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

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Abstract: Earmarked funding to international development organizations has quadrupled over the last two decades and now represents almost 20 percent of total aid. This suggests that this multi-bi aid is an attractive aid modality for donor governments. However, donors' reasons for providing earmarked aid have not been investigated. This paper introduces a new dataset on multi-bi aid that is based on more than 100,000 expert-coded projects taken from the OECD's Creditor Reporting System and that covers 23 OECD donors over the 1990-2012 period. Using these data, the paper tests 16 hypotheses on the determinants of multi-bi aid, including donors' official motives for using multi-bi aid, factors related to international politics, donors' domestic political economy, and donor preferences. Results from random and fixed effect regressions are found to be robust using Extreme Bounds Analysis. The paper also tests for significant differences in the determinants of bilateral, multilateral, and multi-bi aid using Seemingly Unrelated Regressions. We find that multi-bi aid is related to different factors than traditional types of aid. We find evidence that donors indeed use multi-bi aid to 'fill gaps in the multilateral system' as suggested by their rhetoric but that they are also driven by domestic political economy considerations and donor preferences.

Keywords: foreign aid, multi-bi aid, bilateral aid, multilateral aid, aid budget, donor generosity, Extreme Bounds Analysis, Seemingly Unrelated Regression

JEL codes: F35, F53, F55, H84, P45

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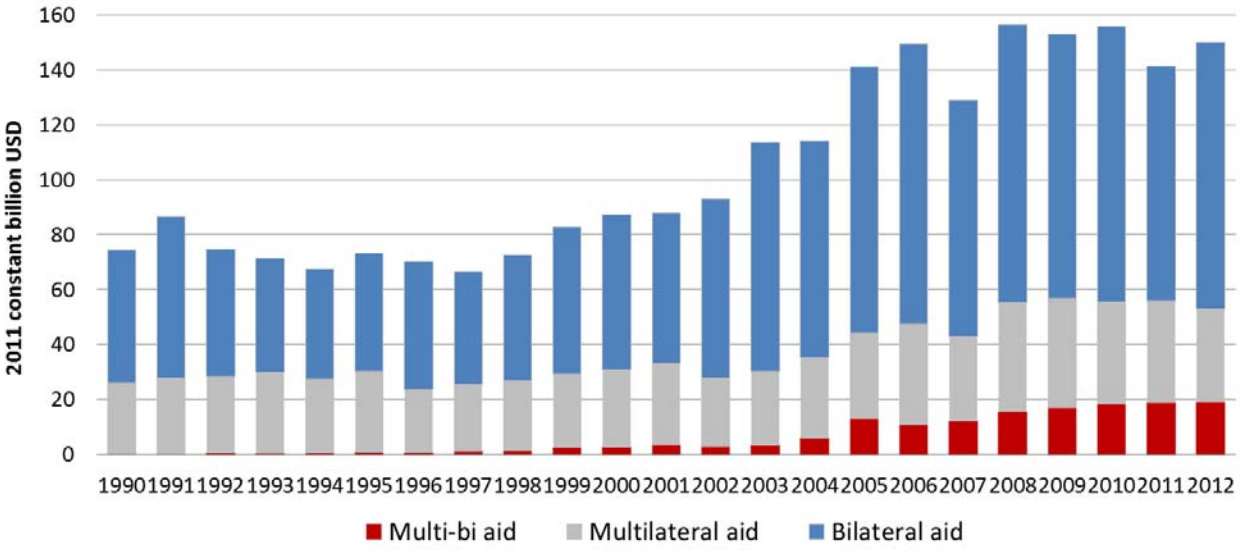
1. Introduction

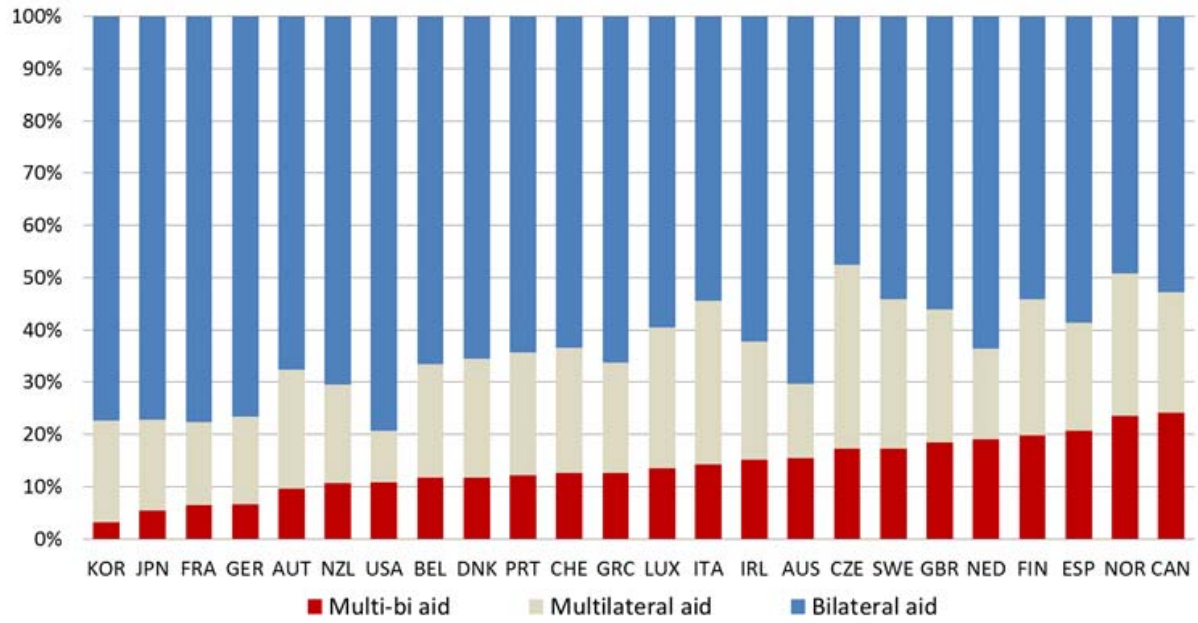
Over the last two decades, donor governments have increased the share of their foreign aid provided as earmarked funding to multilateral organizations (Figure 1). This earmarked or multi-bi aid is implemented by the international development organization in the sector, country, or region stipulated by the donor. At first sight, multi-bi aid sounds like the "best of both worlds" for a donor government, which may delegate implementation and target resources according to its priorities, demand tailored reporting, and reap the benefits of increased visibility relative to multilateral core aid (OECD, 2010), which is unearmarked and loses its 'identity.' However, donors' use of multi-bi aid, which are managed in sector-, issue- and country-specific trust funds, is all but homogeneous. Figure 2 shows the average use of multi-bi aid over the 2006-2012 period. While Korea spent only 3% of all foreign aid as multi-bi aid, Canada provided almost a quarter of its total aid envelope as earmarked aid. In this paper, we investigate the determinants of donors' multi-bi aid budgets.

Figure 1: The evolution of multi-bi aid (1990-2012, Multi-bi aid dataset).



Notes: Multi-bi aid may come from any donor, referring to any earmarked contribution to international development organizations (IDOs). Multilateral aid only includes contributions that do not eventually become multi-bi aid, hence including core contributions and unearmarked voluntary contributions to IDOs. Therefore, aggregate figures are corrected for double-counting and are thus not equivalent to amounts in the OECD's Creditor Reporting System (CRS).

Figure 2: DAC Donors' average use of multi-bi aid (2006-2012, Multi-bi aid dataset).



The question about the factors underlying donor countries' generosity remains highly relevant given the enormous financing gap for the ambitious Sustainable Development Goals (SDGs) adopted by the international community in September 2015 despite repeated calls for mobilizing innovative and private sources of finance (UN 2015 a, b). If donors' preferences about the priority issues among the 17 SDG goals and the 169 associated targets diverge, consensus in multilateral organizations will be hard to achieve, so that multi-bi aid budgets are bound to rise. Yet, there is no evidence about the determinants of donor countries' multi-bi envelopes. Moreover, no paper has yet tested for statistical differences in the factors underlying the multilateral, bilateral, and multi-bi aid budgets. According to official rhetoric, multi-bi aid serves to "fill gaps in the multilateral system," (IEG, 2011: 5) which suggests that it is different from multilateral and bilateral aid and complements the implementation of other aid channels in recipient countries. Generally, there is scant empirical evidence about the determinants of donor countries' aid budgets which, as Fuchs et al. (2014) highlight, is in puzzling contrast to the extensive literature on the allocation of aid across developing countries (e.g., Alesina & Dollar, 2000) and on aid effectiveness (e.g., Doucouliagos & Paldam, 2009). In academic debates, the question about the political economy underlying earmarked aid is often raised, which is to ask about the why and when of donors' usage of multi-bi aid instead of bilateral aid, given that the latter is the easier way to target aid in line with a donor's priorities. We are the first researchers aiming to tackle these questions. This paper contributes to the literature by advancing and investigating arguments about donors' motives for using multi-bi aid and testing for significant differences in the determinants that influence the size of multilateral, bilateral, and multi-bi aid budgets across donors and within donors over time using Seemingly-Unrelated Regressions (SUR).

We offer and test 16 hypotheses about multi-bi aid, which we present, for tractability, in four sets. The first set of hypotheses considers the official motives for multi-bi aid, which is

to fill gaps in the multilateral system. The second and third set of hypotheses consider factors related to international and domestic political economy, respectively, because testing the donors' story does not mean taking it at face value. Indeed, considerable doubts have been raised that multi-bi aid is explained by development needs (only) (IEG, 2011). For example, World Bank management responded to an evaluation report about the Bank's trust funds, the legal instrument through which the World Bank receives earmarked funding, that "management would have welcomed a more systematic discussion of the political economy factors […] that underlie the creation of trust funds" (IEG, 2011: xv). The fourth set of hypotheses relates to donor preferences. Control variables are based on Fuchs et al. (2014), who review the literature on total aid budgets.

The second contribution of this paper is testing for differences in the determinants of multilateral, bilateral, and multi-bi aid budgets. While some aid allocation studies compare the allocation determinants of bilateral and multilateral donors (e.g., Burnside & Dollar, 2000; Neumayer, 2003; Reinsberg, 2014), or bilateral and multilateral contributions of donor governments (e.g., Dang, Knack, and Rogers, 2013), no study tests for significant differences or extends this comparison to multi-bi aid, notably due to a lack of comprehensive data. Our third contribution is thus the introduction of a new dataset that allows tracking multi-bi aid over an extended time period with less measurement error.[1] It includes 100,000 expert-coded multi-bi aid activities over the 1990-2012 period for 23 OECD donors in the Development Assistance Committee (DAC).[2] The new multi-bi aid data are based on the OECD's Creditor Reporting System (CRS) but rely on corrected and refined information about the multilateral recipient of the earmarked aid, contain additional information about the earmarking depth of individual aid activities, and extend data coverage from 2005 back to 1990.[3] We find robust support for most of the hypotheses using Extreme Bounds Analysis (EBA) but do not claim causality for these relationships. Among other results, we find that an incoming aid minister significantly reduces multi-bi aid as do donors that have conducted a multilateral aid assessment. Donors with a significant share of former colonies provide significantly lower amounts of earmarked aid but more bilateral aid. Deterioration in recipient governance increases multi-bi aid significantly while decreasing multilateral and bilateral aid. We also find a donor's international engagement is associated with more multi-bi, multilateral and bilateral aid. While there is no evidence that the volume of multi-bi aid is related to economic hardship in the donor country, we find that it is decreasing in the size of a donor's economy.

[1] For a technical introduction and the codebook, see Eichenauer and Reinsberg (2014).

[2] We include all DAC donors that became DAC members before 2000. Thus, we include Australia, Austria, Belgium, Canada, Switzerland, Germany, Denmark, Spain, Finland, France, the United Kingdom, Greece, Ireland, Italy, Japan, Korea, Luxembourg, the Netherlands, Norway, New Zealand, Portugal, Sweden, and the United States of America.

[3] Donors consistently reported channel codes to the CRS since 2005. We recover information from project descriptions.

The next section describes the new multi-bi aid dataset. Section three describes the rise of multi-bi aid and derives the hypotheses from the literature and policy reports, and presents the respective proxy variables. Section four describes the set of control variables and our method of estimation. Section five presents, as a first application of our dataset, the results of our analysis of the determinants of multi-bi aid budgets for 23 OECD/DAC donors over 23 years. The final section concludes.

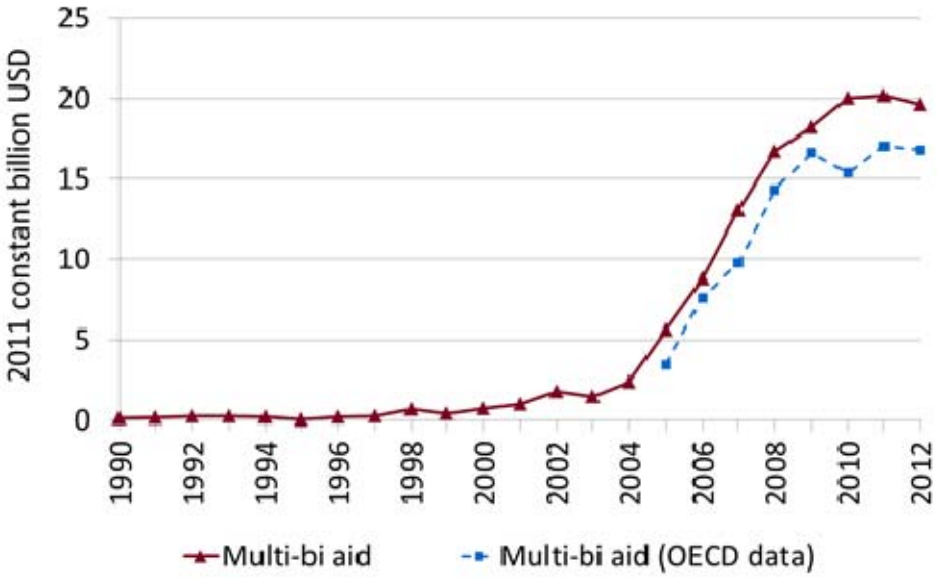
2. Introducing the new multi-bi aid dataset

This paper introduces a novel dataset on multi-bi aid publicly available on www.aiddata.org. The data allows researchers to track the rise of multi-bi 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 and improved through expert-coding. The new multi-bi aid dataset corrects and refines information about the multilateral recipient among the 290 identified multilateral institutions with permanent organizational structure, extends the data period backwards, and adds information about the earmarking depth of individual aid activities.[4] This dataset takes the perspective of the multilateral institution in defining earmarked aid flows, which is in contrast with the OECD data that relies on the donors' perspective.[5] Therefore and because of coding mistakes in the CRS dataset, we obtain aggregate amounts for multi-bi and bilateral aid that are slightly different from OECD data. A comparison with the CRS shows that our data more completely captures the total flows of multi-bi aid, covering a longer time period (Figure 3). This study uses multi-bi aid activities aggregated at the donor level and the adjusted amounts for bilateral aid. Beyond the question addressed in this paper, researchers may use the rich and micro-founded new multi-bi aid data to study, for example, which multilateral institutions and recipient countries are more likely to receive earmarked funds, or to develop theories about the allocation of earmarked aid by sector and the depth of earmarking.

Figure 3: Comparison of aggregate multi-bi aid disbursements according to the new multi-bi aid data and the OECD's Credit Reporting System (1990-2012). The pattern for multi-bi aid commitments is similar.

[4] See Eichenauer and Reinsberg (2014).

[5] 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' allocation.



3. The rise of multi-bi aid and hypotheses

The rise of multi-bi aid warrants explanations, a demand expressed by multilateral organizations and bilateral donors alike.[6] Tentative explanations of the observed trend in multi-bi aid can draw from the classical debate about the choice between multilateral and bilateral aid, and multilateralism and bilateralism more generally. According to Milner and Tingley (2013) however, "[t]heories and evidence about why governments choose multilateralism are few (e.g., Hawkins et al., 2006; Ikenberry, 2001; Ruggie, 1993)." The most prominent arguments for delegation of Official Development Assistance (ODA) to multilateral organizations, which are hard to control and diffuse individual donors' influence, stress the benefits from pooling resources for burden-sharing and from economies of scale, for instance in the gathering of information.[7] As one of few authors, Milner (2006) empirically tests her theory about governments' choice of multilateralism. She suggests that governments use international organizations to send a credible signal to skeptical voters that their taxes used for foreign aid are well spent. In her empirical application, she finds the hypothesized

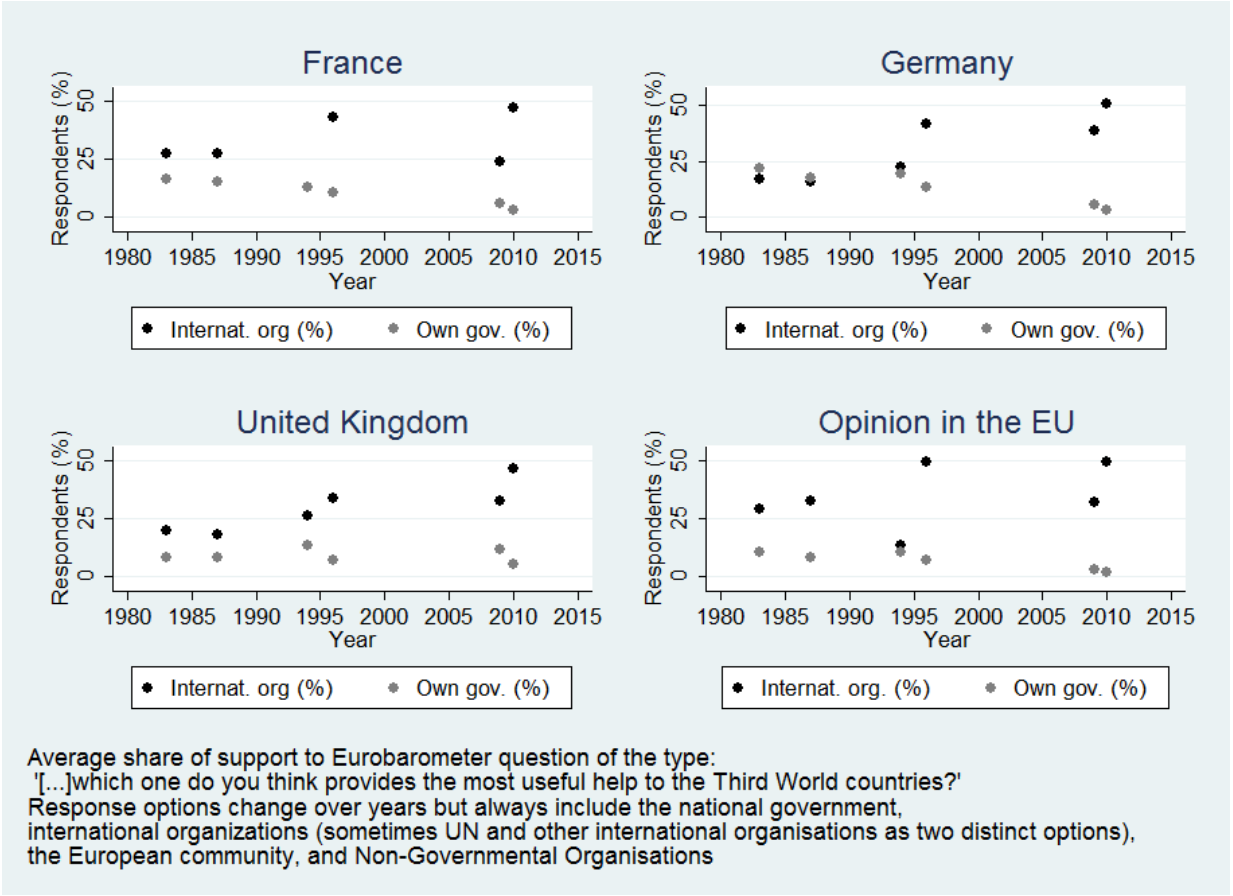
[6] For example, World Bank management writes that "it would be useful […] for the international aid community to reflect on the reasons for the gaps in the multilateral system that lead donors to use trust funds […]" (IEG, 2011: 86). A Swedish policymaker remarked to one of the co-authors that "[…] trust funds are our biggest headache at the moment".

[7] Other explanations have been advanced. For instance, Rodrik (1996) argues that delegation arises because multilateral organizations are better able to enforce conditions on recipients. McKeown (2009) claims that the United States uses multilateral organizations as an alternative channel for foreign policy (see also Stone, 2011). Lake (2009) suggests that powerful states bind themselves through multilateral institutions and thus are able to convince other states to cooperate with them, while Ruggie (1993) argues that multilateral cooperation is induced through normative pressure. Another strand of the literature emphasizes principal-agent models to study multilateralism (Hawkins et al., 2006; Nielson and Tierney, 2003; Tierney, 2006).

negative correlation between public opposition to foreign aid and the share of aid provided to multilateral organizations as core aid.

We collected the most recent survey data and find that support for foreign aid has increased over time and is above 80% in all countries for which recent survey results are available (Table 1). These high levels of support for foreign aid would allow governments to provide a low share of multilateral aid according to Milner's (2006) argument. A time-series perspective on public opinion about who provides the 'most useful help' to developing countries suggests increasing support for multilateral implementation and decreasing support for bilateral activities (Figure 4).[8] The simultaneous public support for foreign aid and multilateral implementation suggests that the earmarking of aid is an attractive option because it allows donor governments to remain in the driver's seat while appearing responsive to the public's preference for multilateral aid. Indeed, the share of respondents supporting multilateral implementation is positively correlated with multi-bi aid (Eichenauer and Hug 2015). The OECD (2010: 14) makes the argument that earmarked funding "can help mobilise and maintain public resources for development" by increasing visibility relative to multilateral aid, which the experience of the United States confirms (IEG, 2011).

Figure 4: Share of respondents considering international organizations or the own government as the 'most useful help to the Third World countries' (Eurobarometer, 2015).



Average share of support to Eurobarometer question of the type:
'[...]which one do you think provides the most useful help to the Third World countries?'
Response options change over years but always include the national government,
international organizations (sometimes UN and other international organisations as two distinct options),
the European community, and Non-Governmental Organisations

[8] Data are only available for European Union countries through the Eurobarometer (2015).

We derive a number of testable hypotheses about the varied use of multi-bi aid by donor countries from the literature. The first set of hypotheses relates to the official donor motives for multi-bi aid. The second set of hypotheses considers the domestic political economy and institutional structure in donor countries as suggested by the World Bank evaluation about trust funds "[f]ocusing on political economy aspects [, which] would explain donors' seemingly ad-hoc behavior in creating trust funds, often responding to the need for visibility on issues of national interest and seeking swift action by the Bank" (IEG 2011: xvi). The third set of hypotheses considers international factors while the last set of hypotheses is related to donor preferences. Table 2 provides an overview over all hypotheses while Table 3 describes the variables used.

A) Official donor motives

According to evidence from interviews, 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 lack of adequate mechanisms to respond "to emergencies such as natural disasters, disease outbreaks, and the end of armed conflict." While these challenges call for a coordinated response, donors claim that it would take too long to work through the multilaterals' formal procedures.

We thus hypothesize that:

H1. Multi-bi aid increases in response to natural disasters and epidemics.

We proxy the need for aid after natural disasters using the lagged and logged costs of disasters and epidemics in donor's recipient countries obtained from EM-DAT.

Multi-bi aid can also be used to address limitations in the formal mandate of international development organizations. It can "finance development in national entities that cannot be sovereign borrowers from the multilaterals," – because these entities are politically unstable or not universally recognized, and "finance global public goods, beyond what can be done under the multilaterals' country-based lending model" (IEG, 2011: 5). Especially for development banks, which are formally limited to work with recipient governments, multi-bi aid can be a mechanism to work through private local partners. A World Bank evaluation report also highlights that trust funds are used by donors to coordinate their aid efforts, particularly in capacity-constrained, often post-conflict countries (IEG, 2011). Donor coordination is particularly pressing in states with weak institutions that have difficulties in handling the multitude of donor demands. Therefore, multi-donor trust funds, one form multi-bi aid has taken, have been set up and used relatively successfully in these situations (Barakat, 2009; Barakat et al., 2012). The World Bank evaluation further notes that donors use trust funds to "distance themselves from politically controversial activities" (IEG, 2011: 80). For example, donor governments might prefer to engage through multilateral organizations in difficult environments to diffuse accountability and mitigate individual risks. One strand of the literature finds that donors avoid using recipient country

systems if their quality is low (Knack, 2014; Dietrich, 2013; Acht et al., 2015). Finally, Eichenauer and Knack (2015) suggest that donors might seek to compensate poor recipient countries with weak policies receiving less from the International Development Association (IDA), the World Bank's concessional lending arm, which allocates aid based on policy performance and population. This leads to the following hypothesis:

H2. Multi-bi aid is positively correlated with a deterioration in the governance in the donor's recipient countries.

We construct a time- and donor-varying measure based on the lagged first quintile value of the governance quality of all bilateral recipients of a donor. Governance quality is computed as the average of the six constituent components of the World Bank Governance Indicators.[9]

The Independent Evaluation Group of the World Bank writes that "the creation of new global programs […] is often linked to G7/G20 initiatives" (IEG, 2011: xv). The major world powers participating in the respective meetings rotate in hosting this summit that allows heads of governments to discuss current global affairs. Host countries undertake considerable efforts to assure that the summit succeeds and seek to demonstrate action on emerging challenges and global public goods. One way of demonstrating action is to set up and provide funding to an international fund for a topic that is high on the international agenda. Host countries of the high-level meetings are thus likely to contribute considerable amounts to such a fund.

H3. Multi-bi aid is positively related to having hosted a G7/G8/G20 summit recently.

We construct an indicator variable turning one in years the donor country hosts a G7, G8 or G20 summit.

Several donors also view trust funds as a mechanism to "mobilize resources from other donors, both traditional and new, in areas of priority and to 'have influence on key issues beyond what would be possible by acting alone' " (IEG, 2011: 6). Donors might also increase their multi-bi aid as a function of their peers' earmarked aid because they fear losing their influence on the policy making of a multilateral organization that is increasingly governed by other donors' earmarked financial resources and thus their priorities. However, donor countries may also free-ride on the (multi-bi) aid efforts of their peers. Financial support for developing countries can be viewed as an international public good (Mosley, 1985) and Fuchs et al. (2014) find evidence that ODA is considered an international public good by donors, rather than a national public good (Dudley, 1979). In the case of multi-bi aid, local or even private benefits may be dominant because it can be targeted, which leads us to expect multi-bi aid to be a national public good. Moreover, some donors might lead the trend to multi-bi aid while others follow. We expect a positive relationship between multi-bi aid by peers and the own multi-bi aid budget.

[9] Most of our variables are drawn from the Quality of Governance database (Teorell et al., 2013). Please see the appendix for detailed variable sources.

H4. A donor's multi-bi aid effort has a positive relationship with the multi-bi effort of its peer donors.

For every donor, multi-bi effort by peers is measured by the lagged and logged amount of multi-bi aid committed by all other donors.

B) Domestic Politics

The provision of multi-bi aid is closely linked to a donor's domestic political economy and institutional factors. The management response to the World Bank evaluation states that "there are multiple interests at play at the level of donors—involving several constituencies, from parliaments to executive powers with a wide variety of decision-making processes, from centralized to very decentralized." (IEG, 2011: xv). We aim to capture these aspects in our hypotheses.

The executive office in the donor country most directly involved is the aid minister. The aid minister has been shown to influence the type of development aid provided to recipient countries (Fuchs and Richert, 2015), as have political leaders for other outcomes (e.g., Jones and Olken, 2005). We expect an incoming development minister to seek profiling herself through actions. Bilateral aid seems the most direct way for a newly appointed minister to show her priorities and abilities, in particular because the total aid budget is likely to have been fixed in the previous year. A reshuffling within the budget from multi-bi to bilateral aid is the most likely strategy because multilateral aid is based on long-term commitments, burden sharing principles and peer pressure, or represents membership fees. In contrast, multi-bi aid can be reduced in a flexible manner based on donor preferences.

H5. An incoming development minister reduces multi-bi aid in his/her first year in office.

Our development minister indicator variable is one in those years in which the development minister changes according to the data from Fuchs and Richert (2015). We lag the dummy by one year to account for the fact that a development minister may be incoming at any time of the year including the end of the calendar year and that his/her policy changes result in changing disbursement patterns after several months only.

However, the aid minister does not act in an institutional vacuum but depends on the government and its party for budget and policy. Following the lines of the literature (e.g., Milner and Tingley 2013; Potrafke and Ursprung, 2013), we might therefore expect that party preferences over aid allocation channels differ. Left-wing governments are more convinced of state capacity and intervention, and might thus support higher aid budgets. Fuchs, Dreher, and Nunnenkamp (2014) find no evidence that ideology influences the size of the overall, multilateral and bilateral aid budgets. Brech and Potrafke (2013) provide evidence that the choice of the aid type is influenced by political ideology.

H6. Multi-bi aid budgets are higher for left-wing governments.

We compute our own measure of political ideology, considering the seat-weighted average ideological position of the government, based on party ideology and election information from the ParlGov database (Manow and Döring 2012). This has the advantage that we also have a realistic measure of political ideology for coalition governments, the most prevalent type of government among the OECD/DAC donor countries in our sample.

We also consider the institutional design of the aid agency in the donor country, a legacy of previous governments. As Bertoli et al. (2008) note, institutional designs that offer some independence from the daily political business might shelter the aid budget and allocation from the effects of diverging interests in government or (temporary) budget cuts. Bertoli et al. (2008) find that independent aid agencies prevent temporary reductions in aid during economic downturns but that institutional independence does not lead to permanently higher aid budgets. In their fixed effect regressions, Fuchs et al. (2014) find that the existence of an independent aid agency is a (positive) determinant of the ratio of aid to GNI. More independence might also allow the aid agency to provide multi-bi aid despite donor concerns about visibility. The IEG (2011: 7) notes that "less visibility and 'credit' from trust funds," has been "a source of considerable concern" for donor governments.

H7. Independent aid agencies are associated with larger multi-bi aid budgets.

Based on the data of Fuchs et al. (2014), we create three indicators variables based on the OECD (2009) classification of aid agencies into four types of agencies.[10] Specifically, we add a dummy variable for each of the two more independent aid agency types, treating the other two types jointly as baseline.

The public's opinion that multilateral organizations are the 'most useful' actor for helping developing countries might affect the choice of aid channel by the government. Indeed, for the United States, which has low levels of support for foreign aid compared to its peers (62% in 2010, see Table 1), "trust funds serve as a way to attract public support, and thus additional aid funds from its Congress, above and beyond the annual aid budget." (IEG, 2011: 7). However, due to lack of panel data, we can only indirectly measure how public opinion affects a government's aid policy. Similar to the argument of Chong and Gradstein (2008), who find evidence that voters' support for foreign aid is adversely affected by perceptions of inefficiency in the domestic governments, we hypothesize that aid budgets are negatively related to government opacity. We hypothesize that more corrupt donor governments have, ceteris paribus, a higher preference to use bilateral aid that allows for full discretion with respect to the timing and delivery of aid in the recipient country. Note that this argument does not extend to multilateral aid directly because even a corrupt donor government

[10] The OECD distinguishes four models of aid allocation: model I ("Development co-operation is an integral part of the ministry of foreign affairs which is responsible for policy and implementation"), model II ("A Development Co-operation Directorate has the lead role within the ministry of foreign affairs and is responsible for policy and implementation"), model III ("A ministry has overall responsibility for policy and a separate executing agency is responsible for implementation"), model IV ("A ministry or agency, which is not the ministry of foreign affairs, is responsible for both policy and implementation"). For our purposes, the distinction between model I and model II is negligible and we thus create a joint dummy variable.

provides some multilateral aid to satisfy her membership requirements in international organizations with membership being explained by (geo-)political considerations (see Hypothesis 1).

H8. Multi-bi aid is positively related to donor transparency.

We measure donor transparency by Transparency International's Perceived Control of Corruption Index.[11]

It has also been suggested that a donor's economic situation and business cycles affect the multi-bi aid in particular, which is more easily reduced due to its voluntary and delegated nature (Reinsberg et al., 2015a). Multilateral core aid is mostly based on long-term international commitments while reduction of bilateral aid might involve political costs if, for example, domestic employees are laid off or relations with partner countries are affected. For total aid budgets, Fuchs et al. (2014) find no effect of budget constraints or a deterioration of domestic macroeconomic conditions on donor generosity controlling for time-invariant donor characteristics. Grepin and Sridhar (2012) find that the share of multi-bi aid within development assistance for health decreased during the crisis years 2008 and 2009 while Reinsberg et al. (2015a) find no indication that economic downturns induce lower multi-bi aid budgets.

H9. The structural macroeconomic situation and economic slumps in the donor country relate negatively to multi-bi aid.

As our main variable for measuring the economic situation in the donor country, we use the lagged values of government gross financial liabilities as percentage of GDP. Following Fuchs et al. (2014), we include five additional controls in robustness checks. Specifically, we proxy the current macroeconomic conditions with government net lending. Business cycle effects are captured through lagged unemployment as share of civilian labor force, annual GDP growth, the output gap, and an indicator for financial crisis. The lagged crisis dummy turns one when the donor experiences a currency crisis, a systematic banking crisis, a sovereign debt default, or sovereign debt restructuring (Laeven and Valencia 2012).

C) International Politics

While the theories about multilateral engagements advance different argument, it is likely that countries having chosen to engage internationally, are more likely to provide substantial amounts of foreign aid as foreign policy tool. The extent of donors' international financial engagement results from geopolitical ambitions, a desire for political clout abroad, economic and security concerns but also altruistic motives. We expect a donor's international engagement to relate positively to all three aid types.

H10. Multi-bi aid relates positively to a donor's international engagement.

[11] Government opacity as used in Chong and Gradstein (2008) and proxied by the International Country Risk Guide's index is highly correlated with Transparency International's Perceived Control of Corruption Index.

We measure a country's participation in the international realm using the "political globalization" sub-index of the KOF Index of Globalization, which combines information on the extent of membership in international organizations and UN peace missions, the number of embassies and high commissions in a country, and the numbers of treaties signed (Dreher, 2006). Fuchs et al. (2012) found a positive relationship between the KOF index and multilateral aid budgets.

The definition of Official Development Assistance is broad and includes expenditures to raise development awareness in donor countries or students in donor countries that are related to aid in indirect ways. Expenses for refugees and asylum seekers in donor countries during the first twelve months of their stay, voluntary repatriation and resettlement can also be counted towards ODA (OECD Note n/a), although donor practices of reporting these expenses as ODA differ widely. Note that the financial support provided to asylum seekers and refugees during the first twelve months should not be endogenous to the size of the aid budget. This type of immigration can be considered as demand-driven in the first twelve months during which financial support may but does not need to be counted as ODA. Moreover, donor countries use international organizations, in particular the International Organization for Migration (IOM), to conduct the voluntary repatriation and resettlement. The IOM receives these funds as earmarked aid. We therefore posit a positive relationship between multi-bi aid and the refugee population in the donor country. To accommodate concerns about a potential mechanical effect, we run regressions excluding the refugee variable and find results to be robust. We are the first to consider refugees in the donor country as determinant of donor's aid budget.[12]

H11. Multi-bi aid increases in the number of refugees in the donor country.

We use the logged and lagged values of the refugee stock in the donor country from the World Development Indicators.

Aid allocation is associated with recipient need as well as political and economic interests. A substantial share of aid scholars consider the allocation of multilateral aid to be more need-oriented and less strategic than bilateral aid from large and geopolitically influential donors (e.g., Maizels and Nissanke, 1984; Powell and Bobba, 2006; Headey, 2008; Easterly and Pfutze, 2008; Birdsall and Kharas, 2010; Knack et al., 2011).[13] While donors' economic and political interests influence multilateral aid as well (e.g., Kuziemko and Werker, 2006; Dreher et al., 2009; Kilby, 2009, 2013; Kersting and Kilby, 2015), the relative importance of need arguably is higher for the multilateral channel. If aid allocation by multilaterals is indeed more need-oriented on average, the preferences of 'altruistic' donor governments are quite well aligned with those of multilateral organizations. Such preference similarity would increase the likelihood of delegation according to the principal-agent

[12] Bertoli et al. (2008) suggest that remittances from the donor country to developing countries as possible alternative to ODA using the share of immigrants in the donor country's population as proxy. Fuchs et al. (2014) add the wages and salaries earned by non-resident workers as a share of GDP to their regressions.

[13] Note that not all studies find different effects for multilateral and bilateral aid (e.g., Rajan and Subramanian, 2008).

arguments in the multilateral aid literature (e.g., Schneider and Tobin, 2011; Milner and Tingley, 2013; Eichenauer and Hug, 2015), especially if multilateral aid is also more effective. Indeed, Addison et al. (2004) find that 'pro-poor' donors provide more than their proportional share of the multilateral burden. However, 'altruistic' donors are also aware of the (informal) influences of large shareholders in international organizations (e.g., Kuziemko and Werker, 2006). Through earmarking of some of their multilateral aid, altruistic donors can ensure that their funding is not diverted for strategic reasons. We also expect altruistic donors to provide the type of aid considered 'better' according to current development thinking.

H12. Altruism in bilateral aid relates positively to multi-bi aid.

We measure the need orientation of a donor government using our own 'development index' that varies across donors and years. The index is constructed as the annual average of three standardized need variables, used in the literature previously, that are averaged across the bilateral recipients of a donor.[14] To the degree that multi-bi aid follows recipient need, the development index should negatively relate to multi-bi aid.

Membership in the European Union is a particularly strong form of multilateralism, involving the delegation of some key competencies and financial contributions to, among other purposes, the development agency of the European Commission. This 'EU aid' may be considered multilateral aid by member states and thus crowd out earmarked (and unearmarked) contributions to multilateral agencies.

H13. EU membership is negatively related to multi-bi aid.

We test this hypothesis by adding an indicator variable for EU membership and interpret a negative coefficient as evidence for partial or full crowding-out.

In interviews, aid officials suggested that multi-bi aid should be particularly attractive for small and emerging donors because multi-bi aid allows governments to engage in additional countries and sectors without setting up field offices. Donors also said that earmarked funds are used because "they lack the funds or expertise to scale up their bilateral programs to deliver the amount of aid they are committed to provide" (IEG, 2011: 6).[15] While larger donors with a well-developed network of field offices could close some offices, vested interests in the aid bureaucracy are likely to hinder such efforts of the government, its principal (see, e.g., Vaubel, 2006). We thus hypothesize that a strong aid agency defends this network and the staff associated with maintaining it, thus providing less multi-bi aid. Older donors are more likely to already have had an implementing agency before the advent of multi-bi aid and, consequently, are less likely to use multi-bi aid. In contrast, 'younger' donors and those with a smaller number of bilateral country offices might use multi-bi aid as a substitute for their lack of bilateral aid presence. Both arguments lead us

[14] The three need variables are "log(GDP per capita)", "life expectancy", and "number of telephone lines per 100 inhabitants."

[15] Several donors that have set high targets for aid/gross domestic product, noted that it was difficult to spend the large amounts bilaterally because they simultaneously seek to hold down their administrative aid budgets.

to expect that donors with a larger number of recipient countries and more experience as donor provide, ceteris paribus, less multi-bi aid.

H14. Vested interests in the aid bureaucracy relate negatively to multi-bi aid.

We use the number of bilateral recipient countries of a donor and the donor experience as proxy variables. We measure donor experience by three indicator variables based on information from the OECD about donors' first aid reporting. Traditional donors, the baseline category in our regressions, established their official aid programs between World War II and the mid-1960s. Conversely, what we call "traditional latecomers" are countries that became donors between 1970 and 1989 (e.g., Finland, Greece, Ireland, or New Zealand). Finally, "new Western donors" are those that started reporting aid after 1989, notably some Eastern European donors (though many of them are not yet or only recent DAC members and thus not in the sample), but also Spain, Portugal, and Korea.

D) *Donor preferences*

The aid allocation literature stresses the simultaneous presence of strategic and altruistic motives in aid allocation although donors differ in the extent of strategic aid provided (Berthélemy 2006). A robust result of this literature is that former colonizers provide more aid to former colonies and donors transfer more aid to politically aligned countries (e.g., Alesina and Dollar, 2000).[16] Bertoli et al. (2008) argue that aid can be considered a substitute for a past colonial relationship and thus expect the share of aid in GDP to be higher for non-colonizers. These authors and Fuchs et al. (2014) find empirical support for this hypothesis, although Fuchs et al. (2012) confirm it for bilateral aid budgets only. We expect that donors prefer to provide political and strategic aid through the bilateral channel because a donor's micromanagement capacity is crucial to achieve the political objectives. Multi-bi aid does not allows donor's control over the implementation process to the same extent. We thus expect that donors that are more strategic in their bilateral aid allocation, provide less multi-bi aid.

H15. Donors with a colonial past provide less multi-bi aid.

We use a bilateral dummy for donors with a colonial past. We prefer our own definition instead of using the logged size of the population living in the donor's former colonies as Fuchs et al. (2014), which does not take into account the number of colonies and therefore cannot account for the fact that smaller countries typically receive more aid per capita in average (e.g., Fleck and Kilby, 2010).

Donors state that they use earmarked aid to influence the World Bank (IEG, 2011). The United Kingdom said that its support to specific sectors is "'a deliberate intention to do things differently in the way aid is mobilized, allocated for results, and governed'" (IEG, 2011: 6). Eichenauer and Hug (2015) also argue that donors might use multi-bi aid as a substitute

[16] Bilateral aid flows have also, among many other factors, been shown to be associated with temporary geopolitical importance (e.g. Kuziemko and Werker, 2006).

for multilateral core aid when they perceive multilateral activities to be misaligned with their preferences in terms of allocation but also efficiency.[17] While it is already difficult to convincingly measure the respective preferences of each donor and each multilateral agency, this would still leave unaccounted the interactions between the allocation choices. We therefore use a different measure for donor preference. Over the last decade, a number of bilateral donors has assessed the 'quality' of major multilateral agencies with respect to their efficiency, effectiveness, and their relevance to the donor's development objectives. Since the British aid agency DFID's pioneer study in 2003 (DFID, 2005; OECD, 2008), the assessment methodology has been refined and efforts were made to coordinate these assessment approaches (OECD, n/a).[18] The commissioning of an evaluation about the performance of multilateral agencies by a donor country can be interpreted either as expressing a genuine interest in the working of the multilateral system (while being critical of its current functioning) or as a means for a government to generate solid arguments to withdraw from multilateral engagements. Empirically, donors stress that these assessments primarily serve as reform incentives for multilateral agencies and will only have funding consequences in the longer term if no reforms are undertaken. We thus prefer the first interpretation, namely that multilateral aid reviews indicate an interest in the multilateral system and its improvement.

H16. Donors with an active multilateral aid policy provide less multi-bi aid.

Our measure for an active multilateral aid policy is an indicator which turns and remains one starting in the year the donor country conducts a first multilateral aid assessment.

4. Control variables and methods

Although we already have a large set of variables to test our 16 hypotheses, we need to add several control variables. We mostly rely on the previous literature on total ODA budgets for our control variables. Fuchs et al. (2014) review this literature and re-investigate 52 proposed determinants of donor generosity in 16 hypotheses for robustness using panel regressions, bootstrap stepwise linear regression, and EBA. In order to preempt a discussion about the choice of our control variables, we include the four control variables identified as robust by Fuchs et al. (2014). As a first robust relationship, Fuchs et al. (2014) and most past studies found a consistent positive relationship between the budget size and the lagged dependent variable, which accounts for budget inertia. However, multi-bi aid may be more volatile than the bilateral, multilateral, and total aid budget (see Hypothesis 9 about economic

[17] See also Schneider and Tobin (2011) about donors' allocation of multilateral aid across multilateral organizations and Reinsberg et al. (2015b) about donors' choice of World Bank trust funds which varies, among other factors, by the extent to which their aid preferences are mutually aligned.

[18] This resulted in the creation of the Multilateral Organisation Performance Assessment Network (MOPAN), currently having 19 donor countries as members. Note that we create our dummy based on individual reviews and not participation in the network. While there clearly are advantages in the coordination of the assessments, a donor's individual assessment is a more actionable basis for a donor's policy while MOPAN ratings are consensus outcomes.

downturns). Moreover, results from estimations including the lagged dependent variable are interpreted as short-term effects, but we are generally more interested in longer term effects. Finally, our time period includes only 20 years so that the inclusion of the lagged dependent variable might give rise to the so-called Nickell bias (Nickell, 1981). For these reasons of content and methodology, we include the lagged dependent variable in some specifications only and correct for the Nickell bias by estimating bias-corrected lagged dependent variable models using Blundell-Bond instruments. Second, we add to all regressions the (lagged) logarithm of population size and the (lagged) logarithm of a donor's Gross National Income (GNI) to proxy country size and donor's income level respectively .[19] Third, Fuchs et al. (2014) find that the dummy for the independence of the aid agency is robust, a variable we already include as proxy for hypothesis H7. Fourth, a donor's colonial relationships have a robust negative correlation with aid budgets. We include this variable as measure for hypothesis 15 but prefer our own definition. Brech and Potrafke (2013) and Fuchs and Richert (2015) also analyze subcomponents of ODA. Following these contributions to the literature, we control for trade openness and government expenditure as share of GDP.

Finally, we add two multi-bi specific controls. First, we control for the size of a donor's remaining ODA budget after subtracting multi-bi aid. This affects the interpretation of all the estimated coefficients, which represent any relationship with multi-bi aid beyond their influence on aid budgets more generally. In robustness analyses, we include bilateral and multilateral aid as two separate variables. Second, we control for the share of underreported bilateral aid computed as the discrepancy between the aggregate bilateral aid amounts reported to the OECD and donors' activity-level aid reports to the OECD's Creditor Reporting System (CRS), which allows distinguishing 'classical' bilateral and multi-bi aid activities.[20] In sum, we include donor population and GNI, the share of underreporting, other aid from the same donor and the time trends in our main regressions.[21] In additional regressions, we add a lagged dependent variable, trade openness and social expenditure as share of GDP.

The econometric analysis proceeds in four sections. We first test the 16 hypotheses using fixed- and random-effect regressions. While we prefer the more stringent regressions with fixed-effects that reduce the likelihood of omitted variable bias, we are interested in the effect of the independent variables on the level of multi-bi aid. Second, we discuss the sensitivity of the results to the closed budget assumption and test the robustness of predictors using an Extreme Bounds Analysis (EBA). Having established the importance of the

[19] An alternative would have been Gross Domestic Product (GDP) or GDP per capita, as used by Fuchs et al. (2014). We choose GNI instead of GDP for reasons of data availability. As we already include population in our regression, we also take GNI rather than GNI per capita to have a ceteris-paribus interpretation for donor income.

[20] The OECD (2010: 38) notes that the low shares of multi-bi aid for some donors may partially be due to under-reporting.

variables for explaining the multi-bi budget, we test for significant differences in the determinants for multilateral and bilateral aid budgets using Seemingly Unrelated Regression (SUR) analysis.

The dependent variable in our main regressions is the natural logarithm of multi-bi commitments provided for purposes other than debt relief and humanitarian aid[22] because our reading of the literature about aid type-specific budgets suggests that there is no consensus in the literature about whether researchers should model a one-step process where budget items and size are simultaneously negotiated or a two-step process in which first the budget size and then the budget allocation across aid types is decided. Theoretically, it is therefore unclear whether the choice among multilateral, bilateral and multi-bi aid is correctly analyzed in the framework of a fixed or open aid budget, that is, whether multi-bi aid should be the absolute amount or the share of the budget spent on each aid type respectively.[23] In the context of multi-bi aid, the additionality of multi-bi aid to existing aid flows is particularly difficult to answer as the trend coincides with increases in aid budgets post-2000, the agenda-setting success of the Millennium Development Goals (Reinsberg, 2015), and the war on terror as new strategic rationale (Dreher & Fuchs, 2011). In a simple framework, Reinsberg, Michaelowa, and Eichenauer (2015) find some quantitative evidence that multi-bi, bilateral, and multilateral aid are complementary aid channels, suggesting that "the rise of multi-bi aid has not simply led to a re-allocation of aid within a fixed budget" (547). In the evaluation about the World Bank's trust fund portfolio, evaluators write that "donor countries generally allocate money to trust funds from within a fixed aid budget" (IEG, 2011: vi), although this does not exclude the possibility that the option of multi-bi aid is already taken into account in the budgetary process. As cited above, the United States consider that trust funds allow the mobilization of additional funding in Congress. It thus remains unsettled what the counterfactual in the absence of multi-bi aid is: a lower aid budget or, within a fixed aid budget, a higher share of multilateral core aid or a multiplication of bilateral initiatives?

Given the contrary views about the additionality of multi-bi aid, we choose to mainly show models with an open aid budget as the assumption of a closed budget is more restrictive. While our main regressions control for the aid amounts provided through

[22] The literature on the total aid budget has used many different dependent variables, namely the share of aid in gross national product (GNI) or gross domestic product (GDP), the first difference of aid, the share of the first difference as share of GDP, growth of aid as share of GDP, and aid per capita. Moreover, the literature has used both aid disbursements or aid commitments (see literature overview in Fuchs et al. 2014). For the study of aid budgets, we prefer commitments to measure political willingness because disbursements depend on circumstances in recipient countries that are mostly outside of donors' control. Finally, we are interested in aid for development and thus deduct humanitarian aid and debt relief. First, we deduct debt relief because it is usually granted in a multilaterally coordinated way as one-off write-off from the donors' assets, which is politically less contentious in donor countries than freeing up resources for aid. Humanitarian aid is more need-driven and not planned and programmed in the same ways as other aid flows.

[23] The literature on specific aid channels uses the share of a donor's specific aid type to a recipient in the total aid to this recipient (Knack 2014; Schneider & Tobin, 2011), the share of the aid type in total aid and the logged specific aid amount and (Schneider & Tobin, 2011), the logged share of two types of aid (Dietrich, 2013), or the percentage share of a specific aid type in the recipient country's total aid from a donor (Acht et al., 2015).

alternative channels, we test the robustness using the share of multi-bi aid in total aid as the dependent variable to model a closed aid budget.

In all estimations, we control for non-linear time trends in the use of multi-bi aid by including year-fixed effects and estimate cluster-robust standard errors. In robustness checks, we use the more general Discroll and Kraay (1998) standard errors that allow for spatial correlation and autocorrelation. In sum, we estimate equations of the following type:

$$\text{Ln (multi-bi commitments)}_{it} = \beta A_{it-1} + \gamma B_{it-1} + \eta C_{it} + \sigma_i + \lambda_t + \varepsilon_{it} \quad (1)$$

where our dependent variable represents the logged multi-bi aid commitments a donor *i* provides in year *t* net of humanitarian aid and debt relief. We replace missing values in the dependent variable by zero, which is interpreting them as zero aid flows. Vector *A* contains our variables of interest testing the hypotheses, which we lag to account for the fact that the budget is typically decided upon in the year prior to the actual aid commitments and to mitigate omitted variables bias (see below). *B* is the vector of (lagged) control variables. Vector *C* stands for contemporaneously included logged total aid, or, alternatively, bilateral and multilateral flows separately. Fixed-effect regressions also include σ_i, which represent donor-specific time-invariant effects. All regressions include year-fixed effects λ_t. Data for the variables of interest and the controls come from different sources and sometimes have missing values. This poses a problem because missing data entail efficiency losses and might result in biased results (e.g., Breitwieser and Wick 2013). For the Extreme Bound Analysis in particular, missing data is problematic for interpretation because changes in coefficients may either result from changes in the sample size or the combination of variables. In our main analysis, we thus use a dataset in which all explanatory variables are imputed using multiple imputation (Honaker, King, and Blackwell 2011). The imputed dataset has 529 observations, including 23 OECD donors observed over 23 years (for a map of missing values in the original data, see Appendix).

In this paper, we are interested in both the variation of multi-bi aid use across donors and for individual donors over time. While we prefer fixed effects regressions that account for unobserved donor heterogeneity and thus mitigate – but do not eliminate – omitted variable bias, there is a trade-off when removing the variation across donor countries. Various potential determinants of multi-bi aid effort are quite stable over time (e.g., population size) or do not vary at all (e.g., EU membership) and thus cannot be studied in this setting. Moreover, the coefficients obtained from fixed effects regression must be interpreted as the within-donor influence of variation in a variable. Therefore, we also perform random effect estimations, which allows for the inclusion of time-invariant variables of interest, although unbiased estimation with random effects requires the strong assumption that omitted donor-specific effects are uncorrelated with the independent variables.[24] As noted by Fuchs et al. (2014), variables related to different hypotheses might be strongly correlated and we thus carefully check correlations between the explanatory variables (Table 5) and provide extensive robustness checks to mitigate concerns about multicollinearity.

[24] A Hausman test suggests using fixed effects (p<0.01) (Hausman, 1978).

Even when we find significant and robust correlations in the subsequent analysis, we abstain from interpreting these relationships as causal because we do not have a stringent identification strategy. While we acknowledge that reverse causality and simultaneity is likely for some variables despite lagging these and most other explanatory variables (e.g., peer effort), we think that the results are interesting in spite of these limitations, especially in a literature where the endogeneity of regressors has not yet been solved in a satisfactory way.[25] Moreover, we are not interested in the effect of a single variable on the size of the multi-bi aid but aim to investigate the universe of potential explanatory factors.

5. Estimation and Results

A) Panel regressions

This section tests our hypotheses for the 23 DAC donors over the 1990-2012 period using random and fixed effect regressions. Columns 1-4 in Table 6 show results from random effect regressions and include time-invariant variables. We include the main controls, year-fixed effects, and all variables of interest associated with the four sets of hypotheses: official donor motives, domestic politics, international politics, and a donor's aid preferences. In column 1, we find seven significant relationships that, respectively, support the hypothesized relationships. Because we include the level of a donor's aid budget as control variable, the coefficients show the additional effects of variables, i.e., beyond their effect on the aid budget in general. We find that multi-bi aid is higher after costly natural disasters and epidemics (H1), for more internationally engaged donors (H10), and increases with the number of refugees in the donor country (H11). We find that multi-bi aid is lower when governance quality in the donor's recipient countries is higher (H2) and when colonial history looms large in a donor's aid allocation (H15). There is also evidence that donors with an active multilateral policy provide less multi-bi aid. As hypothesized, incoming aid ministers reduce multi-bi aid (H5) and that multi-bi aid is lower for EU members (H13). We find that peer effort is negative and significant, which is in contrast to our hypothesis H4. As expected, the share of underreporting is negative and highly significant. The other control variables do not systematically affect the amount of multi-bi aid directly.

When we include the remaining aid budget separately in multilateral and bilateral amounts in column 2, we find that multi-bi aid is positively associated with multilateral aid but negatively with bilateral aid. In column 1, these effects have compensated each other within the aggregated total aid flows. In column 3, we add trade openness and social expenditures as suggested by Brech and Potrafke (2013) and find the latter to be positively and significantly associated with multi-bi aid, which is in line with previous findings about the

[25] Boschini and Olofsgård (2007), Dreher and Fuchs (2011), and Fuchs et al. (2014) use Generalized Method of Moments (GMM) estimators to account for the endogeneity of selected regressors. However, these estimators use internal instruments based on lags of the endogenous variables, which are often weak and unlikely to be exogenous. On top of that, they are a 'black box' for researchers without access to the original code (see Bazzi & Clemens, 2013 in the context of the aid effectiveness literature).

welfare state and (aid) budgets. There also is some evidence that the type of aid agency matters. Column 4 adds additional economic variables to test the concerns about the negative relationship of multi-bi aid with business cycles and economic hardship. We do not find any effect of these variables. In terms of economic significance, we find that being an EU member and an aid minister change influence multi-bi aid budgets most significantly. An incoming aid minister decreases multi-bi aid by 47 percent on average, while the average EU member provides around 80 percent less multi-bi aid.

Table 7 provides robustness checks. In column 1, we control for 'inertia' in the donors' budgetary processes by adding the lagged dependent variable. Note that these results should be interpreted with particular care because of potential Nickell bias (column 5). Column 2 instruments for the endogenous lagged value of multi-bi aid using Blundell-Bond instruments and bootstraps standard errors.[26] Overall, the results are extremely similar to previous columns even though the lagged multi-bi aid budget is economically and statistically significant. The most notable differences are that the donor income turns significant in columns 1 and 2 while the peer effort variable and the number of refugees become insignificant in column 2. The dependent variable in column 3 is the share of multi-bi aid in total aid and aims to test whether our main results hinge on the open budget assumption. They do not.

Table 8 shows results from models with year- and country-fixed effects that control for country-invariant and time-invariant unobserved characteristics respectively. Thus, the coefficients on the explanatory variables represent the influence of the variation in a given variable on the aid budget within a donor country. In column 1, disaster damage (H1), recipient governance (H2), a changing aid minister (H5), and an active multilateral policy (H16) are significantly related to multi-bi aid in the hypothesized direction. Economic difficulties as measured by debt per GDP is negatively related to multi-bi aid, which provides evidence against hypothesis H9. Donor income is significantly and negatively related to multi-bi aid. In column 2, we find again a positive relationship between multi-bi and multilateral aid and the negative one with bilateral aid. According to column 3, trade openness has an economically small but statistically significant negative relationship with multi-bi aid. The economic variables added in column 4 are all insignificant. Refugee population turns significant in columns 3 and 4, while the aid minister change turns insignificant. Note however that the coefficients are similar across columns.

Table 9 displays the robustness checks with a lagged dependent variable (column 1), which we instrument in column 2. The lagged dependent variable and the instrumented lagged dependent variable are both positive and highly significant, suggesting some 'inertia' in multi-bi aid. Note however that the coefficient is between 0.6 and 0.7 in Fuchs et al. (2014). While a direct comparison of coefficient is not possible across these regressions, a

[26] We follow Brech and Potrafke and use the STATA command xtlsdvc. We abstain from interpreting the instrumented variable as causal effect due to the criticism of GMM estimator by, among others, by Bazzi & Clemens (2013).

difference in the 'inertia' coefficient would be in line with the rise of multi-bi aid in popularity.

Results are largely robust to these modifications except that damage costs (H1) turns insignificant. The dependent variable in column 3 is the share of multi-bi aid in total aid, implicitly assuming a fixed budget. Results are fairly similar to the regressions with the total amount as dependent variable. However, a number of additional variables turn significant in column 3: peer effort (H4), the development index (H12), the number of recipient countries (H14) and population. Damage costs (H1) and multilateral assessment (H16) become insignificant.

Regarding the quantitative importance of the robust relationships, a multilateral assessment, an aid minister change, and disaster costs influence multi-bi aid influence the multi-bi aid budget most. Specifically, donors that have conducted a multilateral assessment reduce their multi-bi aid by 93 percent ceteris paribus. A decrease in recipient governance by 0.25 points increases the multi-bi aid budget by 25 percent and an incoming aid minister reduces the multi-bi budget by 46%.

During the time period analyzed, donor countries have increased their use of multi-bi aid largely in parallel. It is thus possible that there is cross-sectional dependence between our observations. Our results persists when we use Discroll-Kraay standard errors that allow for cross-sectional dependence and autocorrelation in the standard errors although, as expected, significance levels are slightly lower.[27] As a further robustness check, we omit the number of refugees (H11) because some readers might be concerned about the endogeneity of this variable. When we do so, two notable differences to previous results appear. First, the significance level of the disaster cost variable falls (H1) and, second, the dummy for aid agency type IV (H7) turns positive and significant. Unsurprisingly, the logarithm of the number of refugees in the donor country and the dummy for agency type IV are positively correlated (0.22).

Overall, we find support for eight hypotheses in the random-effects setup and four to five hypotheses in the fixed-effect regressions, whereof five overlap. We find evidence against hypothesis H3 about a positive relationship of multi-bi aid with the generosity of peers in the random-effect setup and against hypothesis H9 about the negative relationship with government debt in the fixed-effect regressions. We now turn to testing the robustness of these findings using Extreme Bounds Analysis.

B) Extreme Bounds Analysis

We employ a variant of the so-called Extreme Bounds Analysis (Leamer 1983, Levine and Renelt 1992) to preempt concerns about the sensitivity of our previous results to alterations in the set of independent variables. An EBA estimates all possible combinations of the set of

[27] The maximum lag order of autocorrelation is specified to be 1.

explanatory variables controlling for a number of standard variables.[28] We estimate equations of the following form

$$\text{Ln (multi-bi commitments)} = \alpha + \beta F + \gamma D + \varepsilon, \quad (2)$$

where α, the constant term, and *F,* the vector of 'standard' explanatory variables, are included in all regressions. The 'always-controls' included in *F* are donor wealth and population, aid underreporting, other aid, time-fixed effects and, when applicable, donor-fixed effects. In the random-effect EBA, all time-invariant variables are also included in F. *D* refers to the up to five additional explanatory variables included in different combinations, while *ε* represents the error term.[29]

Opinions in the literature about what constitutes a 'robust' finding are heterogeneous. While Leamer (1983) originally proposed to consider a variable robust only if the lower and the upper extreme bound for the coefficient are both either below or above zero, Sala-i-Martin (1997) argued that this criterion alone is too strong and that researchers should report the percentage of the regressions in which the coefficients are different from zero at the 5% level and analyze the entire distribution.[30] Table 6 thus reports the lower and the upper bound of the point estimates, the unweighted parameter estimate for each coefficient, its standard deviation, the fraction of all regressions in which the variable reached the 95% significance threshold and the fraction of the unweighted cumulative distribution function lying above zero. Following Sturm and de Haan (2005), we consider variables to be robust determinants if 95% of the coefficients of the distribution is either below or above zero, i.e., the sign of the coefficient points in the same direction in most cases. This criterion is reasonable because some of the models might be misspecified because of, for instance, multicollinearity. However, we do not know the number of misspecified regressions, which might be more than 5% so that our criterion would still be too strict. Also note that some variables might not reach the threshold value despite being 'truly' related to multi-bi aid. The main advantage of the EBA is thus that variables reaching the threshold can be considered robust determinants independent of the other variables included.

Our variables turn out to be extremely robust. In the random-effect EBA shown in Table 10, all but three variables are robust according to the 'Sturm-de-Haan' criterion, which is that their sign is unambiguous in at least 95% of all regressions. Moreover, the coefficient of partisan position is positive in more in 92% of cases. Note that we include the logarithm of GNI, population, and other aid as well as the share of underreporting as 'always-controls'. The EBA procedure adds at most five other explanatory predictors to these baseline controls,

[28] EBA has been widely used in, for instance, the economic growth literature (Levine and Renelt, 1992; Sala-i-Martin, 1997) and applied in environmental economics (Gassebner et al., 2011, Rudolph and Priebe, 2015).

[29] We run the EBA routine from the package *ExtremeBounds* (Hlavac, 2013) in *R*, which allows including up to ten variables of interest.

[30] The lower (upper) extreme bound for the coefficient is the lowest (highest) value for the coefficient minus (plus) two standard deviations.

leading to the estimation of 4082 possible variable combinations.[31] We restrict the EBA to regressions in which the variance inflation factor (VIF) on the examined coefficients does not exceed the commonly used threshold (VIF<10) to avoid problems of inference due to multi-collinearity (Hlavac, 2013: 13). We do not find robust support for the hypotheses about the size of the refugee population in the donor country (H11) and EU membership (H13). Overall, we find robust support for thirteen of the sixteen hypotheses. In the fixed-effect EBA, we find that all variables are robust predictors of multi-bi aid (Table 11). The fixed-effect EBA is based on all 4082 specifications under application of the same VIF criterion. In sum, the EBAs provide robust support for all our findings previously found significant.

C) Comparison of the determinants of multi-bi, bilateral and multilateral aid

In academic debates, the question is often raised whether multi-bi aid is different from multilateral and bilateral aid. We approach this question by testing for differences in the determinants of the three aid channels using Seemingly Unrelated Regressions (SUR), which account for contemporaneous cross-equation error correlation and make it easy to compare coefficients across regressions (e.g., Zellner 1962). Table 12 shows the results for a SUR model with fixed effects. The dependent variables in columns 1, 2 and 3 are logged bilateral, logged multilateral, and logged multi-bi aid commitments respectively. Note that we do not include the control variable 'other aid' in any of the three regressions. When we drop 'other aid' from the multi-bi regression, previously significant coefficients remain significant except for the aid minister variable. In addition, KOF index turns significant and population turn significant.

Our SUR results suggest, in a nutshell, that multi-bi aid is determined by different factors than multilateral and bilateral aid, which are influenced by similar determinants.[32] While our specification explains multi-bi aid best (adjusted R^2: 0.78), the explanatory variables also explain a substantial share of the variation in multilateral and bilateral aid. Multi-bi aid is significantly more likely than multilateral and bilateral aid to be provided in response to disasters and epidemics (H1) and to target capacity-constrained countries (H2). This result provides support for the 'bypassing strategy', which suggests that donors increase multi-bi aid when the governance quality of their bilateral recipients deteriorates (see, Dietrich, 2013; Knack, 2014; Acht et al., 2015).

Compared to the other aid types, multi-bi aid is also significantly reduced by an incoming aid minister (H5). Multi-bi aid is significantly differently associated with the number of refugees than bilateral and multilateral aid, which display a negative relationship with the stock of refugees (H11). We also find large and highly significant differences of the relationship between multilateral assessments and the three aid types (H16). Moreover, there are significant differences for the control variables with the exception of a donor's

[31] While the previous literature adds at most three additional variables to the baseline controls, our EBA allows for more variable combinations and is thus more flexible.

[32] We implement the fixed-effect SUR using the *suest* command in STATA.

population. When we estimate SUR with random effects to include the time-invariant variables, we confirm these results but in addition find that the coefficients for EU membership (H13) and the number of recipient country (H14) are significantly different between regressions.[33]

In sum, there is evidence that multi-bi aid is governed by different factors than other aid channels. In particular, as opposed to the other types of aid, donors use multi-bi aid when the governance quality of their bilateral aid recipients deteriorates (H2) and when they the number of refugees at home increases (H11). There is also strong evidence that incoming aid ministers reduce multi-bi aid to the benefit of other aid types (H5) while donors that commit to multilateral aid reduce their multi-bi rather than bilateral aid (H16).

6. Conclusion and next steps

This paper develops and tests 16 hypotheses about the determinants of multi-bi aid in donor countries. The hypotheses relate to donors' official motives for multi-bi aid, domestic and international political economy factors, and donor preferences and are tested using a new dataset on multi-bi aid that allows tracking the increase in this new type of funding over the 1990-2012 period. Specifically, we run random- and fixed-effect models to study the size of the multi-bi aid budget. Using Extreme Bounds Analysis, we find robust support for most hypotheses. In particular, there is strong evidence that recipient needs after disasters and epidemics as well as the number of refugees in the donor country relate positively to multi-bi aid while an incoming aid minister reduces the multi-bi budget in her first year in office to the benefit of other aid types. We also find that multilaterally engaged donors have, ceteris paribus, larger multi-bi budgets while donors that have conducted a multilateral aid assessment reduce their earmarked aid. The multilateral assessment might increase donor officials' awareness about the implications of earmarked aid for multilateral organizations (see, Reinsberg, 2015).

Our results contribute to the aid allocation literature, notably its strands on the determinants of aid budgets (e.g., Fuchs et al., 2014) and choice of the aid channel (e.g., Dietrich, 2013; Milner and Tingley, 2013; Eichenauer and Hug, 2015). As regards the former, we extend the existing work by studying the determinants of multi-bi aid, a third type of aid whose importance has dramatically grown over the past decade. We find that multi-bi aid is determined by quite different factors than traditional aid, as exemplified by our findings in the Seemingly Unrelated Regression framework. Specifically, a changing aid minister, the number refugees in the donor country, multilateral assessments, disaster costs, and recipient-country governance are related differently to multi-bi aid and the other aid channels. Our results provide support for a 'bypassing strategy' of donors that is to increase

[33] For the random-effect SUR, we implement a nested model of the Seemingly Unrelated Regression (SUR) type for estimating a common variance-covariance for the two different dependent variables. Due to the size of this matrix, we estimate the SUR using the *gsem* command in STATA.

multi-bi aid when the governance quality of bilateral recipients falls (see, Dietrich, 2013; Knack, 2014; Acht et al., 2015).

The paper also contributes to the policy debate about the financing of the Sustainable Development Goals for which an enormous financing gap persists. The paper provides a better understanding of the factors that influence the multi-bi, multilateral and bilateral aid budgets in donor countries. Important questions about the desirability of multi-bi aid in terms of their efficiency and effectiveness properties relative to other aid types remain to be assessed by future research.

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Table 1: Share of respondents in favor of supporting developing countries
(Figures for 1990-2002 from McDonnell, Lecomte and Wegimont (2003), sources for 2003-2014 see below).

		1990s												2000s											
Country / Year: Support in %		**'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:

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 consider foreign aid to be an integral part of foreign policy.
4. Greece became a member of the DAC in 1999.

Sources:

Public opinion figures for the years 1990-2002: Table 2 in Mc Donnell, I., Solignac Lecomte, HB., & Wegimont, L. (2003).

Public opinion figures for all EU Member countries from 2003-2014 are taken from Eurobarometer 58.2, 62.2, 71.2, 73.5, 76.1, 77.4, 79.4 and 82.1 . The question asked in Eurobarometer 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 saying it is very important and important.

Public opinion figures for New Zealand from UMR research (2007), Overseas Aid. A Qualitative and Quantitative Study.

Public opinion figures for Switzerland from gfs.bern, "Monitor Entwicklungszusammenarbeit 2010 im Auftrag von DEZA und Alliance Sud".

Canada (a), (b) Public opinion figures for Canada 1993-2010 are taken from: Silvio, D. H. (2015). Why Aid? Canadian Perception of the Usefulness of Canadian Aid in an Era of Economic Uncertainty. Rethinking Canadian Aid, 161. Figures for (a) show (strong and mild) public support for Canadian aid. Figures for (b) show the percentage of respondents that answer the volume of aid should be increased or remain the same.

United States (c) Public opinion figures for the United States 2006 & 2007 are taken from: German Marshall Fund (2007). Perspectives on Trade and Poverty Reduction.

United States (d) Public opinion figures for the United States 2002, 2004 & 2010 are taken from: The Chicago Council of Global Affairs (2010).Global Views 2010.

Japan (b) Public opinion figures for Japan 2004 & 2008 are taken from : Atsushi Uchida (2009). Will Public Support for Japan's ODA Last?, JICA USA Newsletter March/April 2009, available online: http://www.jica.go.jp/usa/english/office/others/newsletter/2009/0903-04_05.html

Norway (b) Public opinion figures for 2001-2013 are taken from: Statistics Norway (2013). Attitudes towards and knowledge about Norwegian development aid, available online: https://www.ssb.no/en/uhjelphold

Public opinion figures for Australia from 2001 to 2005: see Figure 7 in Joanna Katelin Williams (2013). Morals or Money? Public Opinion and the Australian Aid Budget 2000-2013.

Table 2: Overview of hypotheses

Hypotheses	Variables
A: Official donor motives	
H1. Multi-bi aid increases in response to natural disasters and epidemics.	Costs of disasters in the donor's recipient countries (natural logarithm)
H2. Multi-bi aid is positively correlated with the deterioration in the governance in the donor's recipient countries.	Quintile value of governance quality of each donor's bilateral recipients
H3. Multi-bi aid is positively related to having hosted a G7/G8/G20 summit recently.	G7/G8/G20 host indicator
H4. A donor's multi-bi aid effort has a positive relationship with the multi-bi effort of its peer donors.	Multi-bi aid of peers (natural logarithm)
B: Domestic politics	
H5. An incoming development minister reduces multi-bi aid in his/her first year in office.	Indicator for aid minister change
H6. Multi-bi aid budgets are higher for left-wing governments.	Political ideology of government
H7. Independent aid agencies are associated with larger multi-bi aid budgets.	Binary indicator variables for each of the two most independent types, the other two types of agencies are the baseline (RE)
H8. Multi-bi aid is positively related to donor transparency.	Perceived absence of corruption
H9. The structural macroeconomic situation and economic slumps in the donor country relate negatively to multi-bi aid.	Debt; In robustness checks: fiscal deficit, unemployment, growth, output gap, financial crisis indicator
C: International politics	
H10. Multi-bi aid relates positively to a donor's international engagement.	KOF Index of Political Globalization
H11. Multi-bi aid increases in the number of refugees in the donor country.	Number of refugees in donor country (natural logarithm)
H12. Altruism in bilateral aid relates positively to multi-bi aid.	Development index of 3 standardized need variables
H13. EU membership is negatively related to multi-bi aid.	EU membership indicator (RE)
H14. Vested interests in the aid bureaucracy relate negatively to multi-bi aid.	Number of bilateral aid recipients

	Three indicators for donor experience (RE)
D: Characteristics of aid agencies	
H15. Donors with colonial past provide less multi-bi aid.	Binary indicator variable
H16. Donors with an active multilateral aid policy provide less multi-bi aid.	Binary indicator for having conducted a multilateral aid assessment
Control variables	
GNI	Natural logarithm of donor's Gross National Income
Population	Natural logarithm of donor's population
Other aid	Natural logarithm of (total ODA - multi-bi ODA) by the donor country
Underreported aid	Share of underreported aid in CRS data compared to aggregate bilateral flows (DAC1)
Robustness checks	
Bilateral aid	Natural logarithm of a donor's bilateral aid commitments
Multilateral aid	Natural logarithm of a donor's multilateral aid commitments
Trade openness	Trade openness as share of GDP
Social expenditure	Public social expenditures as share of GDP

RE: only in random effect models.

Table 3: Variable definitions and sources

Dependent variable	
Log(Multi-bi aid)	Logarithm of multi-bi aid (2011 constant USD). Multi-bi aid flows devoted to humanitarian aid and debt relief are excluded.
Key predictors	
Log(Disaster costs)	Logarithm of the weighted sum of disaster costs in all recipient countries of a donor, computed in three steps: (1) computation of probability that a recipient receives aid from a donor, simply as the fraction of the sample years in which the donor committed a positive amount of aid; (2) multiply these probabilities with lagged disaster costs (the USD amount of damages from natural disaster in the bilateral recipient countries); (3) aggregation over all recipient countries (Damage data from EM-DAT; aid data from OECD (2014b))
Recipient governance	First quintile value of the governance quality of all bilateral recipients of a donor country in the previous year. Governance quality is computed as average of the six constituent components of the World Bank Governance Indicators, collected by World Bank (2014) and sourced from Teorell et al. (2013)
G7/G8/G20 host	Binary indicator variable for whether country hosted a G7/G8/G20 summit in the previous year (updated from Reinsberg, Michaelowa, and Knack 2015)
Log(Peer effort)	Logarithm of aggregated multi-bi aid (i.e., Log(Multi-bi aid)) by all other DAC donors in the previous year
Aid minister change	Binary indicator variable for whether aid minister changed in the previous year (Fuchs and Richert 2015)
Partisan position	Average left-right partisan position of the government, using vote shares of the constituent parties as weights for coalition government, own calculation based on ParlGov data (Manow and Döring 2012)
Aid agency type	Organizational model of foreign aid provision. Four organizational models are distinguished (OECD/DAC 2009). Baseline categories are model 1 and 2. Model 1: Development co-operation is an integral part of the ministry of foreign affairs which is responsible for policy and implementation. Model 2: A Development Co-operation Directorate has the lead role within the ministry of foreign affairs and is responsible for policy and implementation. Model 3: A ministry has overall responsibility for policy and a separate executing agency is responsible for implementation. Model 4: A ministry or agency, which is not the ministry of foreign affairs, is responsible for both policy and implementation.
Perceived corruption control	Transparency International, perceived control of corruption (data from Teorell et al. 2013)
Public debt	Public debt as of GDP (OECD 2014a)
Economic growth rate	Economic growth in the donor country in %, collected by World Bank (2014), sourced from Teorell et al. (2013)
Unemployment rate	Unemployment rate in %, collected by World Bank (2014), sourced from Teorell et al. (2013)
Deficit as of GDP	Fiscal deficit as of GDP in %, collected by World Bank (2014), sourced from Teorell et al. (2013)

Output gap	Output gap as of GDP in % (OECD 2014a)
Financial crisis	Binary indicator of financial crisis (Laeven and Valencia 2012); step dummy that turns one for a crisis in the last year (the modal crisis lasts for four years)
KOF index	KOF index, dimension covering political globalization (Dreher 2006)
Log(Refugees)	Logarithm of (lagged) number of refugees in donor country, sourced from World Bank (2014)
Development index	Index constructed as the annual average of three standardized need variables that are averaged across all bilateral recipients of a donor: log(GDP per capita)", "life expectancy", and "number of telephone lines per 100 inhabitants," collected by World Bank (2014) and sourced from Teorell et al. (2013)
EU member	Binary indicator variable for whether donor country is an EU member state, own coding
Number of recipient countries	Number of bilateral aid recipient countries of a donor in the previous year
Donor age	Ordinal variable capturing donor age, distinguishing three groups: "Traditional donors" (bilateral aid program before the 1970s), "traditional latecomers" (bilateral aid program before 1990s), "latecomers" (bilateral aid program after 1990) – as reported in DAC1 tables (OECD 2015)
Colonial history	Binary indicator variable for whether donor country ever had colonies, own coding based on CEPII data
Multilateral assessment	Binary indicator variable, turning 1 when a donor conducted an assessment of multilateral aid agencies (donor-specific, not MOPAN) and remaining 1 in the years following the assessment. Original coding based on OECD 2008, 2010, 2012.

Control variables	
Log(GNI)	Logarithm of Gross National Income (Teorell et al. 2013)
Log(Population)	Logarithm of donor population (Teorell et al. 2013)
Aid underreporting	Share of underreported bilateral aid in the Creditor Reporting System (indicating the amount of potential underreporting in multi-bi aid) (OECD/DAC 2013, 2014). We assume that aggregate amounts of bilateral aid, which exceed the amounts aggregated manually from CRS data, are correctly reported in the DAC1 table. We also assume that reporting gaps are the same for pure bilateral aid and multi-bi aid. Hence, we can interpret the relative gap in the bilateral aid flows reported in both sources as the degree of underreporting in multi-bi aid.
Log(Total aid)	Logarithm of total Official Development Assistance of a donor (OECD 2015)
Log(Bilateral aid)	Logarithm of (pure) bilateral aid (OECD 2015)
Log(Multilateral aid)	Logarithm of multilateral aid (OECD 2015). These flows exclude 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)

Table 4: Descriptive statistics

		Mean	St. Dev.	Min	Max
	Log(Multi-bi aid) (in million USD)	148.00	300.00	0.00	3160.00
H1	Disaster costs (in million USD)	27.60	25.20	2.35	129.00
H2	Recipient governance	-1.04	0.11	-1.31	-0.32
H3	G7/G8/G20 host	0.05	0.21	0.00	1.00
H4	Peer effort (in billion USD)	2.95	3.37	0.03	11.40
H5	Aid minister change	0.32	0.47	0.00	1.00
H6	Partisan position	5.51	1.46	2.15	8.66
H7	Aid agency: type I (baseline with type II)	0.09	0.28	0.00	1.00
H7	Aid agency: type II (baseline with type I)	0.30	0.46	0.00	1.00
H7	Aid agency: type III	0.43	0.50	0.00	1.00
H7	Aid agency: type IV	0.13	0.34	0.00	1.00
H8	Perceived corruption control	7.70	1.57	2.99	10.00
H9	Government debt as of GDP	64.21	33.84	3.41	196.34
H10	KOF index	88.32	9.93	45.34	98.43
H11	Refugees (in thousand)	105.17	209.75	0.00	1420.00
H12	Development index	-0.21	0.19	-1.17	0.17
H13	EU member	0.65	0.48	0.00	1.00
H14	Traditional donor (baseline)	0.65	0.48	0.00	1.00
H14	Traditional latecomer	0.17	0.38	0.00	1.00
H14	New Western donor	0.17	0.38	0.00	1.00
H14	Number of recipient countries	93.19	38.35	0.00	155.00
H15	Colonial history	0.57	0.50	0.00	1.00
H16	Multilateral assessment	0.05	0.21	0.00	1.00
C	GNI (in trillion USD)	1.50	2.63	0.02	15.50
C	Population (in million)	39.10	60.20	0.38	312.00
C	Aid underreporting	0.28	0.31	0.00	1.00
B&P	Trade openness (% GDP)	78.54	50.63	15.35	333.53
B&P	Social expenditure (% GDP)	21.04	5.80	2.70	35.50
E	Deficit as of GDP	2.51	3.58	-5.85	19.10
E	Unemployment rate	6.92	3.44	1.16	21.67
E	Economic growth rate	1.62	2.60	-8.97	10.33
E	Output gap (% GDP)	0.22	2.70	-8.80	9.78
E	Financial crisis	0.16	0.37	0.00	1.00
C	Other aid (in million USD)	4990.00	6520.00	56.70	36100.00
C	Multilateral aid (in million USD)	1330.00	1380.00	0.00	6880.00
C	Bilateral aid (in million USD)	3680.00	5450.00	0.00	31500.00

N=529

Missingness map for the original dataset

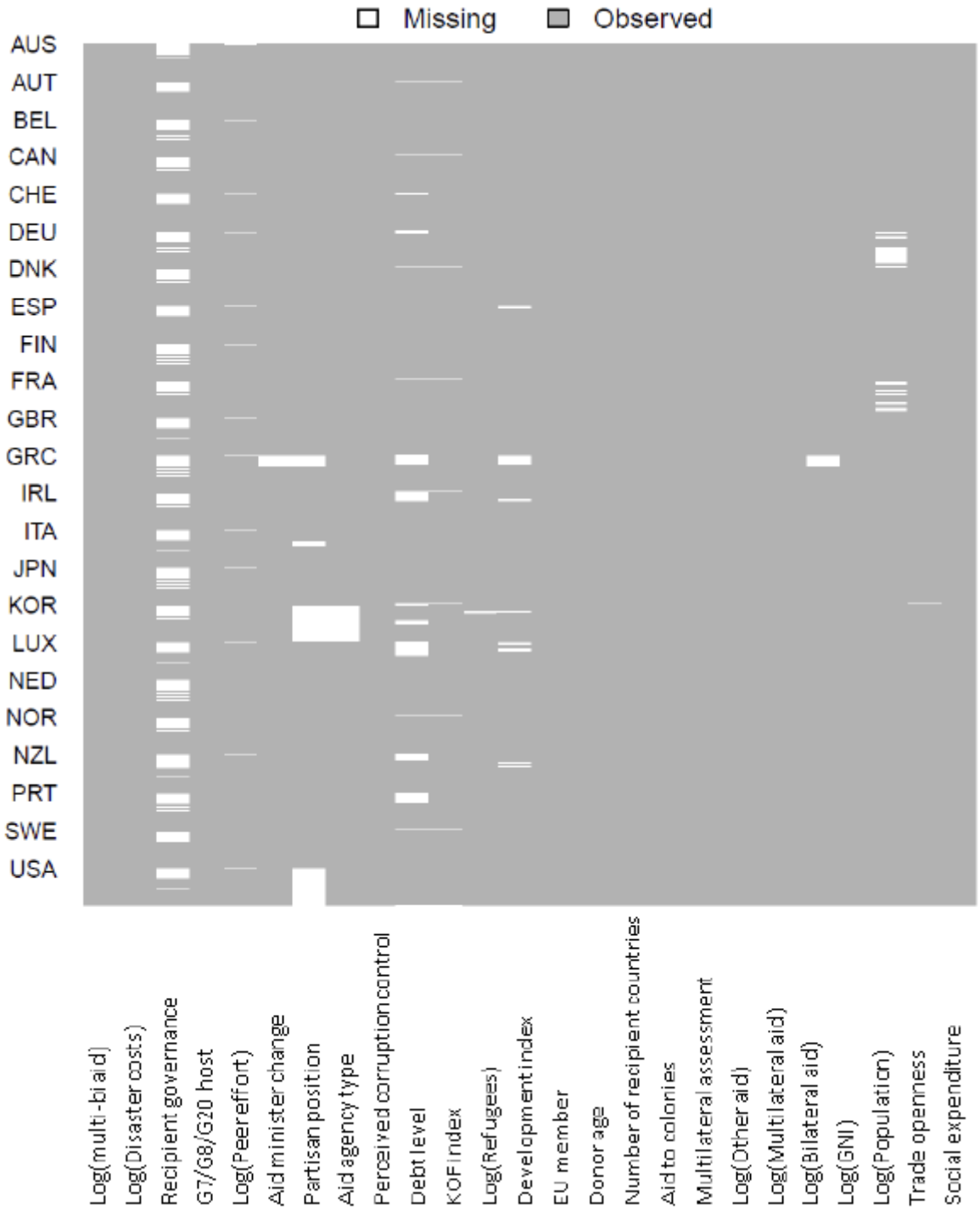

Table 5: Correlation matrix

	y	H1	H2	H3	H4	H5	H6	H8	H9	H10	H11	H12	H14	H15	H16	A	B	C	D	E	F	G	H	I	J	K
y	1.00																									
H1	0.31	1.00																								
H2	-0.20	-0.12	1.00																							
H3	0.07	0.05	-0.01	1.00																						
H4	0.53	0.55	-0.17	0.07	1.00																					
H5	-0.05	0.03	-0.03	0.05	0.06	1.00																				
H6	-0.05	0.00	0.02	0.11	0.04	0.10	1.00																			
H8	0.30	-0.01	0.04	-0.08	-0.02	-0.13	0.01	1.00																		
H9	0.11	0.14	-0.14	0.11	0.14	0.13	0.04	-0.35	1.00																	
H10	0.57	0.27	-0.18	0.08	0.37	0.03	-0.13	0.02	0.41	1.00																
H11	0.41	0.01	-0.12	0.14	0.00	-0.13	-0.01	0.42	0.14	0.44	1.00															
H12	0.38	0.47	-0.15	0.11	0.84	0.06	0.04	-0.14	0.18	0.30	0.02	1.00														
H14	0.28	0.17	-0.25	0.20	0.31	0.14	0.12	-0.02	0.24	0.35	0.39	0.45	1.00													
H15	-0.05	-0.01	0.12	0.08	-0.06	0.01	-0.02	-0.16	-0.05	0.18	0.02	-0.07	-0.04	1.00												
H16	0.16	0.12	-0.05	0.04	0.22	0.00	0.11	0.17	-0.08	0.14	0.15	0.13	0.00	0.16	1.00											
A	0.22	0.07	-0.04	0.26	0.14	0.12	0.12	-0.18	0.34	0.40	0.50	0.31	0.69	0.15	0.04	1.00										
B	0.06	0.02	0.00	0.25	0.03	0.14	0.11	-0.36	0.36	0.33	0.33	0.24	0.59	0.24	0.00	0.94	1.00									
C	-0.76	-0.27	0.15	-0.09	-0.52	-0.01	0.02	-0.16	-0.23	-0.53	-0.37	-0.36	-0.35	-0.10	-0.13	-0.32	-0.18	1.00								
D	0.57	0.55	-0.18	0.07	0.98	0.06	0.04	0.01	0.14	0.38	0.02	0.84	0.32	-0.08	0.24	0.14	0.03	-0.55	1.00							
E	0.53	0.53	-0.18	0.07	0.95	0.06	0.06	0.01	0.13	0.32	0.02	0.82	0.29	-0.08	0.25	0.14	0.03	-0.52	0.97	1.00						
F	0.49	0.53	-0.18	0.07	0.90	0.06	0.07	0.01	0.13	0.28	0.02	0.78	0.27	-0.07	0.24	0.13	0.03	-0.48	0.92	0.99	1.00					
G	0.02	0.09	-0.13	-0.12	0.17	-0.06	-0.06	0.17	-0.23	-0.27	-0.23	0.00	-0.19	-0.17	0.01	-0.61	-0.69	0.02	0.18	0.17	0.16	1.00				
H	0.32	0.13	-0.12	-0.01	0.16	-0.06	-0.12	0.30	0.32	0.42	0.46	0.06	0.03	0.01	0.16	-0.11	-0.21	-0.32	0.17	0.18	0.18	0.13	1.00			
I	0.35	0.16	0.01	0.13	0.21	0.10	0.04	0.22	0.14	0.39	0.36	0.16	0.57	0.09	0.08	0.52	0.40	-0.45	0.23	0.20	0.17	-0.17	0.16	1.00		
J	0.36	0.17	0.00	0.13	0.20	0.11	0.02	0.18	0.18	0.42	0.37	0.14	0.55	0.12	0.10	0.49	0.38	-0.46	0.22	0.19	0.17	-0.16	0.22	0.99	1.00	
K	0.33	0.15	0.02	0.13	0.19	0.10	0.04	0.23	0.12	0.37	0.36	0.15	0.57	0.10	0.08	0.53	0.41	-0.44	0.21	0.18	0.16	-0.18	0.14	1.00	0.97	1.00

Notes: Correlation matrix contains all main time-varying variables as used in the fixed-effects specifications.

- y Log(Multi-bi aid)
- H1 Log(Disaster costs)
- H2 Recipient governance
- H3 G7/G8/G20 host

H4	Log(Peer effort)
H5	Aid minister change
H6	Partisan position
H8	Perceived corruption control
H9	Government debt as of GDP
H10	KOF index
H11	Log(Refugees)
H12	Development index
H14	Number of recipient countries
H15	Aid to colonies
H16	Multilateral assessment
A	Log(GNI)
B	Log(Population)
C	Aid underreporting
D	Time trend
E	Quadratic time trend
F	Cubic time trend
G	Trade openness
H	Social expenditure
I	Log(Total aid)
J	Log(Multilateral aid)
K	Log(Bilateral aid)

Table 6: Regressions with random effects

		(1)	(2)	(3)	(4)
H1	Log(Damage costs)	2.838**	2.781**	2.154	2.161*
		(1.275)	(1.263)	(1.381)	(1.155)
H2	Recipient governance	-6.003***	-6.070***	-6.618***	-5.871***
		(2.237)	(2.244)	(2.195)	(2.256)
H3	G7/G8/G20 host	0.710	0.705	0.644	0.597
		(1.011)	(0.988)	(0.976)	(1.000)
H4	Log(Peer effort)	-3.213**	-3.461**	-3.030**	-3.078*
		(1.534)	(1.453)	(1.509)	(1.577)
H5	Aid minister change	-0.640*	-0.709*	-0.769**	-0.645
		(0.378)	(0.391)	(0.366)	(0.413)
H6	Partisan position	0.041	0.037	0.051	0.041
		(0.167)	(0.169)	(0.166)	(0.164)
H7	Aid agency: type III	-1.487	-1.058	-1.853*	-1.368
		(1.119)	(0.975)	(1.079)	(1.038)
H7	Aid agency: type IV	1.503	1.476	2.104*	1.526
		(1.109)	(1.146)	(1.247)	(1.088)
H8	Perceived corruption control	0.550*	0.691***	0.447	0.338
		(0.312)	(0.256)	(0.325)	(0.303)
H9	Government debt as of GDP	0.010	0.006	0.002	0.009
		(0.009)	(0.008)	(0.011)	(0.010)
H10	KOF index	0.148***	0.146***	0.126**	0.147***
		(0.046)	(0.048)	(0.056)	(0.054)
H11	Log(Refugees)	0.749***	0.635**	0.594**	0.761***
		(0.252)	(0.249)	(0.233)	(0.244)
H12	Development index	-0.171	-0.698	-0.834	-0.325
		(4.519)	(4.876)	(3.986)	(4.347)
H13	EU member	-1.801**	-2.336***	-3.265***	-1.658**
		(0.780)	(0.802)	(1.148)	(0.740)
H14	Traditional latecomer	-1.590	-1.926	-1.300	-1.404
		(1.380)	(1.433)	(1.159)	(1.686)
H14	New Western donor	2.198	1.831	2.337*	1.750
		(1.554)	(1.416)	(1.356)	(1.759)
H14	Number of recipient countries	-0.018	-0.015	-0.018	-0.016
		(0.015)	(0.016)	(0.016)	(0.015)
H15	Colonial history	-0.858	-0.944	-0.958	-0.851
		(1.139)	(1.079)	(1.142)	(1.089)
H16	Multilateral assessment	-1.303*	-1.454*	-1.293	-1.129
		(0.781)	(0.799)	(0.966)	(0.851)
C	Log(GNI)	-1.980	-2.204	-1.949	-1.892
		(1.379)	(1.480)	(1.328)	(1.352)
C	Log(Population)	1.188	1.451	1.854	1.157
		(1.088)	(1.149)	(1.185)	(1.095)

C	Aid underreporting	-12.394***	-12.691***	-12.385***	-13.013***
		(1.506)	(1.482)	(1.494)	(1.437)
C	Log(Other aid)	-0.224		-0.442	-0.266
		(0.389)		(0.496)	(0.436)
R	Log(Multilateral aid)		0.867**		
			(0.427)		
R	Log(Bilateral aid)		-0.994**		
			(0.423)		
B&P	Trade openness (% GDP)			0.005	
				(0.015)	
B&P	Social expenditure (% GDP)			0.245**	
				(0.097)	
E	Deficit as of GDP				-0.112
					(0.138)
E	Unemployment rate				-0.004
					(0.105)
E	Economic growth rate				-0.045
					(0.127)
E	Output gap (% GDP)				-0.208
					(0.134)
E	Financial crisis				-0.471
					(1.425)
	N	529	529	529	529
	N_clust	23	23	23	23
	r2_w	0.68	0.69	0.69	0.69
	r2_b	0.93	0.93	0.94	0.94

Notes: Year-fixed effects and constant included but not reported.
Significance levels: * .1 ** .05 *** .01.

Table 7: Robustness checks for random-effect regressions.

		(1)	(2)	(3)
H1	Log(Damage costs)	1.896**	1.649*	0.591**
		(0.966)	(0.911)	(0.278)
H2	Recipient governance	-6.503***	-7.068**	-1.443**
		(2.248)	(3.020)	(0.675)
H3	G7/G8/G20 host	0.505	0.450	-0.051
		(0.921)	(0.939)	(0.236)
H4	Log(Peer effort)	-3.255**	1.448	-3.567***
		(1.609)	(2.633)	(0.671)
H5	Aid minister change	-0.936**	-0.978**	-0.093
		(0.393)	(0.408)	(0.085)
H6	Partisan position	0.055	0.001	-0.048
		(0.114)	(0.097)	(0.039)
H7	Aid agency: type III	-1.168	-0.591	-0.129
		(0.713)	(0.516)	(0.253)
H7	Aid agency: type IV	0.959	0.426	0.551***
		(0.725)	(0.624)	(0.180)
H8	Perceived corruption control	0.281	0.134	0.253***
		(0.223)	(0.219)	(0.071)
H9	Government debt as of GDP	0.006	0.006	0.003
		(0.006)	(0.007)	(0.003)
H10	KOF index	0.091***	0.048**	0.061***
		(0.026)	(0.023)	(0.017)
H11	Log(Refugees)	0.385***	0.259	0.046
		(0.142)	(0.164)	(0.068)
H12	Development index	-1.066	0.824	-0.841
		(2.928)	(1.582)	(0.816)
H13	EU member	-1.207**	-1.264***	-0.478**
		(0.540)	(0.431)	(0.195)
H14	Traditional latecomer	-1.245	-1.035**	0.095
		(0.831)	(0.501)	(0.300)
H14	New Western donor	1.534	1.180	1.003***
		(0.963)	(0.914)	(0.382)
H14	Colonial history	-0.008	-0.005	0.002
		(0.009)	(0.007)	(0.003)
H15	Number of recipient countries	-0.278	-0.433	0.067
		(0.717)	(0.536)	(0.241)
H16	Multilateral assessment	-0.795	-0.089	-0.100
		(0.706)	(0.566)	(0.222)
C	Log(Population)	0.768	0.910	-0.149
		(0.721)	(0.568)	(0.330)
C	Log(GNI)	-1.560*	-1.802***	-0.316
		(0.873)	(0.659)	(0.364)

C	Aid underreporting	-8.570***	-6.573***	-1.704***
		(1.427)	(1.729)	(0.481)
C	Log(Other aid)	0.125	0.364	
		(0.340)	(0.407)	
FDN	Lagged dependent variable	0.359***	0.607***	
		(0.070)	(0.098)	
	N	506	483	521
	N_clust	23	23	23
	r2_w	0.72	0.70	
	r2_b	0.97	0.99	0.09

Notes: Year-fixed effects and constant included but not reported.
Significance levels: * .1 ** .05 *** .01.

Table 8: Regressions with donor-fixed effects

		(1)	(2)	(3)	(4)
H1	Log(Damage costs)	3.533**	3.135**	3.845***	3.343**
		(1.286)	(1.261)	(1.306)	(1.248)
H2	Recipient governance	-6.765***	-6.618***	-6.968***	-6.813***
		(1.908)	(2.169)	(1.771)	(1.874)
H3	G7/G8/G20 host	0.712	0.709	0.745	0.632
		(1.019)	(1.014)	(1.022)	(0.959)
H4	Log(Peer effort)	-1.756	-1.870	-1.438	-1.553
		(1.449)	(1.386)	(1.426)	(1.402)
H5	Aid minister change	-0.609*	-0.616*	-0.580*	-0.622
		(0.345)	(0.350)	(0.337)	(0.377)
H6	Partisan position	0.171	0.182	0.184	0.175
		(0.153)	(0.159)	(0.153)	(0.152)
H8	Perceived corruption control	-0.354	-0.180	-0.322	-0.452
		(0.586)	(0.556)	(0.578)	(0.492)
H9	Government debt as of GDP	0.029**	0.030**	0.027**	0.037***
		(0.011)	(0.012)	(0.012)	(0.013)
H10	KOF index	0.059	0.086*	0.065	0.058
		(0.058)	(0.049)	(0.054)	(0.061)
H11	Log(Refugees)	0.437	0.317	0.581**	0.414*
		(0.256)	(0.257)	(0.258)	(0.231)
H12	Development index	1.435	0.492	0.688	1.415
		(4.133)	(4.489)	(4.261)	(4.374)
H14	Number of recipient countries	0.005	0.009	0.007	0.005
		(0.016)	(0.016)	(0.015)	(0.015)
H16	Multilateral assessment	-2.726***	-2.568**	-2.548***	-2.227**
		(0.929)	(1.023)	(0.811)	(1.033)
C	Log(GNI)	-10.837***	-7.409***	-12.115***	-14.391***
		(2.526)	(2.500)	(2.499)	(3.214)
C	Log(Population)	-14.750	-12.550	-12.543	-11.367
		(10.222)	(9.881)	(9.902)	(9.629)
C	Aid underreporting	-13.315***	-13.894***	-13.586***	-13.519***
		(1.630)	(1.528)	(1.589)	(1.681)
C	Log(Other aid)	1.417*		1.720**	1.638**
		(0.719)		(0.718)	(0.752)
R	Log(Multilateral aid)		0.774*		
			(0.396)		
R	Log(Bilateral aid)		-0.965**		
			(0.401)		
B&P	Trade openness (% GDP)			-0.033**	
				(0.014)	
B&P	Social expenditure (% GDP)			0.019	
				(0.097)	
E	Deficit as of GDP				-0.006
					(0.175)

E	Unemployment rate				-0.191
					(0.154)
E	Economic growth rate				-0.153
					(0.111)
E	Output gap (% GDP)				-0.061
					(0.151)
E	Financial crisis				-1.233
					(1.184)
	N	529	529	529	529
	N_clust	23	23	23	23
	r2_a	0.69	0.69	0.69	0.69

Notes: Year-fixed effects, donor-fixed effects, and constant included but not reported.
Significance levels: * .1 ** .05 *** .01.

Table 9: Robustness checks for fixed-effect regressions.

		(1)	(2)	(3)
H1	Log(Damage costs)	2.186	2.175	0.537
		(1.466)	(1.481)	(0.366)
H2	Recipient governance	-7.890***	-7.949***	-1.432**
		(1.798)	(1.542)	(0.601)
H3	G7/G8/G20 host	0.426	0.438	0.065
		(0.910)	(0.809)	(0.172)
H4	Log(Peer effort)	-2.947*	-2.539	-2.093***
		(1.464)	(2.353)	(0.487)
H5	Aid minister change	-0.836**	-0.854**	-0.068
		(0.362)	(0.358)	(0.075)
H6	Partisan position	0.160	0.156	0.013
		(0.122)	(0.121)	(0.037)
H8	Perceived corruption control	-0.421	-0.441	-0.144
		(0.460)	(0.352)	(0.103)
H9	Government debt as of GDP	0.028***	0.029**	0.007**
		(0.009)	(0.012)	(0.004)
H10	KOF index	0.055	0.049	0.009
		(0.041)	(0.047)	(0.013)
H11	Log(Refugees)	0.187	0.153	0.108
		(0.159)	(0.285)	(0.167)
H12	Development index	0.350	0.233	-1.031*
		(3.070)	(2.319)	(0.592)
H14	Number of recipient countries	0.003	0.003	0.008**
		(0.010)	(0.011)	(0.004)
H16	Multilateral assessment	-2.344**	-2.318**	-0.085
		(0.922)	(1.073)	(0.252)
C	Log(Population)	-6.499	-6.134	7.567**
		(7.310)	(8.472)	(3.088)
C	Log(GNI)	-7.488***	-7.298**	1.033
		(2.244)	(3.213)	(0.918)
C	Aid underreporting	-10.419***	-10.060***	-2.086***
		(1.467)	(0.884)	(0.434)
C	Log(Other aid)	0.904	0.878	
		(0.537)	(0.668)	
FDN	Lagged dependent variable	0.274***	0.324***	
		(0.081)	(0.041)	
	N	506	506	521
	N_clust	23	23	23
	r2_a	0.72	0.15	0.13

Notes: Year-fixed effects, donor-fixed effects, and constant included but not reported.
Significance levels: * .1 ** .05 *** .01.

Table 10: Random-effect EBA

		Min. Beta	Max. beta	Mean beta	Mean t-stat	Share: 95% significance	Share above zero	Type of variable
H1	Log(Disaster costs)	2.146	3.283	2.624	1.690	0.042	1	D
H2	Recipient governance	-7.187	-5.279	-6.151	-3.505	1	0	D
H3	G7/G8/G20 host	0.511	0.988	0.743	0.869	0	1	D
H4	Log(Peer effort)	-3.222	-2.001	-2.591	-2.562	1	0	D
H5	Aid minister change	-0.747	-0.466	-0.586	-1.502	0	0	D
H6	Partisan position	-0.026	0.138	0.056	0.428	0	0.924	D
H7	Aid agency: type III	-0.018	0.565	0.290	0.891	0	0.998	F
H7	Aid agency: type IV	0.018	0.040	0.031	3.016	0.991	1	F
H8	Perceived corruption control	0.066	0.139	0.108	2.869	0.982	1	D
H9	Government debt as of GDP	0.393	0.744	0.577	2.584	0.973	1	D
H10	KOF index	0.199	2.913	1.714	0.698	0	1	D
H11	Log(Refugees)	-0.013	0.004	-0.004	-0.416	0	0.194	D
H12	Development index	-2.759	-1.345	-2.048	-1.967	0.522	0	D
H13	EU member	-1.431	0.708	-0.367	-0.251	0	0.159	F
H14	Traditional latecomer	1.611	4.486	3.098	1.792	0.308	1	F
H14	New Western donor	-3.236	-0.461	-1.753	-1.458	0.146	0	F
H14	Number of recipient countries	-3.168	-1.189	-2.248	-1.655	0.159	0	D
H15	Colonial history	-7.214	-2.547	-4.907	-2.556	0.995	0	F
H16	Multilateral assessment	-7.727	0.564	-3.991	-2.063	0.567	0.002	D
	Log(GNI)	-8.000	-1.973	-5.355	-2.954	0.995	0	F
	Log(Population)	0.785	5.439	3.311	2.303	0.756	1	F
	Log(Other aid)	-0.061	1.038	0.559	1.121	0.005	0.995	F
	Aid underreporting	-14.214	-12.426	-13.343	-15.042	1	0	F

Notes: EBA with all 4082 combinations. Year-fixed effects included but not reported. VIF control (VIF<10), at most 5 predictors from D simultaneously included.

Table 11: Fixed-effect EBA

		Min. Beta	Max. beta	Mean beta	Mean t-stat	Share: 95% significance	Share above zero	Type of variable
H1	Log(Disaster costs)	2.847	3.908	3.341	1.868	0.212	1	D
H2	Recipient governance	-7.244	-5.276	-6.219	-3.579	1	0	D
H3	G7/G8/G20 host	0.608	1.014	0.814	0.972	0	1	D
H4	Log(Peer effort)	-2.268	-1.408	-1.841	-1.830	0.264	0	D
H5	Aid minister change	-0.667	-0.475	-0.565	-1.477	0	0	D
H6	Partisan position	0.021	0.189	0.110	0.845	0	1	D
H8	Perceived corruption control	-0.525	0.079	-0.205	-0.515	0	0.040	D
H9	Government debt as of GDP	0.025	0.043	0.035	2.853	1	1	D
H10	KOF index	0.038	0.119	0.083	2.021	0.555	1	D
H11	Log(Refugees)	0.333	0.603	0.464	1.830	0.294	1	D
H12	Development index	0.789	3.625	2.329	0.940	0	1	D
H14	Number of recipient countries	-0.0004	0.018	0.010	1.051	0	0.999	D
H16	Multilateral assessment	-3.758	-1.855	-2.721	-2.509	0.852	0	D
	Log(GNI)	-14.740	-8.760	-11.649	-4.237	1	0	F
	Log(Population)	-22.158	-6.199	-13.370	-1.857	0.4	0	F
	Log(Other aid)	1.104	1.747	1.450	2.444	0.937	1	F
	Aid underreporting	-14.814	-13.214	-13.992	-15.410	1	0	F

Notes: EBA with all 4082 combinations. Two-way fixed effects on donors and years included but not reported. VIF control (VIF<10), at most 5 predictors from D simultaneously included.

Table 12: Fixed-effect Seemingly Unrelated Regressions

		bilateral (1)	multilateral (2)	multi-bi (3)	t-test (3)-(1)	t-test (3)-(2)
H1	Log(Damage costs)	-1.464	-1.204	3.615**	5.078***	4.819**
		(0.923)	(0.923)	(1.777)		
H2	Recipient governance	1.967**	2.400***	-6.659***	-8.625***	-9.058***
		(0.927)	(0.927)	(1.784)		
H3	G7/G8/G20 host	-0.150	-0.167	0.724	0.874	0.891
		(0.429)	(0.429)	(0.826)		
H4	Log(Peer effort)	-1.031**	-1.012*	-1.658*	-0.626	-0.645
		(0.521)	(0.521)	(1.003)		
H5	Aid minister change	0.132	0.215	-0.577	-0.709*	-0.791**
		(0.196)	(0.196)	(0.378)		
H6	Partisan position	-0.029	-0.027	0.188	0.217	0.215
		(0.068)	(0.068)	(0.130)		
H8	Perceived corruption control	0.230	0.199	-0.248	-0.478	-0.447
		(0.207)	(0.207)	(0.398)		
H9	Government debt as of GDP	0.016**	0.016**	0.027**	0.012	0.011
		(0.007)	(0.007)	(0.013)		
H10	KOF index	0.040*	0.050**	0.087**	0.047	0.037
		(0.022)	(0.022)	(0.041)		
H11	Log(Refugees)	-0.505***	-0.498***	0.419	0.924**	0.917**
		(0.133)	(0.133)	(0.255)		
H12	Development index	-4.220***	-4.512***	1.073	5.293	5.585
		(1.279)	(1.280)	(2.463)		
H14	Number of recipient countries	0.031***	0.033***	0.004	-0.027	-0.028
		(0.005)	(0.005)	(0.010)		
H16	Multilateral assessment	0.740	0.745	-2.705**	-3.445***	-3.451***
		(0.577)	(0.577)	(1.111)		
C	Log(Population)	2.487	1.233	-13.995*	-16.483	-15.229
		(3.927)	(3.929)	(7.559)		
C	Log(GNI)	1.337	0.811	-8.072***	-9.409***	-8.883***
		(1.368)	(1.368)	(2.633)		
C	Aid underreporting	-1.519***	-1.312***	-13.444***	-11.925***	-12.132***
		(0.485)	(0.485)	(0.933)		
	Adjusted R2	0.58	0.54	0.78		
	Donors	23	23	23		
	Observations	529	529	529		

Notes: Year-fixed effects, donor-fixed effects, and constant included but not reported. Estimated using *suest* in Stata. Significance levels: * .1 ** .05 *** .01

Table 13: Random-effect Seemingly Unrelated Regressions

		bilateral (1)	multilateral (2)	multi-bi (3)	t-test (3)-(1)	t-test (3)-(2)
H1	Log(Damage costs)	-0.431	-0.406	2.857**	2.934*	2.938*
		(0.654)	(0.612)	(1.285)		
H2	Recipient governance	2.788	2.968	-6.267***	-9.323***	-9.485***
		(2.037)	(1.892)	(2.206)		
H3	G7/G8/G20 host	0.055	0.051	0.695	0.549	0.558
		(0.172)	(0.182)	(0.997)		
H4	Log(Peer effort)	-1.153	-1.083	-3.254**	-1.925	-2.007
		(1.145)	(1.144)	(1.524)		
H5	Aid minister change	0.182*	0.275***	-0.652*	-0.873**	-0.963**
		(0.098)	(0.088)	(0.382)		
H6	Partisan position	-0.068	-0.080	0.035	0.147	0.156
		(0.087)	(0.088)	(0.169)		
H7	Aid agency: type III	-0.005	-0.469	-1.461	-1.136	-0.693
		(0.414)	(0.470)	(1.092)		
H7	Aid agency: type IV	-0.535	-0.441	1.626	2.621	2.497*
		(0.340)	(0.352)	(1.069)		
H8	Perceived corruption control	0.696***	0.549**	0.476**	-0.331	-0.178
		(0.215)	(0.216)	(0.237)		
H9	Government debt as of GDP	-0.001	0.003	0.010	0.019	0.014
		(0.006)	(0.006)	(0.008)		
H10	KOF index	0.038	0.047*	0.148***	0.108	0.099
		(0.024)	(0.026)	(0.046)		
H11	Log(Refugees)	-0.314**	-0.237*	0.741***	0.947***	0.877***
		(0.122)	(0.130)	(0.251)		
H12	Development index	-5.805**	-6.161**	-0.272	6.607	6.892
		(2.764)	(2.673)	(4.517)		
H13	EU member	0.217	0.817***	-1.843**	-2.245**	-2.834***
		(0.280)	(0.289)	(0.785)		
H14	Traditional latecomer	-0.968**	-0.716	-1.584	-1.030	-1.254
		(0.475)	(0.461)	(1.413)		
H14	New Western donor	0.227	0.689	2.203	1.153	0.746
		(1.029)	(0.984)	(1.557)		
H14	Number of recipient countries	0.034**	0.034**	-0.019	-0.052**	-0.052**
		(0.017)	(0.016)	(0.015)		
H15	Colonial history	0.490	0.552	-0.952	-1.835	-1.871
		(0.472)	(0.467)	(1.076)		
H16	Multilateral assessment	-0.038	0.079	-1.347*	-1.023	-1.159
		(0.317)	(0.267)	(0.809)		
C	Log(Population)	-0.318	-0.660*	1.194	1.620	1.955
		(0.351)	(0.400)	(1.093)		
C	Log(GNI)	1.146***	1.367***	-2.157	-3.586*	-3.788*
		(0.383)	(0.447)	(1.447)		
C	Aid underreporting	-1.104*	-0.902*	-12.375***	-11.489***	-11.677***

	(0.607)	(0.541)	(1.523)
Adjusted R2	0.59	0.55	0.76
Donors	23	23	23
Observations	529	529	529

Notes: Year-fixed effects and constant included but not reported. Estimated using *gsem*.
Significance levels: * .1 ** .05 *** .01