the *Theil index* of income inequality from UTIP-UNIDO to the EBA.<sup>22</sup>

To test for the role of political ideology on aid budgets (*hypothesis 11*), we follow the previous literature and use the index of *right-wing government ideology* from the Database of Political Institutions (DPI, Beck et al. 2001). The index takes the value of 1 if the government is right-wing, 0 if it is ideologically central, and -1 if it is left-wing. We include alternative definitions from the Comparative Welfare States Dataset (Huber et al. 2004), i.e., the number of *left* (or *right*) *seats* as a share of seats held by all government parties and cumulative cabinet scores (*cumulative left* and *cumulative right*), only in the EBA, due to their limited data availability.<sup>23</sup> The same applies to the more fine-grained index of political ideology from Bjørnskov and Potrafke (2011). Also from the DPI (Beck et al. 2001; Keefer and Stasavage 2003), we employ *government fractionalization*, *opposition fractionalization*, *polarization* and the *checks and balances* index to account for the impact of the divergence of interests in domestic politics (*hypothesis 12*). Furthermore, we include the share of seats held by *women in parliament* (Huber et al. 2004; World Bank 2009). To control for differences in donor countries' aid institutions (*hypothesis 13*), we construct a variable based on the classification in OECD (2009). The dummy variable *aid agency* takes a value of 1 if a separate executing

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<sup>22</sup> We do not include the Gini coefficient since only very scattered data are available on this inequality measure.

<sup>23</sup> Huber et al. (2004) construct cumulative cabinet scores by adding the current value of *left* (or *right*) to its lagged value.

agency is responsible for the implementation of aid programs.<sup>24</sup> In the EBA, we employ the aid institutions dummy as in Bertoli et al. (2008) to test for the robustness of our results.<sup>25</sup>

Concerning the domestic budgetary situation (*hypothesis 14*), prior research suggests that *debt* has most explanatory power. In addition, we account for a donor country's fiscal *deficit*. Using data on gross financial debt and government net lending as a share of GDP from the OECD Economic Outlook, we compute a dummy variable, included in the EBA, indicating a *violation of the Maastricht treaty*. The overall macroeconomic performance of the donor economy (*hypothesis 15*) is captured by its *output gap, growth, unemployment and current account balance* in our estimations. We take data on annual GDP growth and the current account balance as a share of GDP from the World Development Indicators (World Bank 2009). Data on the output gap and the rate of unemployment as a share of the civilian labor force come from the OECD Economic Outlook.

Finally, we employ the following seven measures to test whether aid effort depends on potential substitutes or complements for aid (*hypothesis 16*). First, we obtain official *aid to CEEC/NIS* countries as a share of GNI from the OECD. Second and third, we retrieve trade data on *merchandise imports from developing countries (DC)* and *trade balance with developing countries (DC)*, both as a share of donor GDP, from the UNCTAD Handbook of Statistics online database. Fourth, we use OECD data on outflows of *foreign direct investment* into non-OECD countries as a share of donor GDP. Fifth, we employ workers' remittances and wages and salaries earned by nonresident workers as a share of GDP (World Bank 2009). Sixth and seventh, as in Round and Odedokun (2004), the share of *military expenditure* in the donor country's GDP and the share of *military personnel* in the donor country's labor force proxy for strategic interests that might be pursued through aid provision (World Bank 2009). We lag all explanatory variables to account for the fact that budget decisions are typically taken in the year prior to the actual aid disbursement. Moreover, the use of lagged explanatory variables mitigates endogeneity concerns.

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<sup>24</sup> The OECD (2009) has classified the organizational structures of donors into four models. The variable is coded as 1 if the donor country is classified as Model 3 ("A ministry has overall responsibility for policy and a separate executing agency is responsible for implementation") or Model 4 ("A ministry or agency, which is not the ministry of foreign affairs, is responsible for both policy and implementation"). The variable is coded as 0 in the case of Model 1 ("Development co-operation is an integral part of the ministry of foreign affairs which is responsible for policy and implementation") and Model 2 ("A Development Co-operation Directorate has the lead role within the ministry of foreign affairs and is responsible for policy and implementation"). Semi-autonomous bodies such as the New Zealand Agency for International Development and the Swiss Agency for Development and Co-operation are therefore coded as 0 in contrast to the definition in Bertoli et al. (2008).

<sup>25</sup> The correlation between the aid agency dummies is 0.72.

#### 4. Results

Table 2 shows the main results. In column 1, we explain net aid disbursements (as a percentage of GNI) with all variables that vary over donor countries and cannot be considered as substitutes or complements of aid. In addition, we include dummies for all years and donors to account for time effects and donor-specific characteristics. Column 2 reports the results of a general-to-specific analysis where we successively exclude from column 1 the variable with the lowest t-statistic, until only variables remain that are significant at the ten-percent level. We then reintroduce all variables one at a time, keeping those which turn out to be significant, at the ten-percent level at least. We repeated this procedure until we converged to a final model.

As can be seen from column 2, few variables significantly affect aid effort. The results show that aid budgets increase with the donor country's GDP per capita, at the one-percent level of significance. This is in line with *hypothesis 1*, arguing that donors are more willing to provide a public good when they become richer. Specifically, the coefficient of (logged) GDP per capita shows that the short-run increase in aid budgets is almost 0.016 percentage points following a ten-percent increase in per-capita GDP. This increase corresponds to 2.3 percent of the UN goal to achieve an aid effort of 0.7 percent of GNI. The lagged dependent variable is highly significant, indicating persistence (in line with *hypothesis 4*). By taking the coefficient of the lagged dependent variable into account, the long-run effect of a ten-percent increase in GDP per capita amounts to an increase in aid effort of 0.065 percentage points, i.e., more than 9 percent of the UN goal.

Countries have larger aid budgets when they entertain an independent aid agency, at the one-percent level of significance, which is in line with *hypothesis 13*. Quantitatively, the existence of an independent aid agency increases aid budgets by 0.038 percentage points – a non-negligible change that corresponds to 5.5 percent of the aid effort demanded by the UN. By contrast, aid efforts weaken with more people living in former colonies, at the five-percent level, supporting the view that ODA is a substitute for colonial history (*hypothesis 7*). A ten-percent increase in the size of the population living in former colonies decreases aid effort by 0.008 percentage points.

Columns 3 and 4 replicate the analysis including those variables that do not vary across donor countries such as time-variant conditions in recipient countries, aid effectiveness and peer effects. These estimations thus exclude the dummies for each year. In column 3, we add these variables to the baseline of column 1, while column 4 shows the results of the general-to-specific analysis. In line with the results from column 2, aid budgets increase with



GDP per capita, the lagged dependent variable, colonial history, and the existence of an independent aid agency. Three of the additional variables are also significant at conventional levels, those being our measure for aid effectiveness (*hypothesis 3*), peer group effects (*hypothesis 6*), and the Cold War threat (*hypothesis 8*). In line with our hypotheses, aid budgets increase with the military expenditure of the Warsaw Pact and Russia. Specifically, a ten-percentage-point increase in total military expenditure compared to its 1985 level (where the index is normalized to 100) increases the aid effort of DAC donors by 0.009 percentage points in the short term, on average. Aid budgets decrease with more aid effort by other DAC donors. It therefore seems that individual donors free-ride on other donors' efforts. In other words, ODA appears to be viewed as an *international* public good (Schweinberger and Lahiri 2006), rather than a *national* public good as defined by Dudley (1979). More surprisingly, a larger share of successfully evaluated projects reduces aid budgets. While donors may feel the need for further aid efforts to be less pressing if past aid has been evaluated as successful, this finding is clearly in conflict with *hypothesis 3*.

With the inclusion of the additional variables (and the exclusion of the year dummies), two additional variables turn out to be significant at the five-percent level according to the general-to-specific analysis. As can be seen in column 4, aid effort increases with more political globalization and a lower debt burden of the donor country, as suggested by *hypotheses 9* and *14*. Nevertheless, the estimations reported in columns 2 and 4 of Table 2 resemble each other in that most of the hypotheses introduced in Section 2 are not supported by the data.

Arguably, the end of the Cold War marks an important turning point in donor-recipient relations. Many observers expected humanitarian and developmental motives to become predominant, at least until the onset of the War on Terror in 2001 (see Fleck and Kilby 2010). We therefore test whether the effect of our explanatory variables is different for the years after 1990, focusing on the general-to-specific specifications in columns 2 and 4. The results show that this is generally not the case. In column 5 (including the year dummies), we interact the significant variables from column 2 with the post-Cold War dummy. As can be seen, the impact of the lagged dependent variable is significantly smaller in the post-Cold War period, while the other variables maintain their impact.<sup>26</sup> In column 6 (including the variables that do not change across donors), we interact the significant variables from column 4 with the post-Cold War dummy. This modification weakens the results for several variables. For instance,

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<sup>26</sup> A test of joint significance of the respective explanatory variable and its interaction with the post-Cold War dummy confirmed that all variables remain statistically significant, at least at the ten-percent level, in the post-Cold War period.

colonial history is no longer significant at conventional levels. The same applies to the surprising finding on aid effectiveness mentioned above. The positive coefficient of independent aid agencies on aid efforts remains after the end of the Cold War, but becomes weaker. A test of joint significance of the debt variable and its interaction with the post-Cold War dummy revealed that a country's debt burden has a statistically significant negative effect on aid effort after the Cold War (p-value: 0.053). The same applies to the effect of Russian military expenditure (p-value: 0.002). The results for the donor country's GDP per capita and inertia carry over from column 4 to column 6 and their impact persists in the post-Cold War period. While political globalization and peer effects remain significant in the Cold War period, both variables lose their significance at conventional levels in the post-Cold War period according to a test of joint significance (p-values: 0.373 and 0.168).

We next turn to those variables that could be considered to be alternatives to, or complements of, ODA (*hypothesis 16*). By including them one at a time in the specification in column 2 of Table 2, we find most of them to be unrelated to aid budgets, at conventional levels of significance (Table 3). This is largely in line with the previous literature, which mostly finds insignificant or mixed effects of other international transactions on ODA (see Table 1). The exception in Table 3 is remittances and wages and salaries earned by nonresident workers as a share of GDP, which increase aid effort, at the five-percent level. An increase of ten percentage points in remittances paid leads to an increase in the aid effort by 0.065 percentage points, i.e., almost one tenth of the UN goal to provide 0.7 percent of donor GNI as ODA. This finding may be explained by a greater awareness regarding the need for aid in donor countries with a larger diaspora of nonresident workers. Yet it is open to question whether higher remittances are actually causal for stronger aid efforts. It cannot be ruled out that nonresident workers prefer moving where governments and the public appear to be more generous in supporting poorer people, either by granting ODA or by offering employment opportunities. The previous results for the group of statistically significant determinants of aid effort are not affected when extending the specification to other international transactions.

The next section tests for the robustness of our main results to the choice of the dependent variable and to the selection of specific combinations of control variables.

## **5. Robustness**

We examine the robustness of our main results along two important dimensions. First, we replicate column 1 of Table 2 and the subsequent general-to-specific analysis based on four

alternative definitions of the dependent variable. Second, our results might depend on the particular choice of control variables included in the regressions. We therefore run an EBA to test for robustness with respect to the particular set of controls.

Starting with the alternative measures of aid effort, Table 4 shows remarkably robust results. In columns 1 and 2, we reproduce the results from Table 2 to facilitate comparisons. Columns 3 and 4 show the results for disbursements excluding debt relief, while columns 5 and 6 substitute disbursements with commitments. Excluding debt relief leaves our previous results qualitatively unchanged. When using commitments rather than disbursements, the results remain similar. Specifically, the effects of all previously significant variables are virtually unchanged. In line with *hypothesis 12*, we now also find that aid budgets increase when incongruent ideologies are present within the government, as measured by the government fractionalization index. A ten-percent increase in the probability that two deputies picked at random come from two different government parties increases aid effort by 0.008 percentage points.

The remaining estimations in Table 4 separate bilateral aid (columns 7 and 8) from aid channeled via multilateral institutions (columns 9 and 10). Again, previous findings are fairly robust. In addition, we find some support for *hypothesis 12* when considering only bilateral aid. Specifically, aid efforts increase with the share of women in parliament, who appear to be more concerned about international solidarity. If the share of parliament seats held by women increases by ten percentage points, a donor country's aid effort increases by 0.011 percentage points, on average. Unsurprisingly, aid channeled through multilateral institutions is not affected by colonial history, at conventional levels of significance. It is also intuitive that contributions to multilateral aid budgets increase with a donor's political globalization and the number of IGOs the donor is a member of (*hypothesis 9*).

To examine the sensitivity of our results with respect to the choice of control variables, we employ (variants of) an EBA, as proposed by Leamer (1983) and Levine and Renelt (1992).<sup>27</sup> We estimate equations of the following form:

$$y_{i,t} = \beta_M M + \beta_F F + \beta_Z Z + \lambda_i + \mu_t + v, \quad (1)$$

where  $y_{i,t}$  represents the aid effort of donor  $i$  in year  $t$ .  $M$  is a vector of explanatory variables that “survived” the general-to-specific procedure applied in Section 4 (as shown in column 2 of Table 2).  $F$  represents variables of interest that we added to the base specification one at a time from the set of control variables. The vector  $Z$  contains up to three of the remaining

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<sup>27</sup> The Stata code we use follows Gassebner, Lamla and Sturm (2011).

possible additional explanatory variables (as in Levine and Renelt 1992).  $\lambda_i$  and  $\mu_t$  represent donor and time dummies. The error term is  $v$ .

The EBA test for a variable in  $F$  states that if the lower extreme bound for  $\beta_F$  — i.e., the lowest value for  $\beta_F$  minus two standard deviations — is negative, while the upper extreme bound for  $\beta_F$  — i.e., the highest value for  $\beta_F$  plus two standard deviations — is positive, the variable  $F$  is not robustly related to aid budgets. Sala-i-Martin (1997) argues that this criterion is far too restrictive for any variable to pass the test. If the distribution of the parameter of interest has both positive and negative support, then a researcher is bound to find at least one regression model for which the estimated coefficient changes sign if a large number of regressions are run. Consequently, we report not only the extreme bounds, but also the percentage of the regressions in which the coefficient of each variable in  $M$  or  $F$  is statistically different from zero, at the ten-percent level.

Moreover, instead of merely analyzing the extreme bounds of the estimates for the coefficient of a particular variable, we follow Sala-i-Martin (1997) and analyze the entire distribution. Following Sturm and de Haan (2001), we report the unweighted parameter estimate of  $\beta_F$  and its standard error, as well as the unweighted cumulative distribution function,  $CDF(0)$ .  $CDF(0)$  indicates the larger of the areas under the density function lying on one side of zero. Therefore,  $CDF(0)$  always lies between 0.5 and 1.0. As suggested by Sturm and de Haan (2001), we use a  $CDF(0)$  value of 0.95 as the threshold above which we consider variables to be robust. Clearly, some of the models might be misspecified, indicating, for example, the insignificance of a particular variable due to multicollinearity. Therefore, while we cannot rule out that variables which do not reach the threshold of 0.95 have a “true” effect on aid efforts, we can be confident that those variables above the threshold are robust determinants of aid budgets.

Table 5 presents the results. We report the EBA for the models in columns 2 and 4 of Table 2 in panel A and B of Table 5, respectively. In panel C, we report results when adding our measures for aid substitutes and complements from Table 3 to the EBA. In this panel, remittances paid, which was significant in column 5 of Table 3, enters our base model in addition. Up to 7,175 combinations of the explanatory variables enter each of the EBAs (with 690 observations each). All variables are sorted by their respective  $CDF(0)$  value. We find that our base model is remarkably robust to the choice of control variables. For all variables, the  $CDF(0)$  is clearly above 0.95. Some of the baseline variables even pass the extreme bounds test of Leamer (1983) and Levine and Renelt (1992), with the lower and the upper bound being on one side of zero. Specifically, this is the case for GDP per capita and inertia in

panel A; GDP per capita, inertia, peer effect and colonial history in panel B; and inertia in panel C. The results reveal that the variables in the “narrow” set of control variables are significant at the ten-percent level in almost all regressions run. Importantly, the results also show that hardly any of the additional variables can be considered to be robust determinants of aid effort, the only exception being political globalization (with a positive average coefficient).

In summary, our model is robust to the definition of the dependent variable and to the inclusion of different combinations of control variables.

## **6. Conclusion**

Chances appear to be slim that, in the short run, donor countries will succeed in mobilizing substantial amounts of additional foreign aid to help recipient countries achieve the Millennium Development Goals. At the same time, recent concerns that aid efforts will suffer a major setback due to financial stress, rising debt and economic slowdown in major donor countries appear to be overblown. Rather, aid efforts are most likely to remain weaker than do-gooders may wish, and more resilient than alarmists may fear.

ODA is a slow-moving phenomenon according to our assessment of various possible determinants of aid effort. Most of the hypotheses derived from the previous literature failed to pass rigorous robustness tests. This especially applies, and perhaps most surprisingly, to almost all factors capturing short-term changes in overall budget constraints and macroeconomic conditions. Only a donor country’s debt burden showed a statistically significant negative effect in parts of our empirical analyses. Even changes in the ideological orientation of donor governments and diverging interests in domestic politics show, at best, little effect. Furthermore, varying needs of recipient countries may affect the allocation of aid across countries, but do not appear to increase donor generosity on the whole.

Aid effort by individual donor countries increases with their own income per capita. The quantitative impact of rising domestic income on the ODA-to-GNI ratio is quite modest in the short run. However, the impact is far from negligible in the longer run when taking the strong inertia of aid effort into account. Donors that channel aid through politically less dependent agencies, rather than ministries responsible for foreign affairs, are significantly more generous. All the same, this is not a panacea either, especially once it is taken into account that donors are inclined, according to our findings, to free-ride on the aid efforts of other donors. Significant and negative peer effects suggest that donors consider foreign aid to be an international public good, rather than a national public good.

Finally, our results encourage the conclusion that DAC aid is largely independent of other international transactions such as trade and direct investment. One important question is left open for future research, however. The community of donor countries increasingly extends beyond the traditional DAC group covered in the present analysis. Furthermore, ODA is increasingly supplemented by aid from non-governmental charities, private foundations, and profit-oriented companies. Once data constraints become less binding, the interrelations between different sources of official and private aid clearly deserve more attention.

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**Table 1: Literature Review and Hypotheses**

Hypotheses / potential determinants	Observed effect on aid budgets in different studies				
	positive	mixed positive	insignificant	mixed negative	negative
<b>H1: Aid budgets increase with the average per-capita income.</b>					
INCOME PER CAPITA	Boschini and Olofsgård (2007) Round and Odedokun (2003, 2004)	Bertoli et al. (2008) Dreher and Fuchs (2011) Frot (2009)	Faini (2006) Lundsgaarde et al. (2007) Mosley (1985)		
<b>H2: Aid budgets increase with recipient need for ODA.</b>					
LIFE EXPECTANCY POVERTY		Boschini and Olofsgård (2007)	Boschini and Olofsgård (2007)		
<b>H3: Aid effort decreases with increasing doubts about the effectiveness of ODA.</b>					
AID EFFECTIVENESS / AID QUALITY	Boschini and Olofsgård (2007)	Mosley (1985)			
<b>H4: Aid budgets evolve with inertia.</b>					
LAGGED AID	Beenstock (1980) Bertoli et al. (2008) Boschini and Olofsgård (2007) Faini (2006) Lundsgaarde et al. (2007) Mosley (1985)	Dreher and Fuchs (2011)			
<b>H5: Aid effort decreases with population size.</b>					
POPULATION		Boschini and Olofsgård (2007)		Dreher and Fuchs (2011)	Beenstock (1980) Bertoli et al. (2008) Round and Odedokun (2003, 2004)
<b>H6: Aid budgets depend on the aid effort of the peers.</b>					
PEER EFFECT	Mosley (1985) Round and Odedokun (2003, 2004)		Bertoli et al. (2008) Lundsgaarde et al. (2007)		
<b>H7: Aid is a substitute for colonial history.</b>					
COLONIAL HISTORY					Bertoli et al. (2008)
<b>H8: With weakened strategic motives, aid budgets are reduced after the end of the Cold War and larger after the onset of the War on Terror.</b>					
COLD WAR  COLD WAR THREAT WAR ON TERROR DUMMY TERROR EVENTS	Boschini and Olofsgård (2007) Dreher and Fuchs (2011)  Boschini and Olofsgård (2007) Dreher and Fuchs (2011)	Brech and Potrafke (2009) Round and Odedokun (2003, 2004) Tingley (2010)		Lundsgaarde et al. (2007)	
<b>H9: Aid budgets increase with a donor's global engagement.</b>					
NUMBER OF IGOS NUMBER OF NGOS GLOBALIZATION			Lundsgaarde et al. (2007) Lundsgaarde et al. (2007) Brech and Potrafke (2009)		
<b>H10: Political preferences leading to higher social spending and more redistribution at home result in larger aid budgets.</b>					
GOVERNMENT SIZE  SOCIAL SPENDING/GENEROSITY  INEQUALITY	Bertoli et al. (2008) Round and Odedokun (2003, 2004)	Dreher and Fuchs (2011)  Tingley (2010)	Lundsgaarde et al. (2007) Round and Odedokun (2003, 2004)		Round and Odedokun (2003, 2004) Bertoli et al. (2008)

**Table 1: Literature Review and Hypotheses (continued)**

Potential determinants of aid budgets	Observed effect on aid budgets in different studies				
	positive	mixed positive	insignificant	mixed negative	negative
<b>H11: Right-wing governments provide less aid than left-wing governments.</b>					
RIGHT-WING IDEOLOGY	Bertoli et al. (2008)	Round and Odedokun (2003, 2004)	Faini (2006) Lundsgaarde et al. (2007)	Brech and Potrafke (2009)	Tingley (2010)
CUMULATIVE RIGHT CUMULATIVE LEFT			Lundsgaarde et al. (2007) Tingley (2010)		Tingley (2010)
<b>H12: Aid increases with diverging interests in domestic politics.</b>					
CHECKS AND BALANCES	Round and Odedokun (2003, 2004)				
POLARIZATION INDEX		Round and Odedokun (2003, 2004)			
GOV FRACTIONALIZATION	Round and Odedokun (2003, 2004)				
OPP FRACTIONALIZATION				Round and Odedokun (2003, 2004)	
WOMEN IN PARLIAMENT			Lundsgaarde et al. (2007)		
<b>H13: Aid efforts are strengthened if domestic aid agencies are institutionally protected from political interference.</b>					
INDEPENDENT AID AGENCY		Bertoli et al. (2008)			
<b>H14: Budget constraints have negative effects on aid effort.</b>					
PUBLIC DEBT				Dreher and Fuchs (2011)	Bertoli et al. (2008) Faini (2006)
FISCAL DEFICIT	Beenstock (1980) Bertoli et al. (2008)	Frot (2009) Round and Odedokun (2003, 2004)	Boschini and Olofsgård (2007) Faini (2006)	Mosley (1985)	
VIOLATION OF MAASTRICHT				Bertoli et al. (2008)	
<b>H15: ODA decreases when macroeconomic conditions deteriorate in the donor country.</b>					
GROWTH		Frot (2009) Tingley (2010)	Brech and Potrafke (2009) Lundsgaarde et al. (2007)		
OUTPUT GAP	Round and Odedokun (2003, 2004)	Bertoli et al. (2008)			
UNEMPLOYMENT		Faini (2006)	Boschini and Olofsgård (2007)	Beenstock (1980) Frot (2009) Lundsgaarde et al. (2007)	
BUSINESS CYCLE	Boschini and Olofsgård (2007)			Mosley (1985)	
CURRENT ACCOUNT BALANCE	Beenstock (1980) Bertoli et al. (2008)				
<b>H16: Other international transactions are substitutes or complements for aid.</b>					
AID TO TRANSITION COUNTRIES			Boschini and Olofsgård (2007)		
DEBT RELIEF				Bertoli et al. (2008)	
FDI TO DEVELOPING COUNTRIES			Lundsgaarde et al. (2007) Brech and Potrafke (2009) Tingley (2010)		
TRADE OPENNESS					
IMPORTS FROM DEV. COU.					Lundsgaarde et al. (2007)
TRADE BALANCE WITH DEV. COU.				Lundsgaarde et al. (2007)	
IMMIGRANT STOCK			Bertoli et al. (2008)		
MILITARY EXPENDITURE	Round and Odedokun (2003, 2004)				

**Table 2: Fixed Effect Estimations of DAC Aid Effort (Hypotheses 1-15)**

	(1)	(2)	(3)	(4)	(5)	(6)		
					* Post-CW		* Post-CW	
H1 GDP per capita	0.1857** (0.015)	0.1655*** (0.005)	0.1356** (0.034)	0.1028*** (0.001)	0.1539*** (0.007)	0.0057 (0.787)	0.1384*** (0.002)	0.0070 (0.641)
H4 Inertia (lagged DV)	0.7371*** (0.000)	0.7528*** (0.000)	0.7227*** (0.000)	0.7342*** (0.000)	0.7675*** (0.000)	-0.0543** (0.032)	0.7140*** (0.000)	-0.0256 (0.422)
H5 Population	0.1221 (0.251)		0.0946 (0.373)					
H7 Colonial history	-0.0885** (0.027)	-0.0771** (0.013)	-0.1074*** (0.007)	-0.1062*** (0.001)	-0.0510 (0.108)	-0.0013 (0.205)	-0.0543 (0.122)	-0.0012 (0.212)
H8 Terror incidents	-0.0003 (0.577)		-0.0003 (0.544)					
H9 Political globalization	0.0011* (0.060)		0.0014** (0.011)	0.0013** (0.014)			0.0011** (0.027)	-0.0004 (0.544)
Number of IGOs	0.0033 (0.922)		-0.0021 (0.935)					
Number of NGOs	-0.0239 (0.446)		-0.0453 (0.206)					
H10 Government size	-0.0001 (0.956)		-0.0002 (0.831)					
H11 Right-wing government	-0.0008 (0.834)		0.0003 (0.933)					
H12 Gov. fractionalization	-0.0000 (0.945)		-0.0000 (0.819)					
Opp. fractionalization	-0.0003 (0.108)		-0.0003* (0.075)					
Polarization	0.0016 (0.625)		0.0006 (0.869)					
Checks and balances	-0.0010 (0.693)		-0.0010 (0.719)					
Women in parliament	0.0012 (0.199)		0.0006 (0.465)					
H13 Aid agency	0.0410*** (0.001)	0.0382*** (0.006)	0.0413*** (0.001)	0.0410*** (0.001)	0.0543*** (0.003)	-0.0187 (0.132)	0.0621*** (0.000)	-0.0252** (0.049)
H14 Debt	-0.0002 (0.486)		-0.0004 (0.113)	-0.0004** (0.044)			-0.0001 (0.765)	-0.0003 (0.137)
Deficit	-0.0001 (0.964)		0.0009 (0.476)					
H15 Output gap	0.0017 (0.347)		0.0016 (0.327)					
Unemployment	0.0016 (0.397)		0.0006 (0.736)					
Growth	-0.0006 (0.609)		-0.0013 (0.302)					
Capital account	0.0006 (0.642)		0.0006 (0.620)					
H2 Life expectancy			0.0762 (0.776)					
Phone subscribers			-0.0046 (0.516)					
Disasters			-0.0011 (0.758)					
H3 Aid effectiveness			-0.0017 (0.164)	-0.0016** (0.028)			-0.0000 (0.964)	-0.0035 (0.164)
H6 Peer effect			-0.3924*** (0.004)	-0.3512*** (0.003)			-0.4988** (0.011)	0.1179 (0.717)
H8 Cold War threat			0.0008** (0.011)	0.0009*** (0.000)			0.0007 (0.170)	0.0004 (0.511)
DAC terror incidents			0.0001 (0.607)					
War on Terror			0.0037 (0.760)					
H15 Business cycle			0.0026 (0.159)					
Donor fixed effects	Yes	Yes	Yes	Yes	Yes		Yes	
Time dummies	Yes	Yes	No	No	Yes		No	
Observations	690	690	690	690	690		690	
Number of donors	22	22	22	22	22		22	

Note: Robust p-values in brackets; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 3: Fixed Effect Estimations of DAC Aid Effort (Hypothesis 16)**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP per capita	0.1655*** (0.005)	0.1667*** (0.006)	0.1653*** (0.005)	0.1653*** (0.005)	0.1491*** (0.005)	0.1597*** (0.006)	0.1638*** (0.006)	0.1648*** (0.006)
Inertia (lagged DV)	0.7528*** (0.000)	0.7516*** (0.000)	0.7524*** (0.000)	0.7528*** (0.000)	0.7377*** (0.000)	0.7506*** (0.000)	0.7533*** (0.000)	0.7529*** (0.000)
Colonial history	-0.0771** (0.013)	-0.0760** (0.014)	-0.0770** (0.013)	-0.0772** (0.013)	-0.0687** (0.031)	-0.0752** (0.017)	-0.0773** (0.010)	-0.0776** (0.012)
Aid agency	0.0382*** (0.006)	0.0382*** (0.006)	0.0382*** (0.006)	0.0382*** (0.006)	0.0333** (0.016)	0.0368*** (0.009)	0.0383*** (0.005)	0.0383*** (0.006)
Aid to CEEC/NIS		-0.0372 (0.282)						
Imports DC			-0.0004 (0.846)					
Trade balance DC				-0.0002 (0.932)				
Remittances paid					0.6477** (0.028)			
FDI						0.0187 (0.299)		
Military expenditure							-0.0035 (0.554)	
Military personnel								-0.0007 (0.929)
Donor fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	690	690	690	690	690	690	690	690
Number of donors	22	22	22	22	22	22	22	22

Note: Robust p-values in brackets; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4: Fixed Effect Estimations of DAC Aid Effort (Hypothesis 1-15)**

	(1) Disbursements	(2)	(3) Disbursements (excluding debt relief)	(4)	(5) Commitments	(6)	(7) Disbursements (bilateral)	(8)	(9) Disbursements (multilateral)	(10)
H1 GDP per capita	0.1857** (0.015)	0.1655*** (0.005)	0.1665** (0.027)	0.1582*** (0.005)	0.3253** (0.014)	0.2519*** (0.006)	0.1525** (0.020)	0.1586*** (0.003)	0.0761* (0.085)	0.0420* (0.096)
H4 Inertia (lagged DV)	0.7371*** (0.000)	0.7528*** (0.000)	0.7566*** (0.000)	0.7699*** (0.000)	0.3916*** (0.001)	0.4133*** (0.000)	0.6826*** (0.000)	0.6996*** (0.000)	0.5535*** (0.000)	0.5921*** (0.000)
H5 Population	0.1221 (0.251)		0.1475 (0.167)		0.0449 (0.818)		0.0887 (0.285)		-0.0065 (0.920)	
H7 Colonial history	-0.0885** (0.027)	-0.0771** (0.013)	-0.0908** (0.033)	-0.0691** (0.026)	-0.1471* (0.071)	-0.1541** (0.043)	-0.1014*** (0.008)	-0.0846*** (0.005)	-0.0161 (0.325)	
H8 Terror incidents	-0.0003 (0.577)		-0.0003 (0.594)		-0.0005 (0.561)		-0.0002 (0.702)		-0.0003 (0.291)	
H9 Political globalization	0.0011* (0.060)		0.0013** (0.034)		0.0018 (0.198)		0.0006 (0.206)		0.0006 (0.101)	0.0006* (0.070)
Number of IGOs	0.0033 (0.922)		-0.0107 (0.751)		0.0723 (0.248)		-0.0214 (0.434)		0.0357* (0.066)	0.0385** (0.038)
Number of NGOs	-0.0239 (0.446)		-0.0236 (0.475)		-0.0598 (0.151)		-0.0244 (0.217)		0.0036 (0.827)	
H10 Government size	-0.0001 (0.956)		0.0002 (0.814)		0.0014 (0.493)		0.0007 (0.516)		-0.0002 (0.693)	
H11 Right-wing government	-0.0008 (0.834)		-0.0013 (0.714)		-0.0028 (0.698)		-0.0011 (0.745)		0.0008 (0.626)	
H12 Gov. fractionalization	-0.0000 (0.945)		0.0001 (0.651)		0.0007** (0.048)	0.0008*** (0.002)	-0.0001 (0.638)		0.0000 (0.773)	
Opp. fractionalization	-0.0003 (0.108)		-0.0003 (0.131)		-0.0005 (0.141)		-0.0002 (0.191)		-0.0002 (0.158)	
Polarization	0.0016 (0.625)		-0.0003 (0.941)		0.0030 (0.685)		0.0025 (0.415)		-0.0011 (0.592)	
Checks and balances	-0.0010 (0.693)		-0.0016 (0.440)		0.0013 (0.695)		0.0002 (0.932)		0.0001 (0.959)	
Women in parliament	0.0012 (0.199)		0.0008 (0.344)		0.0019 (0.291)		0.0009 (0.254)	0.0011* (0.058)	0.0007 (0.191)	
H13 Aid agency	0.0410*** (0.001)	0.0382*** (0.006)	0.0281** (0.018)	0.0253** (0.048)	0.0451** (0.045)	0.0410* (0.052)	0.0307** (0.014)	0.0239** (0.034)	0.0190*** (0.003)	0.0204*** (0.001)
H14 Debt	-0.0002 (0.486)		-0.0002 (0.372)		-0.0005 (0.320)		-0.0002 (0.254)		0.0000 (0.900)	
Deficit	-0.0001 (0.964)		-0.0007 (0.495)		-0.0025 (0.298)		0.0000 (0.968)		-0.0000 (0.987)	
H15 Output gap	0.0017 (0.347)		0.0005 (0.801)		0.0009 (0.819)		0.0005 (0.675)		0.0003 (0.842)	
Unemployment	0.0016 (0.397)		0.0016 (0.414)		0.0041 (0.261)		-0.0008 (0.600)		0.0023** (0.045)	
Growth	-0.0006 (0.609)		0.0014 (0.190)		-0.0004 (0.869)		-0.0005 (0.486)		-0.0003 (0.717)	
Capital account	0.0006 (0.642)		-0.0001 (0.912)		0.0000 (0.993)		0.0010 (0.395)		-0.0007 (0.360)	
Donor fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	690	690	690	690	659	659	686	686	689	689
Number of donors	22	22	22	22	22	22	22	22	22	22

Note: Robust p-values in brackets; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 5: Extreme Bounds Analysis of DAC Aid Effort**

Variable	Beta	Std.err.	%Sign.	CDF-U	Lower bound	Upper bound	Combi Obs.
<i>Panel A: Base model (Table 2, column 2)</i>							
Inertia (lagged DV)	0.7519	0.0530	100.00	1.0000	0.0000	0.8744 Government size   Ideology (fine-grained)   Output gap	4089 690
Aid agency	0.0382	0.0124	99.90	0.9984	-0.0261	Aid agency (Bertoli et al.)   Cumulative right   Theil index	4089 690
GDP per capita	0.1645	0.0568	100.00	0.9974	0.0000	0.3415 Government size   Unemployment   Women in parliament	4089 690
Colonial history	-0.0776	0.0302	100.00	0.9943	-0.1646	Opp. Fractionalization   Political globalization   Population	4089 690
<i>Panel A: Other variables (Table 2, column 2)</i>							
Political globalization	0.0009	0.0005	70.23	0.9552	-0.0005	Aid agency (Bertoli et al.)   Social spending   Women in parliament	3682 690
Women in parliament	0.0011	0.0007	26.29	0.9336	-0.0010	Debt   Political globalization   Social globalization	3682 690
Violation of Maastricht	-0.0106	0.0081	0.00	0.9036	-0.0290	Opp. Fractionalization   Social spending   Theil index	3682 690
Polarization	0.0038	0.0030	0.81	0.8952	-0.0057	Checks and balances   Population   Women in parliament	3682 690
Social globalization	-0.0007	0.0005	6.00	0.8861	-0.0022	Left seats   Opp. Fractionalization   Social spending	3682 690
Opp. fractionalization	-0.0002	0.0002	0.08	0.8654	-0.0008	Left seats   Right-wing government   Social globalization	3682 690
Population	0.1019	0.0917	0.00	0.8646	-0.1567	Number of IGOs   Social globalization   Violation of Maastricht	3682 690
Ideology (fine-grained)	-0.0073	0.0091	0.05	0.7831	-0.0413	Left seats   Right-wing government   Women in parliament	3682 690
Output gap	0.0013	0.0018	0.00	0.7552	-0.0031	Debt   Ideology (fine-grained)   Political globalization	3682 690
Number of IGOs	0.0232	0.0346	0.00	0.7472	-0.0729	Political globalization   Population   Social globalization	3682 690
Cumulative right	0.0004	0.0006	0.03	0.7285	-0.0020	Aid agency (Bertoli et al.)   Political globalization   Theil index	3682 690
Right seats	-0.0001	0.0002	0.00	0.7045	-0.0009	Cumulative right   Gov. Fractionalization   Violation of Maastricht	3682 690
Theil index	-0.1168	0.2345	0.00	0.6908	-0.8259	Aid agency (Bertoli et al.)   Cumulative right   Political globalization	3682 690
Aid agency (Bertoli et al.)	0.0062	0.0123	0.03	0.6907	-0.0596	Cumulative right   Political globalization   Theil index	3682 690
Economic globalization	-0.0004	0.0009	0.00	0.6609	-0.0025	Social spending   Output gap   Women in parliament	3682 690
Debt	-0.0001	0.0002	0.00	0.6561	-0.0008	Government size   Opp. Fractionalization   Political globalization	3682 690
Gov. fractionalization	0.0001	0.0002	0.00	0.6505	-0.0004	Economic globalization   Polarization   Right-wing government	3682 690
Social spending	0.0006	0.0018	0.00	0.6439	-0.0048	Cumulative right   Government size   Right seats	3682 690
Left seats	0.0000	0.0001	0.00	0.6423	-0.0003	Ideology (fine-grained)   Terror incidents   Women in parliament	3682 690
Deficit	-0.0003	0.0010	0.00	0.6330	-0.0032	Current account   Government size   Social globalization	3682 690
Right-wing government	0.0008	0.0030	0.11	0.6128	-0.0085	Gov. Fractionalization   Opp. Fractionalization   Social globalization	3682 690
Checks and balances	0.0004	0.0020	0.00	0.6015	-0.0067	Opp. Fractionalization   Polarization   Social globalization	3682 690
Current account	-0.0002	0.0010	0.00	0.5860	-0.0028	Deficit   Gov. Fractionalization   Opp. fractionalization	3682 690
Unemployment	-0.0003	0.0019	0.00	0.5788	-0.0050	Checks and balances   Growth   Social spending	3682 690
Cumulative left	-0.0001	0.0007	0.00	0.5679	-0.0019	Left seats   Opp. Fractionalization   Women in parliament	3682 690
Government size	0.0000	0.0010	0.00	0.5620	-0.0033	Current account   Debt   Social spending	3682 690
Terror incidents	-0.0001	0.0006	0.00	0.5583	-0.0016	Number of NGOs   Polarization   Political globalization	3682 690
Number of NGOs	0.0027	0.0422	0.00	0.5583	-0.1074	Social spending   Terror incidents   Women in parliament	3682 690
Growth	0.0000	0.0011	0.00	0.5531	-0.0030	Output gap   Unemployment   Women in parliament	3682 690

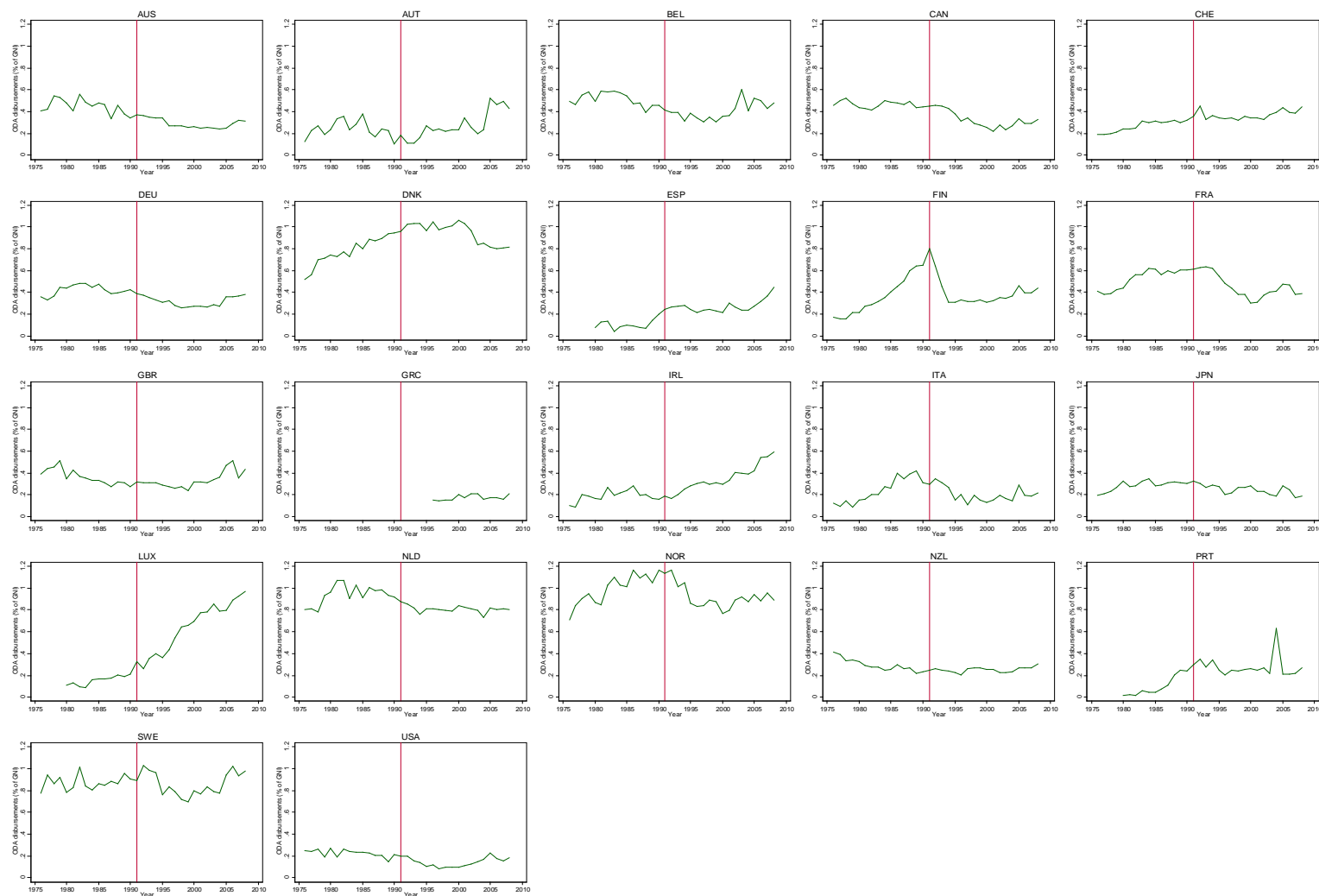


**Table 5 (continued): Extreme Bounds Analysis of DAC Aid Effort**

Variable	Beta	Std.err.	%Sign.	CDF-U	Lower bound	Upper bound	Combi Obs.
<i>Panel B: Base model (Table 2, column 4)</i>							
Inertia (lagged DV)	0.7329	0.0555	100.00	1.0000	0.0000	0.8574 Government size   Population   Theil index	6017 690
Aid agency	0.0411	0.0102	100.00	1.0000	0.0000	0.0740 Aid agency (Bertoli et al.)   Cumulative right   Population	6017 690
Cold War threat	0.0009	0.0002	100.00	0.9999	0.0000	0.0014 DAC terror incidents   Left seats   Opp. fractionalization	6017 690
Colonial history	-0.1041	0.0298	100.00	0.9997	-0.1897	Number of IGOs   Opp. Fractionalization   Population	6017 690
Peer effect	-0.3621	0.1085	100.00	0.9994	-0.6793	Economic globalization   Phone subscribers   Theil index	6017 690
GDP per capita	0.1096	0.0336	100.00	0.9990	0.0000	0.2530 Government size   Number of NGOs   Social globalization	6017 690
Political globalization	0.0013	0.0005	100.00	0.9952	0.0000	0.0025 Business cycle   Number of IGOs   Terror incidents	6017 690
Aid effectiveness	-0.0016	0.0007	91.97	0.9807	-0.0037	Number of IGOs   Opp. Fractionalization   Unemployment	6017 690
Debt	-0.0004	0.0002	83.73	0.9676	-0.0009	Business cycle   Government size   Opp. fractionalization	6017 690
<i>Panel B: Other variables (Table 2, column 4)</i>							
Business cycle	0.0023	0.0018	0.62	0.9031	-0.0019	DAC terror incidents   Disasters   Violation of Maastricht	5488 690
DAC terror incidents	0.0002	0.0002	0.00	0.8109	-0.0004	Business cycle   Left seats   Opp. fractionalization	5488 690
Disasters	-0.0023	0.0032	0.00	0.7571	-0.0118	DAC terror incidents   Left seats   Number of IGOs	5488 690
Phone subscribers	-0.0025	0.0057	0.00	0.6775	-0.0368	Cumulative right   Left seats   War on Terror	5488 690
Life expectancy	-0.0567	0.2352	0.00	0.6499	-0.8322	Cumulative left   Population   Unemployment	5488 690
War on Terror	-0.0015	0.0110	0.00	0.5883	-0.0509	Cumulative right   Left seats   Phone subscribers	5488 690
<i>Control variables (results available upon request)</i>							
<i>Panel C: Base model (Table 3, column 4)</i>							
Inertia (lagged DV)	0.7354	0.0501	100.00	1.0000	0.0000	0.8535 Government size   Output gap   Population	7175 690
GDP per capita	0.1461	0.0504	100.00	0.9969	-0.0093	Government size   Number of NGOs   Unemployment	7175 690
Aid agency	0.0327	0.0126	99.34	0.9938	-0.0361	Aid agency (Bertoli et al.)   Cumulative Right   FDI	7175 690
Remittances paid	0.7106	0.2990	99.96	0.9902	-0.1863	Aid agency (Bertoli et al.)   Cumulative Right   FDI	7175 690
Colonial history	-0.0691	0.0311	99.99	0.9859	-0.1624	Current account   Opp. Fractionalization   Unemployment	7175 690
<i>Panel C: Other variables (Table 3, column 4)</i>							
Aid to CEEC/NIS	-0.0443	0.0340	6.63	0.8982	-0.1746	Military expenditure   Opp. Fractionalization   Unemployment	6579 690
Trade balance DC	0.0024	0.0024	1.37	0.8286	-0.0072	Cumulative left   Imports DC   Opp. fractionalization	6579 690
Military expenditure	-0.0047	0.0062	0.00	0.7756	-0.0219	Aid to CEEC/NIS   Opp. Fractionalization   Population	6579 690
Military personnel	-0.0045	0.0070	0.00	0.7393	-0.0257	Military expenditure   Political globalization   Social globalization	6579 690
Imports DC	-0.0013	0.0022	0.32	0.7342	-0.0081	Population   Theil index   Women in parliament	6579 690
FDI	-0.0075	0.0194	0.00	0.6465	-0.1318	Aid agency (Bertoli et al.)   Theil index   Right seats	6579 690
<i>Control variables (results available upon request)</i>							

**Notes:** Shows the average coefficient across regressions (“Beta”) and its standard error (“Std.err.”). “%Sign.” indicates the share of the regressions in which the coefficient is significant at the ten-percent level at least; “CDF-U” is the unweighted cumulative distribution function. The “lower (upper) bound” is the smallest (largest) coefficient minus (plus) two standard deviations. The variables listed are those included in the regressions achieving the extreme bounds (not shown if the bounds are on the same side of zero).

**Figure 1: Aid Effort over time (aid disbursements, 22 donor countries, 1976-2008)**



Source: Own figure based on data from the OECD (<http://stats.oecd.org/>)

## Appendix A: Variables and sources

Hypothesis/Variable		Description	Data source
–	<b>Aid effort</b>	(Total / Bilateral / Multilateral) Official Development Assistance (net disbursements / net disbursements excluding debt relief / commitments) as a percentage of gross national income	OECD ( <a href="http://stats.oecd.org/">http://stats.oecd.org/</a> )
H1	<b>GDP per capita</b>	Log of gross domestic product divided by population (constant 2000 US\$) (code: NY.GDP.PCAP.KD)	WDI (World Bank 2009)
H2	<b>Life expectancy</b>	Log of life expectancy at birth in low income countries (interpolated, in years) (code: SP.DYN.LE00.IN)	WDI (World Bank 2009)
H2	<b>Phone subscribers</b>	Log of fixed line and mobile phone subscribers (per 100 people) in low income countries (code: IT.TEL.TOTL.P2)	WDI (World Bank 2009)
H2	<b>Disasters</b>	Log of the number of total people affected from disasters (sum of injured, homeless and affected) in all countries outside Northern America, Europe, Russia, Australia and New Zealand	EM-DAT (2009)
H3	<b>Aid effectiveness</b>	Satisfactory outcome performance of evaluated World Bank projects in evaluation year (in %, smoothed values)	Own construction based on data from World Bank Independent Evaluation Group (IEG)
H5	<b>Population</b>	Log of population size (code: SP.POP.TOTL)	WDI (World Bank 2009)
H6	<b>Peer effect</b>	Average ODA of all other donors as a share of their GNI	Own construction based on OECD data
H7	<b>Colonial history</b>	Log of the population of former colonies on DAC list of ODA recipients (0 if no colonial history)	Own calculations based on CEPII geography database (Mayer and Zignago 2006) and WDI population database (World Bank 2009)
H8	<b>Cold War threat</b>	Total military expenditure in the former Warsaw Bloc countries (index, 1985=100)	Boschini and Olofsgård (2007), SIPRI (1974, 1983, 1986), SIPRI Yearbook online ( <a href="http://www.sipri.org/databases/milex">www.sipri.org/databases/milex</a> )
H8	<b>Terror incidents</b>	Number of terror incidents with victims from donor country (4-year average)	ITERATE (Mickolus et al. 2009)
H8	<b>DAC terror incidents</b>	Number of terror incidents with victims from DAC countries (4-year average)	ITERATE (Mickolus et al. 2009)
H8	<b>War on Terror</b>	1 if War on Terror period (2002-2008)	–
H9	<b>Political Globalization</b>	KOF Index on Political Globalization (components: embassies (25%), membership in international organizations (28%), participation in UN Security Council missions (22%), international treaties (25%))	Dreher (2006), updated in Dreher et al. (2008)
H9	<b>Social Globalization</b>	KOF Index on Social Globalization (components: data on personal contact (33%), data on information flows (36%) and data on cultural proximity (31%))	Dreher (2006), updated in Dreher et al. (2008)
H9	<b>Economic Globalization</b>	KOF Index on Economic Globalization (components: actual flows (50%), restrictions (50%))	Dreher (2006), updated in Dreher et al. (2008)
H9	<b>Number of IGOs</b>	Log of number of country memberships in international organizations	Union of International Associations (1983-2007)
H9	<b>Number of NGOs</b>	Log of number of memberships in international nongovernmental organizations	Union of International Associations (1983-2007)
H10	<b>Government size</b>	Total disbursements of the general government as a share of GDP (code: YPGTQ)	OECD Economic Outlook ( <a href="http://stats.oecd.org/">http://stats.oecd.org/</a> )
H10	<b>Social spending</b>	Public social expenditure as a share of GDP (code: SSPG/GDP)	OECD Economic Outlook ( <a href="http://stats.oecd.org/">http://stats.oecd.org/</a> )
H10	<b>Theil index</b>	UTIP-UNIDO Wage Inequality THEIL Measure: Industrial pay inequality in Theil's t	UTIP-UNIDO ( <a href="http://utip.gov.utexas.edu">utip.gov.utexas.edu</a> )
H11	<b>Right-wing government</b>	1 = right-wing executive, 0 = ideologically central/unclear, -1 = left-wing (code: EXECRLC)	DPI 2010 (Beck et al. 2001)
H11	<b>Ideology (fine-grained)</b>	Political ideology (1 = liberalist economic policy, 0.5 = conservative, 0 = social democratic party, -0.5 = modern socialist, -1 = unreformed socialist and communist)	Bjørnskov and Potrafke (2011)
H11	<b>Left cabinet</b>	Left seats as a share of seats held by all government parties (in %) (code: LEFTCAB)	Comparative Welfare States Dataset (Huber et al. 2004)
H11	<b>Cumulative left</b>	Cumulative left cabinet scores (code: LTCABCUM)	Comparative Welfare States Dataset (Huber et al. 2004)
H11	<b>Right cabinet</b>	Right, Christian seats as a share of seats held by all government parties (in %) (code: RTCRCAB)	Comparative Welfare States Dataset (Huber et al. 2004)
H11	<b>Cumulative right</b>	Cumulative right, Christian cabinet scores (code: RTCRCUM)	Comparative Welfare States Dataset (Huber et al. 2004)
H12	<b>Gov. fractionalization</b>	Probability that two deputies picked at random from among government parties will be of different political parties (in %) (code: GOVFRAC)	DPI 2010 (Beck et al. 2001)

## Appendix A (continued): Variables and sources

Hypothesis/Variable		Description	Data source
H12	<b>Opp. fractionalization</b>	Probability that two deputies picked at random from among the opposition will be from different parties (in %) (code: OPPFRAC)	DPI 2010 (Beck et al. 2001)
H12	<b>Polarization</b>	0 if elections are not competitive, 0 if the chief's executive party has an absolute majority in the legislature, otherwise: maximum difference (0-2) in orientation between the president's party and the three biggest government parties and the largest opposition party (code: POLARIZ)	DPI (Keefer and Stasavage 2003)
H12	<b>Checks and balances</b>	Extent of formal political control on political decision makers (code: CHECKS)	DPI (Keefer and Stasavage 2003)
H12	<b>Women in parliament</b>	Seats held by women as a share of all seats (in %) (codes: FEMPAR&SG.GEN.PARL.ZS)	Comparative Welfare States Dataset (Huber et al. 2004), WDI (World Bank 2009)
H13	<b>Aid agency</b>	1: existence of national aid agencies operating independently from the Ministry of Foreign Affairs	Own construction based on OECD (2009)
H13	<b>Aid agency (Bertoli et al.)</b>	1: existence of national aid agencies operating independently from the Ministry of Foreign Affairs	Bertoli et al. (2008) (updated)
H14	<b>Debt</b>	General government gross financial liabilities as a percentage of GDP (code: GGFLQ)	OECD Economic Outlook ( <a href="http://stats.oecd.org/">http://stats.oecd.org/</a> )
H14	<b>Deficit</b>	Government net lending as a share of GDP (code: NLGQ)	OECD Economic Outlook ( <a href="http://stats.oecd.org/">http://stats.oecd.org/</a> )
H14	<b>Violation of Maastricht</b>	1 if deficit in excess of 3% of GDP or public debt in excess of 60% of GDP (also used for non-signatory countries) (codes: GGFLQ&NLGQ)	Own construction based on OECD data
H15	<b>Output gap</b>	Percentage difference between actual GDP and estimated potential GDP (in constant prices) (code: GAP)	OECD Economic Outlook ( <a href="http://stats.oecd.org/">http://stats.oecd.org/</a> )
H15	<b>Unemployment</b>	Rate of unemployment as share of civilian labor force (code: UNR)	OECD Economic Outlook ( <a href="http://stats.oecd.org/">http://stats.oecd.org/</a> )
H15	<b>Growth</b>	Annual growth of GDP (code: ny_gdp_mktg_kd_zg)	WDI (World Bank 2009)
H15	<b>Current account</b>	Current account balance as a percentage of GDP (code: GC.DOD.TOTL.GD.ZS)	WDI (World Bank 2009)
H15	<b>Business cycle</b>	Average growth rate of G7 countries (weighted by their share of GDP in total GDP)	Own construction based on WDI data (World Bank 2009)
H16	<b>Aid to CEEC/NIS</b>	Official aid to CEEC/NIS countries as a share of nominal GDP (Values before 1990 and after 2004 are set to zero)	OECD ( <a href="http://stats.oecd.org/">http://stats.oecd.org/</a> )
H16	<b>Imports DC</b>	Merchandise imports from developing countries as a share of donor GDP	UNCTAD ( <a href="http://unctadstat.unctad.org">unctadstat.unctad.org</a> )
H16	<b>Trade balance DC</b>	Exports to developing countries minus imports from developing countries as a share of donor GDP	UNCTAD ( <a href="http://unctadstat.unctad.org">unctadstat.unctad.org</a> )
H16	<b>Remittances paid</b>	Workers' remittances and compensation of nonresident employees, paid, as a share of GDP (code: BM.TRF.PWKR.CD.DT/NY.GDP.MKTP.CD)	WDI (World Bank 2009)
H16	<b>FDI</b>	Direct investment (flows) in non-OECD countries divided by donor GDP	OECD ( <a href="http://stats.oecd.org">stats.oecd.org</a> )
H16	<b>Military expenditure</b>	Military expenditure as a share of GDP (code: MS.MIL.XPND.GD.ZS)	WDI (World Bank 2009)
H16	<b>Military personnel</b>	Military personnel as a share of total labor force (code: MS.MIL.TOTL.TF.ZS)	WDI (World Bank 2009)

## Appendix B: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>Dependent variables</i>					
Aid effort, Disbursements	694	0.43	0.26	0.02	1.17
(excluding debt relief)	694	0.41	0.26	0.02	1.17
(bilateral)	691	0.28	0.18	0.00	0.81
(multilateral)	693	0.15	0.10	0.01	0.47
Aid effort, Commitments	663	0.49	0.27	0.09	1.78
<i>Explanatory variables (in alphabetic order)</i>					
Aid agency	726	0.38	0.49	0.00	1.00
Aid agency (Bertoli et al.)	726	0.37	0.48	0.00	1.00
Aid effectiveness	726	74.83	7.91	62.16	88.79
Aid to CEEC/NIS	689	0.01	0.04	0.00	0.53
Business cycle	726	2.71	1.28	0.04	4.85
Capital account	700	-0.21	4.63	-15.32	17.30
Checks and balances	713	4.27	1.39	1.00	16.00
Cold War threat	726	50.68	40.42	5.37	105.50
Colonial history	726	10.32	8.77	0.00	21.46
Cumulative left	468	13.48	10.76	0.00	44.86
Cumulative right	468	1.38	5.01	0.00	28.99
DAC terror incidents	726	95.27	29.85	34.75	148.75
Debt	561	61.71	29.82	7.65	175.27
Deficit	667	2.47	4.45	-18.45	15.96
Disasters	726	18.56	0.86	17.00	20.31
Economic globalization	726	70.81	14.88	29.75	98.90
FDI	436	0.02	0.14	-0.02	2.43
GDP per capita	726	9.85	0.42	8.57	10.94
Gov. fractionalization	709	28.38	27.41	0.00	82.78
Government size	667	45.41	8.25	26.06	70.93
Growth	726	2.67	2.19	-7.28	11.35
Ideology (fine-grained)	656	0.29	0.36	-0.57	1.00
Imports DC	726	4.44	2.41	1.39	18.82
Inertia (lagged DV)	690	0.43	0.26	0.02	1.17
Left seats	468	35.52	38.92	0.00	100.00
Life expectancy	726	3.99	0.05	3.88	4.07
Military expenditure	440	1.90	0.94	0.53	5.79
Military personnel	440	1.21	0.82	0.10	4.98
Number of IGOs	726	4.16	0.21	3.43	4.64
Number of NGOs	726	7.55	0.46	6.25	8.35
Opp. fractionalization	699	46.53	23.78	0.00	92.24
Output gap	687	-0.33	2.26	-9.43	7.23
Peer effect	726	0.38	0.05	0.28	0.48
Phone subscribers	726	-0.05	1.08	-1.19	3.04
Polarization	674	1.18	0.91	0.00	2.00
Political globalization	726	84.92	12.11	45.77	98.78
Population	726	16.49	1.43	12.80	19.52
Remittances paid	624	0.01	0.02	0.00	0.19
Right seats	468	3.01	15.11	0.00	88.00
Right-wing government	720	0.05	0.90	-1.00	1.00
Social globalization	726	71.29	15.19	31.39	95.01
Social spending	678	13.36	3.63	5.07	23.73
Terror incidents	726	4.33	11.34	0.00	69.00
Theil index	518	0.02	0.01	0.00	0.13
Trade balance DC	726	-0.73	2.19	-11.81	4.06
Unemployment	707	6.51	3.50	0.18	19.11
Violation of Maastricht	627	0.66	0.47	0.00	1.00
War on Terror	726	0.21	0.41	0.00	1.00
Women in parliament	642	17.37	11.57	0.00	47.30

### Appendix C: Literature Overview

Author(s) (Year)	Time period	Method	Countries	Dependent variable	Focus
<b>Beenstock (1980)</b>	1960-1976	Fixed Effects	6-8 donors	ODA disbursements ODA disbursements / GNP ODA disbursements per capita $\Delta$ ODA disbursements	Macroeconomic determinants
<b>Bertoli et al. (2008)</b>	1970-2004	Fixed Effects	22 DAC donors	ODA and OA disbursements / GDP	Macroeconomic, structural and institutional characteristics Low aid budgets in Italy
<b>Boschini and Olofsgård (2007)</b>	1970-1997	Fixed Effects GMM	17 DAC donors	(log) ODA disbursements	Security concerns Cold War
<b>Brech and Potrafke (2012)</b>	1960-2008	FGLS OLS Bruno estimator <sup>28</sup>	23 OECD donors	Growth of ODA / GDP	Government ideology Bilateral vs. multilateral aid Grants vs. loans
<b>Dreher and Fuchs (2011)</b>	1971-2008	Fixed Effects GMM	22 DAC donors	ODA commitments / GNI	Transnational terrorism War on Terror
<b>Faini (2006)</b>	1980-2004	Fixed Effects	15 DAC donors European subsample	ODA disbursements / GDP Total official flows / GDP Net aid transfer / GDP	Fiscal policy
<b>Frot (2009)</b>	1986-2000	Fixed Effects VAR	Up to 20 DAC donors	(log) ODA disbursements per capita	Financial crisis
<b>Lundsgaarde et al. (2007)</b>	1980-2000	Fixed effects	19 OECD donors	ODA disbursements / GNP	Imports from developing countries "Trade, not aid" debate
<b>Mosley (1985)</b>	1961-1979	Pooled OLS	9 OECD donors	ODA disbursements	Aid as a public good
<b>Round and Odedokun (2004)</b>	1970-2000	Fixed Effects	22 DAC donors G7 subsample	ODA disbursements / GDP	General determinants
<b>Tingley (2010)</b>	1971-2002	Pooled OLS Fixed Effects	18 DAC donors	$\Delta$ ODA commitments / GDP ODA commitments / GDP	Government ideology Bilateral vs. multilateral aid Low income recipients vs. middle income recipients

<sup>28</sup> Dynamic bias-corrected estimator (see Bruno 2005)