



What determines earmarked funding to international development organizations? Evidence from the new multi-bi aid data

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Abstract: Earmarked aid to international development organizations has quadrupled over the last two decades and now represents almost twenty percent of total aid. This paper introduces a new dataset on earmarked aid, which alternatively has been referred to as multi-bi, restricted, non-core or trust fund aid. The data makes it possible to track the rise of the new aid channel over an extended period of time and in greater detail regarding, e.g., the implementing multilateral organizations. The data include more than 100,000 earmarked projects of 23 OECD donors to 290 multilateral institutions from 1990 to 2012. We graphically illustrate the distribution and patterns of this new aid channel for all actors involved, namely donor governments and their aid-providing agencies, multilateral organizations, and recipient countries, and highlight promising avenues for further research. In a first empirical application of the data, we analyze donors' heterogeneous use of earmarked aid, and test three lines of argument for the provision of earmarked aid: official donor motives regarding specific recipient needs, public opinion in donor countries, and 'market-oriented' donor economies' use of earmarked aid to 'bypass' recipient countries with weak governance. We show that earmarked aid is associated with different donor- and recipient-level factors than traditional or 'pure' bilateral aid.

Key words: Foreign aid, aid channels, earmarked aid, aid budget, donor generosity, governance

JEL codes: F35, F53, F59, O19

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1. Introduction

Over the last two decades, donor governments have increased the share of the foreign aid they provide as earmarked funding to multilateral organizations (Figure 1). Earmarked aid, which has alternatively been referred to as multi-bi aid, non-core or restricted funding, is implemented by a multilateral development organization in the sector, country, or region stipulated by the donor.¹ Academic research on earmarked aid and trust funds, the institutional vehicle in which earmarked aid is managed, has taken off only recently. This is partly due to the lack of extended time-series data on this new type of aid. The implications of earmarked funding for aid effectiveness, donor coordination, accountability, and recipient country ownership remain largely unassessed. The new multi-bi aid data introduced in this paper will advance this emerging strand of the aid literature by offering a longer time-series of data, more precise information about the international development organizations receiving the funds, and additional information about the earmarking type and depth of individual aid activities. We graphically illustrate the temporal, geographical, and sectoral use of this new aid channel and provide a first empirical application that analyzes donor governments' differential use of earmarked aid. Beyond the question addressed in this paper, the data allows researchers to tackle questions such as the rise of earmarked aid, the multilateral organizations involved, and to develop theories about allocation patterns of this type of aid across sectors and recipient countries.

The remainder of the paper is structured as follows. Section 2 briefly introduces the data. Section 3 explores the data from the perspective of each actor affected by earmarked funding, namely donor countries and their aid-providing agencies, multilateral organizations, and recipient countries. We provide first evidence on common 'wisdoms' held in the emerging literature on earmarked aid, and suggest research questions to be analyzed using the new data. One major finding from this section is that post-conflict and fragile states are major beneficiaries of the increases in earmarked funding. We also show that there is a continuous increase in the number of multilateral organizations receiving earmarked funds, but find no evidence that donors use earmarked funding to venture into new sectors or new partner countries. In section 4, we briefly review the literature and apply the multi-bi aid data to analyze three explanations about donor countries' heterogeneous use of these funds: official donor motives, the role of public opinion, and the 'bypass'-hypothesis advanced in the recent literature. We contribute to the aid budget and the aid allocation literature by showing results from regressions with, alternatively, donor countries and donor-recipient relationships as units

¹ Multi-bi or earmarked aid refers to "voluntary external assistance from donors for a multilateral agency which is supplementary to core membership contributions and which is earmarked for specific purposes" (OECD 2005: 102).

of analysis. We find that both recipient- and donor-level variables are statistically associated with the volume of earmarked aid provided and that the size of earmarked aid budgets correlates with a different set of factors than ‘pure’ bilateral aid budgets. Section 5 concludes.

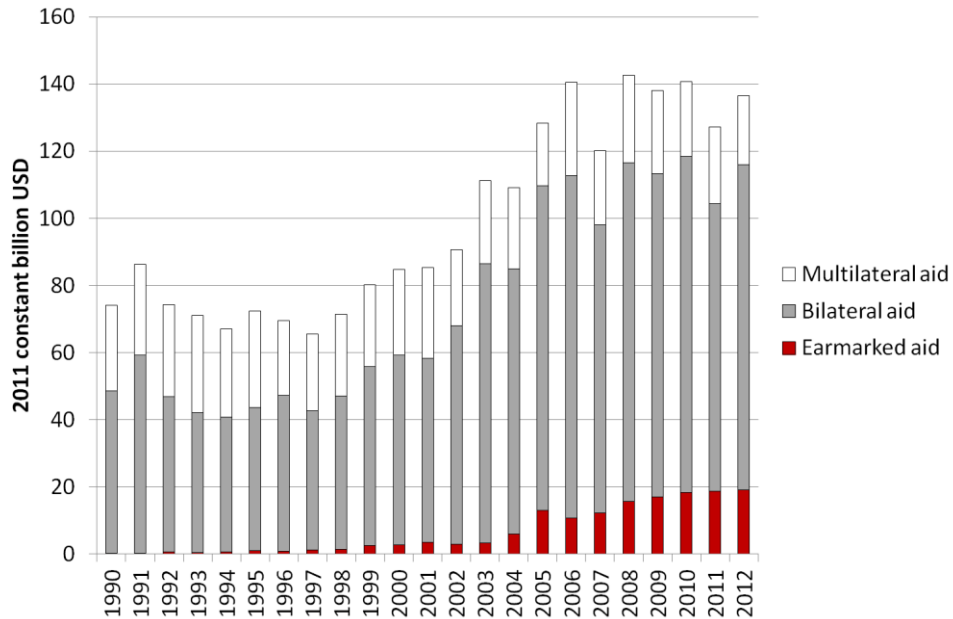
2. Introducing the multi-bi aid data

This paper introduces the three components of an original dataset on multi-bi aid, which is publicly available on <http://aiddata.org/donor-datasets>. The data allow researchers to track earmarked aid across donors, multilateral organizations, and sectors over the 1990-2012 period. The data is based on the Creditor Reporting System (CRS) of the OECD’s Development Assistance Committee (DAC) and improved through expert coding.² The new multi-bi aid dataset corrects and refines information about the multilateral aid recipient. Component 1 of the data includes the 290 multilateral institutions with permanent organizational structure mentioned in donors’ project descriptions (Appendix D). Component 2 of the data is at the project-level. It extends information about earmarked aid and the multilateral recipient from 2005, the year since the *channelcode* has been consistently reported, backwards to 1990. It also includes new information about the earmarking stringency of individual aid activities for the full time period. The dataset takes the perspective of the multilateral institution in defining earmarked aid flows, which is in contrast to the OECD data that relies on the donors’ perspective. Our dataset is more adequate for time-series analysis because the OECD/DAC has re-categorized some recipient institutions of earmarked aid (i.e. accounted as bilateral aid by the OECD/DAC) to being eligible for multilateral core funding.³ For these reasons and, mainly, because of inconsistencies between activity descriptions and the *channelcodes* reported by donors in the CRS dataset, we obtain aggregate amounts for multi-bi and bilateral aid that differ slightly from OECD data (component 3). A comparison with the CRS shows that our data more smoothly captures the total flows of earmarked aid over a longer time period (Figure 2).

² The codebook (Eichenauer and Reinsberg 2014) is available on the authors’ websites and on <http://aiddata.org/donor-datasets>.

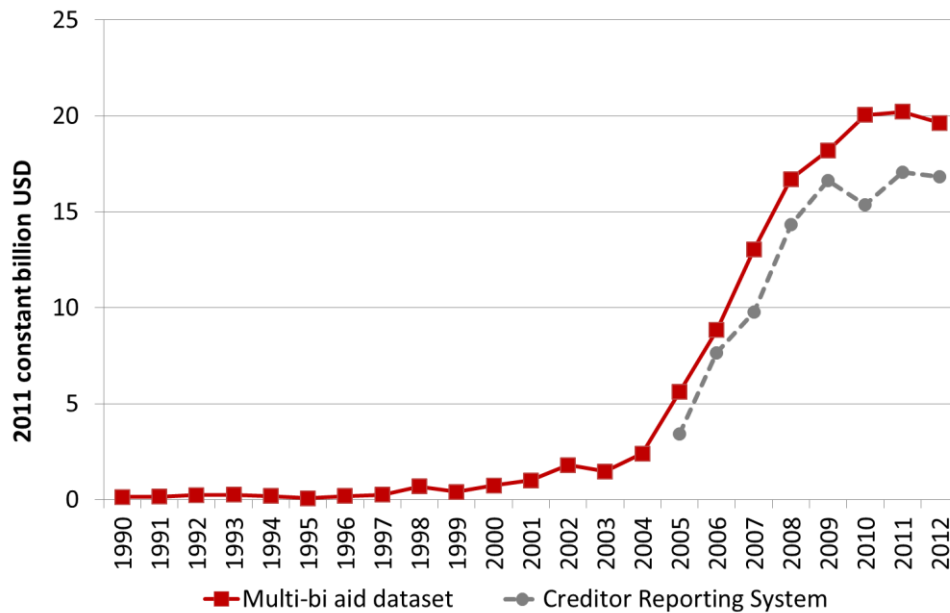
³ The adequate perspective depends on the research question. We think that the perspective of the international organization is better suited for political economy analyses, which see multi-bi aid as a donor policy allowing increased influence over ‘multilateral’ allocations.

Figure 1: The evolution of earmarked aid



Notes: Earmarked (=multi-bi =restricted =non-core) aid refers to any earmarked funds received by international development organizations. Multilateral aid consists of assessed contributions and un-earmarked voluntary contributions to multilateral organizations. Traditional (= ‘pure’) bilateral aid is provided directly to recipient country governments or through intermediaries such as NGOs.

Figure 2: Aggregate earmarked aid: comparison of the new multi-bi aid and the OECD data



Notes: Comparison of aggregate multi-bi aid disbursements according to the new multi-bi aid data and the OECD’s Creditor Reporting System (1990-2012). The pattern for multi-bi aid commitments is similar.

3. Actors in earmarked aid: donor countries, multilateral organizations, and recipient countries

The multi-bi aid data make it possible to track earmarking over time and to study the role of each actor involved in the process: First, we look at the financiers of earmarked aid, donor countries and their aid-providing agencies. We then shed light on the international development organizations to which donors delegate the aid for implementation and disbursement to the targeted beneficiaries. Lastly, we focus on the ultimate beneficiaries of earmarked aid, global public goods and recipient countries.

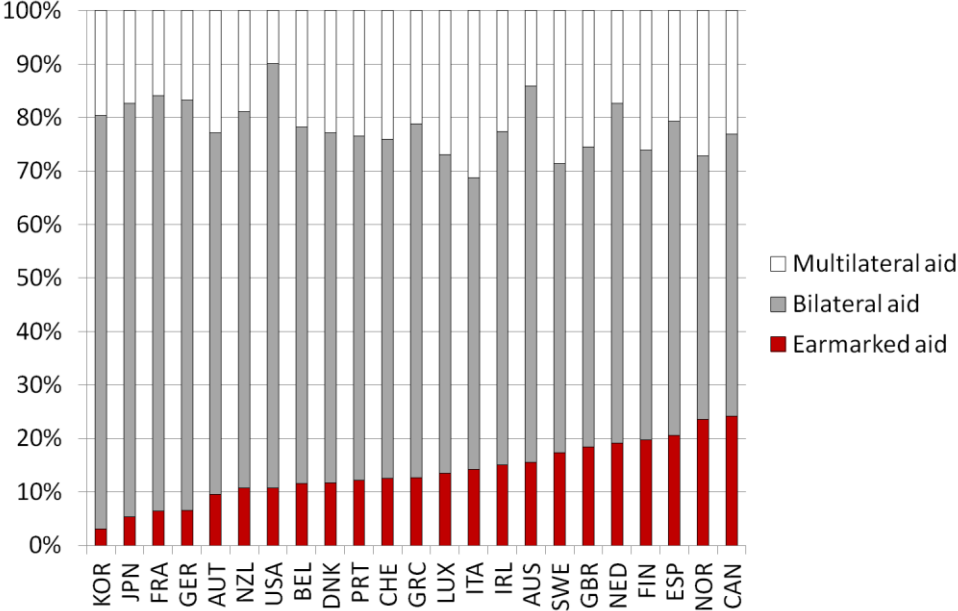
3.1 Donor countries and their national aid agencies

Figures 1 and 3 display the upward trend in earmarked funding in absolute and relative terms, respectively. Following a rapid growth since the 2000s, earmarked aid flows reached about USD 20 billion in 2012. Earmarking seems like the ‘best of both worlds’ for a donor government, combining the benefits of multilateral delegation with, as in the case of ‘pure’ or traditional bilateral aid, the control over the allocation of resources to specific projects. Puzzlingly, donors’ use of earmarked aid is all but homogeneous. Figure 3 depicts the average use of earmarked aid by the 23 DAC donors in our sample for the years 2006-2012, when earmarked aid has been most substantial. The contrast between donors is stark: while Korea spent only three percent of its aid budget as multi-bi aid, Canada provided almost a quarter of its total aid envelope as earmarked aid.

Figure 4 explores donor heterogeneity in the use of earmarked funding over time. For representation purposes, we compare the average share of earmarked aid in the total aid budget within each of four time periods (1990-1995, 1996-2001, 2002-2007, 2008-2012), three of which consist of six years and one of five years. For tractability, only the largest aid donor countries and the largest donors of earmarked aid are represented individually, while we group the remaining donor countries together. Donors are put into groups based on their geographic proximity and/or based on similarity in the evolution of their shares of earmarked aid when we analyzed them individually. For example, we group the large aid donors Japan, Germany and France because they have all used earmarking to a small extent. Figure 4 shows that earmarked aid has increased as share of total aid budgets in all donor countries and groups, which is in line with the aggregate trend in Figure 1. In Germany and the Netherlands, there is a reduction in the share of earmarked aid from the second-to-last (2002-2007) to the last period (2008-2012), while in most donor countries/groupings, the share of earmarked funding doubled between these two periods. Within each of these time periods, there is substantial variation in the average share of earmarked aid provided across donors. During the 1996-2001 period, the Dutch government already provides earmarked aid equivalent to 18 percent of its ‘pure’

bilateral aid budget, while the average Nordic country provides 12 percent,⁴ and France, Germany, and Japan earmark hardly any aid at all.

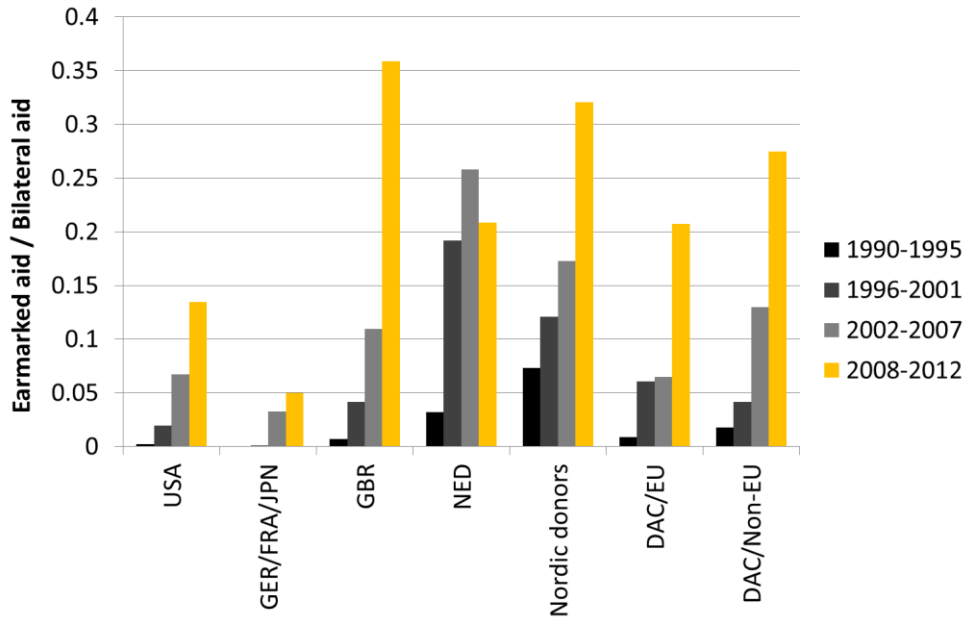
Figure 3: DAC donors’ average use of different aid channels (2006-2012)



Notes: Average share of earmarked, multilateral and bilateral in total Official Development Assistance (2006-2012). The country abbreviations refer, from left to right, to South Korea, Japan, France, Germany, Austria, New Zealand, the United States, Belgium, Denmark, Portugal, Switzerland, Greece, Luxembourg, Italy, Ireland, Australia, Sweden, the United Kingdom, the Netherlands, Finland, Spain, Norway, and Canada.

⁴ In the 1996-2001 period, Denmark is an outlier in the Nordic group, providing only around 1.5 percent of its ‘pure’ bilateral aid as earmarked aid.

Figure 4: Share of earmarked aid over time for major donors and donor groups

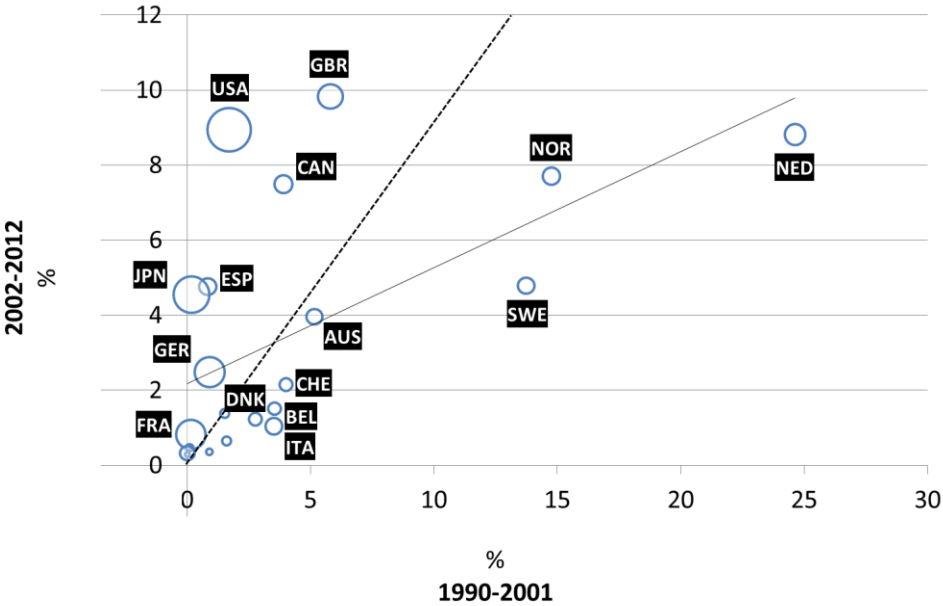


Notes: Earmarked aid as share of ‘pure’ bilateral aid for four time periods. We use the following donor groups: major donors with small shares of multi-bi aid (France, Germany, Japan), Nordic countries (Denmark, Sweden, Norway, Finland), European DAC members (Austria, Belgium, Greece, Italy, Ireland, Luxembourg, Portugal, Spain, Switzerland), and non-European DAC members (Australia, Canada, Korea, New Zealand). USA, GBR and NED refer to the United States of America, Great Britain and the Netherlands respectively.

Figure 5 explores in more detail which donor countries lead the earmarking trend. The graph compares the relative importance of each donor country in total earmarked aid for two time periods of almost equal length (1990-2001 and 2002-2012). The donor countries to the left of the dotted 45-degree line increase in (relative) importance over time while those to the right decline in relative terms. The slope of the solid line representing the line of best fit is less steep than the slope of the 45-degree line and has a positive intercept, which implies that earmarked aid has become an established aid instrument for a majority of donor countries over the past decade. Bubble sizes are determined by donors’ total aid budget in the second time period (2002-2012) and represent their importance as aid providers in absolute terms. The Netherlands, Norway, and Sweden are the leading donors in the 1990-2001 period, providing, respectively, 25, 15, and 14 percent, and thus together more than half of all earmarked funding in the period. The United Kingdom and Australia provided around 5 percent each in the first time period. Detailed analyses show that these five donors, Canada, and Denmark started providing earmarked aid in the early 1990s. Although the three ‘pioneer’ donors remain among the ten most important providers in the second time period, the United Kingdom and the U.S. are the most important donors in the second time period, providing 10 and 9 percent of

earmarked funding respectively. The graph also shows that the earmarking of aid has become much more common in the second period and, consequently, is no longer dominated by a small number of donors. It is noteworthy that none of the largest aid donors is an early adopter of earmarked aid and that some large donors remain marginal (Germany and France), while others have become important actors (the United States and the United Kingdom).

Figure 5: Leaders and followers in earmarked aid



Notes: For each donor, the graph shows the relative importance of the donor country in providing earmarked funding over the respective period (share of a donor’s earmarked funding in a period over total earmarked funding by all donors in the period). The dotted line indicates equal importance of a donor in both time periods (45-degree line). Donors with bubbles to the left of the dotted line have become relatively more important in more recent years (2002-2012) while those to the right of the dotted line have declined in importance. The solid line is the line of best fit. The size of the bubbles is determined by donors’ total aid from 2002 to 2012.

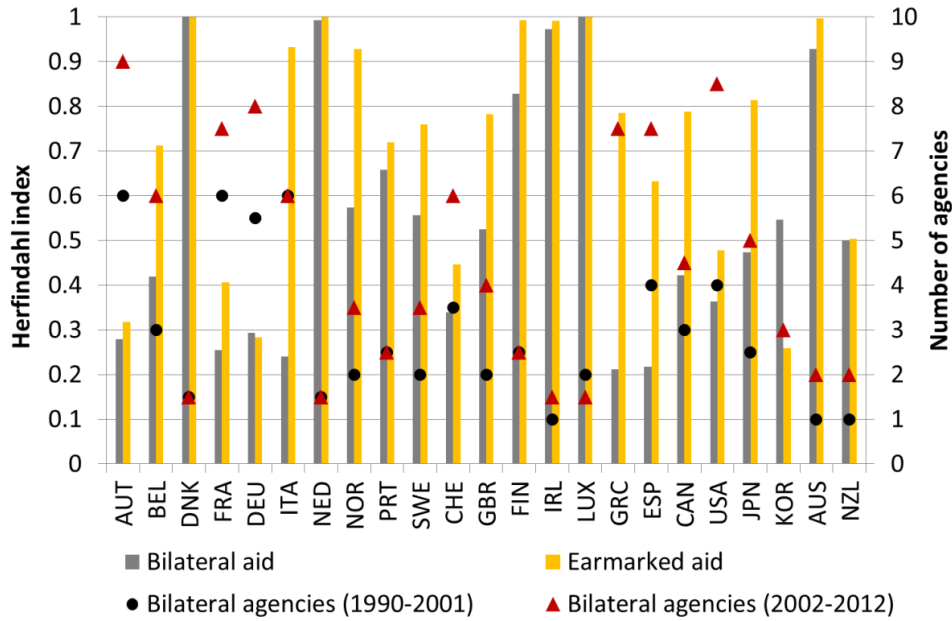
The differential use of earmarked funding revealed by figures 3-5 calls for theoretical explanations about the international and domestic (political economy) reasons that led some donors to pioneer earmarked funding in the 1990s and that made earmarked aid popular in some but not other donor countries in the 2000s. While one might think that earmarked funding is a reaction to institutional change at multilateral organizations, the rise of earmarked funding is not explained by changes in funding rules alone. In an insightful analysis of changing funding rules at the United Nations, Graham (2015) shows that earmarked or, in her terminology, restricted funding was permitted at more than ten UN institutions already in the 1970s (see Figure 1 in Graham 2015). Reinsberg et al. (2015a) propose two narratives for the

rise of multi-bi aid: one is related to the increased focus on fighting poverty and the Millennium Development Goals while the other argues that policy makers sought to increase aid effectiveness as a reaction to rising domestic skepticism about foreign aid activities. A more trivial explanation for the rise of multi-bi aid is that earmarked funding has risen with improved IT infrastructure, which allowed quick and detailed (financial) reporting for each and every donor contribution. As all of these trends coincide, it is a major challenge for researchers to develop a research design that make it possible to convincingly discriminate between these reasons. Moreover, none of these arguments helps to explain the heterogeneous use of multi-bi aid by donor governments.

Eichenauer and Hug (2015) propose a game-theoretical model to explain heterogeneity across donors, which includes aspects related to international and domestic political economy. They show that the interaction between governance rules at international organizations, heterogeneity in donor preferences, concerns about aid effectiveness, and domestic constraints interact in determining donors' choice of aid channel. In academic debates, the argument is often raised that smaller donor states with less (formal and informal) influence in a multilateral organization should be the most likely to use earmarked funding to make the organization work in their preferred issue areas. A World Bank evaluation notes that the majority of donor countries use earmarked funds to influence the World Bank (IEG 2011). But although the data show that some smaller states with generous aid budgets have spearheaded the rise of earmarked funding and that some large donors have used earmarked funding to a small extent even in recent years, this pattern cannot be applied as a general rule for all, small and large states. We review other theories for donors' choice of earmarked aid and other aid channels and test some of them in section 4 using regression analysis.

We now turn to examining the aid-providing institutions within a government administration and first analyze whether national ministries, departments and other agencies use multi-bi aid to make a foray into bilateral aid provision. There is no such evidence. All government agencies reporting multi-bi aid to the OECD also provide bilateral aid. Next, we investigate the OECD's (2011: 18) claim that "there are many examples of dispersed decision-making" regarding multilateral core (un-earmarked) contributions and earmarked aid to the same multilateral organization. Unfortunately, we cannot study this claim directly as we lack information about the donor agency responsible for un-earmarked funding to each of the 290 multilateral development organizations we identified. Instead, we analyze the national agencies that provide bilateral aid on which information is available in the CRS. We find that in almost all donor countries, the one or two government agencies that jointly disburse 55 to 100 percent of bilateral aid also jointly report more than 80 percent of a donor governments' earmarked aid.

Figure 6: Concentration of earmarked and bilateral aid provision in donor countries



Notes: The left axis corresponds to the Herfindahl index, which measures the concentration of actors in a market. Higher values indicate a higher concentration. The right axis corresponds to the circle and triangle symbols and indicates the number of agencies in a donor country providing bilateral aid in the 1990-2001 and 2002-2012 periods, respectively.

Figure 6 illustrates the concentration ratio of national agencies providing bilateral and earmarked aid using the Herfindahl index.⁵ We find bilateral aid to be more dispersed than multi-bi aid, which implies that responsibility for earmarked aid is more concentrated than bilateral aid. The circles and triangles, which correspond to the first and second decade of earmarked aid (1990-2001 and 2002-2012, respectively), show the number of ministries, departments, and other agencies within donor governments, that are engaged in the provision of earmarked aid. The number of agencies does not decrease in any donor country and increases in most of them, although the number of aid actors within a government varies greatly across donor countries. In sum, the national lead aid agency/agencies are the first to use earmarked aid and are responsible for providing most of its volume. As this is merely descriptive evidence, researchers may develop more complex theories about the bureaucratic interactions within a donor government that drive these results. For example, national agencies may differ in the stringency of their earmarking. Reinsberg et al. (2015a) provide first insights about patterns in the depth of earmarking.

⁵ We calculated the Herfindahl index as the sum of squared shares of a donor's agencies in the donor's total aid budget. Values thus range from $1/N$ to 1, where N refers to the number of aid-providing agencies.

3.2 Multilateral organizations

Next, we study multilateral development organizations. They are the first recipients and implementers of earmarked funds.⁶ Figure 7 shows that in each year over the whole period of 1990-2012 between 4 and 26 multilateral organizations are reported to be first-time recipients of earmarked funding.⁷ There is no decrease in the number of new organizations reported by donor countries. The bold line shows the increase in the number of organizations reported as receiving multi-bi aid. There is an accelerated increase in the number of receiving organizations between 2002 and 2007.⁸ The figure suggests that few organizations are involved at first but that earmarked funding has become widely accepted across multilateral organizations. It remains to be explored in how far this evolution is supply- or demand-driven and how competition for donor funds between multilateral organizations affected their decision to accept earmarked funds and the stringency of earmarking.

We explored this pattern further by looking at the market share of the United Nations (UN), the World Bank Group, regional development banks, and other multilateral development organizations for the four different time periods used previously.⁹ There is surprisingly little variation in the relative importance of these groups of multilateral organizations over time, suggesting that there is not one multilateral organization that leads the earmarking trend. Of the total global earmarked funding, in all four time periods the UN and its sub-entities (i.e., funds and programs, and specialized agencies) receive around 50 percent, the World Bank Group between 15 and 25 percent, the regional development banks less than 5 percent. The remaining multilaterals jointly receive between 20 and 28 percent of earmarked aid, despite the increasing number of multilateral organizations within the category 'other agencies'. In contrast to this aggregate analysis, there is substantial variation in the share of earmarked aid going to different multilateral organizations across donors within a time period and within donors over time. In the early 1990s, most donors provided the majority of their small amounts of earmarked aid to UN organizations and only the Netherlands, an early and relatively large provider of earmarked funding, already engaged with the World Bank to a substantial extent. In the late 2000s, the World Bank received a greater share of every donor's earmarked aid. In

⁶ Most earmarked funds provided to multilateral organizations are pre-specified for specific countries, sectors, or focus areas but some money supports institutional capacity building, research on specific topics, or targets other programs and initiatives within a multilateral organization.

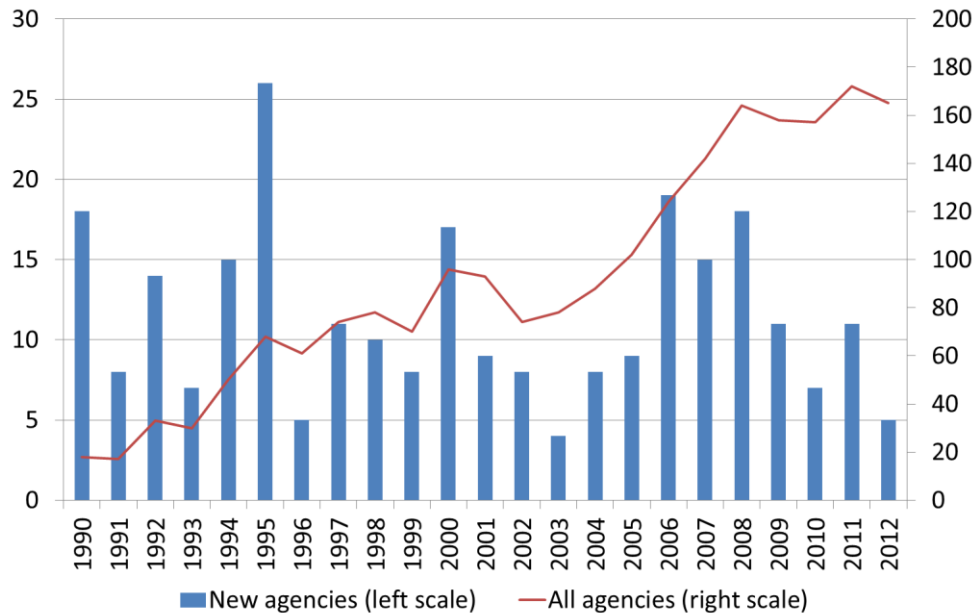
⁷ We caution against over-interpreting the finding of a single year in the early 1990s as solid evidence because problems of underreporting were substantial.

⁸ This might be due not only to the actual increase in aid-receiving organizations but also to improvements in data quality.

⁹ Due to space constraints, no graphs are shown but they can be obtained from the authors upon request.

absolute terms, it continued to receive the most substantial amount of earmarked aid primarily from three donors, the United States, the United Kingdom and the Netherlands.¹⁰

Figure 7: The number of multilateral development organizations receiving earmarked aid



Notes: The columns indicate the number of multilateral organizations (identified by the variable *ParentID*, see Eichenauer and Reinsberg 2014) first mentioned as recipients of earmarked aid in a given year (right scale). The line shows the total number of multilateral development organizations receiving any earmarked aid in a given year (left scale).

These patterns in the data raise interesting research questions: What determines the ratio of earmarked to un-earmarked multilateral aid received by a multilateral organization? Is there a relationship between a donor’s influence in an organization and the supplied ratio of earmarked to unrestricted multilateral funds? What role does the mandate, the governance rule, and the effectiveness of the multilateral recipient play in a donor’s choice for providing earmarked or unrestricted voluntary funding to an organization? Eichenauer and Hug (2015) show some descriptive evidence that multilateral organizations evaluated as ‘better’ by donor countries receive both more earmarked aid and more unrestricted funding but there is still ample space in the literature to explore this relationship further.

¹⁰ The World Bank also receives substantial amounts of earmarked aid from the European Commission.

3.3 The ultimate recipients of earmarked aid

We now turn to the ultimate beneficiaries of earmarked aid. According to interviews with officials from national aid agencies, donor governments resort to multi-bi aid when “bilateral aid is not an option” and there is a need “to fill gaps in the multilateral system” (IEG, 2011: 5). One such gap is the financing of global public goods (e.g., the environment or global health), which are challenges that must be addressed beyond the multilateral development banks’ country-based lending model. For each donor, we study whether earmarked funding is more focused on global activities than bilateral aid and/or if it is allocated to different sectors. In the following, all graphs use earmarked aid commitments provided by a donor country for purposes other than debt relief and humanitarian aid because we are interested in earmarked aid given for development purposes.¹¹ Figure 8 shows that for the most important providers of earmarked funding the share of earmarked aid for global purposes increases over time. Only for the average European DAC donor, the share decreases from already low levels. For the non-European DAC donors, the share is below 12 percent in all periods. We further compare the share of earmarked aid for global purposes with the corresponding share for bilateral aid. We find that the share of earmarked aid budget allocated to global activities is slightly lower for most donors. Generally, the Dutch use earmarked aid much less for global purposes than their bilateral aid. The other exceptions are the United Kingdom and, in the 1990s, the European DAC donors and the United States, which provide a higher share of bilateral than of earmarked aid for global public goods.

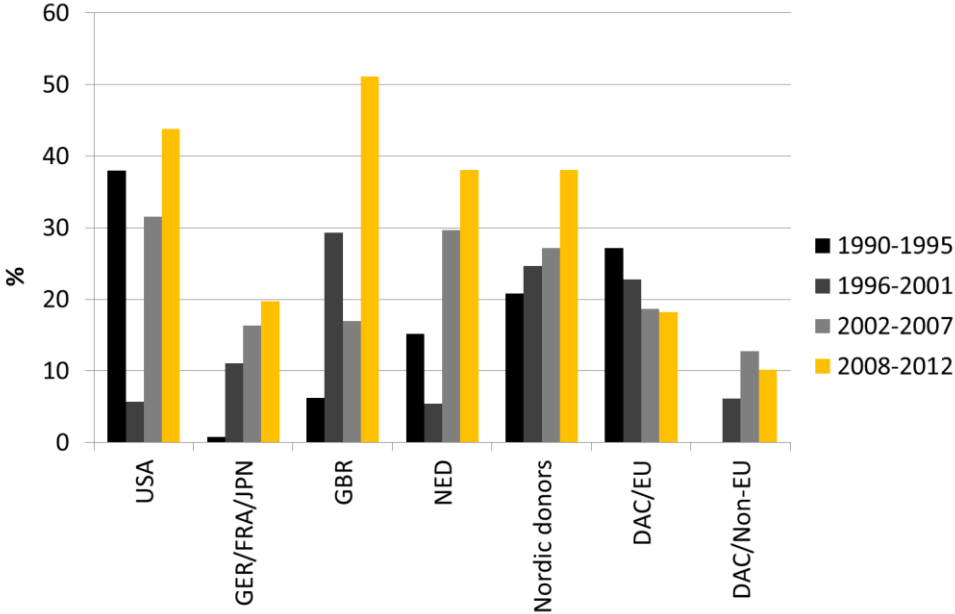
We explored in some detail at the period level whether donors use earmarked aid to enter sectors not served by their bilateral aid but did not find any evidence that earmarked aid is complementary to bilateral aid (at the 5-digit purpose level of aggregation). Similarly, we did not find any evidence that donors use earmarked aid to engage in countries and territories where they do not have an own bilateral presence.¹² While these observations are based on descriptive analysis only, they are in stark contrast to observations made in policy reports of international organizations. The IEG (2011: 5) describes donors’ statements about resorting to earmarked funding when “bilateral aid is not an option” and the OECD (2011: 7) notes that “there is growing pressure on the multilateral system to deliver in countries and regions where bilateral donors are exiting or unable to intervene.” Therefore, qualitative evidence about

¹¹ Acht et al. (2015) show that humanitarian assistance is predominately channeled through non-state actors, which includes multilateral organizations. Debt relief is by definition earmarked for specific countries but granting debt relief commonly tends to be a multilaterally-coordinated effort.

¹² We tried several different thresholds to define a bilateral presence, e.g., annual commitments above 10,000 USD or 100,000 USD, or more than three activities, or combinations thereof. These alternative ways of operationalization do not affect the conclusion that earmarked aid supports countries or sectors that already benefit from bilateral aid.

donors' strategic composition of aid modalities and more rigorous data analyses of the differences in the allocation of donors' bilateral and earmarked aid in terms of sectors, countries, and aid modalities is needed. Specifically, the complementarity of earmarked and bilateral aid between sectors within recipient countries and for each year should be considered, as there is substantial anecdotal evidence that earmarked aid is used in this way. Moreover, the (relative) efficiency and effectiveness of earmarked funding is under-researched.¹³ Earmarked aid may be more effective than bilateral aid if earmarked funding from various donors is pooled by the multilateral organization and, consequently, (within-sector) donor fragmentation in a recipient country is reduced. But earmarked aid might reduce aid efficiency due to higher transaction costs for donor countries, multilateral organizations, and recipient countries, or higher fragmentation on the ground if donor countries continue their bilateral aid activities in parallel.

Figure 8: Global and regional activities as share of earmarked aid



Notes: Global activities are all aid activities that are not earmarked for a specific recipient country. The graph shows the shares of the earmarked aid that is not country-specific as a share of total earmarked aid, averaged over the relevant time period, and, if applicable, over donors.

¹³ Barakat et al. (2012) systematically review the evidence on the effectiveness of earmarked funding pooled across donors (multi-donor trust funds) and note the lack of scientifically rigorous studies. To the best of our knowledge, we are not aware that this has changed. Reinsberg (2016) discusses the implications of earmarked funding on multilateral agencies and provides evidence that earmarked funding poses a governance challenge for the World Bank and may jeopardize organizational coherence.

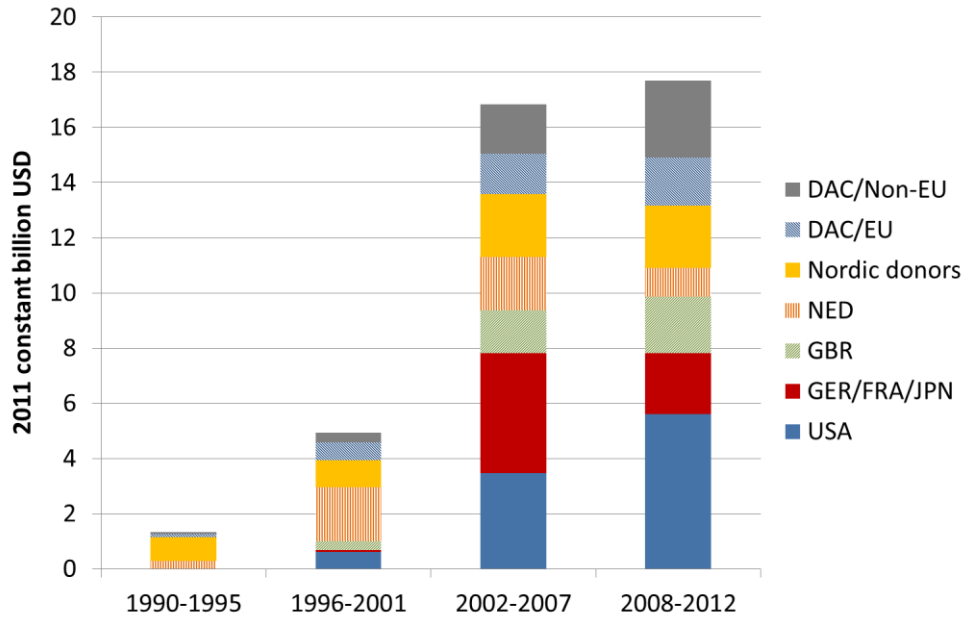
Beside the lack of mechanisms for financing global public goods and the use of earmarked aid to venture into countries where bilateral aid is not an option, donors also note that the multilateral system falls short of having adequate institutions to respond “to emergencies such as natural disasters, disease outbreaks, and the end of armed conflict.” We first examine whether country-specific earmarked funding has indeed been allocated to post-conflict countries to a larger extent than bilateral aid. Figure 9 shows the absolute increase in earmarked funding to post-conflict countries from around USD 5 billion in the 1996-2001 period to USD 18 billion in the last time period (2008-2012). We define countries as post-conflict in the first up to the fifth year after the end of a civil war or inter-state war.¹⁴ Although traditional bilateral aid still is more important for most recipient countries in absolute terms, donors increasingly resort to earmarked aid. This allows them to pool the risk of failure with other donor countries and to delegate the operational risks of engaging in post-conflict contexts to multilateral organization. In the years 2006-2012, all donor countries and groups provided a higher share of country-specific earmarked than of bilateral aid to post-conflict countries (Figure 10). This suggests that donors choose earmarked aid as an aid modality in particular when engaging in such contexts. A replication of figures 9 and 10 for countries in conflict gives similar results except that the number of states in conflict and the absolute aid amounts provided are higher (around USD 34 billion for 2008-2012).

We end the descriptive analysis by analyzing the claim that earmarked aid is needed to adequately respond to the occurrence of natural disasters in developing countries. While there is a general upward trend in the number of natural disasters, the variation between years is substantial and the peak years are in the early 2000s. In contrast, earmarked aid increases more smoothly over the last two decades. As the improvement of responsiveness to disasters is one of several motivations for providing earmarked aid, it is best explored in a multivariate regression framework, where other factors can be held constant. We offer such an analysis in the next section.

In sum, we have illustrated in this section the multiple dimensions of the multi-bi aid data by showing patterns for the three types of actors involved in the earmarked funding, namely donor governments and their aid-providing agencies, multilateral development organizations, and recipient governments. Further, we have suggested avenues for future research on each of the actors individually and on their interactions. In the next section, we apply the new data for investigating the motives and determinants of donors’ differential use of earmarked aid using more rigorous statistical methods.

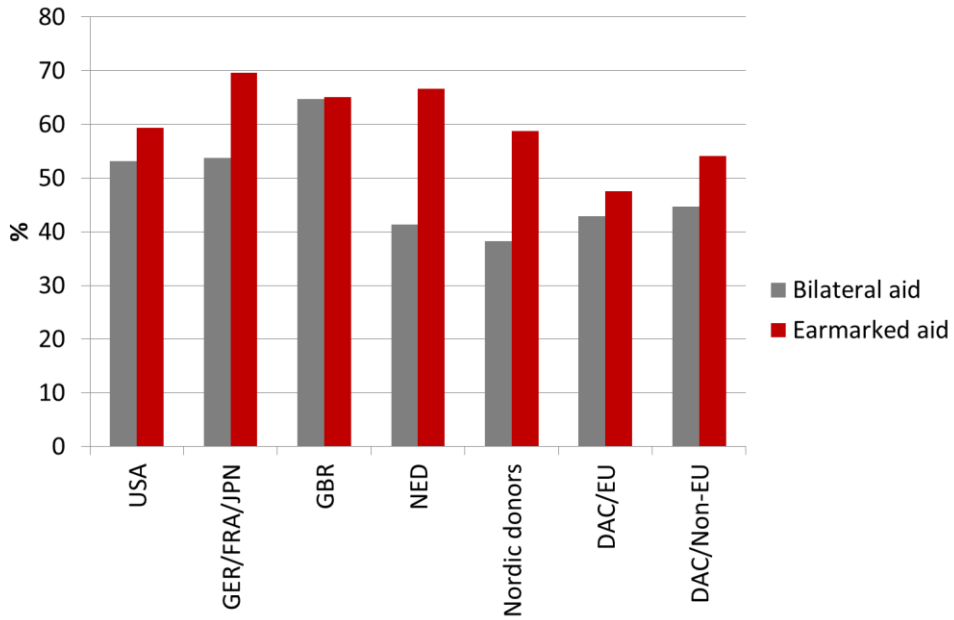
¹⁴ We refer to Appendix A for more details on the definition and data sources.

Figure 9: Earmarked aid to post-conflict countries



Notes: Earmarked aid to post-conflict countries (i.e., in the first to fifth year after the end of a civil or international war).

Figure 10: Share of bilateral and earmarked aid provided to post-conflict countries



Notes: Share of earmarked ('pure' bilateral) aid in total country-specific earmarked ('pure' bilateral) aid to post-conflict countries.

4. Donor- and recipient-level determinants of donors' earmarked aid budgets: a first application of the multi-bi aid data

As we have shown above, donors' use of earmarked aid is all but homogeneous. Given the theoretical advantages earmarked aid offers to donor countries, this is puzzling. Earmarking allows donor countries to delegate responsibility and to pool risks with other donors while simultaneously being able to target resources according to their priorities, demand tailored reporting, and reap the benefits of increased visibility relative to (un-earmarked) multilateral aid (OECD 2010). The puzzling observation about the heterogeneity in the use of earmarked aid across donor countries is yet unexplained in the literature. More generally, there is scant empirical evidence about the determinants of donor countries' aid budgets which, as Fuchs et al. (2014) note, is in contrast to the extensive literature on the allocation of aid across developing countries and on aid effectiveness. This lack of research on donor generosity is also in stark contrast to the obvious relevance of such a research agenda. Despite repeated calls for innovative and private sources of finance, here still is an enormous financing gap for the ambitious Sustainable Development Goals (SDGs) adopted by the international community in September 2015 (UN 2015a; UN 2015b). The mobilization of 'additional' resources in donor countries will depend on donor governments' (and private funders') ability to target their resources according to their preferences. However, donors are likely to have divergent priorities when it comes to the 17 SDG goals and the 169 associated targets. When their preferences align, 'like-minded' donors might seek multilateral cooperation using earmarked aid to pool their resources and the implementing capacities of the existing multilateral institutions. Hence, we expect aid earmarked for specific topics and countries to increase further in both relative and absolute terms.

4.1 Literature review

Our research interest relates to three strands of research within the literature on foreign aid: donors' choice of aid channels, the emerging literature on earmarked aid, and the determinants of donors' total aid budgets. The first relevant strand of the literature offers theories about donors' choice of bilateral and multilateral aid (Milner 2006; Milner and Tingley 2013 for the U.S.), between multilateral organizations (Schneider and Tobin 2011), and between multilateral, bilateral and earmarked aid (Eichenauer and Hug 2015). Particularly relevant to our empirical application is Milner's (2006) argument that multilateral aid allows donor governments to credibly signal the non-political use of foreign aid to voters who are interested in the (humanitarian) effectiveness of their taxes spent abroad. Noting the challenge of assembling data on public opinion about foreign aid, she constructs a composite measure of favorable attitudes towards aid from different polls and uses two (single) imputation methods. Using these measures, she finds support for her argument that multilateral aid is higher if the public disapproves of the current level of the aid budget. Regarding multi-bi aid, the OECD

(2010: 14) argues that earmarking “can help mobilize and maintain public resources for development” in donor countries by increasing visibility relative to multilateral aid. We contribute to this strand of the literature by testing for a relationship between earmarked aid and the public’s opinion about supporting developing countries and, for EU countries, the public’s stance on whether their own government provides the “most useful help to the Third World countries” (Eurobarometer 2015).

All of the papers mentioned in the previous paragraph explain the choice of the aid channel primarily by donor preferences, the domestic political economy in donor countries, and characteristics of the multilateral organization. Dietrich (2013), Knack (2014), and Acht et al. (2015) argue and show that donors take recipient characteristics into account when choosing how to deliver aid. This would be in accordance with donor commitments made in the Paris Declaration. All three papers thus use donor-recipient pairs as unit of analysis. Knack (2014) shows that donors bypass recipient country systems when the quality of budgetary and financial management capacity in the recipient country is weak. Using different measures for weak governance and corruption than Knack (2014), Acht et al. (2015) present cross-sectional evidence that donors decrease both the share and absolute amount of state-to-state aid to countries with weaker governance scores, whereas Dietrich’s (short) panel analysis (2013) shows that the share of aid that bypasses the government is higher in low-governance countries.¹⁵ The literature further argues that donor and recipient characteristics interact and that their bilateral relationships matter for their choice of aid modality. Acht et al. (2015) find that the economic self-interest of donors in recipient countries weakens donors’ rationale for bypassing the government. Dietrich (2016) shows that the share of ‘bypass’ aid a donor provides in low-governance countries interacts with the political economy in donor countries. Specifically, the market-orientation of donors’ economies, such as their stance on outsourcing public service delivery domestically, positively correlates with the degree of ‘bypassing’ recipient governments in weakly-governed countries.

As suggested by this strand of the literature, we examine whether the use of earmarked aid is explained by an interaction of donor and recipient characteristics. We contribute to the literature by separately examining earmarked aid, a subset of the ‘catch-all’ bypass aid, and by analyzing earmarked aid over an extended period of time. While the analysis in Acht et al. (2015) is purely cross-sectional and relies on 2008 data, Dietrich’s (2016) study is based on the

¹⁵ Their respective definitions of non-state aid or ‘bypass’ aid differ from Knack (2014), who defines bilateral aid not provided through the country system as ‘bypassing’. In contrast, these authors define ‘bypass’ aid as aid channeled through international and local non-governmental and international governmental organizations. Dietrich (2013) further includes other development actors such as private contractors and public-private partnerships in the definition of ‘bypass’ aid. We test below whether the definition of ‘bypass’ aid influences the results.

period spanning 2005, the first year the channel code variable was consistently used by donor countries, to 2011. Additionally, we test for the official donor motives about recipient need whenever quantitatively possible. Given the lack of such findings in Eichenauer and Knack (2016), we expect to find a weak or no systematic relationship between earmarked aid and post-conflict status or natural disasters due. In their study on the allocation of earmarked aid, these authors do not find statistical evidence that World Bank trust funds systematically disburse more aid to disaster-affected, post-conflict or fragile states although trust fund aid generally is more poverty and policy selective than ‘pure’ bilateral aid. Using the same data from the World Bank, Reinsberg et al. (2015b) include both donor- and recipient-related variables in their study of donors’ choice among single-donor, small-n multi-donor, and large-n multi-donor trust funds.

Regarding the third strand of relevant literature, we rely on the recent review of the literature on the size of donors’ aid budgets (Fuchs et al. 2014). These authors apply Extreme Bounds Analysis to examine the robustness of the fifty-two determinants of donor generosity proposed in the previous literature. After such a consolidative effort, it is hard to avoid a too parsimonious or a too inflated specification. We thus include the five robust variables, identified by Fuchs et al. (2014), as main controls in our specification and describe them in the next section. In robustness checks, we add variables that are used in at least four of the studies summarized in Fuchs et al. (2014: Table 1). As we detail in the next section, we also include variables from the two other recent donor-centered papers that analyze various sub-components of the aid budget. Brech and Potrafke (2013) and Fuchs and Richert (2015) study the relationship between different types of aid and, respectively, donor ideology and the characteristics of the aid minister. Neither considers earmarked aid as a category. All aid budget papers use donor countries as unit of analysis although some recipient-level variables are usually included. No study in this literature tests for statistical differences in the determinants of sub-components of donors’ aid budget.

4.2 Estimation and data

We examine donor- and recipient level factors potentially associated donors’ heterogeneous use of earmarked aid using a panel dataset of 23 OECD/DAC donors over the 1990-2012 period. Our dependent variable is the natural logarithm of earmarked aid commitments provided by a donor country for purposes other than debt relief and humanitarian aid. Aid commitments are commonly used in aid budget and aid allocation studies because donors exert full control only over commitments while aid disbursements also depend on the recipient countries and implementing organizations. Therefore, we prefer using absolute earmarked aid amounts rather than earmarked aid as percentage of total aid because the latter implies the assumption

of fixed aid budgets within which the different types of aid are re-allocated.¹⁶ The question of additionality versus re-allocation within a fixed aid budget is particularly unclear for earmarked aid (e.g., OECD 2010, Reinsberg et al. 2015a). There is also no consensus in the literature about how to model the process of allocation across types of aid. The allocation process can be modeled as a one-step decision in which the budget size and budget items are simultaneously determined or as a two separate choices in which first the budget size and then the budget allocation across aid types are determined. In using absolute amounts, we are also in line with the most recent contributions to the literature on aid budgets (Brech and Potrafke 2013; Fuchs and Richert 2015).¹⁷ While the rise of earmarked aid is primarily donor-focused, the recent literature has highlighted the importance of recipient characteristics and their interaction with donors' political economies. In order to remain comparable to both the aid budget and the aid allocation literatures, we show results from specifications with the donor-year (Equation 1 below) and donor-recipient-year (Equation 2 below), respectively, as the units of analysis.¹⁸ By using these two levels of aggregation we further ensure that the results are not driven by the research design.

As described in the literature section, we examine three sets of arguments proposed to explain the use of earmarked aid. Regarding the official motives, we operationalize the claim that earmarked aid is provided in response to specific needs in recipient countries through two measures. In our donor-year regressions, we account for heightened reconstruction and development needs after natural disasters (beyond humanitarian needs) by first calculating for each donor-recipient pair the probability of bilateral aid assistance in the 1990-2012 period, multiplying this with the lagged number of disaster occurrences in the recipient country, and weighting it with the mean population size of the recipient country over the period.¹⁹ We then sum the variable for each donor across all recipient countries to obtain our measure of *post-disaster needs*.²⁰ In the dyadic specification, we simply use the lagged number of *disasters* that occurred in the recipient country. We measure *post-conflict needs* by aggregating over all

¹⁶ We also prefer absolute amounts over aid as a share of donor's gross national income because for the latter variable, the variation in the dependent variable might alternatively arise from the numerator or the denominator. Moreover, aid allocation studies always use absolute amounts as dependent variable.

¹⁷ For missing values in the dependent variable, we assume no earmarked aid is provided and replace them with zero except for those eight country-years where a donor country also did not report aggregate bilateral aid flows where we leave values missing.

¹⁸ The donor-recipient sample includes all possible dyadic relationships. As in the donor-year specification, we interpret missing values as zero aid. Before logging the variables, one is added.

¹⁹ Appendix A provides details on the construction and the data sources of all variables.

²⁰ We use the time-constant probability of a dyadic relationship, which is less likely to be endogenous than a year-specific probability. Year-specific probabilities suffer from the temporal proximity/simultaneity of donor's choice for a bilateral aid relationship and the transition of the recipient country in a particular state (e.g., (post-) conflict; low governance).

recipients the interaction between the donor-recipient aid probability and a dummy for post-conflict status, which we define to be one in the first five years after the end of a civil war or an international war as we did for the figures above. In the dyadic setting, a dummy indicates a *post-conflict country*.

Second, we test the ‘bypassing’ story, which suggests that donor countries, in particular those with market-oriented economies, avoid state-to-state aid to recipients with low governance and instead channel their aid through other development actors, such as multilateral organizations. We obtain our measure *weak governance index* by the aggregation of the dyad-specific product between the probability of receiving aid and a binary variable indicating weak governance, assigned to countries with a governance score in the lowest quintile.²¹ In the dyadic regressions, *recipient governance* is a standardized governance variable for all and not only weakly-governed recipient countries. Dietrich (2016) argues that donors’ stance domestic practice of outsourcing public service delivery is related to their likelihood of delegating the delivery of aid abroad. We test her argument following her definition of ‘liberal market economy,’ that is derived from the ‘Varieties of Capitalism’ literature, and measured by the time-invariant binary variable *market-oriented donor economy*.²² The coordinated market-economies are our baseline category.

Finally, we examine the relationship between public opinion and earmarked aid at the donor level using two different survey questions. We collected the most recent survey data on the public’s opinion about helping developing countries from various sources (Appendix B). Across donor countries, over the last two decades responses have become more favorable towards supporting developing countries with approval being above 80% in all countries with recent survey results. Broadening Milner’s (2006) argument, such high levels of responses in favor of helping developing countries, which we assume here to extend to foreign aid as the means to do so, would allow governments to provide a low share of multilateral aid as no signaling to voters about the humanitarian usage of the aid budget is necessary.²³ As a second and more precise survey question, we use data from the Eurobarometer (2015), which allows a time-series perspective on the public’s opinion about the ‘most useful help’ to developing countries. While support for the own government has decreased over time, international

²¹ To maximize the number of available observations, we construct a standardized measure of governance that combines (standardized) information from the average of the six World Bank Governance Indicators or the ICRG index on political stability.

²² Market-oriented donor economies are Australia, Canada, Ireland, New Zealand, the Scandinavian countries (Sweden, Norway, Denmark, and Finland), the United Kingdom, and the United States (Dietrich 2016).

²³ Applying Milner’s (2006) argument to this alternative question stretches her theory, which she tested using survey responses about the appropriateness of the own governments’ current aid budgets.

organizations are increasingly considered the most useful help for developing countries. Combining the observation of high approval for supporting developing countries and the public assessment that multilateral organizations are better suited to do so, it can be argued that earmarked aid should be the ideal tool for donor governments to simultaneously remain in the driver's seat regarding aid allocation and signal responsiveness to the public's preference for multilateral aid. Indeed, the share of respondents supporting multilateral implementation is positively correlated with earmarked aid (Eichenauer and Hug 2015: Figure 13). Due to the unbalanced panels of the survey data, we do not include the public opinion variables in the main regressions at the donor-year level but analyze them in separate regressions as we describe below. The two regression equations thus read:

$$(1) \ln(\text{Earmarked aid commitments})_{it} = \beta_1 \text{Post disaster needs}_{it-1} + \beta_2 \text{Post conflict needs}_{it-1} + \beta_3 \text{Weak governance index}_{it-1} + \beta_5 \text{Market oriented donor economy}_i * \text{Weak governance index}_{it-1} + \sum_k \beta_k \text{Controls}_{ikt-1} + \theta_i + \vartheta_t + \varepsilon_{it}$$

$$(2) \ln(\text{Earmarked aid commitments})_{ijt} = \beta_1 \text{N}^\circ \text{ of disasters}_{jt-1} + \beta_2 \text{Post conflict country}_{jt-1} + \beta_3 \text{Recipient governance}_{jt-1} + \beta_4 \text{Market oriented donor economy}_i * \text{Recipient governance}_{it-1} + \sum_k \beta_k \text{Controls}_{ijkt-1} + \theta_i + \vartheta_t + \varepsilon_{ijt}$$

The index i indicates the donor country, j refers to the recipient country, t stands for the calendar year, and k identifies the number of donor and recipient controls described below. The variables of interest and all control variables are lagged by one period to reduce concerns about simultaneity and reverse causality. Note that not all regressions include donor fixed effects θ_i and that the coefficient for the dummy *market-oriented donor economy* is omitted when θ_i is included. To take into account that the propensity of donors to use earmarked aid is likely to be correlated over time and across recipient countries, we use robust standard errors clustered at the donor country level in both specifications.

As main donor controls, we include the covariates used in Fuchs et al. (2014) and Fuchs and Richert (2015). These variables are donors' logged *GDP per capita*, donors' level of *political globalization*, a binary variable indicating the existence of an *independent aid agency*, and the logged population in former colonies of the donor country (*ex-colonial population*). Fuchs et al. (2014) and most previous studies on aid budgets find a robust positive relationship between the size of the aid budget and the *lagged dependent variable*, implying that aggregate ODA budgets are inflexible in the short-term. However, our time period includes only 20 years so that the inclusion of the lagged dependent variable might give rise to the Nickell bias (Nickell 1981). What is more, coefficients on the variables of interest must be interpreted as short-term relationships in dynamic models and we are interested mostly in the more fundamental

relationships. For these reasons of content and methodology, we include the lagged dependent variable only in some specifications and correct for the Nickell bias by estimating bias-corrected lagged dependent variable models using Anderson and Hsiao (1982) instruments.²⁴ Following Brech and Potrafke (2013) and Fuchs and Richert (2015), who also analyze sub-components of ODA, we further control for *trade openness*, *social expenditure* as share of GDP and *public debt* as share of GDP. Finally, we control for the share of *aid underreporting* in donor-level regressions.²⁵

To decrease the risk of omitted variable bias due to a too parsimonious specification, we show specifications including additional covariates, which are used in at last four recent studies on aid budgets (based on the overview in Table 1 in Fuchs et al. 2014). These variables are (logged) *peer effort*, a binary variable for *right-wing government*, the share of *FDI outflows* from the donor country's firms to developing countries as share of the donor's GDP, and a number of variables related to the donor's macroeconomic and fiscal situation: the *fiscal deficit*, *GDP growth*, and the *unemployment* rate.²⁶ Data for the variables of interest and the controls come from different sources and sometimes have missing values, which entails efficiency losses and might result in biased results (e.g., Breitwieser and Wick 2016). Missing data are problematic for interpretation as changes in coefficients may result either from changes in the sample size or the combination of variables. As the literature commonly uses the original data despite these problems, our main results are based on the original data but we find our results to be robust to using multiple imputation for missing values, which requires imposing additional assumptions. Results for some variables, such as disasters, are more consistent.²⁷ Table 1 shows descriptive statistics for both units of analysis.

²⁴ We follow Brech and Potrafke (2013) and use the STATA command *xtlsdvc*.

²⁵ The share of underreporting is computed as the share of the discrepancy between the aggregate bilateral aid amounts (including multi-bi aid, which the OECD records as bilateral aid) reported to the OECD and donors' activity-level aid reports to the CRS over aggregate bilateral amounts. The share of underreporting controls for the low reporting by donor countries about their multi-bi and ('pure') bilateral aid in the early years of the CRS, noted as a problem by the OECD (2010). We do not control for *aid underreporting* in donor-recipient regressions because we rely on cross-section variation.

²⁶ Several other hypotheses have been popular in the literature but do not fulfill our criterion because the variable definition varies widely (e.g., operationalization of 'diverging interests in domestic politics'), are already included in our main controls (income per capita, lagged aid, population, government size) or are simply not relevant for our time period (cold war dummy/cold war threat).

²⁷ Appendix C shows our main results using the data imputed with multivariate imputation and describes the imputation procedure.

4.3 Results

In the first application of the new data, we seek to explain the variation in the use of multi-bi aid both across donors and for individual donors over time. While we prefer and mostly show fixed-effects regressions that account for unobserved donor heterogeneity and thus mitigate – but not eliminate – omitted variable bias, there is a trade-off involved when removing the variation across donor countries. Various potential determinants of earmarked aid effort are quite stable over time (e.g., GDP per capita) or do not vary at all (e.g., market-oriented donor economy). Note that we abstain from interpreting relationships as causal even when we find significant and robust correlations in the subsequent analysis because we do not have a stringent identification strategy for our variables of interest. As noted above, we lag all variables on the right-hand side of the regression equation to reduce concerns about simultaneity and reverse causality.²⁸

Main results at the donor level

Our first results are based on regressions with the donor-year as the unit of analysis (Eq. 1). Columns 1 and 2 of Table 2 account only for year-specific shocks affecting all donors (ϑ_t), which allows us to study differences between donor countries. In columns 3 through 8 we add donor-fixed effects and thus interpret the estimated coefficients as within-donor relationships. Table 2 tests two explanations for earmarked aid: recipient needs and the ‘bypass’-strategy of (market-oriented) donor economies. We find that the occurrence of natural disasters in donor’s recipient countries is economically significant and positively correlated with earmarked aid in all specifications – whether or not we include donor-fixed effects and despite having removed humanitarian aid from the dependent variable. However, the coefficients on *post-disaster needs* are insignificant at conventional levels of statistical significance when we add the interaction of interest (column 2), the full set of donor controls (column 7), or the lagged dependent variable instrumented following Anderson-Hsiao (1982) (columns 6 and 8).²⁹ A one-

²⁸ Although this is weakness, the literatures on aid allocation or aid budgets have not yet solved the endogeneity of regressors in a satisfactory way. For example, Fuchs et al. (2014) use GMM estimators to account for the endogeneity of selected regressors. However, these estimators are criticized because the exclusion condition is often violated and because of arbitrariness in modeling (see, e.g., Bazzi and Clemens 2013).

²⁹ It is possible that lagging the disaster variable is not the right way to model the relationship with earmarked aid because aid responses to disasters might be more rapid than other types of aid, even for non-humanitarian disaster aid. On the other hand, disasters may occur towards the end of a calendar year so that most of the aid might be disbursed in the subsequent year. When we use the lagged number of disasters in the construction of post-disaster needs, the positive coefficient turns insignificant and reduces in size (not shown).

standard deviation decrease in post-disaster needs is associated with a reduction in earmarked aid of up to 42 percent.³⁰

Post-conflict countries do not receive systematically different amounts of earmarked aid. If anything, these countries seem to receive less (column 1). At this level of aggregation, there is also no evidence that a decrease in the average governance among weakly-governed or fragile countries (i.e., an decrease in the weak governance index) mobilizes earmarked aid. That is, there is no statistical support for the ‘unconditional bypass’ hypothesis that does not take into account donor characteristics (Dietrich 2013; Knack 2014; Acht et al. 2015). We re-visit the unconditional argument below using donor-recipient regressions, which have been used in the relevant literature and are more appropriate for addressing this question.

Taking into account the political economy in donor countries, we find that market-oriented donor economies provide significantly more earmarked aid in general (column 2). Holding the weak governance index and all other values at their mean value, market-oriented donors provide almost seven times more earmarked aid.³¹ As the negative sign of the interaction shows, market-oriented donor economies provide significantly more earmarked aid than other donors when governance quality deteriorates. The statistical significance and the size of the interaction coefficient are robust to the inclusion of donor-fixed effects, additional covariates and the lagged dependent variable in the subsequent columns. In terms of quantitative importance, we find that a decrease in the weak governance index of one standard deviation increases earmarked aid from market-oriented donor countries by 125 percent and decreases aid from coordinated market economies by around 25 percent, though the coefficient for the weak governance index is imprecisely estimated (column 6).³²

Regarding the main controls, few variables turn out to be related to earmarked aid in statistically significant ways. Comparing donor countries in columns 1 and 2, we find that politically globalized donors provide more earmarked aid whereas those with colonial ties provide significantly less; this supports the hypothesis that (earmarked) aid is a substitute for a common colonial past (e.g., Fuchs et al. 2014). Accounting for time-invariant donor characteristics, we find that past colonizers increase earmarked aid when they observe population growth in their former colonies. There is some weak evidence that highly indebted countries provide less earmarked aid but, conditional on the level of debt, is associated with more earmarked aid – potentially to the detriment of other aid channels, as we will explore

³⁰ Based on column 3, $100 * (\exp(-19.574) - 1) * 0.43 = -42.999$

³¹ Based on column 2, $100 * (\exp(-0.473 * 28.13 + 15.331) - 1) = 658.0$

³² Using the point estimates from column 6, a one-standard deviation decrease in governance result leads to: for market-oriented donor governments, $100 * (\exp(0.396 - 0.077) - 1) * 3.33 = 125.1$, and for coordinated market economies: $100 * (\exp(-0.077) - 1) * 3.33 = -24.6$.

below. As mentioned above, aid inertia has been found to be one of the primary explanatory factors for aid budgets but the inclusion of a lagged dependent variable risks creating a Nickell bias in our relatively short panel. Reassuringly, the size and sign of the coefficients of interest are largely stable to the inclusion of the lagged dependent variable (column 5) and its Anderson-Hsiao-instrumented version (columns 6 and 8).³³ We find that a one percent increase in earmarked aid in the previous year is associated with around 0.3 percent more earmarked aid in the next year. The coefficient size implies that inertia for earmarked aid is low compared to total aid commitments and particularly to aid disbursements (Fuchs et al. 2014; Fuchs and Richert 2015).

Our main results are unaffected by the inclusion of additional variables popular in the aid budget literature although some of the main controls lose their statistical significance (column 7). Among the additional variables, we find that FDI outflows from donor countries are strongly related to the amount of earmarked aid and peer effort to be negatively associated with own efforts, which has been interpreted as evidence that donors view (earmarked) aid as an international public good (Schweinberger and Lahiri 2006; Fuchs et al. 2014). Accounting for aid inertia in column 8 does not affect the findings for the extended donor controls.

Main results at the donor-recipient level

Given our interest in several recipient-level factors, Table 3 shows regressions at the donor-recipient level as specified in equation (2). The use of dyads as units of analysis is common in the aid allocation literature and is used by all studies on ‘bypass’ aid (Dietrich 2013; Knack 2014; Acht et al. 2015; Dietrich 2016). Most importantly, the results show that our main finding about the use of earmarked aid in fragile countries does not hinge on the unit of analysis. In the first and most parsimonious regression, we find that disaster-affected, post-conflict and weakly-governed countries receive significantly more earmarked aid (column 1). This is in contrast with results at the aggregate level, where we did not find statistical evidence that post-conflict and fragile countries were unconditional beneficiaries of earmarked aid. When additional recipient and donor controls are introduced in the subsequent columns, the coefficient on disasters and on recipient governance turns insignificant and reduces in size, where the latter is in line with previous results. Substantially, a ten percent increase in the number of disasters is associated with a 5.8 percent increase in earmarked aid for the recipient country (column 1). Post-conflict countries receive 85 percent more aid than peaceful countries or countries in conflict.³⁴ According to column 1, a decrease in the governance scale by one standard deviation increases

³³ We do not report the non-instrumented dynamic regression of column 8 but results are available upon request.

³⁴ Based on column 1: $100 * (\exp(0.618) - 1) = 85.5$.

earmarked aid on average by around 64 percent for coordinated donor economies and about 126 percent for market-oriented donor economies.³⁵ We add our main donor controls and recipient controls in column 2 and the extended donor controls in column 3. The coefficients on disasters and recipient governance turn insignificant while the interaction is marginally insignificant.

Based on the aid allocation literature, we include the most common covariates at the recipient level: recipient need is measured by (logged) *recipient GDP per capita* and *recipient population*. Political relationships are accounted for by *UNGA alignment*, which measures the distance between the ideal points of a donor-recipient pair based on voting in the UN General Assembly and by a dummy for a shared *colonial history* with the donor.³⁶ *Recipient trade openness* captures the importance of international trade for the recipient country. In line with the previous literature, we do not include recipient-fixed effects (Dietrich 2013; Knack 2014; Acht et al. 2015) because the quality of governance in recipient countries is highly persistent, leaving little for the variables of interest to explain. Column 2 shows that earmarked aid is allocated to poorer countries with growing populations. The negative sign on colonial history supports the hypothesis that (earmarked) aid is a substitute for a common colonial past (e.g., Fuchs et al. 2014). In column 3, we add the extended set of donor-specific variables. This does not change the results in any significant way.

Columns 4 through 6 replicate these specifications but limit the sample to the 1990-2001 period to test whether motives changed over time. Most notably, the interaction coefficient is positive although insignificant, suggesting that in this time period market-oriented donors did not systematically use earmarked aid in low-governance countries to a larger extent than their peers. This finding might be due to the relatively limited number of donors providing substantial amounts of earmarked aid in the 1990s, among which the Netherlands, a pioneer donor in earmarked aid, is categorized as a coordinated economy in the ‘Varieties of Capitalism’ literature. Interestingly, there seems to be a negative association between UNGA alignment and earmarked aid in some regressions. This could suggest that donors use earmarked aid when they do not want to be observed as engaging with a donor government bilaterally for some reason. Alternatively, the effect might be driven by the Scandinavian donors and the Netherlands that were found to be pioneers of earmarked aid and are known for their ‘altruistic’ aid allocation (e.g., Berthélemy 2006).³⁷ Our main findings for the full period are

³⁵ Based on column 1: for coordinated economies, $100 * (\exp(0.683) - 1) * 0.65 = 63.7$, and for market-oriented donor countries, $100 * (\exp(0.683 + 0.393) - 1) * 0.65 = 125.6$.

³⁶ When we include the dyadic colonial history dummy, we exclude (ln) ex-colonial population from the donor controls.

³⁷ Sweden was not identified as ‘altruistic’ donor due to data availability (Berthélemy 2006).

robust to focusing on the 2002-2012 period (Columns 7-9). In this more recent period, the coefficient on the post-conflict dummy is statistically less pronounced but of similar size. Most notably, we find earmarked aid to be used in low-governance contexts statistically and economically significantly only by *market-oriented donor economies*. That is, there is no evidence for the ‘unconditional’ bypass argument in the most recent decade for the more fully specified models in columns 8 and 9.

In Table 4, we focus on different types of ‘bypass’ aid. To allow for a comparison of our results with those in Dietrich (2016), we focus on the years 2005-2011.³⁸ The dependent variable in columns 1-2 is the (logged) aid that ‘bypasses’ the government as defined in Dietrich (2016). ‘Bypass’ aid refers to aid channeled through multilateral organizations, NGOs, and other development actors. The coefficient on the interaction term is larger than in previous tables and significant at the 5 percent level. To study which type of ‘bypass’ aid drives the results, we disaggregate ‘bypass aid’ by (*ln*) *earmarked aid* and (*ln*) *bypass aid net of multi-bi aid* (OECD 2013) in columns 3-4 and 5-6 respectively, also focusing on the 2005-2011 period. For earmarked aid, we find that the coefficient on the interaction is economically substantial although marginally insignificant in column 3, turning statistically significant in column 4 through the inclusion of the extended donor controls. In columns 5 and 6, the interaction coefficient is statistically insignificant and of smaller size. This suggests that ‘bypass’ aid other than earmarked aid is used more heterogeneously than earmarked aid by market-oriented donor economies in fragile countries. For example, donors might only be able to fund NGOs in countries with sufficient levels of political freedom. More generally, these findings suggest that future research should further disentangle the concept of ‘bypass’ aid to improve our understanding of donor practice in disaster-struck, post-conflict, and fragile countries. Donor practice and outsourcing to other development actors in these challenging contexts is likely to interact with donor characteristics because of differences of prevailing theories and beliefs about the best strategies to support these recipient countries. Interestingly, earmarked aid is substantially more need-oriented and negatively correlated with colonial history, which is in contrast to either all or other ‘bypass’ aid.

Earmarked aid and public opinion

Next, we statistically explore the relationship between public opinion and earmarked aid using the donor country as unit of analysis. The cross-country survey data is highly unbalanced and we therefore prefer to run a regression on the mean values of all variables, averaged over the

³⁸ It would be interesting to test for temporal heterogeneity in donors’ use of different types of ‘bypass’ aid but, unfortunately, the data about the channelcode for aid intermediaries other than multilateral organizations are missing for years prior to 2005.

1990-2001 and 2002-2012 period respectively (see Appendix B). The top panel of Table 5 shows that public support for foreign aid neither explains differences in the use of earmarked aid between donors (column 1) nor (robustly) within-donor variation (columns 2 and 3). To test our argument that donor governments may use earmarked aid to simultaneously satisfy the public's mistrust about bilateral aid and keep using aid as a foreign policy tool, columns 3 to 6 instead include the share of respondents that consider their own government as the "most useful help to the Third World countries." This question is available for all EU countries for five years (1991, 1994, 1996, 2009, 2010), so that we again resort to averaging all variables within the 1990-2001 and 2002-2012 periods respectively but limit our sample to EU countries. We find a significant negative association between the earmarking trend and the public's opinion about the helpfulness of their own government for developing countries. A one percent reduction in favorable opinion about the own government translates to a more than a doubling of earmarked aid.³⁹ Although the economic and statistical significance of the coefficient is robust to the inclusion of fixed effects and control variables, the finding may result from coinciding but unrelated trends and is far from being causally identified.

The finding might be used to advocate for a broadening of Milner's (2006) argument. When public opinion towards bilateral aid is unfavorable, a donor government may use delegation to a multilateral organization to signal 'altruistic' motives to the domestic audience. Earmarked aid allows for partial delegation. Specifically, a government may keep (most) control over the allocation and the timing of earmarked disbursements by trust funds. Thus, earmarked aid allows to simultaneously increase usage of multilateral organizations and to employ as a foreign policy tool.⁴⁰ Rows 3-6 explore whether public opinion questions are also associated with the bilateral and multilateral aid budgets. We find an unconditional positive but economically and statistically weak correlation between bilateral aid and favorable opinions about the helpfulness of the own government which disappears when we add variables and fixed effects. No other economically or statistically significant relationships emerge.

Comparison of the determinants of earmarked and bilateral aid

Table 6 compares the determinants of earmarked aid budgets with those of bilateral aid budgets using seemingly unrelated regression (SUR) (Zellner 1962).⁴¹ SUR accounts for the

³⁹ Based on Column 4, Row 2: $100 * (\exp(0.749) - 1) = 111.5$.

⁴⁰ The governance structure in each trust fund is different. Generally, allocation decisions are limited by the sector- and country-focus of the trust fund and depend upon agreement among the one or multiple contributing donors.

⁴¹ While it would be interesting to compare earmarked aid, a hybrid between multilateral and bilateral aid, to the donor-level determinants of multilateral aid budgets, this is unconvincing when characteristics of (bilateral or earmarked) recipient countries are related to the size of the respective aid budgets (as we

correlation of disturbances between components of the total aid budget and thus improves on the efficiency of the estimation.⁴² It allows us to test for statistical differences between the point estimates obtained in different equations. We find the coefficient on the two variables of interest to be statistically different: earmarked aid is significantly more responsive to natural disasters than 'pure' bilateral aid and donor countries with market-oriented economies provide significantly more earmarked aid to low governance countries. The coefficients on the main donor controls suggest that bilateral and earmarked aid are determined by different factors. As in Fuchs et al. (2014) for aggregate aid budgets, bilateral aid budgets are significantly related to changes in donor wealth, donor's multilateral engagement, and a donor's colonial relationships. None of these factors is statistically related to earmarked aid. However, the differences between the respective coefficients are however not statistically different at conventional levels of statistical significance (demonstrated by the Wald test in the last column).

We find that governments with a large share of social expenditures are also generous providers of both earmarked and bilateral aid. Interestingly, there is evidence that growing debt levels are associated with a reduction in bilateral aid but an increase in earmarked aid. The difference between coefficients is statistically significant. Future research could explore in more detail whether increasing debt levels are indeed associated with a shift away from bilateral aid towards earmarked aid. In combination with the comparatively low inertia for earmarked aid, one may speculate that earmarked aid is associated with less binding future commitments than other types of aid. Bilateral aid often involves multi-year projects while multilateral aid is highly inflexible in the short term due to multilateral agreements and compulsory membership fees.

For comparative purposes, we also estimated SUR at the dyad level. Table 7 shows that most variables of interest are associated in a significantly different manner with the allocation of earmarked and bilateral aid. Specifically, improved recipient governance increases bilateral aid from all donor countries while earmarked aid increases with deteriorating recipient governance, although significantly so only for market-oriented donor countries. In contrast to official donor rhetoric, we do not find earmarked aid to be preferred over bilateral aid as instrument to respond to disaster needs. Among the recipient-level variables, there are only few significant differences between both aid channels: Earmarked aid is more poverty-selective than bilateral aid, in line with findings by Eichenauer and Knack (2016). For the remaining recipient-level variables, the size and signs of coefficients are similar.

find them to be). By the definition of multilateral aid, which is pooled and allocated by the multilateral's governing board, donors' multilateral contributions cannot be motivated by conditions in donor-specific recipient samples in the same way as country-specific bilateral or earmarked aid.

⁴² The correlation between (the logarithm) of earmarked aid and bilateral (multilateral) aid is 0.31 (0.36) while multilateral and bilateral aid are highly correlated (0.88).

In sum, we find mixed evidence about donors' use of earmarked aid being associated with recipient needs after natural disasters, one of the official motives for multi-bi aid. At the donor-recipient level, the more appropriate unit of analysis for recipient variables, we find statistical evidence that earmarked aid specifically targets post-conflict countries, another official donor motive. We find that donors differ in their choice of aid modalities when it comes to engaging in weakly-governed countries. There is robust evidence at both levels of analysis that market-oriented domestic economies bypass weakly-governed governments by outsourcing aid delivery to multilateral organizations. We also show some preliminary evidence that multilateral organizations might be the preferred intermediary to circumvent recipient governments. However, donors' choice of the 'bypass' channel might further depend upon factors such as the political regime in the recipient country. Thus, further research is required to understand donors' strategic choice of intermediary when bypassing recipient governments or engaging in post-conflict and post-disaster contexts.

Regarding public opinion, we find no robust relationship between earmarked, bilateral, or multilateral aid and the share of respondents that is in favor of supporting developing countries. We find a robust negative association between earmarked aid and the public's opinion about the usefulness of their own government in helping developing countries, broadening Milner's (2006) argument about the governments' rationale for multilateral aid. While we abstain from making causal claims in general, we note that the relationship between public opinion and earmarked aid in particular might just be the result of coinciding but unrelated trends and call for more research on this important topic.

5. Conclusion

This paper introduces an original dataset on earmarked or multi-bi aid that is provided by donor countries to multilateral development organizations and managed in trust funds before allocation and implementation according to donors' pre-specified priorities. The new data allow researchers to analyze earmarked aid over an extended period of time using refined information about the multilateral recipients and the earmarking stringency of individual aid activities. Our descriptive analysis of the actors affected by the earmarking trend highlights patterns in the data that future research may analyze and contribute to the literatures on aid budgets, the choice of the aid channel, aid allocation across sectors, countries, and aid modalities, and the effectiveness of aid.

In a first application of the data, we analyze three explanations for earmarked aid at two levels of analysis. First, we find some mixed evidence that donors' use of earmarked aid is associated with official donor motives for earmarked aid. At the donor-level, we find a positive

relationship with needs after natural disasters and, in the dyadic regression, with needs in post-conflict countries. Second, we contribute to the literature on the ‘bypassing’ of recipient governments with low quality of governance by focusing on earmarked aid, one type of ‘bypass’ aid, and by analyzing an extended time period. We find that only market-oriented donor economies use earmarked aid in low-governance countries. Our results also suggest that ‘bypass’ aid, a catch-all term for all aid that is not government-to-government, might be more heterogeneous than discussed in the previous literature. Third, we analyze the relationship between earmarked aid and public opinion, using two different survey questions: we find no relationship between the share of respondents in favor of supporting developing countries and either multilateral, bilateral, or earmarked aid. However, decreases in the public’s opinion about the usefulness of their own government in helping developing countries is associated with increases in earmarked aid.

In terms of policy implications, the relatively low inertia of earmarked aid budgets over time may suggest that donors are willing and able to mobilize substantial amounts of earmarked aid for a specific country or issue in the short term. On a more negative note, low inertia may imply that earmarked aid is more easily reduced in response to economic downturns and distress of donors’ government finances although no evidence for this relationship has been found so far (see above and Reinsberg et al. 2015a). In contrast, increasing debt levels to be associated with a shift towards earmarked aid, while bilateral aid is negatively related to increasing debt levels. More generally, we find that earmarked aid levels are determined by different factors than bilateral aid: market-oriented donor economies allocate significantly more earmarked aid to weakly-governed countries. There is some mixed evidence that earmarked aid is allocated to a larger extent than bilateral aid to disaster-affected and post-conflict countries. Our findings suggest complementarities between bilateral and earmarked aid and between ‘bypass’ actors, which future research should seek to understand in more detail. In particular, earmarked aid might complement donors’ bilateral aid across sectors within the same recipient country.

This paper has raised many research questions about the actors, the motives, and the consequences of earmarked aid and offers improved data to study these questions. Important research agendas include but are not limited to the efficiency and effectiveness of earmarked aid, the timing of the rise of earmarked aid and its frontrunners, and the implications of earmarked aid for multilateral organizations. We hope that the new multi-bi aid data contributes to furthering our understanding of the role of earmarked aid within the larger aid architecture.

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Tables

Table 1: Descriptive statistics

<i>Descriptives at the donor-year level</i>	N	Mean	SD	Min	Max
Earmarked aid (2011 constant USD)	521	1.51E+08	3.01E+08	1.00E+00	3.16E+09
Bilateral aid (2011 constant USD)	521	3.73E+09	5.48E+09	3.98E+07	3.15E+10
Post-disaster needs	521	5.28	0.43	3.57	5.93
Post-conflict needs	521	364.92	126.15	78.96	638.93
Weak governance index	521	28.13	3.33	20.31	34.44
Market-oriented donor economy	521	0.44	0.5	0	1
Public support for aid (%)	204	80.95	11.63	34	97
Own government is most useful (%)	69	6.42	4.59	0.40	19.25
GDP per capita (2011 constant USD)	521	29,197.77	11,674.88	7339.71	90,888.71
GDP growth (%)	521	2.47	2.63	-8.27	11.27
Social expenditure (% GDP)	520	21.33	5.79	2.7	35.5
Public debt (% GDP)	466	65.58	32.95	7.51	192.75
Public deficit (% GDP)	489	1.94	4.76	-18.7	32.3
Unemployment (%)	490	7.11	3.48	1.56	22.05
Right-wing government	521	0.5	0.5	0	1
Independent aid agency	521	0.57	0.5	0	1
Political globalization	498	88.43	9.73	45.84	98.43
Trade openness (% GDP)	492	80.01	51.67	15.92	333.53
FDI outflows (% GDP)	478	2.92	16.89	-8.45	221.37
Ex-colonial population	521	11.21	10.3	0	24.72
Peer effort (2011 constant USD)	501	3.10E+09	3.40E+09	1.16E+08	1.14E+10
Aid underreporting	521	0.27	0.3	0	1

Table 1 continues on the next page

Table 1 continued

<i>Descriptives at the donor-recipient level</i>	N	Mean	SD	Min	Max
Earmarked aid (2011 constant USD)	46,012	2.07E+08	3.50E+08	0	3.16E+09
Bypass aid (2011 constant USD)	46,012	2.06E+06	1.05E+07	0	5.74E+08
Bilateral aid (2011 constant USD)	46,012	2.00E+07	1.10E+08	0	4.65E+09
Disasters	30,191	4.63	4.26	2	38
Post-conflict country	46,012	0.25	0.47	0	2
Recipient governance	39,072	-0.51	0.65	-2.4	1.55
Market-oriented donor economy	46,012	0.44	0.5	0	1
Recipient GDP per capita (constant international dollar)	39,933	2,247.55	2,834.88	50.04	55,376.43
Recipient population	40,415	4.96E+07	1.73E+08	9004	1.32E+09
UNGA alignment	42,371	1.7	0.7	0	4.76
Colonial history	41,182	0.86	0.35	0	1
Recipient trade openness (% GDP)	40,813	75.3	38.31	0.18	349.26
Donor GDP per capita (2011 constant USD)	46,012	31433.97	10663.61	11171.92	90888.71
GDP growth (%)	46,012	2.09	2.36	-8.27	10.97
Social expenditure (% GDP)	45,867	22.15	5.2	5.1	35.5
Public debt (% GDP)	43,093	69.79	33.29	11.27	192.75
Public deficit (% GDP)	44,374	2.13	4.87	-18.7	32.3
Unemployment (%)	43,777	7.09	3.12	1.56	22.05
Right-wing government	46,012	0.5	0.5	0	1
Independent aid agency	46,012	0.63	0.48	0	1
Political globalization	43,403	91.04	6.75	48.39	98.43
Donor trade openness (% GDP)	42,255	75.28	47.39	15.92	333.53
FDI outflows (% GDP)	44,607	2.81	16.09	-8.45	221.37
Peer effort (2011 constant USD)	44,919	3.73E+09	3.56E+09	1.16E+08	1.14E+10

Table 2: Main results at the donor-level, 1990-2012

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post-disaster needs	7.616** (3.604)	5.504 (3.979)	19.574** (8.567)	16.783* (8.183)	14.802* (8.197)	14.623 (8.992)	3.057 (9.275)	3.180 (7.440)
Post-conflict needs	-0.024* (0.012)	-0.015 (0.013)	0.000 (0.013)	0.000 (0.013)	0.003 (0.008)	0.003 (0.010)	0.007 (0.009)	0.003 (0.011)
Weak governance index	-0.961 (1.095)	-0.464 (1.019)	0.017 (1.145)	0.053 (1.037)	0.105 (1.151)	0.077 (0.561)	0.349 (1.074)	0.454 (0.731)
Weak governance index * market-oriented donor economy		-0.473** (0.207)		-0.532** (0.198)	-0.424** (0.185)	-0.396** (0.162)	-0.652*** (0.170)	-0.582*** (0.181)
Market-oriented donor economy		15.331** (6.159)						
Lagged dependent variable					0.275** (0.102)	0.320*** (0.046)		0.258*** (0.047)
GDP per capita (ln)	2.080 (1.920)	0.912 (2.264)	-3.701 (4.482)	-1.791 (4.709)	-2.555 (3.294)	-2.606 (4.020)	-6.623 (4.947)	-6.088 (5.545)
Political globalization	0.280*** (0.098)	0.244** (0.094)	0.073 (0.083)	-0.010 (0.091)	0.048 (0.066)	0.048 (0.066)	-0.042 (0.089)	-0.034 (0.096)
Independent aid agency	0.572 (0.848)	0.300 (0.882)						
Ex-colonial population (ln)	-0.119** (0.046)	-0.091** (0.039)	0.181** (0.079)	0.081 (0.071)	0.102* (0.054)	0.106 (0.133)	0.081 (0.125)	0.030 (0.204)
Trade openness (% GDP)	-0.009 (0.013)	0.001 (0.018)	0.007 (0.031)	0.036 (0.032)	0.008 (0.023)	0.008 (0.030)	0.039 (0.035)	0.014 (0.036)
Social expenditure (% GDP)	0.007 (0.090)	0.007 (0.092)	0.244 (0.164)	0.266 (0.170)	-0.005 (0.161)	-0.016 (0.138)	0.516** (0.212)	0.360* (0.209)
Public debt (% GDP)	-0.024* (0.013)	-0.015 (0.012)	0.021* (0.011)	0.032*** (0.009)	0.035*** (0.009)	0.034** (0.014)	0.087*** (0.022)	0.074*** (0.024)
Aid underreporting	-14.245*** (1.397)	-13.996*** (1.073)	-13.714*** (1.668)	-13.461*** (1.471)	-10.635*** (1.350)	-10.294*** (1.125)	-12.544*** (1.811)	-10.175*** (1.419)
GDP growth (%)							0.156 (0.156)	0.167 (0.145)

Table 2 continued

Public deficit (% GDP)							-0.192 (0.113)	-0.142 (0.095)
Unemployment (%)							-0.131 (0.170)	-0.045 (0.221)
Right-wing government							-0.236 (0.497)	-0.183 (0.556)
FDI outflows (% GDP)							0.066*** (0.010)	0.073*** (0.024)
Peer effort (ln)							-7.554** (3.392)	-3.409 (3.414)
Year-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Donor-FE			Yes	Yes	Yes	Yes	Yes	Yes
Instrumented lagged DV						AH		AH
Number of observations	440	440	440	440	425	425	360	360
Number of donor countries	23	23	23	23	23	23	23	23
Adjusted R2	0.63	0.65	0.61	0.63	0.66	0.66	0.60	0.60
Within R2			0.64	0.66	0.69		0.64	

Notes: The dependent variable is (logged) earmarked aid and covers the years 1990-2012. AH refers to the use of the Anderson-Hsiao instruments for the lagged dependent variable. Robust standard errors in brackets, clustered at the donor country level. * p<0.10, ** p<0.05, *** p<0.01

Table 3: Main results at donor-recipient level

	1990-2012			1990-2001			2002-2012		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Disasters (ln)	0.588*** (0.152)	0.186 (0.144)	0.193 (0.164)	0.156* (0.090)	0.076 (0.098)	0.041 (0.121)	0.925*** (0.217)	0.208 (0.206)	0.215 (0.221)
Post-conflict country	0.618*** (0.152)	0.394*** (0.140)	0.379** (0.163)	0.121** (0.053)	0.116 (0.087)	0.081 (0.095)	0.863*** (0.257)	0.447* (0.227)	0.386 (0.236)
Recipient governance	-0.683*** (0.108)	-0.094 (0.121)	-0.044 (0.139)	-0.338*** (0.118)	-0.144 (0.166)	-0.027 (0.203)	-0.950*** (0.179)	-0.032 (0.173)	-0.018 (0.186)
Recipient governance * market-oriented donor economy	-0.393* (0.225)	-0.364 (0.245)	-0.412 (0.256)	0.152 (0.196)	0.331 (0.256)	0.307 (0.285)	-0.669* (0.372)	-0.781* (0.399)	-0.822* (0.399)
Recipient GDP per capita (ln)		-0.527*** (0.177)	-0.527** (0.194)		-0.379 (0.221)	-0.242 (0.236)		-0.727*** (0.235)	-0.757*** (0.246)
Recipient population (ln)		0.208** (0.081)	0.221** (0.091)		0.106 (0.063)	0.129 (0.077)		0.283** (0.120)	0.290** (0.125)
UNGA alignment		-0.169 (0.190)	-0.139 (0.198)		-0.379* (0.209)	-0.529** (0.215)		-0.083 (0.252)	-0.058 (0.253)
Colonial history		-0.633*** (0.219)	-0.672** (0.252)		0.194 (0.205)	0.258 (0.219)		-1.005*** (0.349)	-1.004** (0.371)
Recipient trade openness (% GDP)		0.000 (0.002)	0.000 (0.002)		0.001 (0.002)	0.002 (0.002)		-0.001 (0.003)	-0.001 (0.003)
Year-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Donor-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Main donor controls		Yes	Yes		Yes	Yes		Yes	Yes
Extended donor controls			Yes			Yes			Yes
Number of observations	28,065	21,742	19,246	9,455	7,546	5,902	18,610	14,196	13,344
Number of donor countries	23	23	23	21	20	17	23	23	23
Adjusted R2	0.37	0.41	0.42	0.27	0.30	0.33	0.41	0.46	0.45

Notes: The dependent variable is (logged) earmarked aid. Main donor controls are GDP per capita (ln), political globalization, trade openness (% GDP), social expenditure (% GDP), and public debt (% GDP). Extended donor controls are GDP growth (%), public deficit (% GDP), unemployment (%), right wing government, FDI outflows (% of GDP), and peer effects (ln). Robust standard errors in brackets, clustered at the donor country level.

* p<0.10, ** p<0.05, *** p<0.01

Table 4: Testing the ‘bypass’ story at the donor-recipient level, 2005-2011

	All bypass aid		Earmarked aid		Other bypass aid	
	(1)	(2)	(3)	(4)	(5)	(6)
Disasters (ln)	0.347*	0.384*	0.263	0.292	0.256	0.254
	(0.176)	(0.188)	(0.236)	(0.248)	(0.179)	(0.183)
Post-conflict country	0.044	0.054	0.111	0.047	-0.165	-0.142
	(0.172)	(0.179)	(0.328)	(0.340)	(0.146)	(0.145)
Recipient governance	0.280	0.314	-0.081	-0.050	0.374	0.378
	(0.234)	(0.245)	(0.239)	(0.258)	(0.227)	(0.240)
Recipient governance * market-oriented donor economy	-0.858**	-0.865**	-0.773	-0.842*	-0.513	-0.487
	(0.344)	(0.346)	(0.488)	(0.490)	(0.313)	(0.318)
Recipient GDP per capita (ln)	-0.047	-0.052	-0.920***	-0.956***	-0.125	-0.138
	(0.177)	(0.189)	(0.270)	(0.284)	(0.173)	(0.185)
Recipient population (ln)	0.447***	0.437***	0.327**	0.320**	0.594***	0.605***
	(0.138)	(0.137)	(0.137)	(0.143)	(0.087)	(0.089)
UNGA alignment	-0.526	-0.601*	0.055	0.104	-0.691*	-0.748**
	(0.350)	(0.312)	(0.275)	(0.277)	(0.342)	(0.324)
Colonial history	-0.098	-0.042	-1.241***	-1.234**	0.330	0.399
	(0.386)	(0.400)	(0.429)	(0.451)	(0.312)	(0.324)
Recipient trade openness (% GDP)	-0.005*	-0.006**	-0.002	-0.003	-0.005*	-0.005*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Year-FE	Yes	Yes	Yes	Yes	Yes	Yes
Donor-FE	Yes	Yes	Yes	Yes	Yes	Yes
Main donor controls	Yes	Yes	Yes	Yes	Yes	Yes
Extended donor controls		Yes		Yes		Yes
Number of observations	10,377	9,839	10,377	9,839	10,377	9,839
Number of donor countries	23	23	23	23	23	23
Adjusted R2	0.80	0.80	0.49	0.48	0.77	0.77

Notes: The dependent variable in columns 1-2 is (logged) bypass aid as defined in Dietrich (2016), (logged) earmarked aid in columns 3-4, and (logged) bypass aid net of earmarked aid in columns 5-6 and covers 2005-2011. Main donor controls are GDP per capita (ln), political globalization, trade openness (% GDP), social expenditure (% GDP), and public debt (% GDP). Extended donor controls are GDP growth (%), public deficit (% GDP), unemployment (%), right wing government, FDI outflows (% of GDP), and peer effects (ln). Robust standard errors in brackets, clustered at the donor country level. * p<0.10, ** p<0.05, *** p<0.01

Table 5: Earmarked aid and public opinion in donor countries

Dependent variable / main predictors	(1)	(2)	(3)	(4)	(5)	(6)
<i>Earmarked aid (ln)</i>						
(1) Public support for aid (%)	0.073 (0.072)	-0.193*** (0.059)	0.046 (0.107)			
(2) Own government is most useful (%)				-0.749** (0.306)	-0.756** (0.288)	-1.084*** (0.261)
<i>Bilateral aid (ln)</i>						
(3) Public support for aid (%)	-0.036 (0.023)	-0.006 (0.008)	0.010 (0.007)			
(4) Own government is most useful (%)				0.095* (0.053)	0.024 (0.034)	-0.035 (0.026)
<i>Multilateral aid (ln)</i>						
(5) Public support for aid (%)	-0.017 (0.019)	-0.001 (0.007)	0.008 (0.007)			
(6) Own government is most useful (%)				0.066 (0.048)	0.001 (0.025)	-0.057 (0.040)
Period-FE		Yes	Yes		Yes	Yes
Donor-FE		Yes	Yes		Yes	Yes
Main donor controls			Yes			Yes
Number of observations	44	44	44	31	31	31
Number of donor countries	22	22	22	16	16	16

Notes: The dependent variables are the averages for 1990-2001 and 2002-2012 for the aid variable as noted in italics. Main donor controls include post-disaster needs, post-conflict needs, the weak governance index, the interaction between market-oriented donor economy and the weak governance index, GDP per capita (ln), political globalization, ex-colonial population (ln), trade openness (% GDP), social expenditure (% GDP), and public debt (% GDP). Robust standard errors in brackets, clustered at the donor country level. * p<0.10, ** p<0.05, *** p<0.01

Table 6: Seemingly unrelated regression and Wald tests at the donor level

	(1) Earmarked aid (ln)	(2) Bilateral aid (ln)	(1)-(2) Difference / Wald test
Post-disaster needs	16.783** (8.370)	-0.572 (0.660)	17.355**
Post-conflict needs	0.000 (0.010)	-0.003*** (0.001)	0.003
Weak governance index	0.053 (0.635)	0.032 (0.050)	0.021
Weak governance index * market-oriented donor economy	-0.532*** (0.121)	0.004 (0.010)	-0.536***
GDP per capita (ln)	-1.791 (3.449)	2.008*** (0.272)	-3.800
Political globalization	-0.010 (0.070)	0.017*** (0.006)	-0.027
Ex-colonial population (ln)	0.081 (0.111)	-0.027*** (0.009)	0.108
Trade openness (% GDP)	0.036 (0.028)	0.000 (0.002)	0.035
Social expenditure (% GDP)	0.266* (0.141)	0.045*** (0.011)	0.221
Public debt (% GDP)	0.032** (0.016)	-0.005*** (0.001)	0.037***
Aid underreporting	-13.461*** (0.999)	-0.129 (0.079)	-13.332***
Year-FE	Yes	Yes	
Donor-FE	Yes	Yes	
Number of observations	440	440	
Number of donor countries	23	23	
Adjusted R2	0.73	0.95	

Notes: The dependent variables are (logged) earmarked and 'pure' bilateral aid respectively and cover the years 1990-2012. Robust standard errors in brackets, clustered at the donor country level. * p<0.10, ** p<0.05, *** p<0.01

Table 7: Seemingly unrelated regression and Wald tests at the donor-recipient level

	(1)	(2)	(1)-(2) Difference / Wald test
	Earmarked aid (ln)	Bilateral aid (ln)	
Disasters (ln)	0.186** (0.084)	0.267*** (0.070)	-0.081
Post-conflict country	0.394*** (0.077)	-0.182*** (0.065)	0.576***
Recipient governance	-0.094 (0.091)	0.563*** (0.076)	-0.656***
Recipient governance * market-oriented donor economy	-0.364*** (0.122)	0.124 (0.102)	-0.488*
Recipient GDP per capita (ln)	-0.527*** (0.078)	0.050 (0.065)	-0.577***
Recipient population (ln)	0.208*** (0.036)	0.514*** (0.030)	-0.306***
UNGA alignment	-0.169** (0.082)	-0.348*** (0.069)	0.179
Colonial history	-0.633*** (0.112)	-0.203** (0.094)	-0.429*
Recipient trade openness (% GDP)	0.000 (0.001)	-0.002** (0.001)	0.003
Donor-FE	Yes	Yes	
Year-FE	Yes	Yes	
Main donor controls	Yes	Yes	
Number of observations	21,742	21,742	
Number of donor countries	23	23	
Adjusted R2	0.20	0.25	

Notes: The dependent variables are (logged) earmarked and 'pure' bilateral aid respectively and cover the years 1990-2012. Robust standard errors in brackets, clustered at the donor country level. * p<0.10, ** p<0.05, *** p<0.01

Appendix A

Table A1: Definitions and data sources for variables at the donor level

Variable	Description	Source(s)
<i>Dependent variable(s)</i>		
Earmarked aid (ln)	Natural logarithm of earmarked aid (or “multi-bi aid”) commitments in 2011 constant USD net of earmarked aid devoted to humanitarian purposes and debt relief; pro-rata (multilateral) contributions to the four pass-through multilaterals (i.e., GAVI, GEF, GFATM, EU) that ultimately become earmarked aid are added to this amount (see Eichenauer and Reinsberg 2014).	Multi-bi aid data
Bilateral aid (ln)	Natural logarithm of bilateral aid commitments in 2011 constant USD net of earmarked aid flows channeled through multilateral organizations.	OECD 2013 and Multi-bi aid data
Multilateral aid (ln)	Natural logarithm of multilateral aid commitments in 2011 constant USD net of the pro-rata (multilateral) contributions to the four pass-through multilaterals (i.e., GAVI, GEF, GFATM, EU) that ultimately become earmarked aid (see Eichenauer and Reinsberg 2014).	OECD 2013 and Multi-bi aid data
<i>Key predictors</i>		
Post-disaster needs	Donor- and time-varying measure of natural disasters in developing countries, one-year lag. Computation in three steps: (1) calculate the fraction of sample years in the period 1990-2012 in which a donor committed a positive amount of ‘pure’ bilateral aid to a specific recipient; (2) multiplication of the lagged number of natural disaster occurrences in each recipient country, the logged population of the recipient country (averaged over 1990-2012) and the fraction from (1); and (3) sum for each donor over all recipient countries.	Probability calculated from OECD 2013; Disasters from EM-DAT database (CRED 2015); Population originally from World Development Indicators and sourced from Teorell et al. 2013
Post-conflict needs	Donor- and time-varying measure of post-conflict reconstruction needs in developing countries, one-year lag. Computation in three steps: (1) calculate the fraction of sample years in the period 1990-2012 in which a donor committed a positive amount of ‘pure’ bilateral aid to a specific recipient; (2) multiplication of the probabilities from (1) with the logged population of the recipient country (averaged over 1990-2012) and a post-conflict indicator of a given recipient country and (a country is considered to have post-conflict status in the first five years after a conflict ends, a conflict can be either a civil war according to the UCDP/PRIO definition (Gleditsch et al. 2002) or an international war according to the COW definition; ongoing wars are not considered; if the conflict ends in the first half of a year, the post-conflict indicator turns one in the same year; if it ends in the second half, the indicator turns one the following year); and (3) sum for each donor over all recipient countries.	Probability calculated from OECD 2013; Internal conflict data from UCDP/PRIO (Pettersson and Wallensteen 2015) and international conflict from COW (Sarkees and Weyman 2016); Population originally from World Development Indicators and sourced from Teorell et al. 2013

Weak governance index	Donor-varying measure of governance quality in developing countries, one-year lag. Computation in three steps: (1) calculate the fraction of sample years in the period 1990-2012 in which a donor committed a positive amount of 'pure' bilateral aid to a specific recipient; (2) assign the binary indicator "weakly governed country" to each country with a governance level below the threshold of "weak governance" defined as those values in the lowest quintile in the annual governance distribution; and (3) aggregate to the donor level through the creation of a weighted average of the normalized governance level among the "weakly governed states", where weights are given by the probability of a positive aid receipt (expressed in percent) and the logged population.	Probability calculated from OECD 2013; Governance data from the World Bank Governance Indicators or the ICRG index (whichever values were not missing), population from the World Development Indicators, sourced from Teorell et al. 2013
Market-oriented donor economy	Binary indicator variable for being a market-oriented "variety of capitalism"; donor countries with a market-oriented system include Australia, Canada, Denmark, Finland, Ireland, New Zealand, Norway, Sweden, the United Kingdom, and the United States.	Dietrich 2016
Own government is most useful (%)	Percentage of national survey respondents to the question "[...] which one do you think provides the most useful help to the third world countries?" who answer the own (national) government, one-year lag. Response options vary over years but always include the own government and international organizations (international organizations (like the UN), the European Community/Union, and voluntary organizations/NGOs, business and industry/private companies).	Eurobarometer 2015. Questions used are Q91 (1991), Q69 (1994), Q81 (1996), QF4 (2009), QD4 (2010).
Public support for aid (%)	Percentage of national survey respondents who support foreign aid; exact wording of the question varies across countries.	See Appendix B
<i>Control variables</i>		
GDP per capita (ln)	Natural logarithm of GDP per capita of the donor country in constant USD, one-year lag.	OECD 2014
GDP growth (%)	Real growth of GDP in the donor country, one-year lag.	OECD 2014
Social expenditure (% GDP)	Social expenditure of the donor government as percentage of GDP, one-year lag.	OECD 2014
Public debt (% GDP)	Public debt level of the donor government as percentage of GDP, one-year lag.	OECD 2014
Public deficit (% GDP)	Annual deficit of the donor government as percentage of GDP, one-year lag.	OECD 2014
Unemployment (%)	Unemployment rate as percentage of the working population, one-year lag.	OECD 2014
Right-wing government	Binary indicator of right-wing partisanship of the donor government, one-year lag. A donor is considered to be right-wing partisan if its average ideological position is above the sample average; the average partisan position of the government is calculated using vote shares of the constituent parties as weights for coalition government.	ParlGov data from Manow and Döring 2012

Independent aid agency	<p>Binary variable based on the classification of the four organizational models of bilateral aid provision (OECD/DAC 2009), one-year lag. Independent aid agency as defined in Fuchs et al. (2014) and combines the management models 3 and 4.</p> <p>Model 1: Development co-operation is an integral part of the ministry of foreign affairs, which is responsible for policy and implementation.</p> <p>Model 2: A Development Co-operation Directorate has the lead role within the ministry of foreign affairs and is responsible for policy and implementation.</p> <p>Model 3: A ministry has overall responsibility for policy and a separate executing agency is responsible for implementation.</p> <p>Model 4: A ministry or agency, which is not the ministry of foreign affairs, is responsible for both policy and implementation.</p>	Definition from Fuchs et al. 2014; Classification from OECD 2009
Political globalization	KOF index, dimension covering political globalization, one-year lag.	Dreher 2006
Trade openness (% GDP)	Sum of exports and imports as a percentage of GDP of the donor country, originally collected in the World Development Indicators, one-year lag.	Teorell et al. 2013
FDI outflows (% GDP)	FDI outflows from the donor country to developing countries (non-OECD countries) as a percentage of GDP (of the donor country), one-year lag.	OECD 2014
Ex-colonial population (ln)	Natural logarithm of the population living in ex-colonies of the donor country, one-year lag.	Population from Teorell et al. 2013; Colonial ties from Mayer and Zignago 2006
Peer effort (ln)	Natural logarithm of net earmarked aid committed by all other DAC donors, one-year lag.	Multi-bi aid data
Aid underreporting	The share of underreported bilateral aid is calculated as the difference between the aggregated total bilateral aid reported by a donor country (Table DAC1a) each year and the sum of amounts reported as bilateral aid activities to the Creditor Reporting System divided by the aggregated bilateral aid. In an ideal world, the two sums would be equal but mostly they are not. We assume that reporting gaps are the same for bilateral aid (net of earmarked aid) and earmarked aid and interpret the share as the degree of underreporting in multi-bi aid.	OECD 2013

Table A2: Definitions and data sources for variables at the donor-recipient level

Variable	Description	Source(s)
<i>Dependent variable(s)</i>		
Earmarked aid (ln)	Natural logarithm of earmarked aid (or multi-bi aid) commitments from a donor to a recipient country in 2011 constant USD net of earmarked aid devoted to humanitarian purposes and debt relief; pro-rata (multilateral) contributions to the four pass-through multilaterals (i.e., GAVI, GEF, GFATM, EU) that ultimately become earmarked aid are added to this amount (see Eichenauer and Reinsberg 2014).	Multi-bi aid data
Bypass aid (ln)	Natural logarithm of bilateral aid commitments (2011 constant USD) channeled through multilateral organizations (earmarked aid), non-governmental organizations, and other non-governmental development actors.	OECD 2013 and Multi-bi aid data
Bilateral aid (ln)	Natural logarithm of bilateral aid commitments (2011 constant USD) channeled through a donor's own entity.	OECD 2013
<i>Variables of interest</i>		
Disasters (ln)	Natural logarithm of the number of disaster occurrences in the recipient country drawn from the EM-DAT database, one-year lag.	CRED 2015
Post-conflict country	Binary post-conflict indicator of a given recipient country, one-year lag. A country is considered to have post-conflict status in the first five years after a conflict ends (a conflict can be either a civil war according to the UCDP/PRIO definition or an international war according to the COW definition; ongoing wars are not considered).	Internal conflict data from UCDP/PRIO (Pettersson and Wallensteen 2015) and international conflict from COW (Sarkees and Weyman 2016)
Recipient governance	Standardized governance value of the recipient country, one-year lag (information from the World Bank Governance Indicators and the ICRG index have been combined in order to reduce missing data, comparability of the data are ensured due to normalization).	Teorell et al. 2013
<i>Control variables</i>		
Recipient GDP per capita (ln)	Natural logarithm of GDP per capita of the recipient country, based on the World Development Indicators, one-year lag.	Teorell et al. 2013
Recipient population (ln)	Natural logarithm of the population of the recipient country, based on the World Development Indicators, one-year lag.	Teorell et al. 2013
UNGA alignment	Ideal-point distance between the donor country and the recipient country based on all votes in the United Nations General Assembly, one-year lag.	Bailey et al. forthcoming
Colonial history	Binary indicator variable that is one if the recipient country was a former colony of the donor country.	CEPII database (Mayer and Zignago 2006)
Recipient trade openness (% GDP)	Sum of imports and exports of the recipient country as a percentage of GDP, based on UN Comtrade data, one-year lag.	Teorell et al. 2013

Appendix B

Table B1: Share of respondents in favor of supporting developing countries

(Figures for 1990-2002 from McDonnell et. Al. (2003), sources for 2003-2014 see below).

		1990s											2000s													
Country / Year:		'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14
Australia	(a)					72				84		85														
	(b)													86	87	89	91									
Austria ¹				60	71		66	63		57	86		83	69		86					78	87	85	83	82	87
Belgium								67		55				61		86					81	87	83	85	80	84
Canada ²	(a)				79	64	57			72	75			83												
	(b)																		68	74	75	79				
Denmark							75	83	73	84				93		94					92	94	90	94	85	85
Finland ³								77	34	70	51	60		92		91					92	94	91	88	85	85
France								78		70				74		88					86	86	82	82	76	
Germany								75		66		75		79		91					89	89	92	90	89	91
Greece ⁴								90		87				94		95					88	90	83	81	77	85
Ireland		89						91		82	95			85		94					92	85	85	88	85	87
Italy								87		78				93		94					90	87	84	82	78	80
Japan	(a)	79	83	80	78	79	79	80	76	70	72	64	75													
	(b)															68						75				
Luxembourg								91		75				95		93					88	83	92	89	89	91
Netherlands										75				92		93					86	88	87	87	82	88
New Zealand											71					76						76				
Norway	(a)	77				85		84			88															
	(b)											88	88	89	89	89	90	90	90	89	89	88	86	84	83	
Portugal								89		78				78		88					93	92	88	78	86	93
Spain		58				67		94		95		84		88							93	94	88	88	84	90
Sweden		65	65	54	63	62	59	52						92		96					93	96	97	97	95	97
Switzerland						78					76					75					83					
UK			85	75			81					69	71	78		91					87	91	81	85	81	82

United States	(a)	41	45	47				
	(b)		80		79			
	(c)					72	66	
	(d)				74	70		62

**Notes from
McDonnell et al.
(2013):**

1. Austria, 1999: the question 'Is development co-operation right?' was added to a survey on fair trade: 86 per cent of respondents said it was right.
2. Canada, 1997: National budget deficit was eliminated in 1997. A marked increase in support for development assistance is observed between the first poll in February 1997 and the second one in August.
3. Finland 1997 and 1999: percentage of population that considers foreign aid to be an integral part of foreign policy.
4. Greece became a member of the DAC in 1999.

Sources:

Figures for 1990-2002: Table 2 in Mc Donnell et al. (2003).
 EU Member States: figures for 2003-2014 from Eurobarometer (2015) (corresponding to ascending years: questions 58.2, 62.2, 71.2, 73.5, 76.1, 77.4, 79.4 and 82.1). The question asked was: "In your opinion, it is very important, important, not very important, or not at all important to help people in poor countries in Africa, South America, Asia, etc. to develop?" The figure in the Table is the sum of respondents stating that it is very important or important to help people in poor countries.
 New Zealand: figures for from UMR Research Limited (2007).
 Switzerland: figures from Bieri (2010).
 Canada (a) & (b): figures for 1993-2010 from Silvio (2015). (a) is the (combined) strong and mild public support for Canadian aid. (b) is the percentage of respondents that state that the volume of aid should be increased or remain the same.
 United States (c): figures for 2006 & 2007 from German Marshall Fund (2007).
 United States (d): figures for 2002, 2004 & 2010 from The Chicago Council of Global Affairs (2010).
 Japan (b): figures for 2004 & 2008 from Uchida (2009).
 Norway (b): figures for 2001-2013 from Statistics Norway (2013).
 Australia: figures for 2001-2005 from Figure 7 in Williams (2013).

Appendix C

Description of the imputation procedure

Any imputation algorithm assumes that the data are missing at random (MAR), implying that the absence can be explained by the observed data. In our case, we assume that missing observations in the control variables for a given donor are not systematically related to its multi-bi aid. We opt for an imputation model that consists of the donor dummies and the year dummies and that uses a uniform prior. We create 20 imputations of the data, following guidance that a lower number of imputations may not be sufficient to capture the cross-sample variability of the imputed estimates (Graham et al. 2007). Furthermore, we require that imputations respect the logical bounds of the respective variables, notably for non-negative variables and ordinal variables. Our reported point estimates reflect the average coefficient from all imputations. We adjust standard errors to take into account the cross-sample variance of the respective estimates (Rubin 1987).

Table C1: Main results with imputed data (corresponds to Table 2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post-disaster needs	7.917* (3.852)	4.724 (4.172)	21.198** (7.664)	17.840** (8.050)	15.966** (6.986)	15.827** (6.980)	16.868** (7.934)	14.584** (7.300)
Post-conflict needs	-0.023* (0.012)	-0.011 (0.013)	0.003 (0.013)	0.002 (0.014)	0.003 (0.009)	0.002 (0.009)	0.006 (0.014)	0.004 (0.009)
Weak governance index	-0.878 (0.854)	-0.309 (0.835)	-0.047 (0.800)	0.018 (0.750)	0.128 (0.782)	0.117 (0.662)	0.007 (0.737)	0.106 (0.709)
Weak governance index * Market-oriented donor economy		-0.426** (0.169)		-0.375** (0.164)	-0.315** (0.150)	-0.292** (0.117)	-0.426** (0.171)	-0.327** (0.128)
Market-oriented donor economy		14.113** (4.977)						
GDP per capita (ln)	2.091 (1.613)	1.205 (1.837)	-7.357* (3.737)	-6.802* (3.921)	-4.833 (2.860)	-4.630 (3.050)	-7.595* (4.024)	-4.608 (3.342)
Social expenditure (% GDP)	0.053 (0.077)	0.049 (0.071)	0.284* (0.140)	0.233 (0.145)	0.083 (0.130)	0.081 (0.133)	0.385** (0.147)	0.191 (0.160)
Public debt (% GDP)	-0.017 (0.016)	-0.009 (0.014)	0.007 (0.011)	0.011 (0.011)	0.012 (0.010)	0.012 (0.011)	0.014 (0.011)	0.013 (0.012)

Table C1 continued

Independent aid agency	0.801 (0.796)	0.618 (0.799)						
Political globalization	0.190** (0.073)	0.156** (0.067)	0.090 (0.055)	0.067 (0.055)	0.075* (0.040)	0.075* (0.042)	0.076 (0.051)	0.076* (0.045)
Trade openness (% GDP)	-0.013 (0.011)	-0.004 (0.016)	-0.004 (0.011)	0.000 (0.011)	-0.003 (0.012)	-0.003 (0.013)	0.004 (0.012)	-0.003 (0.014)
Ex-colonial population (ln)	-0.133*** (0.046)	-0.102** (0.039)	0.158** (0.068)	0.098 (0.063)	0.095* (0.049)	0.095 (0.113)	0.083 (0.073)	0.099 (0.125)
Aid underreporting	-13.928*** (1.633)	-13.948*** (1.420)	-13.510*** (1.495)	-13.545*** (1.419)	-11.063*** (1.287)	-10.774*** (0.876)	-13.527*** (1.381)	-10.933*** (0.991)
Lagged dependent variable					0.263** (0.096)	0.308*** (0.036)		0.299*** (0.036)
GDP growth (%)							0.189* (0.094)	0.128 (0.107)
Public deficit (% GDP)							-0.089 (0.122)	-0.068 (0.074)
Unemployment (%)							-0.124 (0.118)	-0.026 (0.102)
Right-wing government							-0.090 (0.466)	-0.021 (0.463)
FDI outflows (% GDP)							0.000 (0.000)	0.000 (0.000)
Peer effort (ln)							-1.945 (3.032)	-0.841 (3.077)
Year-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Donor-FE			Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	521	521	521	521	521	521	498	498
Number of donor countries	23	23	23	23	23	23	23	23
Number of imputations	20	20	20	20	20	20	20	20

Notes: The dependent variable is (logged) earmarked aid and covers the years 1990-2012. Robust standard errors in brackets, clustered at the donor country level. * p<0.10, ** p<0.05, *** p<0.01

Appendix D

Table D1: List of multilateral organizations (component 1 of the data)

Adaptation Fund
Africa Partnership Forum
Africa Program for Onchocerciasis Control
Africa Rice Center
African and Malagasy Council for Higher Education
African Capacity Building Foundation
African Center for Technology Studies
African Development Bank
African Development Fund
African Export Import Bank
African Training and Management Services Organization
African Union (excluding peacekeeping facilities)
Alliance for a Green Revolution in Africa
Andean Community
Andean Development Corporation
Asia Europe Foundation
Asian Development Bank
Asian Development Fund
Asian Productivity Organisation
Asia-Pacific Economic Cooperation
Asia-Pacific Fishery Commission
Association for the Development of Education in Africa
Association of South East Asian Nations: Economic Co-operation
Bangladesh Climate Change Resilience Trust Fund
Basle Convention
Biodiversity International
Black Sea Trade and Development Bank
Bonn Convention
Caribbean Community Secretariat
Caribbean Development Bank
Caribbean Epidemiology Centre
Center for International Forestry Research
Central African States Development Bank
Central American Bank for Economic Integration
Central Emergency Response Fund
Central European Free Trade Area Secretariat
Central European Initiative - Special Fund for Climate and Environmental Protection
Centre Agriculture & Bioscience International

CGIAR Fund
Cities Alliance
Cities Development Initiative for Asia
Clean Technology Fund
Climate and clean air coalition to reduce short-lived climate pollutants
Climate Investment Funds
ClimDev Africa Special Fund
Colombo Plan
Commission on Nuclear Test Ban Treaty Organisation
Common Fund for Commodities
Common Market for East and Southern Africa
Commonwealth universe
Community of Portuguese Speaking Countries
Consultative Group to Assist the Poor
Convention on Biological Diversity
Convention on Cluster Munition
Convention on Conventional Weapons
Convention on international trade in endangered species
Convention to Combat Desertification
Council of Europe
Council of Europe Development Bank
Debt Relief Trust Fund
Desert Locust Control Organisation for Eastern Africa
East African Community
East African Development Bank
East African Standby Force Coordinating Mechanism
Eastern and Southern Africa Initiative on Debt Reserves Management
Eastern and Southern African Mineral Resources Development Corporation
Eastern and Southern African Trade and Development Bank
Eastern-Regional Organisation of Public Administration
Economic and Monetary Community of Central Africa
Economic and Social Commission for Asia and the Pacific
Economic and Social Commission for Western Asia
Economic Commission for Africa
Economic Commission for Latin America and the Caribbean
Economic Community of Central African States
Economic Community of West African States
Enhanced Integrated Framework
Environment and Development Action in the Third World
European and Mediterranean Plant Protection Organisation
European Bank for Reconstruction and Development

European Commission - Development Share of Budget
European Commission - European Development Fund
European Forest Institute
European Investment Bank
Extractive Industries Transparency Initiative International Secretariat
Fondo Indigenia
Food and Agricultural Organisation
Food and Fertilizer Technology Centre
Forest Carbon Partnership Facility
Forum Fisheries Agency
Framework Convention to protect the maritime environment of the Caspian Sea
Francophone organizations
Geneva Center for Democratic Control of the Armed Forces
Geneva International Centre for Humanitarian Demining
Global Agriculture and Food Security Program
Global Alliance for ICT and Development
Global Alliance for Improved Nutrition
Global Alliance for Vaccines and Immunization
Global Biodiversity Information Facility
Global Climate Partnership Fund
Global Crop Diversity Trust
Global Development Network
Global Energy Efficiency and Renewable Energy Fund
Global Environment Facility Trust Fund
Global e-Schools and Communities Initiative
Global Fund to Fight AIDS, Tuberculosis and Malaria
Global Green Growth Institute
Global Knowledge Partnership on Migration Development
Global Partnership on Education
Global Water Partnership
Guyana REDD Investment Fund
Haiti Reconstruction Fund
Iberoamerican Organization of States
ICPO-Interpol
Infrastructure Consortium Africa
Inter-American Development Bank, Inter-American Investment Corporation and Multilateral Investment Fund
Inter-American Indian Institute
Inter-American Institute for Co-operation on Agriculture
Intergovernmental Authority on Development
Intergovernmental Coordination Group on the Indian Ocean Tsunami Warning System
Intergovernmental Oceanographic Commission

Intergovernmental Panel on Climate Change
International Center for Integrated Mountain Management
International Whaling Commission
International Advisory and Monitoring Board
International AIDS Vaccine Initiative
International Atomic Energy Agency
International Bank for Reconstruction and Development
International Board for Soil Research Management
International Center for Migration Policy Development
International Center for Settlement of Investment Disputes
International Centre for Advanced Mediterranean Agronomic Studies
International Centre for Agricultural Research in Dry Areas
International Centre for Development Oriented Research in Agriculture
International Centre for Diarrhoeal Disease Research, Bangladesh
International Centre for Tropical Agriculture
International Centre of Insect Physiology and Ecology
International Civil Aviation Organization
International Cocoa Organization
International Coffee Organization
International Commission against Impunity in Guatemala
International Commission against the Death Penalty
International Commission for the Conservation of Atlantic Tunas
International Cotton Advisory Committee
International Crop Research for Semi-Arid Tropics
International Development Association
International Development Law Organisation
International drug purchase facility
International Energy Agency
International Finance Corporation
International Finance Facility for Immunisation
International Food Policy Research Centre
International Fund for Agricultural Development
International Health Partnership
International Initiative for Impact Evaluation
International Institute for Cotton
International Institute for Democracy and Electoral Assistance
International Institute of Tropical Agriculture
International Labour Organisation
International Land Coalition
International Livestock Research Institute
International Maize and Wheat Improvement Centre

International Maritime Organization - Technical Co-operation Fund
International Monetary Fund
International Network for Bamboo and Rattan
International Olympic Committee
International Organisation for Migration
International Organisation of the Francophonie
International Partnership on Microbicides
International Potato Centre
International Renewable Energy Agency
International Rice Research Institute
International Seed Testing Association
International Service for National Agricultural Research
International Standards Organizations
International Tax Dialogue
International Telecommunications Union
International Tropical Timber Organisation
International Union for the Conservation of Nature
International Vaccine Institute
International Water Management Institute
INTERPOL Fund for Aid and Technical Assistance to Developing Countries
Investment Climate Facility
Joint Integrated Technical Assistance Programme
Joint United Nations Programme on HIV/AIDS
Joint Vienna Institute
Justice Studies Centre of the Americas
Latin American Archives
Latin Union Organization
Latin-American Energy Organisation
Macroeconomic Financial Management Institute for Eastern and Southern Africa
Mekong River Commission
MENA Transition Fund
Mercado del Sur
Microfinance Enhancement Facility
Mine Ban Convention Implementation Support Unit
Mountain Partnership Secretariat
Multi-Donor Trust Fund Aceh
Multilateral Fund for the Implementation of the Montreal Protocol
Multilateral Investment Guarantee Agency
Nagoya Protocol Implementation Fund
Network of Networks for Impact Evaluation
New Partnership for Africa's Development

Nordic Development Fund
Nordic Environment Finance Corporation
North Atlantic Treaty Organization
Office of the High Representative
Organisation for Economic Co-operation and Development
Organisation of American States
Organisation of Eastern Caribbean States
Organisation of the Black Sea Economic Cooperation
Organization for Security and Co-operation in Europe
Organization for the Prohibition of Chemical Weapons
Pacific Islands Forum Secretariat
Pacific Regional Environment Programme
Pan-American Health Organisation
Pan-American Institute of Geography and History
Pan-American Railway Congress Association
Partnership in Statistics for Development in the 21st Century
Permanent Interstate Committee for Drought Control in Sub-Saharan Africa
Private Infrastructure Development Group
Ramsar Convention on Wetlands
Regional Cooperation Council
Regional Environmental Center
Regional Micro, Small and Medium Enterprise Investment Fund for Sub-Saharan Africa
Regional Organisation for the Strengthening of Supreme Audit Institutions of Francophone Sub-Saharan Countries
Rotterdam Convention
Sahara and Sahel Observatory
Sahel and West Africa Club
Secretariat of the Pacific Community
Small Arms Survey
South Asian Association for Regional Cooperation
South East Asian Fisheries Development Centre
South East Asian Ministers of Education
South Pacific Applied Geoscience Commission
South Pacific Board for Educational Assessment
Southern African Development Community
Southern African Transport and Communications Commission
Stability Pact for South Eastern Europe
Stockholm Convention
Strategic Climate Fund
Temporary International Presence Hebron
Three MDG Fund Myanmar

Transition and Demobilization Reintegration Program
Tropical Agricultural Research Higher Education Center
Tropical Diseases Research Program
United Nations (unspecified)
United Nations Children's Fund
United Nations Conference on Trade and Development
United Nations Democracy Fund
United Nations Department of Peacekeeping Operations
United Nations Development Programme
United Nations Economic Commission for Europe
United Nations Educational, Scientific and Cultural Organisation
United Nations Entity for Gender Equality and the Empowerment of Women
United Nations Environment Programme
United Nations Framework Convention on Climate Change
United Nations High Commissioner for Human Rights
United Nations Human Settlement Programme
United Nations Industrial Development Organisation
United Nations Institute for Training and Research
United Nations International Strategy for Disaster Reduction
United Nations Mine Action Service
United Nations Office for Project Services
United Nations Office of Co-ordination of Humanitarian Affairs
United Nations Office of the United Nations High Commissioner for Refugees
United Nations Office on Drugs and Crime
United Nations Peacebuilding Fund
United Nations Population Fund
United Nations Relief and Works Agency for Palestine Refugees in the Near East
United Nations Research Institute for Social Development
United Nations Special Initiative on Africa
United Nations System Staff College
United Nations System Standing Committee on Nutrition
United Nations University (including Endowment Fund)
United Nations Volunteers
United Nations World Tourism Organisation
Universal Postal Union
Wealth Accounting and Valuation of Ecosystem Services
West African Development Bank
West African Monetary Union
Western Balkans Investment Framework
World AgroForestry Centre
World Commission on Dams

World Customs Organisation
World Food Programme
World Health Organisation
World Intellectual Property Organisation
World Maritime University
World Meteorological Organisation
World Organisation for Animal Health
World Trade Organisation
World Trade Organisation - International Trade Centre
World Vegetable Centre
World Fish Centre