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Aid Allocation through Various Official and Private Channels: Need, Merit and Self-Interest as Motives of German Donors

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Abstract:

Previous literature largely ignores the heterogeneity of aid channels used by each single donor country. We estimate Tobit models to assess the relative importance of recipient need, recipient merit and self-interest of donors for various channels of official and private German aid across a large sample of recipient countries in 2005-2007. Our findings strongly underscore the need for a disaggregated analysis of aid allocation. Aid channels differ significantly in the extent to which need and merit are taken into account. Yet, the German case does not reveal unambiguously superior aid channels. Better targeted aid through some channels seems to be conditioned on political support by recipient countries in the UN General Assembly.

Keywords: aid allocation, aid channels, donor motives, Germany, Tobit models

JEL code: F 35

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1. Introduction

Donor fragmentation may impede aid effectiveness by imposing high transaction costs on the recipient countries and absorbing scarce administrative resources especially in the poorest among them (Acharya, Fuzzo de Lima and Moore 2006; Bigsten 2006). Recipient countries typically have to deal with dozens of donor countries and multilateral aid agencies. However, the "aid architecture" can be fairly complex even for single donor countries, extending well beyond official agencies or ministries whose *raison d'être* is to grant aid. The Ministry of Economic Cooperation and Development (BMZ) accounted for just half of German (bilateral and multilateral) ODA in 2006-2007.[1] Essentially the same applies to Sweden where SIDA (Swedish International Development Agency) handled little more than half of the country's total budget for development cooperation in 2005 (Dreher, Mölders and Nunnenkamp 2009).[2]

Official aid channels often include central government agencies with principal mandates other than international development cooperation, as well as regional and local bodies. In addition, private aid channels and public-private co-financing play an increasingly important role. The OECD's Creditor Reporting System implicitly acknowledges the importance of donor fragmentation within DAC countries by offering to users of its extensive database the option of breaking down total aid into "channels." However, doing so is of little practical use. About half of aid disbursed by all DAC countries in 2005-2007 remains "to be defined", i.e., is not assigned to any specific channel. Moreover, the "public sector" that accounts for most of the rest is no further differentiated.

Given the scarcity of relevant data, it is not surprising that the aid allocation literature has hardly addressed the question of whether the relative importance of "need, merit and self-interest" (Hoeffler and Outram 2008), representing the three major motives underlying aid, differs between aid channels used by one particular donor country. The bulk of previous literature compares the allocation of total aid across donor countries, notably with respect to classifying DAC countries into altruistic and selfish donors. Recent studies include Berthélemy and Tichit (2004), Berthélemy (2006), Dollar and Levin (2006), Nunnenkamp and Thiele (2006), Baulch (2006), Younas (2008), Hoeffler and Outram (2008), and Sawada, Yamada and Kurosaki (2008).[3] Donor countries have also been compared by analyzing the allocation of specific types of aid. For instance, Neumayer (2005) focuses on food aid, while Thiele, Nunnenkamp and Dreher (2007) cover sector-specific aid related to the Millennium Development Goals.

[1] See: http://www.bmz.de/de/zahlen/imDetail/Mittelherkunft_der_bi-_und_multilateralen_ODA_2006-2007.pdf; accessed: July 2009.
[2] See also Nunnenkamp, Weingarth and Weisser (2009) on the case of Switzerland.
[3] For a review of earlier studies, see Neumayer (2003).

The few papers that refer to aid channels in a donor country-specific context almost exclusively do so by comparing the allocation of aid through public and private channels.[4] Dreher, Mölders and Nunnenkamp (2009) analyze Sweden's aid delivery through (Swedish) NGOs. Schulpen (1997) provides an earlier and more detailed comparison of Dutch ODA and co-financed aid through clerical organizations in selected Indian states. Similarly, Nunnenkamp, Weingarth and Weisser (2009) are interested primarily in the distinction between Swiss ODA and Swiss NGO aid. However, these authors seem to be the first in considering various aid channels of one particular donor country. In particular, Swiss aid statistics allow for comparing the allocation of ODA from different public sources. Indeed, Nunnenkamp, Weingarth and Weisser find that it depends on the source of NGO funding as well as the choice of the official benchmark whether or not NGOs provide better targeted aid.

The differentiation between public and private aid channels is of interest in order to assess the widely held view that NGO aid is better targeted to the needy than ODA.[5] NGOs may be closer to the poor by circumventing (often corrupt) governments. Moreover, NGO aid is less likely to be distorted by political and commercial self-interest that official donors tend to have when deciding on the allocation of ODA. On the other hand, NGOs may be reluctant to address the most entrenched forms of poverty and to work in particularly difficult local environments. Rather, they may have to demonstrate visible and short-term results in order to secure future funding through private donations and/or official co-financing. According to the principal-agent model of Fruttero and Gauri (2005), funding concerns – notably dependence on official refinancing - tend to weaken the incentives of NGOs to engage where they might be needed most. This could explain why Dreher, Mölders and Nunnenkamp (2009) find the poverty orientation of Swedish aid delivered through NGOs to be surprisingly weak.

While the distinction between private and official aid channels may be blurred by co-financing mechanisms, it would be equally simplistic to assume that aid allocation through the various official channels is driven by a uniform set of donor motives. As a matter of fact, individual donor countries such as Germany do not have full control over some aid channels. Debt relief provides a case in point: While the cancellation of repayment obligations related to ODA loans from particular donor countries counts as bilateral aid, debt relief efforts are often the result of multilateral negotiations (among members of the so-called Paris Club). As a

[4] Raschky and Schwindt (2009) provide an exception. They find that international aid efforts to help relieve disasters depend on whether donors deliver this type of aid through bilateral or multilateral channels. OECD donors prefer bilateral channels if the recipient country struck by disaster is of commercial interest to them (in terms of trade and availability of oil resources).

[5] See Koch et al. (2009) for a detailed discussion of hypotheses related to the pros and cons of NGO aid compared to ODA.

consequence, one would expect that such aid channels are less affected by commercial and political interests that national donors might have.

At the opposite end of the spectrum, local and regional bodies often decide over the allocation of part of a donor country's ODA. As will be shown below, the German Länder (federal states) have a peculiar aid agenda due to the fact that education belongs to their core competences in the German federal system. This is likely to result in aid allocation criteria that differ from those driving ODA from central government agencies.

Different criteria may apply even if central government agencies have the say over the allocation of ODA. This is fairly obvious in cases such as Switzerland where the State Secretariat for Economic Affairs (SECO) represents an important official source of ODA (Nunnenkamp, Weingarth and Weisser 2009); SECO's principal mandate is to "ensure sustainable economic growth" in Switzerland, e.g., by helping "ensure access to all markets for Swiss goods and services and investment."[6] However, the relative importance of need and merit, if not the donor's self-interest, can also be supposed to differ between implementing agencies of the same central ministry. Various German agencies are handling different aspects of international development cooperation under the BMZ umbrella (see Section 2 for details). Taking recent donor statements at face value, merit should figure most prominently as a determinant of financial cooperation, compared to (project-specific) technical cooperation. For example, BMZ guidelines explicitly state that general budget support should be granted primarily to well governed recipient countries (BMZ 2008). By contrast, emergency aid may be driven exclusively by need and is most unlikely to reward better governed recipient countries.

In summary, analyzing aid allocation on the basis of aggregate aid statistics is likely to blur significant differences between aid channels. Aid from a single donor country can be expected to reveal as much heterogeneity as the well known comparisons across donor countries. This proposition is tested in the following for the case of Germany, which ranked third among all DAC donor countries with disbursed aid in the order of US$ 33 billion in 2005-2007.[7] We discuss data issues and method in Section 2. Results are presented in Section 3, and Section 4 concludes.

[6] Quotes are from: http://www.seco.admin.ch/org/00686/index.html?lang=en; accessed: July 2009.
[7] Data from: http://stats.oecd.org/qwids/; accessed: July 2009.

2. Data and estimation approach

German aid channels

We combine two datasets on various channels through which German aid is delivered. The first source is a detailed account of bilateral ODA across recipient countries.[8] In addition to separating financial cooperation from technical cooperation, this source further refines the channels through which the German Ministry of Economic Cooperation and Development (BMZ) offers technical cooperation – including through refinancing private donors such as clerical organizations, political foundations and other NGOs. Public sources other than BMZ and its implementing organizations are also listed separately, e.g., other ministries (notably, the Ministry of Foreign Affairs) and the federal states. Finally, emergency aid as well as aid by means of debt relief and restructuring is separated from regular aid channels.

The second source provides a comparable format for NGO aid proper, i.e., the allocation of the German NGOs' own resources raised through donations, sales and membership fees. These data are collected by the Statistisches Bundesamt for a large number of German NGOs; about 500 organizations participated in the survey for 2007.[9] In contrast to BMZ's refinancing of private donors, NGO aid proper cannot be differentiated into clerical organizations and other NGOs. Moreover, coverage may still be less than complete, but we are not aware of any other major donor country providing similarly rich information on the cross-country allocation of NGO aid proper.[10]

The data available from these sources cover just three years, 2005-2007, which prevents us from analyzing aid allocation in a panel context. On the other hand, coverage of aid recipients is complete, with all low- and middle-income countries being listed for all channels of aid. This allows us to consistently compare the allocation of aid between (i) different public agencies, (ii) official and private donors, and (iii) self-financed and officially refinanced NGO aid.

These comparisons are clearly relevant as several channels play a quantitatively important role for German aid (Figure 1). Debt relief accounted for almost 45 percent of total

[8] Note that, at the time of writing this paper (July 2009), the data used here were not available from the English version of BMZ's website; for 2007 data see: http://www.bmz.de/de/zahlen/imDetail/Bilaterale_ODA_nach_Instrumenten_und_Laendern_2007_im_Detail.pdf (accessed: June 2009).

[9] Personal communication with Statistisches Bundesamt and BMZ. The NGOs' response ratio was about 50 percent. Participation of NGOs is voluntary, with an increasing number of organizations having provided data in recent years; see also Dietz and Gude (2007). Hence, it would make sense to focus on 2005-2007 even if data for NGO aid were available for earlier years.

[10] The data made available to us are aggregated over all participating NGOs. To the best of our knowledge, Switzerland is the only DAC member that publishes NGO-specific data on the cross-country allocation of NGO aid proper; for details, see DCC (various issues).

bilateral German ODA of € 17.4 billion in 2005-2007. This is due to some exceptionally large relief operations, notably for Iraq in 2005 and 2007 (€ 3.1 billion) and Nigeria in 2005 and 2006 (€ 2.4 billion). By contrast, (regular) financial cooperation plays a minor role when considering *net* disbursements as in Figure 1 (i.e., loan repayments, sales of equity shares held by DEG,[11] etc., are subtracted from gross disbursements). In the estimations performed below, we use an alternative measure of financial cooperation, namely financial grants.[12] The sum of grants in 2005-2007 amounted to € 2.1 billion, compared to net financial cooperation of € 0.9 billion.

German ODA involves several implementation agencies, funded by BMZ, focusing on financial cooperation (KfW banking group, including DEG), technical cooperation (GTZ) and human resource development (InWEnt, DED, CIM). Apart from these well-known ODA channels, BMZ refinances private donors. BMZ funds delivered through clerical organizations, political foundations and other NGOs amounted to €1.26 billion in 2005-2007, representing 7.2 percent of total bilateral ODA.

While BMZ is funding about 35 percent of net disbursements of German bilateral ODA, other federal ministries as well as the German states are relevant actors, too.[13] Aid at the state level is largely restricted to financing scholarships for students from developing countries. Among other federal ministries, the Ministry of Foreign Affairs figures most prominently.[14] This offers an interesting comparison with BMZ's aid allocation, especially on whether BMZ focuses more on poorer recipient countries than other ministries for which political and strategic motivations may loom larger.

Finally, NGO aid proper (including aid from clerical organizations and foundations, to the extent that those took part in the aforementioned survey) contributes considerably to German bilateral aid. In 2005-2007, NGOs spent own resources almost in the order of the net disbursements channelled through BMZ's major official implementing organizations. Adding up NGO aid proper and officially refinanced aid of clerical organizations, political

[11] DEG (Deutsche Investitions- und Entwicklungsgesellschaft) is part of KfW banking group. Inter alia, DEG carries out loan programmes, supporting investment projects in developing countries, on behalf of the German federal government.

[12] In contrast to loans and DEG equity participation, grants constitute a net financial transfer by definition. Net financial cooperation, including loans and repayments, is negative in various cases. Setting all these observations equal to one, in order to be able to take logs, may bias the data. This is why we prefer grants as a measure of financial cooperation.

[13] BMZ's share in bilateral ODA rises to about 50 percent (2006/07) when financial cooperation with respect to market-related loans and repayments are separated from BMZ accounts (http://www.bmz.de/de/zahlen/imDetail/Mittelherkunft_der_bi-_und_multilateralen_ODA_2006-2007.pdf; accessed: July 2009)

[14] See: http://www.bmz.de/de/zahlen/imDetail/Mittelherkunft_der_bi-_und_multilateralen_ODA_2006-2007.pdf; accessed: July 2009.

foundations and other NGOs, NGOs allocate almost 22 percent of overall (public plus private) bilateral aid.

It remains open to question, however, whether the involvement of NGOs has strengthened the poverty orientation of German aid. The share of aid that the various channels provide for Sub-Sahara Africa may offer first clues in this regard. The need for aid is clearly most urgent in this region where two thirds of all low-income countries are located (World Bank classification). At the same time, less than one third of Sub-Sahara African countries do not fall into the low-income category. The region also stands out in that more than 40 percent of its population were still living on less than one dollar a day in 2004.[15]

Nevertheless, less than 30 percent of NGO aid proper flows to Sub-Sahara Africa (Figure 2). The focus on the neediest region is still weaker for BMZ funds channelled through German NGOs, except for BMZ financing of aid projects administered by clerical organizations. The same applies to ODA from federal ministries other than BMZ and the German states. On the other hand, BMZ-funded official channels of financial and technical cooperation, including human resource development, deliver a relatively high share of ODA to Sub-Sahara Africa.[16] However, multivariate regression analyses are required to gain deeper insights into the poverty orientation of different types of aid.

Before introducing the independent variables capturing different aid motivations and specifying our estimation approach, we present pair-wise correlations between per-capita aid delivered through different channels in Table 1. The cross-country allocation of BMZ funds through regular official channels (financial cooperation, technical cooperation through GTZ, human resource development) appears to be fairly similar, as far as simple correlations can tell. The same applies to several correlations of these regular official channels with BMZ refinancing of private donors (as well as "other technical cooperation"). In some contrast to what we suspected above, aid allocation by other ministries is relatively strongly correlated with BMZ-funded financial and technical cooperation.

On the other hand, aid by means of debt relief is clearly distinct, which is not surprising as major relief operations involved a limited number of recipient countries in the period under consideration. Correlations of emergency aid with most other aid channels are also weak, except for BMZ refinancing of clerical organizations and NGOs' own resources. The allocation of NGOs' own resources is rather weakly correlated with most other aid channels.

[15] See: http://siteresources.worldbank.org/INTGLOMONREP2008/Resources/4737994-1207342962709/251-268_GMR08_mdg_web.pdf; accessed: June 2009.

[16] This also holds for financial cooperation when considering financial grants, rather than net disbursements of grants and loans as in Figure 2; Sub-Sahara Africa received 38 percent of grants.

Explanatory variables

The sample underlying the subsequent analysis consists of 152 countries listed by BMZ and Statistisches Bundesamt as potential recipients of German aid. However, we lose some observations due to data limitations with regard to possible determinants of aid allocation. As concerns the need for aid, we employ three indicators to assess the poverty orientation of aid delivered through different channels. In line with most previous studies, we choose (log) GDP per capita as our standard indicator of need. Alternatively, we consider the infant mortality rate. It is widely acknowledged that average incomes may capture recipient need at best partly, which leads Younas (2008) to apply infant mortality as an indicator of "physical need."[17] We also use the UNDP's Human Development Index, which provides a broader measure of need by including life expectancy at birth, literacy rates, and school enrolment rates, next to GDP per capita.

Similar to Hoeffler and Outram (2008), we consider the merit for aid to be related to the recipient countries' quality of governance. This is based on Burnside and Dollar's (2000) reasoning that aid tends to be more effective in countries with better policies and reasonably well developed institutions. The quality of governance is measured in alternative ways. Our preferred measure is "voice and accountability" taken from Kaufmann, Kraay and Mastruzzi (2005). This index takes higher values if democratic institutions are better developed. Alternatively, we use the combined average ratings of political rights and civil liberties by Freedom House (2006), ranging from 1 – 7, with higher values indicating *less* democratic governance. While these two indicators proxy for democracy, we also employ an indicator capturing important aspects of economic institutions: the rule of law index from Kaufmann, Kraay and Mastruzzi (2005); higher scores reflect better environments. Control of corruption comes from the same source. Finally, we make use of the Failed States Index available from the Fund for Peace.[18] While this index provides a broader measure of state failure than more specific institutional conditions, the index also covers aspects of recipient need for aid; e.g., one of the indicators reflects "uneven economic development along group lines."

To check whether the allocation of aid is shaped by commercial and political self-interest of donors we include (i) the share of the recipient country in German exports to all sample countries and (ii) the degree of voting coincidence between the recipient country and

[17] Berthélemy and Tichit (2004) also include infant mortality as a determinant of aid allocation. However, these authors regard infant mortality as indicating social policy outcomes and expect its coefficient to be negative (i.e., higher mortality leading to less aid).

[18] http://www.fundforpeace.org/web/index.php?option=com_content&task=view&id=99&Itemid=140; accessed: July 2009.

Germany in the United Nations General Assembly. These variables are standard in the recent aid allocation literature (e.g., Alesina and Dollar 2000; Fleck and Kilby 2006; Nunnenkamp and Thiele 2006; Hoeffler and Outram 2008).

In *Robustness and Extensions* of Section 3 below, we introduce some additional factors that may shape the allocation of aid. In particular, the severity of disasters as well as ODA granted by other DAC countries are included in extended versions of the basic Tobit models. Instead of ODA granted by other DAC countries, we include BMZ-funded technical cooperation (excluding BMZ refinancing of private donors) as a factor that may influence the allocation of NGO aid proper and, in particular, officially refinanced private aid. Finally, in all specifications, we include the recipient countries' (log) population as an independent variable since the dependent aid variables are defined in absolute terms.

Some of the explanatory variables may not be exogenous, e.g., if effective aid helps raising the per-capita income of recipient countries. Note, however, that reverse causation is unlikely to distort our empirical results. Large parts of aid are generally unlikely to have *short-term* effects on economic outcomes and institutional conditions (Clemens, Radelet and Bhavnani 2004; Burnside and Dollar 2004). Furthermore, sums delivered through specific German aid channels are most probably too small to shape economic outcomes and institutional conditions in countries that typically receive aid from dozens of countries and various private donors. Nevertheless, essentially all our explanatory variables are lagged, referring to 2004 whenever possible. Exact definitions and sources as well as summary statistics and the correlations between all variables used in the estimations are presented in Appendices 1-3.

Estimation approach

In our regression analysis, we take (logged) amounts of aid rather than aid per capita as the dependent variables.[19] This reflects the fact that donors are more likely to allocate a fixed overall amount of money per country than distributing aid on a per-capita basis (e.g., Neumayer 2003).

The disaggregation of German aid yields many zero observations in our data; the number of countries receiving aid depends on the channel through which aid is delivered. To account for this distinguishing feature of our dependent variables, we adopt Tobit estimations as OLS estimations would be biased.

[19] Note that there are some negative values of ODA total as well as various zero observations. To avoid any loss of observations, we set the negative values equal to 0 and add up 1 to all values before taking the logarithm.

We assess the effects of the explanatory variables on aid allocation through the various channels by estimating a Tobit model for each single aid channel. Furthermore, we estimate SUR (seemingly unrelated regression) to address the issue of comparing coefficients across several regressions. More precisely, it allows us to test the equality of the coefficients.[20]

The basic specification of the Tobit estimation is defined as follows:

$$Aid_i = \max(0, \alpha + \beta_1 * Population_i + \beta_2 * per-capita\,GDP_i + \beta_3 * Voice_i + \beta_4 * Export\,share_i + \beta_5 * UN\,votes_i + \varepsilon_i)$$

Note that the coefficients β_j (reported in Appendices 4-6) cannot be interpreted directly in the context of the nonlinear Tobit model. Instead, we are interested in the marginal effects of the explanatory variables on $E(Aid_i|x_i)$.[21] We calculate them at the mean of the respective covariates.[22]

3. Results

Basic results

In our basic Tobit model, we capture the need for aid by the recipient country's per-capita GDP. Merit is proxied by the quality of democratic institutions as given by voice and accountability from the World Bank's Worldwide Governance Indicators. Donor self-interest is taken into account by the recipient country's relative importance as a German export market and by the degree of its UN voting coincidence with Germany. The results are reported in Table 2 for essentially all German aid channels for which data exist.[23]

One striking finding has to be noted before turning to our variables of principal interest, i.e., the coefficient of population for which we control for the reasons given above. In sharp contrast to conventional wisdom, the coefficient is larger than one for all aid channels. For some channels, we even find a marginal effect of about three percent. In other words, German aid in 2005-2007 reveals a strong large-country bias, rather than the typically found

[20] As the results of the SUR do not substantially differ from the results of the single regressions, we do not report them.

[21] We limit our analysis to the overall marginal effects. The two other marginal effects, on $P(Aid_i|x_i)$ and $E(Aid_i|x_i, Aid_i>0)$, are available on request.

[22] Note that the marginal effects can be interpreted as elasticities when the dependent and independent variables are in logs. Likewise, we get semi-elasticities when the independent variable is in levels.

[23] We exclude BMZ refinancing of political foundations as well as aid for foreign refugees in Germany. The sums for the latter type of aid are marginal (€ 10-15 million annually in 2005-2007). The former type involves slightly higher sums than BMZ refinancing of clerical organizations (see Figure 1), but about 80 percent of total BMZ refinancing of political foundations is not allocated to specific recipient countries in the database, possibly because the political foundations cover various neighbouring countries from regional representative offices.

small-country bias.[24] Closer inspection of the data reveals that huge recipient countries such as China and India received fairly low German aid in per-capita terms, as one would expect. Rather, the large-country bias appears to be due to various small countries with populations of less than one million not having received any German aid in 2005-2007. It is also interesting to note in this context that the BMZ came up with the so-called anchor country concept during the period under consideration here.[25] The 15 anchor countries, considered to be indispensable partners for global development, are all fairly populous.

The extent to which the allocation of aid is needs-based differs considerably between German aid channels. Aid through some channels is not at all related to need. Various debt relief operations were orchestrated for middle-income countries, including upper middle-income countries such as Serbia & Montenegro and Gabon. The disconnection from need of aid at the state level may be because the demand for scholarships is mainly from middle-income countries where the incentives for human capital formation through studying abroad tend to be stronger than in poor subsistence economies.[26] The observation that German ministries other than BMZ lack any poverty orientation when allocating aid suggests that developmental concerns are blurred by broader (political or strategic) objectives of these donors.

There are striking differences in the degree of poverty orientation even between those channels for which aid allocation is shown to be needs-based. The marginal effects of per-capita GDP on aid by means of financial cooperation are clearly strongest. In quantitative terms, an increase in per-capita GDP by one percent decreases financial cooperation by 4.1 percent. Testing for significant differences between the corresponding regression coefficients, financial cooperation proves more poverty oriented than technical cooperation at the one percent level. An increase in per-capita GDP by one percent reduces technical cooperation by 1.1 percent. However, even within the spectrum of technical cooperation, the poverty orientation varies considerably. Interestingly, needs-based targeting of BMZ's refinancing of NGOs is significantly stronger (at the one percent level) than the targeting of BMZ's overall technical cooperation. At the same time, while German NGOs allocate their own resources according to need, targeting is significantly weaker than that of BMZ funds channelled

[24] This cannot be attributed to the sources of aid data that we use here. We replicated the estimate for total German ODA with OECD data from its International Development Statistics, and again found the large-country bias for German aid in 2005-2007 (results not shown). The estimation results of Younas (2008) for total German ODA are also in conflict with the conventionally found small-country bias.

[25] See: http://www.bmz.de/en/countries/partnercountries/ankerlaender/index.html; accessed: July 2009.

[26] This may also explain why human resource development through technical cooperation by central government agencies such as DED and InWEnt (column 6 in Table 2) is less poverty orientated than other BMZ funds; this difference is significant at the five percent level.

through NGOs. This finding is in some conflict with the widely perceived closeness of NGOs to the poor that should show up in the allocation of their own resources in the first place.

Similarly pronounced differences can be observed between German aid channels with respect to merit determining aid allocation. The marginal effects of voice and accountability on financial grants are particularly strong. Likewise, some channels of technical cooperation are not only more needs-based than others, but at the same time more rewarding to countries with more democratic institutions. This applies especially to BMZ's refinancing of NGOs. Also similar to need, the targeting according to merit of BMZ funds channelled through NGOs turns out to be significantly stronger (at the one percent level) than that of NGOs' own resources.[27] This may also reflect, however, that NGOs are tempted to work in easier environments in particular when relying on official refinancing, as suggested by Fruttero and Gauri (2005).

Note that debt relief is neither shaped by need nor by merit. Arguably, the former finding is because debt problems were concentrated in middle-income countries, while the poorest countries had received grants rather than ODA loans. However, the latter finding is rather puzzling, recalling donor statements according to which debt relief, e.g., in the context of the Heavily Indebted Poor Countries (HIPC) initiative, was subject to strict conditions, including a national poverty reduction strategy developed through participatory processes.[28] At the same time, the fairly ambiguous picture on the determinants of debt relief, together with the quantitative importance of this aid channel in recent years, clearly reveals the limitations of analyzing allocation of *aggregate* aid.

In contrast to debt relief, it was to be expected that merit does not play a significant role for the allocation of emergency relief. Aid from other ministries is exceptional as countries with better developed democratic institutions get significantly *less* aid through this channel. Especially the Ministry of Foreign Affairs may have granted aid to countries such as Afghanistan, Iraq and Sudan in order to promote democratization, rather than rewarding good governance.[29] These findings underscore the need for a disaggregated analysis of aid allocation. In other words, the heterogeneity across specific aid channels may at least partly explain the rather ambiguous findings of previous studies for overall German aid (Berthélemy and Tichit 2004; Nunnenkamp and Thiele 2006; Hoeffler and Outram 2008).

[27] As shown in column 13 of Table 2, merit affects the allocation of NGO aid proper only at the ten percent level.
[28] For details, see: http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTDEBTDEPT/0,,contentMDK:20260411~menuPK:64166739~pagePK:64166689~piPK:64166646~theSitePK:469043,00.html; accessed: July 2009.
[29] Twelve recipient countries, including Afghanistan, Iraq and Sudan, each received annual aid of more than € 5 million from other German ministries. The average indicator value of voice and accountability for this group was considerably below the overall sample mean (-0.73 versus -0.4).

This is not to ignore some common features of aid allocation across almost all German aid channels. Most importantly, the results reported in Table 2 are in conflict with some previous studies according to which trade-related donor interest had significantly shaped the allocation of German aid (Berthélemy 2006; Hoeffler and Outram 2008).[30] Note that the present analysis is restricted to 2005-2007. Possibly, German donors have become more altruistic recently. The marginal effects of German exports on aid clearly differ between aid channels. But for none of the channels do we find that more aid was granted to more important export markets. It rather appears that German donors took the recipient countries' absorption of German exports as another indication of their need for aid.

In contrast to commercial motives, we find clear evidence for German political interests having shaped the allocation of aid through various channels. The marginal effect of UN voting coincidence is strongest for financial grants: An increase in the coincidence by one percent increases financial grants by 0.28 percent.[31] The corresponding coefficient is significantly higher (at the five percent level) than the coefficient for technical cooperation. Compared to technical cooperation tied to specific projects, financial cooperation involves more discretion of how to use aid and, thereby, offers greater benefits to recipient countries. This may induce donors to condition financial grants more strongly on political support by the recipient country (Dreher, Nunnenkamp and Thiele 2008).

More surprisingly, aid granted by German ministries other than BMZ is not shaped in a stronger way by UN voting coincidence than BMZ's technical cooperation. Some particular channels of technical cooperation are not affected by political self-interest as reflected in UN voting patterns. This applies especially to BMZ's refinancing of clerical organizations and other NGOs. Similar to the case of Switzerland (Nunnenkamp, Weingarth and Weisser 2009), it appears that the NGO channel is sometimes used by official donors to deal with politically "less friendly" recipient countries. Likewise, debt relief is not affected by UN voting, possibly because relief operations are often orchestrated in a multilateral setting.

Robustness and extensions

We present two sets of robustness tests in Table 3 by employing (i) alternative measures of need and (ii) several institutional indicators to capture merit. To save space we only report the marginal effects of the alternative variables.[32] The effects of the remaining standard variables

[30] However, trade-related self-interest did not result in higher German aid according to Berthélemy and Tichit (2004).
[31] Note that the variable UN votes is the share of voting coincidence between the recipient country and Germany in the United Nations General Assembly.
[32] Complete results are available on request.

are hardly affected. A notable exception is that voice and accountability is no longer significant in the allocation of financial grants when replacing per-capita GDP by alternative measures of need.

Measuring need by the more broadly based Human Development Index, instead of per-capita GDP, has little effect on previous findings. Once again, the poverty orientation of financial cooperation turns out to be significantly stronger (at the one percent level) than the poverty orientation of technical cooperation. Moreover, it remains that recipient need shapes the allocation of NGO-administered BMZ aid in a stronger way than the allocation of the NGOs' own resources. Both findings also hold when replacing per-capita GDP by infant mortality as an indicator of physical need, although the coefficients of infant mortality are significantly different between financial and technical cooperation only at the ten percent level. More generally, infant mortality typically reveals somewhat weaker effects than per-capita GDP and the HDI.

We also tried "uneven economic development along group lines" within the recipient countries, i.e., one of the elements of the Fund for Peace's Failed States Index as an indicator of need. We entered this indicator in addition to per-capita income. It takes higher values for countries with higher group-based inequality so that a positive coefficient would point to relative levels of poverty shaping the allocation of aid through a particular channel. The sample shrinks to 108 observations as the index is not available for various small countries, and we do not report detailed results. It should be noted, however, that we find some support for the view that NGOs are concerned about relative poverty when allocating their own resources. Uneven economic development also results in higher technical cooperation.

Turning to alternative institutional indicators in the lower panel of Table 3, the results change only slightly when employing the rating of political and civil liberties by Freedom House.[33] This is not surprising as this is a measure of democratic institutions, as is voice and accountability. Notably, aid from other German ministries is once again an exception by favouring less democratic recipient countries.[34] As for the other two indicators from the World Bank's Worldwide Governance Indicators, the results for control of corruption also resemble those for voice and accountability relatively closely. The coefficient turns insignificant in the estimation for NGOs' own resources. Yet we find no evidence that German NGOs spend their own resources predominantly in countries with difficult

[33] Note that Freedom House takes higher indicator values when democratic institutions are less advanced, in contrast to voice and accountability.

[34] The same still applies when replacing voice and accountability by the rule of law index that proxies for economic institutions. However, the coefficient of institutions turns insignificant for aid from other ministries for the remaining two indicators.

institutional conditions. The rule of law index performs less well for various aid channels, probably because the focus of most donors is on broader political aspects of good governance. The results prove to be weakest when using the Failed States Index from the Fund for Peace. This index differs from the previous institutional measures as it covers a wider array of state failure. As mentioned before, the index even includes aspects of recipient need, for which we would expect a positive sign. Moreover, while donors may generally reward good governance, recent attempts at post-conflict resolution in countries ranking high in the Failed States Index involved considerable aid efforts, with the Dem. Rep. of Congo representing a prominent example.

In Table 4, we return to the preferred set of measures of need and merit but extend the specification in two ways. First, we add the number of deaths caused by disasters in the recipient country, taken from the Emergency Events Database. This variable is expected to account for exceptional cases of need that may have significant effects of aid allocation through specific channels, notably emergency relief. Second, we follow previous studies such as Berthélemy and Tichit (2004) and Berthélemy (2006) in that we account for ODA granted by all other DAC countries. This variable should affect the allocation of aid through German aid channels negatively if German donors specialized and avoided duplication of aid efforts. By contrast, a positive effect of this variable would indicate parallel behaviour, i.e., German donors adding to the widely perceived dichotomy between “aid darlings” and “aid orphans.”

It is reassuring that the extensions of the basic Tobit models hardly affect the previous results for the standard set of aid determinants. This holds for all German aid channels under consideration. In some cases, the level of significance and the overall marginal effects decline slightly, but all major findings carry over to the extended versions. Nevertheless, there are some interesting additional insights from Table 4.

The additional indicator of need, the number of deaths caused by disasters, has the expected positive effect on BMZ’s emergency aid (column 8 in Table 4). More surprisingly, disaster-related need does not result in more aid through any other aid channel. In particular, German NGOs do not direct more aid, by using either their own resources or BMZ refinancing, to recipient countries struck by more serious disasters. To the contrary, aid through some channels appears to be negatively affected by disasters. As concerns aid from German states as well as BMZ-funded human resource development, this may be due to less demand for scholarships and, more generally, human resource development under disaster conditions. However, we also find indications that emergency aid is not fully additional to

regular aid, but tends to substitute for technical cooperation channels such as GTZ-administered funds.[35]

None of the German aid channels allocates aid in a way that prefers the aid orphans of other DAC donors. Nevertheless, there are considerable differences between German aid channels with respect to parallel behaviour. It appears that parallel behaviour is predominantly a phenomenon among official aid agencies. By contrast, the allocation of NGO-administered ODA and NGOs' own resources is unaffected by aid from DAC donors other than Germany.[36] This does not imply, however, that German NGOs allocate aid in a fully autonomous way. The bottom line of Table 4 presents an additional estimation for the three aid channels involving private agents in which we replace aid from DAC countries by BMZ's technical cooperation (netting out BMZ's refinancing of private agents). It turns out that clerical organizations as well as other NGOs tend to replicate BMZ's aid allocation. Not surprisingly, the NGOs' autonomy is relatively strongly affected when allocating officially refinanced aid. The effect of BMZ aid on ODA funds administered by clerical organizations and other NGOs is significantly higher than the corresponding effect on the NGOs' own resources at the one (clerical organizations) and five (other NGOs) percent level, respectively.[37]

4. Summary and Conclusion

Aid from a single donor country can be expected to reveal as much heterogeneity as the well known comparisons across (altruistic and selfish) donor countries. We address a major limitation of the aid allocation literature that largely ignores the variety of aid channels within particular donor countries. The relative importance of recipient need, recipient merit and self-interest of donors – i.e., the three major motives driving aid - is supposed to differ not only between official aid and self-financed NGO aid proper but also across the various official aid channels, including publicly refinanced aid administered by private agents.

We evaluate these propositions for the case of Germany which ranks among the top aid donor countries. We draw on two little known datasets providing an exceptionally detailed account of the cross-country allocation of aid through BMZ and its implementation agencies, other ministries, the federal states, officially refinanced private donors as well as German NGOs using their own resources. We estimate Tobit models to assess the marginal effects of need, merit and donor interest on aid allocation through all these channels in 2005-2007.

[35] These results hold when measuring the severity of disasters by the number of people affected, instead of the number of deaths, even though marginal effects and the level of significance weaken somewhat (not shown).
[36] The same applies to aid from German states and other ministries.
[37] Recall that the NGOs' own resources cannot be differentiated between clerical organizations and other NGOs.

Our empirical findings strongly underscore the need for a disaggregated analysis of aid allocation. The extent to which aid allocation is needs-based differs significantly as SUR estimates attest. While the poverty orientation of BMZ-funded financial cooperation is clearly strongest, other ministries lack any poverty orientation – suggesting that developmental concerns tend to be blurred by other (political or strategic) objectives of these donors. German NGOs allocate their own resources according to recipient need but, surprisingly, this targeting turns out be relatively weak compared to that of BMZ technical cooperation funds channelled through private agents.

Similarly pronounced differences between German aid channels are observed with respect to merit. Indeed, there is a striking parallel between our findings and those of Dollar and Levin (2006): Comparing donor countries as well as international agencies, Dollar and Levin conclude that the same group of multilateral and bilateral aid agencies that are poverty focussed are also rewarding merit of recipients. Likewise, some German aid channels are not only more needs-based than others, but at the same time more rewarding to countries with more democratic institutions or less corruption.

This finding does not necessarily imply, however, that better targeted aid is purely altruistic. To the contrary, we find clear evidence for German political interests – though not export-related commercial interest - having shaped the allocation of aid through various channels. In particular, financial cooperation seems to be conditioned on political support by the recipient country in the UN General Assembly. This may be the price of financial grants offering greater benefits to recipient countries than project-tied technical cooperation.

Taken together, the German case does not suggest that one particular aid channel is unambiguously superior in terms of targeting the needy and deserving as well as avoiding self-interest of donors to shape the allocation across recipient countries. The closeness of NGOs to the poor is less compelling than widely perceived. More flexible forms of ODA such as financial grants tend to involve a trade-off for the recipient between more discretion in how to use aid and more pressure to politically support the donor. Comparable analyses for other important donor countries would be desired to arrive at stronger policy conclusions. Hence, it would be extremely useful if the OECD's Creditor Reporting System succeeded in filling the huge gaps in data availability concerning specific aid channels.

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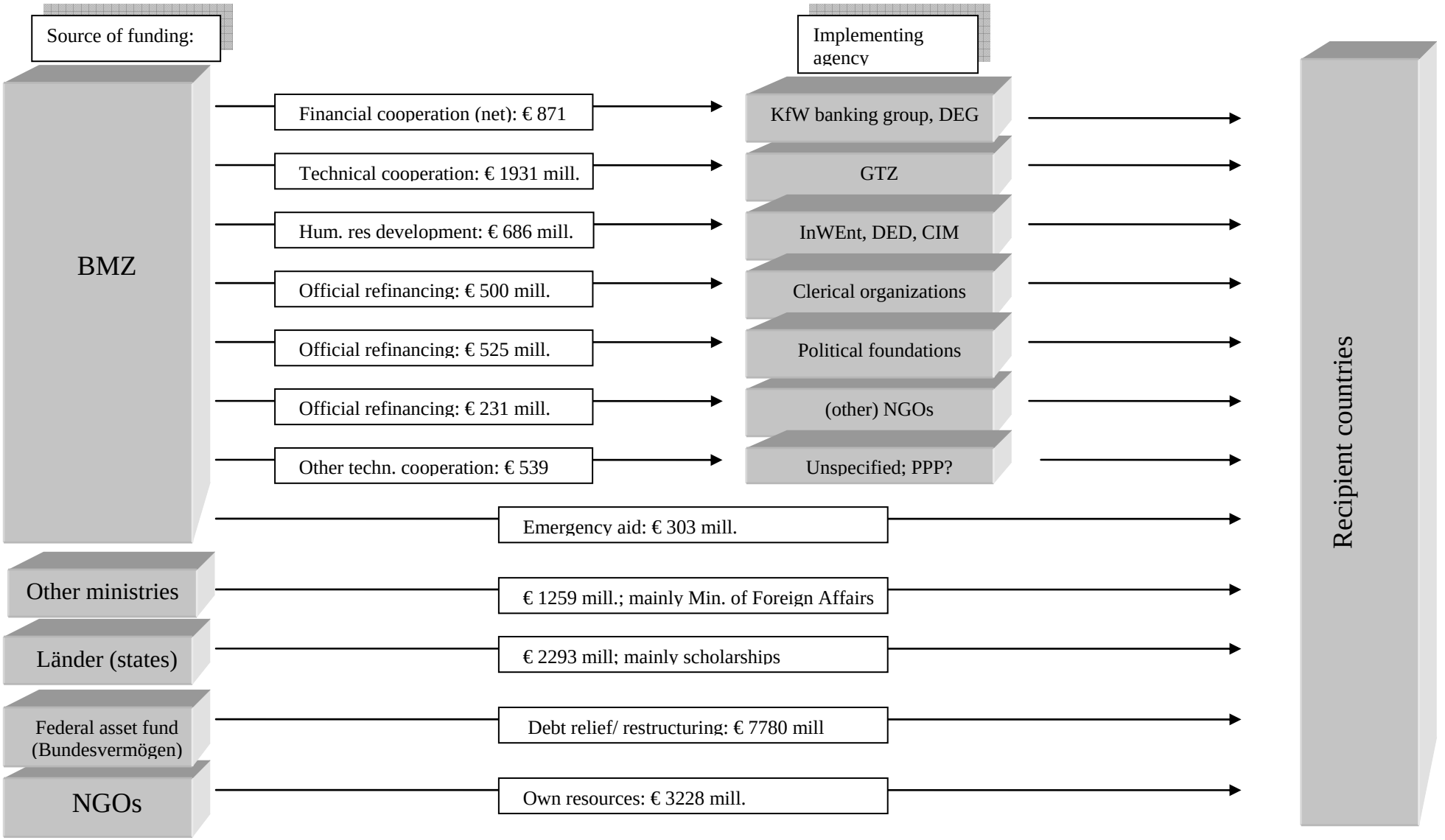
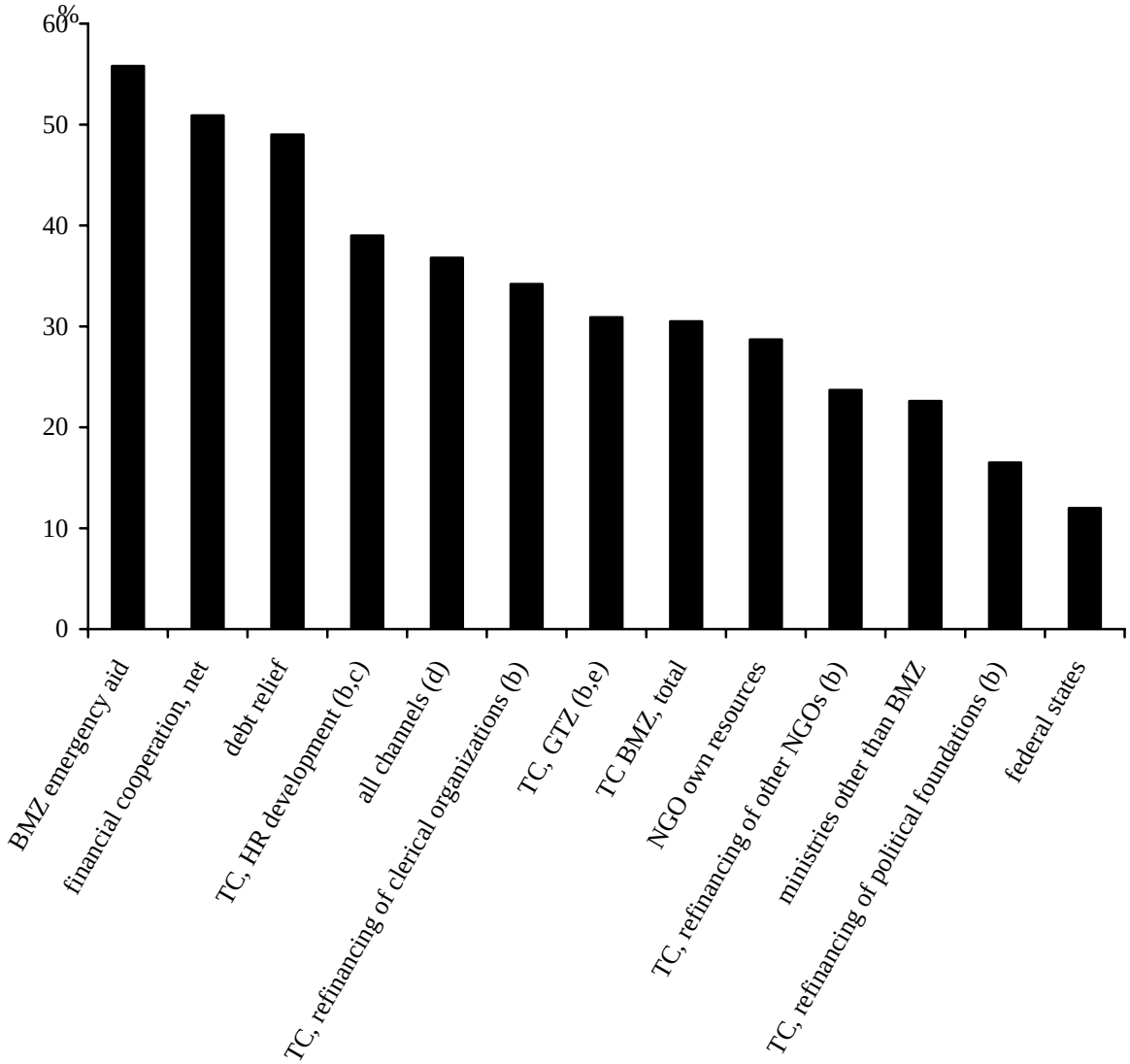
Figure 1 - German aid channels: Bilateral (net) disbursements of ODA and private aid[a], 2005-2007



[a] Including amounts not allocated to particular recipient countries and regions. BMZ: Ministry for Economic Cooperation and Development; CIM: Centrum für Internationale Migration und Entwicklung; DED: Deutscher Entwicklungsdienst; DEG: Deutsche Investitions- und Entwicklungsgesellschaft; GTZ: Deutsche Gesellschaft für Technische Zusammenarbeit; InWEnt: Internationale Weiterbildung und Entwicklung. Source: BMZ, Statistisches Bundesamt

Figure 2 — German aid channels: Share of Sub-Sahara Africa in bilateral (net) disbursements (a), 2005-2007



[a]Excluding unallocated amounts for all channels. [b]Part of TC BMZ, total. [c]German Development Service (DED), Capacity Building International (InWEnt), Centre for International Migration and Development (CIM), etc. [d]Including minor channels not listed here. [e]Technical cooperation by Deutsche Gesellschaft für Technische Zusammenarbeit.
Source: BMZ, Statistisches Bundesamt

Table 1 – Correlations between different channels of bilateral German aid across 152 recipient countries, € per capita, 2005-2007[a]

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Fin. cooperation, net	(1)	1	0.63***	0.40***	0.25***	0.43***	0.21***	0.22***	0.30***	0.12	0.43***	0.12	-0.07	0.11
Fin. cooperation, grants	(2)		1	0.58***	0.34***	0.58***	0.29***	0.34***	0.42***	0.15*	0.62***	0.12	-0.02	0.18**
Tech. cooperation, GTZ	(3)			1	0.62***	0.44***	0.66***	0.34***	0.62***	0.14*	0.51***	0.44***	-0.00	0.17**
TC, HR development	(4)				1	0.57***	0.22***	0.44***	0.42***	0.02	0.19**	0.11	0.00	0.16*
TC, refin. of clerical org.	(5)					1	0.15*	0.27***	0.26***	0.27***	0.34***	0.05	-0.02	0.20**
TC, refin. of pol. found.	(6)						1	0.07	0.38***	-0.07	0.48***	0.50***	0.00	0.09
TC, refin. of other NGOs	(7)							1	0.19**	0.08	0.10	-0.07	-0.03	0.18**
Tech. cooperation, other	(8)								1	0.02	0.39***	0.28***	0.06	0.10
BMZ emergency aid	(9)									1	0.18**	-0.10	-0.06	0.41***
Other ministries	(10)										1	0.50***	0.02	0.13
States	(11)											1	0.09	0.01
Debt relief	(12)												1	-0.06
NGO own resources	(13)													1

[a] Sum of aid in 2005-2007, related to recipient countries' population in 2006 (2005 for 12 countries); ***, **, * = significant at the 1, 5, 10 level, respectively.
Source: BMZ; Statistisches Bundesamt; World Bank, WDI (population)

Table 2 - Basic Tobit models: Overall marginal effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	ODA total	FC grants	TC BMZ	TC GTZ	TC HR	TC refin. cl. org.	TC refin. other NGOs	TC other	BMZ emergency	Other ministries	States	Debt relief	NGO own resources
Population	1.650***	2.347***	2.162***	3.055***	1.967***	3.148***	2.543***	2.689***	1.543***	1.666***	1.479***	1.158***	1.084***
	(0.213)	(0.389)	(0.191)	(0.317)	(0.181)	(0.327)	(0.322)	(0.322)	(0.309)	(0.133)	(0.125)	(0.308)	(0.139)
Per-capita GDP	-0.821**	-4.144***	-1.103***	-1.562***	-0.711**	-1.796***	-2.293***	-1.062*	-1.812***	-0.011	0.269	0.244	-0.905***
	(0.392)	(0.712)	(0.350)	(0.560)	(0.331)	(0.574)	(0.564)	(0.568)	(0.607)	(0.243)	(0.230)	(0.405)	(0.257)
Voice	-0.330	2.472***	0.808*	2.189***	0.955**	2.473***	2.611***	1.250*	-0.730	-0.888***	-0.404	0.342	0.574*
	(0.501)	(0.911)	(0.446)	(0.722)	(0.422)	(0.737)	(0.734)	(0.727)	(0.640)	(0.311)	(0.294)	(0.501)	(0.327)
Export share	-0.457***	-0.232	-0.377**	-0.456**	-0.338**	-0.708***	-0.257	-0.372	-1.871***	-0.223**	-0.098	-1.705***	-0.207*
	(0.165)	(0.270)	(0.145)	(0.225)	(0.137)	(0.226)	(0.212)	(0.225)	(0.647)	(0.102)	(0.096)	(0.511)	(0.107)
UN votes	8.428	28.251***	13.825***	13.781*	12.615***	11.137	10.931	9.831	-0.993	12.606***	14.626***	2.579	7.673**
	(5.289)	(9.363)	(4.754)	(7.596)	(4.493)	(7.702)	(7.563)	(7.676)	(7.265)	(3.310)	(3.102)	(5.116)	(3.416)
Observations	135	135	135	135	135	135	135	135	135	135	135	135	135
Censored obs.	11	48	15	33	15	44	58	42	76	11	7	108	5

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 3 - Robustness tests: Overall marginal effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	ODA total	FC grants	TC BMZ	TC GTZ	TC HR	TC refin. cl. org.	TC refin. other NGOs	BMZ emergency	Other ministries	States	NGO own resources
Robustness tests: need indicator											
HDI	-4.589*	-20.237***	-7.369***	-11.088***	-5.040**	-10.888***	-14.890***	-7.167**	-1.239	2.538	-5.214***
	(2.702)	(4.600)	(2.325)	(3.329)	(2.232)	(3.652)	(3.605)	(3.560)	(1.611)	(1.540)	(1.754)
Infant mortality	0.013	0.051***	0.024**	0.031**	0.015*	0.043***	0.042***	0.033**	0.007	-0.012**	0.022***
	(0.010)	(0.019)	(0.009)	(0.014)	(0.009)	(0.014)	(0.014)	(0.013)	(0.006)	(0.006)	(0.007)
Robustness tests: institutional indicator											
Freedom	0.137	-0.833**	-0.294	-0.811***	-0.328*	-0.967***	-1.154***	0.397	0.385***	0.224*	-0.260*
	(0.213)	(0.383)	(0.190)	(0.306)	(0.180)	(0.311)	(0.307)	(0.268)	(0.132)	(0.124)	(0.139)
Law	-0.426	3.210***	0.641	1.930**	0.874	1.079	1.066	-0.688	-1.217***	0.020	-0.570
	(0.623)	(1.121)	(0.560)	(0.904)	(0.531)	(0.937)	(0.917)	(0.820)	(0.382)	(0.368)	(0.408)
Corruption	0.333	3.342***	1.544**	2.866***	1.517***	2.232**	1.984*	-0.379	-0.320	0.384	-0.321
	(0.668)	(1.248)	(0.595)	(0.980)	(0.567)	(1.025)	(1.027)	(0.939)	(0.426)	(0.394)	(0.435)
Failed	0.042	-0.046	-0.027	-0.035	-0.040*	-0.066	-0.083*	0.094*	0.014	-0.006	-0.003
	(0.029)	(0.056)	(0.021)	(0.039)	(0.021)	(0.046)	(0.049)	(0.050)	(0.009)	(0.014)	(0.015)

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 4 - Extended Tobit models: Overall marginal effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	ODA total	FC grants	TC BMZ	TC GTZ	TC HR	TC refin. cl. org.	TC refin. other NGOs	BMZ emergency	Other ministries	States	NGO own resources
Population	1.621***	2.759***	2.470***	3.854***	2.291***	3.392***	2.638***	0.794*	1.774***	1.850***	1.055***
	(0.336)	(0.608)	(0.270)	(0.482)	(0.257)	(0.523)	(0.525)	(0.478)	(0.196)	(0.169)	(0.200)
Per-capita GDP	-0.732*	-3.975***	-1.042***	-1.269**	-0.610*	-1.455**	-2.662***	-1.861***	-0.009	0.259	-0.764***
	(0.432)	(0.771)	(0.346)	(0.580)	(0.329)	(0.626)	(0.631)	(0.636)	(0.251)	(0.217)	(0.257)
Voice	-0.250	2.666***	0.932**	2.163***	1.032**	2.466***	2.927***	-0.886	-0.803**	-0.340	0.532*
	(0.527)	(0.947)	(0.421)	(0.714)	(0.401)	(0.768)	(0.776)	(0.686)	(0.307)	(0.265)	(0.314)
Export share	-0.435**	-0.232	-0.348**	-0.481**	-0.319**	-0.736***	-0.232	-1.642**	-0.204**	-0.084	-0.198**
	(0.168)	(0.272)	(0.133)	(0.217)	(0.126)	(0.230)	(0.220)	(0.700)	(0.098)	(0.084)	(0.100)
UN votes	4.608	27.126***	10.406**	8.481	9.055**	10.295	12.397	3.610	10.824***	9.134***	7.095**
	(5.823)	(9.727)	(4.627)	(7.594)	(4.395)	(8.077)	(8.098)	(7.612)	(3.388)	(2.929)	(3.467)
Disaster: deaths	-0.019	-0.480	-0.482**	-0.904***	-0.469**	-0.216	-0.045	0.686**	-0.191	-0.491***	-0.054
	(0.252)	(0.433)	(0.201)	(0.338)	(0.191)	(0.364)	(0.361)	(0.312)	(0.147)	(0.127)	(0.150)
DAC aid	0.012	0.329**	0.143**	0.200*	0.130**	0.245*	-0.005	0.176	0.055	-0.038	0.035
	(0.084)	(0.156)	(0.067)	(0.112)	(0.064)	(0.124)	(0.117)	(0.143)	(0.049)	(0.042)	(0.050)
Robustness test: other aid											
TC BMZ pure						1.357***	1.068***				0.483***
						(0.271)	(0.259)				(0.057)
Observations	125	125	125	125	125	125	125	125	125	125	125
Censored obs.	9	42	11	27	11	38	51	69	8	4	3

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Appendix 1 – Definitions of variables and sources

	Definition	Source
All channels	Sum of all aid channels (ODA total plus NGO own resources), net flows, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
ODA total	All ODA channels (sum of: FC net, TC BMZ, BMZ emergency, Other ministries, States, Debt relief, and minor items such as administrative costs), net flows, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
FC net	Financial cooperation, net flows, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
FC grants	Financial cooperation, grants (i.e., excluding loans and related repayments), 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
TC BMZ	Total technical cooperation funded by BMZ, 1000 €, annual average 2005-2007; consists of: TC GTZ, TC HR, TC refin. cl. org., TC refin. pol. found., TC refin. NGO, TC other, logged	BMZ; Stat.Bundesamt
TC BMZ pure	TC BMZ – TC refin. cl. org. – TC refin. pol. found. – TC refin. other NGOs, logged	BMZ; Stat.Bundesamt
TC GTZ	Technical cooperation implemented by GTZ, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
TC HR	Technical cooperation for human resource development implemented by InWEnt, DED, CIM, etc., 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
TC refin. cl. org.	BMZ refinancing of clerical organizations, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
TC refin pol. found.	BMZ refinancing of political foundations, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
TC refin. other NGOs	BMZ refinancing of German NGOs other than clerical organizations and political foundations, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
TC other	Other technical cooperation funded by BMZ, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
BMZ emergency	BMZ emergency aid, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
Other ministries	Aid from other federal ministries, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
States	Aid from Länder (states), 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
Debt relief	Aid through debt relief and restructuring, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
NGO own resources	NGO aid proper, financed through own resources, 1000 €, annual average 2005-2007, logged	BMZ; Stat.Bundesamt
Population	Population of recipient country, 2004, in 1000, logged	World Bank WDI
Per-capita GDP	GDP per capita in recipient country, 2004, US$, logged	World Bank WDI
Infant mortality	Infant mortality per 1000 live births, 2005 (2004 not available for most recipient countries)	World Bank WDI
HDI	Human Development Index, 2004	UNDP, Human Development Report 2006
Uneven	Uneven economic development within recipient country; one of the 12 indicators used by Fund for Peace to construct its failed states index; based on evidence for 2005 (2006 for some countries not listed in previous scores); range from 0 to 12 (most uneven = least stable)	http://www.fundforpeace.org/web/index.php?option=com_content&task=view&id=99&Itemid=140
Freedom	Freedom House, combined average ratings of political rights and civil liberties, 2004	http://www.freedomhouse.org/template.cfm?page=15
Law	Rule of law index from the World Bank's Worldwide Governance Indicators (WGI) project, 2004	http://info.worldbank.org/governance/wgi/index.asp
Voice	Voice and accountability from the World Bank's Worldwide Governance Indicators (WGI) project, 2004	http://info.worldbank.org/governance/wgi/index.asp
Corruption	Control of corruption from the World Bank's Worldwide Governance Indicators (WGI) project, 2004	http://info.worldbank.org/governance/wgi/index.asp
Export share	German exports to recipient country *i*, share in German exports to all sample countries, 2004, percent	IMF Direction of Trade
UN votes	Voting coincidence between recipient country and Germany in the United Nations General Assembly, 2004, share	http://dvn.iq.harvard.edu/dvn/dv/Voeten/faces/study/StudyPage.xhtml?studyId=38311
Disaster: affected	Number of people affected by disasters in the recipient country, annual average 2004-2006, in 1000, logged	Emergency Events Database, http://www.emdat.be/ (accessed: July 2009)

Disaster: deaths	Number of deaths due to disasters in the recipient country, annual average 2004-2006, in 1000, logged	Emergency Events Database, http://www.emdat.be/ (accessed: July 2009)
Failed	Failed states index scores 2006 (based on evidence for 2005); index scores 2007 for some countries not listed in previous scores; range from 0 (most stable) to 120 (least stable)	http://www.fundforpeace.org/web/index.php?option=com_content&task=view&id=99&Itemid=140
DAC aid	Bilateral aid disbursed by DAC countries other than Germany, 1000 €, 2004, logged	OECD, International Development Statistics

Appendix 2 - Summary statistics

	Obs.	Mean	Std. Dev.	Min	Max
All channels	152	36 231	116 750	0	1 156 227
ODA total	152	31 697	115 795	0	1 154 920
FC grants	152	4 391	7 389	0	36 636
TC BMZ	152	6 214	8 943	0	49 686
TC GTZ	152	3 359	5 116	0	34 690
TC HR	152	1 132	1 724	0	10 871
TC refin. cl. org.	152	938	2 222	0	18 339
TC refin. other NGOs	152	252	671	0	6 930
TC other	152	328	506	0	3 491
BMZ emergency	152	570	1 529	0	11 496
Other ministries	152	1 641	3 188	0	23 109
States	152	4 831	16 988	0	186 814
Debt relief	152	17 060	114 344	0	1 142 945
NGO own resources	152	4 562	9 120	0	83 105
Population	152	33 950	138 533	1	1 296 158
Per-capita GDP	152	4 652	4 352	252	26 530
HDI	131	0.6	0.2	0.3	0.9
Infant mortality	139	49.8	37.5	5.2	159.7
Uneven	109	7.7	1.2	2.0	9.3
Voice	144	-0.4	0.8	-2.1	1.2
Freedom	142	3.8	1.8	1.0	7.0
Law	145	-0.5	0.7	-2.3	1.2
Corruption	143	-0.5	0.6	-1.8	1.4
Failed	109	81.5	15.6	32.0	112.3
Export share	140	0.7	2.4	0	22.5
UN votes	138	0.7	0.1	0.5	0.9
Disaster: affected	133	1 098.9	6 904.6	0	75 268.3
Disaster: deaths	133	1.0	5.7	0	59.0
DAC aid	152	189 458	360 212	0	3 530 430
TC BMZ pure	152	4 819	6 772	0	38 567

Appendix 3 - Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
(1) All channels	1.00																													
(2) ODA total	0.93	1.00																												
(3) FC grants	0.63	0.65	1.00																											
(4) TC BMZ	0.73	0.78	0.75	1.00																										
(5) TC GTZ	0.67	0.72	0.84	0.88	1.00																									
(6) TC HR	0.70	0.75	0.74	0.97	0.86	1.00																								
(7) TC refin. cl. org.	0.61	0.63	0.67	0.76	0.75	0.76	1.00																							
(8) TC refin. other NGOs	0.51	0.55	0.60	0.66	0.63	0.65	0.69	1.00																						
(9) TC other	0.65	0.70	0.70	0.79	0.78	0.77	0.60	0.60	1.00																					
(10) BMZ emergency	0.38	0.41	0.50	0.48	0.44	0.44	0.54	0.46	0.41	1.00																				
(11) Other ministries	0.75	0.80	0.64	0.88	0.77	0.85	0.65	0.58	0.69	0.41	1.00																			
(12) States	0.71	0.78	0.56	0.80	0.70	0.79	0.55	0.53	0.67	0.26	0.85	1.00																		
(13) Debt relief	0.32	0.34	0.29	0.29	0.27	0.28	0.29	0.32	0.31	0.17	0.27	0.27	1.00																	
(14) NGO own resources	0.77	0.70	0.62	0.84	0.72	0.82	0.67	0.59	0.63	0.46	0.75	0.74	0.25	1.00																
(15) Population	0.73	0.76	0.60	0.83	0.74	0.82	0.68	0.63	0.69	0.42	0.88	0.85	0.26	0.78	1.00															
(16) Per-capita GDP	-0.29	-0.34	-0.44	-0.33	-0.29	-0.26	-0.32	-0.33	-0.27	-0.57	-0.25	-0.14	-0.19	-0.28	-0.23	1.00														
(17) HDI	-0.27	-0.30	-0.36	-0.30	-0.29	-0.21	-0.28	-0.31	-0.21	-0.49	-0.19	-0.01	-0.17	-0.28	-0.20	0.84	1.00													
(18) Infant mortality	0.20	0.22	0.22	0.21	0.17	0.14	0.22	0.19	0.12	0.46	0.17	-0.03	0.10	0.25	0.15	-0.71	-0.91	1.00												
(19) Uneven	0.19	0.19	0.12	0.26	0.10	0.17	0.13	0.21	0.12	0.27	0.08	-0.03	0.17	0.36	0.28	-0.37	-0.39	0.38	1.00											
(20) Voice	-0.37	-0.43	-0.19	-0.33	-0.20	-0.28	-0.16	-0.12	-0.23	-0.41	-0.50	-0.39	-0.11	-0.31	-0.47	0.45	0.39	-0.38	-0.37	1.00										
(21) Freedom	0.32	0.37	0.14	0.28	0.16	0.25	0.11	0.05	0.22	0.36	0.46	0.38	0.04	0.25	0.44	-0.32	-0.30	0.30	0.29	-0.96	1.00									
(22) Law	-0.45	-0.49	-0.29	-0.43	-0.30	-0.36	-0.33	-0.29	-0.26	-0.48	-0.53	-0.36	-0.21	-0.48	-0.48	0.57	0.52	-0.53	-0.52	0.72	-0.63	1.00								
(23) Corruption	-0.35	-0.38	-0.26	-0.33	-0.23	-0.27	-0.26	-0.24	-0.22	-0.44	-0.42	-0.28	-0.21	-0.41	-0.43	0.55	0.47	-0.48	-0.51	0.71	-0.61	0.91	1.00							
(24) Failed	0.29	0.33	0.20	0.16	0.06	0.04	0.07	0.09	0.10	0.51	0.17	-0.07	0.16	0.24	0.19	-0.61	-0.56	0.50	0.72	-0.71	0.63	-0.77	-0.73	1.00						
(25) Export share	0.03	0.06	0.10	0.16	0.18	0.18	0.09	0.17	0.18	-0.17	0.24	0.30	-0.08	0.10	0.39	0.19	0.21	-0.18	0.11	-0.02	0.06	0.11	0.09	-0.14	1.00					
(26) UN votes	0.13	0.16	0.20	0.25	0.21	0.27	0.16	0.14	0.15	-0.09	0.27	0.34	0.02	0.23	0.16	0.16	0.36	-0.32	-0.26	0.17	-0.18	0.08	0.10	-0.32	0.14	1.00				
(27) Dis: affected	0.38	0.40	0.34	0.51	0.42	0.50	0.51	0.52	0.42	0.41	0.51	0.35	0.14	0.47	0.60	-0.29	-0.24	0.16	0.27	-0.10	0.04	-0.35	-0.30	0.19	0.27	0.00	1.00			
(28) Dis.: deaths	0.52	0.54	0.39	0.55	0.48	0.52	0.52	0.52	0.49	0.44	0.62	0.51	0.28	0.52	0.78	-0.27	-0.26	0.22	0.35	-0.33	0.28	-0.38	-0.37	0.33	0.28	-0.13	0.69	1.00		
(29) DAC aid	0.22	0.22	0.34	0.28	0.27	0.26	0.27	0.18	0.23	0.30	0.22	0.13	0.18	0.23	0.18	-0.38	-0.36	0.31	0.22	-0.19	0.16	-0.31	-0.25	0.29	-0.01	-0.01	0.21	0.11	1.00	
(30) TC BMZ pure	0.73	0.79	0.76	1.00	0.89	0.97	0.75	0.65	0.81	0.48	0.88	0.80	0.30	0.83	0.82	-0.32	-0.29	0.19	0.23	-0.33	0.28	-0.41	-0.31	0.15	0.16	0.26	0.50	0.54	0.28	1.00

Appendix 4 - Basic Tobit models: Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	ODA total	FC grants	TC BMZ	TC GTZ	TC HR	TC refin. cl. org.	TC refin. other NGOs	TC other	BMZ emergency	Other ministries	States	Debt relief	NGO own resources
Population	1.651***	2.813***	2.163***	3.158***	1.967***	3.527***	3.504***	3.028***	3.441***	1.666***	1.479***	9.578***	1.084***
	(0.213)	(0.482)	(0.191)	(0.335)	(0.181)	(0.387)	(0.478)	(0.378)	(0.804)	(0.133)	(0.125)	(2.832)	(0.139)
Per-capita GDP	-0.821**	-4.966***	-1.103***	-1.615***	-0.712**	-2.012***	-3.159***	-1.196*	-4.040***	-0.011	0.269	2.016	-0.905***
	(0.392)	(0.874)	(0.350)	(0.580)	(0.331)	(0.647)	(0.789)	(0.641)	(1.236)	(0.243)	(0.230)	(3.505)	(0.257)
Voice	-0.330	2.963***	0.808*	2.263***	0.955**	2.771***	3.596***	1.407*	-1.627	-0.888***	-0.404	2.828	0.574*
	(0.501)	(1.094)	(0.446)	(0.746)	(0.422)	(0.825)	(1.006)	(0.817)	(1.435)	(0.311)	(0.294)	(4.084)	(0.327)
Export share	-0.457***	-0.278	-0.377**	-0.471**	-0.338**	-0.794***	-0.355	-0.419	-4.172**	-0.223**	-0.098	-14.105**	-0.207*
	(0.165)	(0.324)	(0.145)	(0.233)	(0.137)	(0.255)	(0.293)	(0.254)	(1.654)	(0.102)	(0.096)	(6.268)	(0.107)
UN votes	8.429	33.857***	13.826***	14.246*	12.619***	12.479	15.059	11.067	-2.214	12.606***	14.626***	21.340	7.673**
	(5.290)	(11.373)	(4.755)	(7.864)	(4.495)	(8.664)	(10.511)	(8.664)	(16.200)	(3.310)	(3.102)	(42.615)	(3.416)
Constant	0.808	1.247	-5.964	-12.827*	-8.279*	-14.037*	-9.494	-16.183*	4.993	-11.205***	-12.345***	-125.642**	6.724**
	(4.938)	(10.724)	(4.450)	(7.441)	(4.211)	(8.343)	(10.118)	(8.283)	(16.359)	(3.091)	(2.897)	(53.742)	(3.202)
Sigma	3.867***	7.484***	3.407***	5.425***	3.223***	5.783***	6.687***	5.868***	8.870***	2.392***	2.269***	19.960***	2.533***
	(0.253)	(0.621)	(0.228)	(0.406)	(0.215)	(0.465)	(0.597)	(0.467)	(0.923)	(0.156)	(0.145)	(3.303)	(0.160)
Observations	135	135	135	135	135	135	135	135	135	135	135	135	135
Censored obs.	11	48	15	33	15	44	58	42	76	11	7	108	5

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Appendix 5 - Robustness tests: Coefficients of Tobit models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	ODA total	FC grants	TC BMZ	TC GTZ	TC HR	TC refin. cl. org.	TC refin. other NGOs	BMZ emergency	Other ministries	States	NGO own resources
Robustness tests: need indicator											
HDI	-4.589*	-23.809***	-7.369***	-11.248***	-5.042**	-11.985***	-19.960***	-16.860**	-1.239	2.538	-5.214***
	(2.703)	(5.465)	(2.325)	(3.381)	(2.233)	(4.037)	(4.894)	(7.881)	(1.611)	(1.540)	(1.754)
Infant mortality	0.013	0.063***	0.024**	0.032**	0.016*	0.048***	0.059***	0.077***	0.007	-0.012**	0.022***
	(0.010)	(0.023)	(0.009)	(0.015)	(0.009)	(0.016)	(0.020)	(0.028)	(0.006)	(0.006)	(0.007)
Robustness tests: institutional indicator											
Freedom	0.137	-1.003**	-0.294	-0.840***	-0.328*	-1.086***	-1.586***	0.886	0.385***	0.224*	-0.260*
	(0.213)	(0.461)	(0.190)	(0.317)	(0.180)	(0.349)	(0.420)	(0.604)	(0.132)	(0.124)	(0.139)
Law	-0.426	3.849***	0.641	2.002**	0.874	1.231	1.513	-1.523	-1.217***	0.020	-0.570
	(0.623)	(1.349)	(0.560)	(0.938)	(0.531)	(1.067)	(1.298)	(1.815)	(0.382)	(0.368)	(0.408)
Corruption	0.333	3.984***	1.544**	2.960***	1.518***	2.517**	2.768*	-0.826	-0.320	0.384	-0.321
	(0.668)	(1.493)	(0.595)	(1.013)	(0.567)	(1.158)	(1.433)	(2.044)	(0.426)	(0.394)	(0.435)
Failed	0.042	-0.049	-0.027	-0.035	-0.040*	-0.069	-0.098*	0.163*	0.014	-0.006	-0.003
	(0.029)	(0.061)	(0.021)	(0.039)	(0.021)	(0.048)	(0.058)	(0.086)	(0.009)	(0.014)	(0.015)

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Appendix 6 - Extended Tobit models: Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	ODA total	FC grants	TC BMZ	TC GTZ	TC HR	TC refin. cl. org.	TC refin. other NGOs	BMZ emergency	Other ministries	States	NGO own resources
Population	1.621***	3.188***	2.470***	3.925***	2.291***	3.709***	8.012***	1.651	1.774***	1.850***	1.055***
	(0.337)	(0.715)	(0.270)	(0.497)	(0.257)	(0.588)	(1.782)	(1.039)	(0.196)	(0.169)	(0.200)
Per-capita GDP	-0.732*	-4.594***	-1.042***	-1.293**	-0.610*	-1.590**	3.224**	-3.871***	-0.009	0.259	-0.764***
	(0.432)	(0.907)	(0.346)	(0.591)	(0.329)	(0.686)	(1.576)	(1.217)	(0.251)	(0.217)	(0.257)
Voice	-0.250	3.081***	0.932**	2.202***	1.033**	2.696***	1.547	-1.842	-0.803**	-0.340	0.532*
	(0.527)	(1.099)	(0.421)	(0.727)	(0.401)	(0.841)	(1.799)	(1.432)	(0.307)	(0.265)	(0.314)
Export share	-0.435**	-0.268	-0.348**	-0.490**	-0.319**	-0.805***	-0.858*	-3.416**	-0.204**	-0.084	-0.198**
	(0.168)	(0.315)	(0.133)	(0.221)	(0.126)	(0.253)	(0.499)	(1.631)	(0.098)	(0.084)	(0.100)
UN votes	4.608	31.346***	10.406**	8.636	9.056**	11.256	75.267***	7.509	10.824***	9.134***	7.095**
	(5.824)	(11.330)	(4.627)	(7.735)	(4.396)	(8.845)	(21.126)	(15.782)	(3.388)	(2.929)	(3.467)
Disaster: deaths	-0.019	-0.555	-0.482**	-0.921***	-0.470**	-0.236	-0.725	1.426**	-0.191	-0.491***	-0.054
	(0.252)	(0.501)	(0.201)	(0.345)	(0.191)	(0.398)	(0.905)	(0.640)	(0.147)	(0.127)	(0.150)
DAC aid	0.012	0.381**	0.143**	0.204*	0.130**	0.268*	0.030	0.366	0.055	-0.038	0.035
	(0.084)	(0.181)	(0.067)	(0.114)	(0.064)	(0.136)	(0.239)	(0.295)	(0.049)	(0.042)	(0.050)
Constant	2.791	-7.825	-7.437	-18.453**	-9.974**	-22.038**	-151.198***	0.691	-11.187***	-9.274***	5.858*
	(5.835)	(11.799)	(4.684)	(8.021)	(4.454)	(9.392)	(30.268)	(16.689)	(3.411)	(2.937)	(3.477)
Robustness test: other aid											
TC BMZ pure						1.488***	1.470***				0.483***
						(0.318)	(0.409)				(0.057)
Observations	125	125	125	125	125	125	125	125	125	125	125
Censored obs.	9	42	11	27	11	38	85	69	8	4	3

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.