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Does private aid follow the flag? An empirical analysis of humanitarian assistance

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1 | INTRODUCTION

Non-state donors are becoming increasingly more important for providing funds in response to humanitarian needs, fostering economic development and shaping development policy (Desai & Kharas, 2008, 2018; Esser & Bench, 2011; Metzger, Nunnenkamp, & Mahmoud, 2010; Werker & Ahmed, 2008). The Bill and Melinda Gates Foundation, for example, contributed over US\$26.1 billion over the 2009–2017 period, which is a tenth of the official aid budget of the United States, the foundation's home country (OECD, 2019). Policymakers, development scholars and recipient governments relish such private aid flows, which originate from non-governmental organisations (NGOs), companies and charitable individuals, among others (Lundsgaarde, 2013; White, 2012). In paragraph 41 of the 2030 Agenda for Sustainable Development, the international community “acknowledges[s] the role of the diverse private sector, ranging from micro enterprises to cooperatives to multinationals, and that of civil society organizations and philanthropic organizations in the implementation of the new Agenda” (United Nations, 2015).

This paper focuses on the role of private donors in humanitarian assistance. The growing frequency and severity of natural disasters and militarised conflicts raises demand for additional financial resources in response to humanitarian crises (Global Humanitarian Assistance, 2018). Official donors are often unable or unwilling to provide the required funds. Becerra, Cavallo, and Noy (2014) and

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Becerra, Cavallo, and Noy (2015) show that official aid surges in the aftermath of natural disasters are low compared to the economic damages caused. A prominent example is the aftermath of the 2004 Indian Ocean earthquake and tsunami where the majority of humanitarian assistance originated from private sources.¹ In fact, US companies alone mobilised more than US\$565 million (Thomas & Fritz, 2006). Furthermore, official bilateral aid is generally perceived as bureaucratic, slow and politically driven (e.g., Lancaster, 2007). Previous empirical research finds that the allocation patterns of official aid are not only determined by recipient countries' needs and performance in terms of their development policies but also by the political and economic interests of the government of the donor country (e.g., Alesina & Dollar, 2000; Faye & Niehaus, 2012; Hoeffler & Outram, 2011). This finding has been confirmed by studies that focus on humanitarian aid exclusively (e.g., Annen & Strickland, 2017; Bommer, Dreher, & Perez-Alvarez, 2018; Fink & Redaelli, 2011; Raschky & Schwindt, 2012).

Hence, private donors, and in particular NGOs, have often been perceived as more need-oriented than official donors. For example, Desai and Kharas (2008: 161) highlight that “while official donor allocations are influenced by, among other things, political coalitions, policy concerns, and colonial ties, NGO allocations are assumed to be influenced by need”. In addition, private donors are supposed to have a comparative advantage in difficult environments as they can more easily circumvent corrupt governments and deal with local target groups directly (Riddell, Bebbington, & Peck, 1995).² However, critics suspect that private donors rather imitate the allocation of official aid. In the case of NGOs, being financially dependent on official financiers is expected to undermine the autonomy of NGOs in allocating aid. According to Edwards and Hulme (1996: 970), the relations of NGOs with state agencies are “too close for comfort”—with NGOs often becoming “the implementer of the policy agendas” of governments. Furthermore, official financiers may predominantly cofinance NGO projects that are located in their favoured countries (Dreher, Nunnenkamp, Öhler, & Weisser, 2012). Along similar lines, corporations may provide humanitarian assistance to their government's favoured locations to obtain favours in return. In this spirit, Bertrand, Bombardini, Fisman, and Trebbi (2020) describe corporate philanthropy as an alternative to campaign contributions and lobbying activities for companies that seek to influence policies.

This paper studies the determinants of the allocation of humanitarian aid made by NGOs and corporate donors from a large set of countries. More specifically, we test whether private aid tends to follow the humanitarian aid allocation pattern made by the government of their home country, that is, whether private humanitarian aid tends to “follow the flag”. A better understanding of the extent to which private donors follow their home countries' official aid allocation pattern enables us to assess the independence of private aid decisions. If private donors closely follow the aid allocation made by official donors, they might not be able to exploit their supposed advantage of being more need-oriented than their official counterparts. Moreover, if official and private donors are clumping together their aid activities, this cements the grouping of recipient countries into donor “darlings” and “orphans” (Davies & Klasen, 2019) and increases the need for donor coordination within recipient countries.

Although research on foreign aid has been largely focused on bilateral and multilateral official donors, we are not the first to study the aid allocation of private aid donors. However, previous research has only analysed private aid giving from single donor organisations, from single donor countries, in

¹See Kim, Nunnenkamp, and Bagchi (2016) on an analysis of private donations to NGOs as a response to the tsunami.

²In line with this idea, many donor governments tend to use NGOs as implementers of aid projects to bypass governments in badly governed recipient countries (Acht, Mahmoud, & Thiele, 2015; Dietrich, 2013, 2016).



single recipient countries or to single disaster events (e.g., Büthe, Major, & De Mello e Souza, 2012; Dreher, Nunnenkamp, Öhler, et al., 2012; Dreher, Nunnenkamp, Thiel, & Thiele, 2012; Metzger et al., 2010). Our paper is closely related to Fink and Redaelli (2011) who focus on humanitarian assistance specifically, as we do in the present study. They analyse the allocation of aggregated private humanitarian aid across recipient countries. However, they do not disaggregate non-state aid into corporate and NGO aid, nor do they take account of the home country of the private entity, that is, they only study the aggregate “private aid” and its correlates. Likewise, Neumayer (2005) analyses the allocation of food aid by an NGO aggregate, which prevents the study from testing whether NGOs follow donor country-specific interests.

We thus contribute to the literature in several ways. First, our study is the first multidonor country multirecipient country panel analysis that tests whether private aid tends to follow the aid allocation of the respective official donor. For this purpose, we construct a database that offers information on the country in which the headquarters of the private donors are located and combine it with humanitarian aid data provided by the Financial Tracking System (FTS) of the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA). Second, we improve the identification strategy compared to previous studies by employing panel data methods controlling for various kinds of heterogeneity, particularly across recipient country-year pairs. This minimises the risk of spuriously attributing a positive correlation caused by common factors that affect both official and private humanitarian aid giving to a causal relationship between official aid of the home country and private aid. Third, to further reduce endogeneity concerns, we use a novel instrumental variable (IV) that relies on variation in the leadership of ministries responsible for official humanitarian aid. Finally, our study is the first analysis that compares the aid allocations of NGOs and corporate donors.

We also compare the poverty and need orientation of private donors to that of official donors. Following humanitarian motives, altruistic donors are expected to provide more humanitarian assistance to needier countries (e.g., Büthe et al., 2012; Fink & Redaelli, 2011). Countries with good policies and good institutions could either get more aid flows as a reward (e.g., Burnside & Dollar, 2000) or less aid since good institutions increase the potential ability of countries to deal with humanitarian crises themselves (e.g., Fink & Redaelli, 2011). However, the comparative advantage of working in difficult environments may lead NGOs to engage themselves in countries with high corruption and conflict potential (e.g., Riddell et al., 1995). Finally, private and official donors' aid patterns are expected to be shaped by institutional, political and economic self-interests such as vote buying in international organisations or export promotion (e.g., Alesina & Dollar, 2000; Dreher, Nunnenkamp, & Thiele, 2008; Drury, Olson, & Van Belle, 2005; Edwards & Hulme, 1996).

Our results show that the humanitarian aid allocation of private donors tends to follow the allocation of the respective official donor. This finding holds when we use a binary variable or a recipient's share in a donor's total aid allocation as dependent variable. It is robust against the inclusion of various fixed effects and tackling remaining endogeneity concerns with IV estimations. A disaggregated analysis shows that this result holds for the allocations of both NGOs (including non-corporate private foundations) and corporate donors. Donor country-specific estimations reveal statistically significant evidence that private donors from China, Sweden, the United Kingdom and the United States tend to “follow the flag”.

Our paper proceeds as follows. Section 2 situates our paper in the burgeoning literature on private donors, elaborates on potential differences in the aid allocation patterns between private and official donors and discusses why NGOs and corporations have incentives to follow their government's aid allocation. In Section 3, we introduce a new data set on the home countries of private donors, all other data used, descriptive statistics and our estimation strategy. Section 4 presents our results. We summarise and conclude in Section 5.

2 | BACKGROUND

2.1 | NGOs

Official donors are often criticised since their projects are widely perceived as failing “to reach down and assist the poor” (Riddell & Robinson, 1995:2). Meanwhile, NGOs are commonly believed to be more poverty- and need-oriented. Furthermore, NGOs are supposed to have a comparative advantage operating in difficult environments as they can more easily circumvent corrupt governments and deal with local target groups directly (Riddell et al., 1995). Finally, NGOs are supposed to be more altruistic than official donors, that is, their aid allocation is less likely to be shaped by commercial or political interests of donor countries (Nancy & Yontcheva, 2006:3).

However, critics have called these suppositions into question. Risk aversion may actually weaken the incentives of NGOs to work in difficult environments, where extreme poverty and high levels of corruption decrease the chance of success for projects. NGOs generally need to compete for funds, urging them to strategically allocate aid to where the probability of failure is low (Bebbington, 2004). The principal-agent model of Fruttero and Gauri (2005) shows that the dependence of NGOs (the agents) on external funding (from official donors as principals) leads them to abandon their objectives, such as poverty alleviation, to some extent in favour of organisational imperatives related to future NGO operations and sustained funding. This occurs even if the principals and agents share the same development objectives. The asymmetric information of the principals on NGO projects implies that NGOs are tempted to produce visible results to assure future funding. Hence, NGOs tend to avoid locations where “the risk of a failure is so high that it could jeopardize the flow of funding from donors” (Fruttero & Gauri, 2005: 761). Likewise, choosing locations where other donors are also present is supposed to render it more difficult for principals to assess the performance of NGOs and may thus help prevent financial sanctions. This may lead NGOs to imitate the allocation of official aid.

More so, the financial dependence of NGOs on their official financiers is expected to undermine their autonomy in allocating aid. According to Edwards and Hulme (1996: 970), the relations of NGOs with state agencies are “too close for comfort”—with NGOs often becoming “the implementer of the policy agendas” of governments. Furthermore, the official financier may predominantly cofinance NGO projects that are located in their favoured countries (Dreher, Nunnenkamp, Öhler, et al., 2012). As a consequence, the allocation of NGO aid may closely resemble the allocation of the official financier.

This is, however, not to say that there may not also be other reasons for NGO aid to follow official aid in its allocation. Important synergies may be generated by the joint presence of official and private donors of the same country. For example, clustering can have important practical benefits in logistics, security, enhanced local capacities and more leverage on local authorities.

Despite the importance of NGO aid, and in stark contrast to the extensive literature on official aid provided by governments and multilateral institutions, the empirical literature on NGO aid is small. Most research on NGO aid focuses either on NGOs from one particular donor country (Dreher, Nunnenkamp, Öhler, et al., 2012, and Nunnenkamp & Öhler, 2011 on Germany; Dreher, Mölders, & Nunnenkamp, 2010 on Sweden; Koch, 2009, and Loman, Pop, & Ruerd, 2010 on the Netherlands; Dreher, Nunnenkamp, Thiel, et al., 2012, and Nunnenkamp, Weingarth, & Weisser, 2009 on Switzerland; Büthe et al., 2012 on the United States), a limited subsample of NGOs (Koch, Dreher, Nunnenkamp, & Thiele, 2009 on 61 NGOs of the OECD; Nancy & Yontcheva, 2006 on NGO aid financed by the European Union) or on the allocation of NGO aid within a particular recipient country (Fruttero & Gauri, 2005 in Bangladesh; Öhler, 2013 in Cambodia). The overall finding is that NGOs



are not more poverty-oriented than official donors.³ With respect to the hypothesis that NGOs tend to follow their official financier, most studies show a significant and positive relationship between official aid and NGO aid (Dreher, Nunnenkamp, Öhler, et al., 2012; Dreher, Nunnenkamp, Thiel, et al., 2012; Koch, 2009; Koch et al., 2009). An exception is Nancy and Yontcheva (2006) whose results do not point in this direction. However, none of these studies test their hypotheses on a multidonor country multirecipient country panel, nor do they tackle the endogeneity concerns with respect to official aid of the home country in a satisfactory manner.⁴

2.2 | Corporate donors

Corporate aid in response to humanitarian catastrophes is on the rise. Companies and their foundations frequently provide cash donations, in-kind goods and access to critical infrastructure when such crises hit.⁵ Despite its growing importance, the scientific literature on both corporate foreign aid in general and corporate humanitarian aid in particular is small (see Büthe & Cheng, 2013 for an overview).

Previous research has shed some light on potential motives for corporations to provide (humanitarian) aid. First of all, in the words of Thomas and Fritz (2006), “firms feel increasing pressure from consumers, employees, and a growing segment of the investment community to demonstrate good corporate citizenship”.⁶ The benefits that accrue to the companies come in the form of satisfied employees that feel a sense of contribution and in the form of good publicity that appeals to customers. Humanitarian aid is thus a tool to boost the image of the donor company. Zhang, Zhu, Yue, and Zhu (2010) find a positive association between a company's advertising intensity and its aid giving after the 2008 Sichuan earthquake, which they interpret as serving the common purpose of building customer loyalty. While cash transfers need to be made public in media outlets, companies can more directly benefit from the distribution of branded products (Thomas & Fritz, 2006). This latter tool is particularly relevant to companies that are active in sectors central to humanitarian relief, such as food and health care.

Corporate humanitarian aid is arguably a function of the geography of a corporation's international activities. Muller and Whiteman (2009) argue that a company is more likely to provide disaster aid (and provides larger amounts) if a catastrophe happens in its “home region”, that is, the world region where the company has its headquarters. Along similar lines of reasoning, they predict that more

³Similarly, Esser and Bench (2011) find that the aid allocations of private foundations are not associated with health priorities, while official aid allocations are weakly but significantly correlated with the latter. Note that we classify non-corporate private foundations as NGOs.

⁴Dreher, Nunnenkamp, Öhler, et al. (2012) and Dreher, Nunnenkamp, Thiel, and Thiele (2012) use voting alignment between donor and recipient country in the UNGA as an IV for official aid. However, UNGA voting as a proxy for political proximity may also affect the allocation of NGO aid directly, for example, if NGOs share the political preferences of the government or if they are financially dependent on the state.

⁵White (2012) investigates corporate responsiveness to natural disasters by focusing on several case studies over the last decade and providing evidence from expert interviews. She finds that “[c]orporate engagement in natural disaster response has grown significantly in both scale and diversity during the last decade. Today, it is a central component of the international response machinery and is becoming more and more important with each new disaster” (White, 2012: V).

⁶Unsurprisingly, corporate donors face accusations that their aid is targeted at the most most publicised disasters rather than the most severe catastrophes (Thomas & Fritz, 2006).

corporate support is delivered to the company's "host region", that is, the world region where the company has a local presence. Indeed, their empirical results for the Fortune Global 500 firms support these hypotheses. With respect to aid effectiveness, Ballesteros, Useem, and Wry (2017) show that locally active firms engaging in disaster relief have a positive impact on disaster recovery.

Beyond their narrow corporate interests, companies can more indirectly benefit if humanitarian assistance helps dampen the adverse consequences of humanitarian crisis on commerce. Gassebner, Keck, and Teh (2010) find that natural disasters are harmful for trade with countries suffering from a catastrophe. As Thomas and Fritz (2006) note, "[m]any companies are moved to participate in humanitarian efforts because they have seen the staggering losses inflicted when disasters interrupt the flow of business". One would thus expect that more aid is directed to countries where a company's most important trading partners are located.

There are several reasons why one would expect corporate aid to "follow the flag".⁷ First, official and corporate donors may provide aid in a similar manner as they have similar preferences and share similar interests, such as functioning trade with the country affected by humanitarian crises. Second, corporate donors may purposefully provide aid according to their home country's interests. As Bertrand et al. (2020) argue, corporate philanthropy can be used to curry favours with lawmakers. For example, it constitutes an alternative to campaign contributions and lobbying activities in a company's toolbox to obtain favourable regulatory treatment. In contrast to its alternatives, corporate philanthropy is not as tightly regulated and harder to trace down to special interest politics.⁸ Likewise, in an effort to please the government, companies can provide humanitarian assistance, one type of corporate philanthropy, when given to its government's favoured locations. To provide an example, our own expert interview with a Chinese government official suggests that a leading US networking company provided aid in the aftermath of the 2008 Sichuan earthquake at the request of the US government to upgrade the United States' official aid effort.⁹ Gao (2011) argues that these government-business trading of favours are even more important in countries with pronounced state control over economic activities. He lists "preferential treatment in the forms of easy access to limited resources, increased accessibility to controlled information, increased possibility of avoiding fines or taxes, preferential terms including the granting of credit and protection from external competitors" among the benefits that accrue to companies from good relations with the government or public officials (Gao, 2011: 1379).

Empirical literature on corporate donors is almost inexistent. Due to data constraints, the little previous research that has been done on corporate aid focuses on small subsamples of corporate aid-like activities. Most prominently, Metzger et al. (2010) take a quantitative approach to study Nestlé's aid allocation. They use project-level data obtained from Nestlé's headquarters and find that its aid lacks focus in providing support to poor countries. They interpret this finding as the result of the probably unavoidable side-effect of aid being linked with commercial motives. Focusing on corporate humanitarian aid as we do, Muller and Whiteman (2009) analyse disaster relief giving by Fortune Global 500 firms from North America, Europe and Asia after three major disaster episodes in 2004 and 2005: the South Asia tsunami, Hurricane Katrina and the Kashmir earthquake. They find evidence

⁷Obviously, there are also reasons why government aid could follow corporate aid, for example, to secure access to economic supplies. We return to this important issue below when we address reserve causality.

⁸The empirical findings in Bertrand, Bombardini, Fisman, and Trebbi (2020) show that charitable giving of a corporate foundation is significantly larger to congressional districts at times when its representative is a member of a committee relevant to the respective corporation.

⁹Authors' interview with government official in China's Ministry of Commerce, the country's leading aid agency, in Beijing, June 2013.



that companies are more likely to aid if disasters hit their home region or areas where they maintain a local presence.¹⁰ There is also suggestive evidence that corporate aid pays off as a marketing tool for companies. Analysing the 2008 Sichuan earthquake, Gao, Faff, and Navissi (2012) observe higher abnormal stock returns to donor companies if they provided products and services directly to end-consumers. The regression results in Gao (2011: 1377) show that “large firms and firms who have political ties donate a significant more to disaster relief than smaller firms and firms who do not have political ties”. As of today, however, no research work subjects the analysis of corporate aid giving patterns to a panel study for a large number of donor and recipient countries. This is what we do below.

3 | DATA AND METHOD

3.1 | Data and descriptive statistics

To analyse whether private humanitarian aid tends to “follow the flag”, we construct a new database that links each private donor to its respective home country. We build our analysis on humanitarian aid data from the Financial Tracking Service (FTS) managed by the UN Office for the Coordination of Humanitarian Affairs (UNOCHA, 2017). The FTS reports humanitarian aid flows from government donors, multilateral organisations, NGOs, private foundations and the private sector since 1992. Following Fuchs and Klann (2013) and Raschky and Schwindt (2012), we exclude data before 2000 since these are only scattered. We cover humanitarian aid flows that have at least reached the commitment stage, that is, we exclude pledges.¹¹ Taken together, these aid flows amount to US\$158.9 billion over the 2000–2016 period, of which 5.1% is provided by private donors (US\$8.1 billion).¹² In order to link the humanitarian aid flows from NGOs, private foundations and private companies to their respective home country, we had two research assistants independently assign each private donor to the country where its headquarters is located through an Internet search. If the two coders disagreed on the home country, the authors arbitrated the assigned home countries.¹³ To give an example, the largest private contributor of humanitarian aid (US\$454 million) in our sample is the Disasters Emergency Committee (DEC). It is an umbrella group of 14 leading British private charities such as the British Red Cross or Oxfam. Since its Secretariat is based in London, we code DEC’s headquarters as “United Kingdom”. Appendix 1 shows a list of the three largest private donors of humanitarian assistance by home country.

¹⁰Corroborating these findings at the subnational level, Zhang, Rezaee, and Zhu (2009) find that companies in the Sichuan province provided more aid in response to the 2008 Sichuan earthquake than companies elsewhere in China.

¹¹The information on disbursements (contribution stage) is incomplete, which is why we work with projects that have at least reached the commitment stage. According to UNOCHA, the commitment stage is “the crucial stage of humanitarian funding” (see FTS website at <https://fts.unocha.org/glossary>, accessed 26 July 2020).

¹²We define private donors as those organisations where the FTS variable *SourceOrganizationtype* is coded as either “NGO”, “Private organization/foundation” or “Red Cross/Red Crescent”. We fixed a couple of obvious coding errors in the FTS database. These and all following values are in constant 2011 US dollars.

¹³We are not able to assign a home country to 34.6% of all private aid transactions. The bulk of this (97.2%) is only coded as “Private (individuals & organizations)”, that is, we lack sufficient information to code the home country. The second most important case (0.4%) is “ACT Alliance”, which is an umbrella group of 150 churches and church-related organisations. It has seven locations without a clearly identifiable headquarters, which is why we do not attribute it to any of the seven possible home countries.

We also coded a variable to distinguish between NGOs and corporate donors. This allows us to separately run regressions for both types of private donors in our regression analysis below. We define enterprises or private non-profit entities, such as private foundations established by an enterprise or a group of enterprises, as corporate donors. Non-corporate private foundations on the other hand are classified as NGOs.¹⁴ The largest corporate donor (US\$55.7 million) is the Business Roundtable (BRT), which is an association of chief executive officers of leading US companies. Since the BRT website provides a contact address in Washington DC, we code it as “United States”. Appendix 1 lists the largest corporate private donor of all home countries in our sample.

We then aggregate the humanitarian aid activities of all private donors by their home country. We restrict our empirical analysis to donor countries which provide a significant amount of private humanitarian aid. Specifically, we consider the 23 home countries of private humanitarian aid donors whose aid flows reported to FTS amount to more than US\$10 million over the entire period.¹⁵ Table 1 shows the resulting amount of private humanitarian aid per country of origin in the period 2000–2016 and displays the amount of official humanitarian aid given by governments for comparison.¹⁶ The highest amount of private humanitarian aid originates from the United States with US\$748 million, whereas official US bilateral humanitarian aid amounts to US\$45.6 billion. The United Kingdom is just behind in second place with private humanitarian aid flows of US\$693 million, but official UK humanitarian aid is significantly lower than the support from the United States with only US\$10.2 billion. On average, the ratio between private humanitarian aid and official bilateral humanitarian aid is 0.10.¹⁷ Two outliers in this respect are Qatar and South Korea with a ratio of 1.00 and 0.62, respectively.¹⁸

Figure 1 compares the average annual number of recipient countries that receive private humanitarian aid with the corresponding number for official humanitarian aid by donor country. The overall picture is that large official donors also have very active private donors in humanitarian assistance. This is particularly true for the United Kingdom where private donors are over-proportionally active in recipient countries relative to the respective official donor when compared to other donor countries. Figure 2 compares the average annual number of donor countries of private humanitarian aid with the corresponding number for official humanitarian aid by recipient country. It seems that typical recipient countries of official humanitarian aid are also typical recipients of private humanitarian aid as the two are highly correlated. This is also visible in world maps of private and official humanitarian assistance in Figures 3 and 4.

Simple correlations between the bilateral aid allocations of official and private donors for each donor country in the 2000–2016 period tentative evidence on whether private humanitarian aid tends to “follow the flag” (see Appendix 2). The correlation is always positive and ranges between 0.02 (United Arab Emirates) and 0.57 (Spain). Rather surprisingly, the correlation in the case of China is relatively low (0.22). One could have expected that the correlation is larger in a country where economic and civil society activities are subjected to state control to a larger degree than in Western

¹⁴For example, we coded the Coca Cola Foundation as a corporate donor as it clearly belongs to a company (The Coca Cola Company) but coded the Bill & Melinda Gates Foundation as an NGO.

¹⁵This implies that we exclude 99 home countries with small humanitarian aid amounts, of which 46 have only provided aid to other countries once or twice.

¹⁶We exclude recipient countries that are classified as high-income countries according to World Bank definitions.

¹⁷See Schweinberger and Lahiri (2006) for a theoretical model that explains why the private-to-official aid ratio differs across countries.

¹⁸Without Qatar and South Korea, the ratio between private aid and official aid drops to 0.04.

**TABLE 1** Private and official humanitarian aid flows per donor country (2000–2016)

Country	Private humanitarian aid (in 1,000 US\$)	Official bilateral humanitarian aid (in 1,000 US\$)	Ratio private/official bilateral humanitarian aid
United States of America	748,420	45,620,154	0.02
United Kingdom	693,006	10,190,034	0.07
Qatar	474,072	475,809	1.00
Germany	190,802	7,759,824	0.02
Netherlands	163,864	2,703,408	0.06
Japan	138,299	6,618,350	0.02
Switzerland	122,084	2,506,593	0.05
Korea (South)	108,283	175,028	0.62
France	92,927	1,282,593	0.07
United Arab Emirates	88,818	2,797,333	0.03
Canada	70,771	4,531,018	0.02
Italy	65,031	1,304,318	0.05
Spain	60,780	1,200,924	0.05
Sweden	47,633	4,294,154	0.01
Kuwait	45,000	1,015,356	0.04
Belgium	42,440	1,218,513	0.03
Australia	35,501	1,738,287	0.02
Denmark	32,289	2,238,234	0.01
Ireland	26,539	1,034,880	0.03
China	23,397	242,988	0.10
Norway	21,569	3,627,533	0.01
Finland	15,548	919,287	0.02
Austria	10,060	188,986	0.05

Source: Own calculations based on aid data from UNOCHA (2017).

countries.¹⁹ Two other correlations are of considerable interest when taking into account previous research on the issue: in the case of Germany and Switzerland, the correlations are also rather low (0.20 and 0.11). Previous research, however, has shown a significant relationship between private and official aid for both of these European countries (Dreher, Nunnenkamp, Öhler, et al., 2012; Dreher, Nunnenkamp, Thiel, et al., 2012). Nonetheless, the relationship between the two aid types appears to be significantly stronger in other countries such as Spain (0.57), Australia (0.54) and Canada (0.47). Strikingly, the correlations between private and official humanitarian aid are essentially zero in the case of South Korea and the United Arab Emirates; it seems that the two aid types are not at all related in these two countries.²⁰

¹⁹Using Chinese customs data, Davis, Fuchs, and Johnson (2019) show that trade is more likely to “follow the flag” in the sense that it is responsive to bilateral political tensions if it is under state control.

²⁰A closer look at the data reveals that more than three quarter of private aid projects from South Korea were active in North Korea, whereas no official South Korean aid project was carried out in the neighbouring country. This provides an explanation for the essentially zero correlation (0.03) between private and official aid in the case of South Korea.

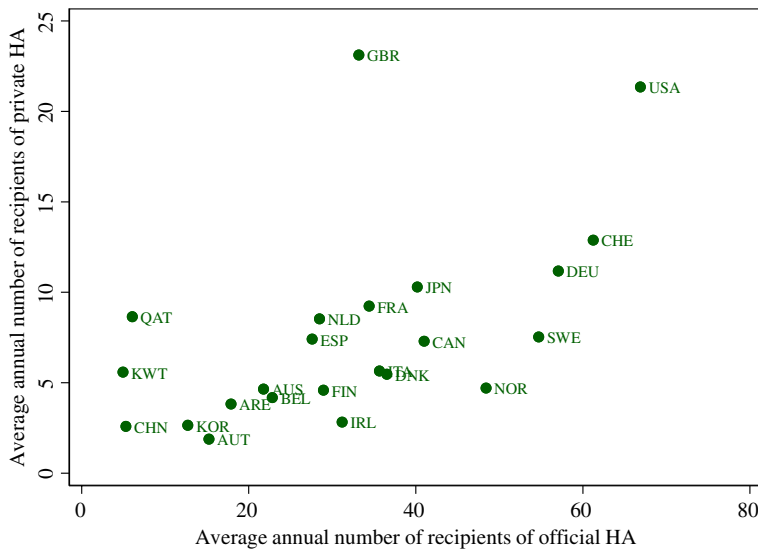
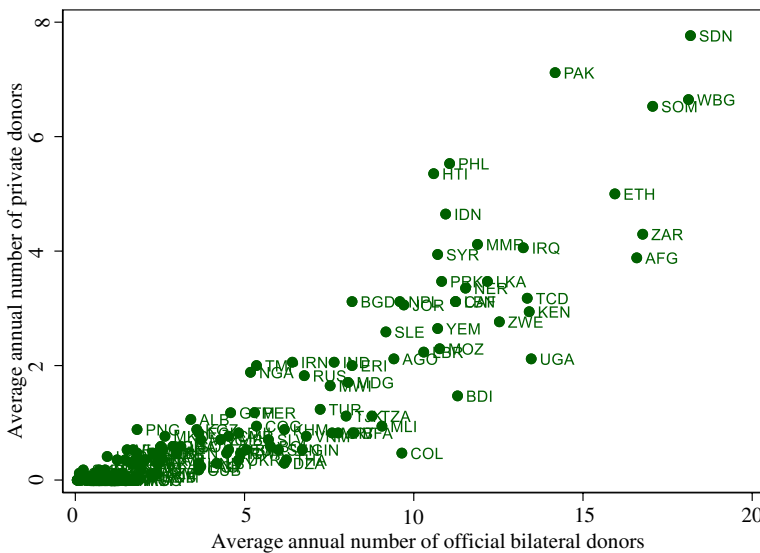


FIGURE 1 Average annual number of recipient countries of private versus official humanitarian aid by donor country (2000–2016)

Source: Authors' own calculations based on humanitarian aid data from UNOCHA (2017) [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)]





number of people affected by natural or man-made disasters, disaster-related deaths, conflict-related deaths), the difficulty of the recipient country's (institutional) environment (corruption, conflict-related deaths) and the political and economic self-interests of donor countries (voting distance in the UN General Assembly (UNGA) between donor and recipient country, recipient country temporary membership in the UN Security Council (UNSC), exports).²¹

Second, we include an official humanitarian aid variable OHA_{drt} as our main variable of interest in the estimations of private humanitarian aid in order to examine the hypothesis that the aid allocation of private organisations tends to “follow the flag”, that is, it is not independent of the allocation of official humanitarian aid of their home countries. It is a binary variable equal to one if official humanitarian aid from donor country d to recipient country r in year t is larger than zero in our baseline specification. We also show results with a continuous variable equal to a recipient country's share in a donor country's total official humanitarian aid allocation for comparison.

Rather than estimating the amount given, we focus on the more basic question of whether private organisations of a given donor country provide aid to a given recipient country in a given year. Given the large amount of zeros in our dyadic data set (94.5%), this question appears to be the more relevant one versus how much private organisations of a donor country spend in the relatively small subsample of recipient country-year combinations where they have decided to engage.²² More specifically, we perform logit estimations of the probability that a donor country provides private humanitarian aid with three alternative sets of fixed effects²³:

$$P(PHA_{drt}) = F(\alpha OHA_{drt} + X'_{rt}\beta + Z'_{drt}\gamma + \mu_{dt}) \quad (1)$$

$$P(PHA_{drt}) = F(\alpha OHA_{drt} + Z'_{drt}\gamma + \mu_{dt} + \pi_{rt}) \quad (2)$$

$$P(PHA_{drt}) = F(\alpha OHA_{drt} + X'_{rt}\beta + Z'_{drt}\gamma + \rho_{dr} + y_t) \quad (3)$$

where PHA_{drt} is a binary variable equal to one if private humanitarian aid from donor country d to recipient country r in year t is larger than zero; X_{rt} comprise the recipient country-specific explanatory variables listed above; and Z_{drt} are our dyadic donor–recipient variables (UNGA voting distance, exports).²⁴ The estimations include donor country-year fixed effects, μ_{dt} in Equation (1) in order to account for any (time-invariant and time-variant) heterogeneity across donors. This captures, for example, the donor country's economic situation or natural disasters within the donor country, both of which may affect the willingness of official and private donors to give aid abroad.

²²Another advantage of using a binary variable is that we can keep the two per cent of aid transactions that lack information on the financial value of the aid project. Nevertheless, we also discuss regression results for a recipient's share in a donor's aid budget and the amount of aid using Poisson pseudo-maximum likelihood estimations in a robustness test below.

²³In the case of the third specification, we perform conditional logit estimations in order not to encounter an incidental parameter problem.

²⁴Data have been obtained from Bailey, Strezhnev, and Voeten (2017), Dreher, Sturm, and Vreeland (2009), Guha-Sapir, Below, and Hoyois (2019), the International Monetary Fund's Direction of Trade Statistics, the World Bank's World Development Indicators and the Worldwide Governance Indicators (WGI) project (Kaufmann, Kraay, & Mastruzzi, 2004). Appendix S1 in the supplementary material lists all variables, definitions and sources of all variables employed in this study.

²⁴We lag population, per capita GDP, control of corruption, UNGA voting and exports by one year, while we employ contemporaneous values for the variables where we expect a timely response (number of people affected by disasters, disaster deaths, conflict-related deaths, temporary membership in the UNSC).

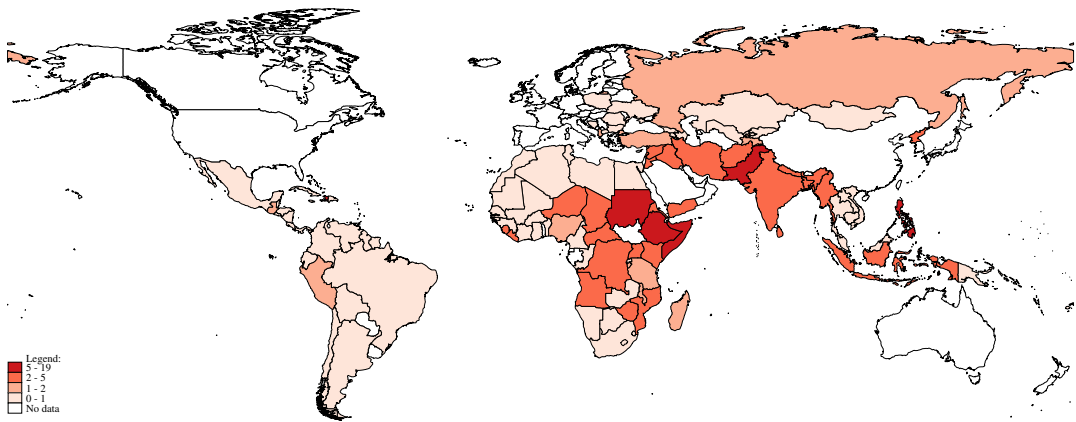


FIGURE 3 Average annual number of donor countries of private humanitarian aid by recipient country (2000–2016)

Source: Authors' own calculations based on humanitarian aid data from UNOCHA (2017) [Colour figure can be viewed at wileyonlinelibrary.com]

In Equation (2), our preferred specification, we further add recipient country-year fixed effects, π_{rt} , in order to control for any unobserved (time-invariant and time-variant) heterogeneity across recipients, including changes in humanitarian need or other relevant circumstances which may shape the aid allocation of both official and private donors.²⁵ This helps rule out that an observed positive coefficient on the official humanitarian aid dummy reflects omitted variables rather than a positive relationship between the aid allocation of private donors and the official humanitarian aid allocation of their home country.

Finally, Equation (3) includes donor–recipient-pair fixed effects, ρ_{dr} , and year fixed effects, y_t , in order to account for any unobserved (time-invariant) heterogeneity across donor–recipient pairs. Donor–recipient-pair fixed effects capture time-invariant relationships between donor and recipient countries, that is, historical and cultural ties. Standard errors are clustered at the level of recipient countries in all specifications. Appendix 3 provides descriptive statistics of the variables used in the analysis. We now turn to our results.

4 | RESULTS

4.1 | Allocation of private humanitarian aid versus official bilateral humanitarian aid

We start with Table 2 where we—for the time being—ignore interactions between official and private donors. This implies that we do not yet include official bilateral humanitarian aid as an explanatory variable in estimations of private humanitarian aid. Columns (1)–(3) present the results with the private humanitarian aid dummy variable as the dependent variable, while in Columns (4)–(6) we employ the official bilateral humanitarian aid dummy as dependent variable for comparison.²⁶

²⁶The number of observations drops significantly between the first specification and the second and third specifications because of the inclusion of further fixed effects in the logit model. For instance, the inclusion of recipient country-year fixed effects leads to the exclusion of all recipient country-year combinations where no private (official) donor was active because the fixed effects predict the outcome of the dependent variable (i.e., zero) perfectly in these cases.

²⁵Thus, the recipient country-specific explanatory variables are excluded from this specification.

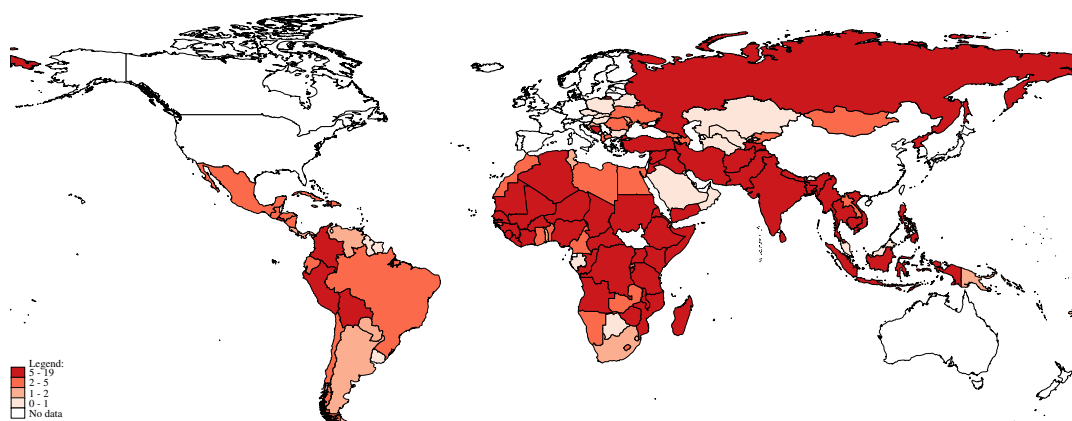


FIGURE 4 Average annual number of donor countries of official humanitarian aid by recipient country (2000–2016)

Source: Authors' own calculations based on humanitarian aid data from UNOCHA (2017) [Colour figure can be viewed at wileyonlinelibrary.com]

The first explanatory variable, population, never enters significantly in the case of private humanitarian aid, which is in line with the findings of Fink and Redaelli (2011). By contrast, it is statistically significant at the five-per cent level for official humanitarian aid when we control for donor–recipient-pair fixed effects in Column (6): countries with an increased population are more likely to receive official humanitarian aid but private donors do not seem to react to population size. Per capita GDP, an indicator of need of a country's population, is statistically significant and negative throughout the estimations, that is, richer countries are less likely to receive humanitarian aid compared to poorer countries.

The number of people affected by disasters and the number of disaster-related deaths represent more specific need indicators with respect to humanitarian crises. Both variables are statistically significant at conventional levels in the case of both official and private humanitarian aid. However, the significance levels of the number of people affected by disasters are higher in the official humanitarian aid regressions. The variable disaster-related deaths, on the other hand, are significant at the one-per cent level and positive for both private and official humanitarian aid.

The number of conflict-related deaths is another variable indicating a particular need for humanitarian interventions. At the same time, it is also an indicator for a difficult environment. The results show a statistically significant and positive effect of the number of conflict-related deaths on the likelihood of humanitarian aid throughout the estimations.

The other variable included in the estimations that reflects a difficult environment is the level of corruption. Control of corruption is only significant in Columns (1) and (4). The effect turns out to be negative, implying that countries with higher corruption levels are more likely to get supported by humanitarian aid from both official and private sources. Hence, we find some evidence that private donors are inclined towards working in difficult institutional environments but the same applies to official donors as well. It may be the case that donors, whether public or private, believe that highly corrupt public administrations are less likely to successfully deal with a humanitarian crisis on their own (Fink & Redaelli, 2011).

With respect to our variables reflecting political and economic self-interests, we find that temporary membership of the recipient country in the UNSC does not enter significantly in any of our estimations. This may seem—at least at first sight—rather surprising considering that previous research

TABLE 2 Allocation of private versus official bilateral humanitarian aid: Logit estimations

	(1)	(2)	(3)	(4)	(5)	(6)
	Private HA			Official bilateral HA		
	Logit	Logit	Conditional logit	Logit	Logit	Conditional logit
Ln population	−0.047 (0.073)		2.049 (2.122)	0.036 (0.056)		3.729** (1.597)
Ln per capita GDP	−0.388*** (0.089)		−1.691*** (0.636)	−0.575*** (0.081)		−1.354** (0.612)
Ln people affected by disasters	0.047** (0.021)		0.029* (0.016)	0.054*** (0.014)		0.061*** (0.013)
Ln disaster-related deaths	0.226*** (0.054)		0.246*** (0.046)	0.126*** (0.035)		0.198*** (0.035)
Ln conflict-related deaths	0.138*** (0.037)		0.076* (0.042)	0.215*** (0.027)		0.173*** (0.043)
Control of corruption	−0.487** (0.205)		0.231 (0.395)	−0.368** (0.170)		0.020 (0.244)
UNSC	−0.094 (0.303)		−0.079 (0.348)	0.135 (0.169)		0.147 (0.155)
UNGA voting distance	0.127 (0.153)	−0.328 (0.327)	0.034 (0.213)	0.063 (0.120)	−0.274 (0.197)	−0.481** (0.192)
Export share	1.720 (12.529)	37.430** (16.339)	6.405 (44.813)	−15.895 (13.994)	40.692*** (12.466)	−29.325 (33.017)
Donor-year FE	YES	YES	NO	YES	YES	NO
Recipient-year FE	NO	YES	NO	NO	YES	NO
Donor–recipient-pair FE	NO	NO	YES	NO	NO	YES
Year FE	NO	NO	YES	NO	NO	YES
# Recipient countries	140	117	113	140	142	138
# Observations	44,554	14,753	16,109	48,775	36,321	31,197

Notes: Standard errors clustered by recipient country in parentheses.

Abbreviation: HA, humanitarian aid.

*** $p < .01$.

** $p < .05$.

* $p < .1$.

revealed a significant and positive relationship between temporary membership in the UNSC and official aid (e.g., Kuziemko & Werker, 2006; Vreeland & Dreher, 2014). However, donors can be expected to use other forms of aid, for example, budget support, to reward recipients for their votes in the UNSC. UNGA voting turns out to be significant for official humanitarian aid in Column (6). A larger political distance between donor and recipient country is related to a lower probability of receiving official funds from that donor country. By contrast, the allocation of private humanitarian aid seems to be unaffected by the political alignment between the respective home country of private donors

TABLE 3 Does private humanitarian aid follow the flag? Logit estimations with the private humanitarian aid dummy variable as the dependent variable

	(1)	(2)	(3)	(4)	(5)	(6)
	Logit	Logit	Conditional logit	Logit	Logit	Conditional logit
Official HA dummy	2.161 ^{***} (0.147)	0.739 ^{***} (0.108)	1.819 ^{***} (0.101)			
Official HA share				11.603 ^{***} (2.084)	2.350 ^{***} (0.706)	5.741 ^{***} (1.350)
Ln population	−0.016 (0.061)		0.748 (1.676)	−0.011 (0.065)		1.835 (1.961)
Ln per capita GDP	−0.235 ^{***} (0.078)		−1.582 ^{***} (0.494)	−0.370 ^{***} (0.080)		−1.566 ^{***} (0.580)
Ln people affected by disasters	0.023 (0.019)		0.014 (0.014)	0.049 ^{**} (0.021)		0.029 [*] (0.015)
Ln disaster-related deaths	0.179 ^{***} (0.045)		0.189 ^{***} (0.038)	0.191 ^{***} (0.046)		0.218 ^{***} (0.042)
Ln conflict-related deaths	0.076 ^{**} (0.033)		0.048 (0.036)	0.097 ^{***} (0.033)		0.063 (0.041)
Control of corruption	−0.338 [*] (0.181)		0.235 (0.360)	−0.386 ^{**} (0.193)		0.250 (0.375)
UNSC	−0.142 (0.284)		−0.091 (0.303)	−0.004 (0.281)		−0.031 (0.315)
UN voting distance	0.061 (0.129)	−0.325 (0.311)	0.195 (0.194)	0.071 (0.124)	−0.326 (0.318)	0.079 (0.214)
Export share	8.341 (10.040)	33.673 ^{**} (15.915)	17.943 (35.183)	2.751 (11.215)	36.251 ^{**} (15.959)	8.954 (43.372)
Donor-year FE	YES	YES	NO	YES	YES	NO
Recipient-year FE	NO	YES	NO	NO	YES	NO
Donor–recipient-pair FE	NO	NO	YES	NO	NO	YES
Year FE	NO	NO	YES	NO	NO	YES
Number of recipient countries	140	117	113	140	117	113
Number of observations	44,554	14,753	16,109	44,554	14,753	16,109

Notes: Standard errors clustered by recipient country in parentheses.

Abbreviation: HA, humanitarian aid.

*** $p < .01$.

** $p < .05$.

* $p < .1$.

and the recipient countries (Columns (1)–(3)). This suggests that private humanitarian aid giving is decoupled from political preferences reflected in the voting behaviour in international organisations.

With respect to the economic interests of donor countries, the share of exports of a donor country going to a specific recipient country is only significant and positive in the specification in which we control for recipient country-year fixed effects (Columns (2) and (5)).²⁷ Overall, our results suggest the aid decisions of private and official donors are relatively closely aligned. We now turn to the question of whether private donors react in their humanitarian aid allocation decisions to the aid allocation pattern of official bilateral donors.

4.2 | Does private humanitarian aid follow the flag?

In Table 3, we test whether the allocation of humanitarian aid by private donors is related to the allocation of official humanitarian aid of their home country. To do so, we include the official humanitarian aid dummy variable as our main variable of interest in the estimations of private humanitarian aid. In Columns (1)–(3), we estimate the three specifications outlined in Section 3. The remaining three columns replicate our main regressions but replace the official humanitarian aid dummy variable by shares. More precisely, we use a recipient country's share in a donor country's total official humanitarian aid allocation as main variable of interest.

The results show a statistically significant and positive relationship between private and official humanitarian aid in all six specifications (at the one-per cent level). In quantitative terms, the presence of the respective official donor in a recipient country increases the likelihood of private humanitarian aid from the same country by 6.7% on average (according to the average marginal effect based on Column (2), corresponding to 37.9% of the sample mean). Likewise, an increase in a recipient country's share in a donor country's total official humanitarian aid allocations by 10 percentage points increases the likelihood of private humanitarian aid from the same country by 2.2% on average (according to the average marginal effect based on Column (5), corresponding to 12.3% of the sample mean).

Importantly, this finding confirms our hypothesis of private aid “following the flag” insofar as it shows that official and private humanitarian aid tend to go (predominantly) to the same countries.²⁸ Arguably, the result is consistent with both private donors following official donors in their allocation to countries in need and to countries without the greatest need.²⁹ A further investigation into this issue in Appendix 4 reveals complex non-linear interaction effects between official bilateral humanitarian aid and the variables reflecting a country's need (per capita GDP, number of people affected by disasters and disaster-related deaths). Generally, the results presented in Appendix 4 suggest that the relationship between official and private humanitarian aid is less tight in cases of low or extreme need.

²⁷In an extended specification, we include a donor country's FDI stock in a recipient country as an additional explanatory variable (data from UNCTAD, 2018). The results show that the variable has no significant effect on private aid, whereas it is positive and significant in the first and second specification in the case of official aid. We abstain from using the variable as a standard explanatory variable because of the high number of missing observations. Results are available on request.

²⁸A critical reader may be concerned that it was difficult for private donors *not* to “follow the flag” if official humanitarian aid goes to all countries in need. To investigate this, we divided recipient country cases into quintiles according to need. The results show that, for instance, in the case of disaster-related deaths per 10,000 inhabitants, the country cases in the highest quintile only receive official humanitarian aid from a given official donor with a probability of 37%. Even in the case of an important donor, such as the United States, this percentage is with 66% far from 100%.

²⁹We are grateful to an anonymous referee for pointing this out.



TABLE 4 Does private humanitarian aid follow the flag? Robustness tests and instrumental variables estimation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Logit	Logit	PPML	Logit	Logit	Logit	First stage	Probit
Official HA dummy	0.712 ^{***} (0.109)	1.100 ^{***} (0.234)		0.572 ^{***} (0.100)			IV	2.694 ^{***} (0.382)
Official HA share			0.744 [*] (0.409)					
Official HA dummy (<i>t</i> − 1)				0.117 (0.093)				
Official HA dummy (<i>t</i> − 2)				0.336 ^{***} (0.097)				
Official food HA dummy					0.710 (0.442)			
Official health HA dummy						0.847 ^{***} (0.160)		
Private HA dummy (<i>t</i> − 1)				0.879 ^{***} (0.113)				
Private HA dummy (<i>t</i> − 2)				0.632 ^{***} (0.128)				
UN voting distance		−0.381 (0.414)	−0.085 (0.267)	−0.346 (0.259)	−0.485 (0.522)	−0.737 (0.884)	−0.053 ^{***} (0.012)	0.033 (0.099)
Export share		6.729 (19.730)	26.395 (16.052)	28.402 ^{**} (13.017)	−23.156 (19.248)	54.405 (38.919)	2.919 ^{***} (0.769)	2.608 (5.708)
Probability of receiving HA							1.079 ^{***} (0.021)	−2.262 ^{***} (0.560)

(Continues)

TABLE 4 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Logit	Logit	PPML	Logit	Logit	Logit	IV	Probit
Gender*probability							First stage −0.077 *** (0.021)	
F-statistic								12.320
Donor-year FE	YES	YES	YES	YES	YES	YES	YES	YES
Recipient-year FE	YES	YES	YES	YES	YES	YES	YES	YES
Number of recipient countries	121	110	115	115	67	84	117	117
Number of observations	18,354	6,142	14,747	14,406	1,091	3,310	14,753	14,753

Notes: The dependent variable is the private humanitarian aid dummy in Columns (1), (2), (4) and (8). In Column (3), the share of private humanitarian aid is used as the dependent variable. In Columns (5) and (6), the dependent variable is a dummy variable set equal to one if a country receives private food (health) humanitarian aid in a given year. In Column (2), we exclude the UNICEF National Committees and the National Red Cross and Red Crescent Societies. In Columns (7) and (8), an IV probit model with *gender* * *probability* as instrument is estimated. In the first stage (Column (7)), the official humanitarian aid dummy is the dependent variable. Standard errors clustered by recipient country in parentheses.

Abbreviation: HA, humanitarian aid.

****p* < .01.

***p* < .05.

**p* < .1.

While in the case of moderate need private donors may not always see the necessity to engage alongside the official donor, private donors may feel urged to become active independent of the official donor's decision in cases of severe disasters.

In Table 4, we perform a couple of robustness tests with respect to our main result that private humanitarian aid tends to “follow the flag”. All estimations are based on the second specification with donor country-year and recipient country-year fixed effects.³⁰ In Column (1), we exclude the variables that capture political and economic interests of donor countries (UNGA voting distance and export share). By doing so, we intend to capture “following the flag” in a broader sense: private donors may “follow the flag” if they share certain political and economic interests with the respective official donor. The effect of the official humanitarian aid dummy variable is statistically significant at the one-per cent level and is quantitatively almost identical to Column (2) of Table 3 (6.3%). In Column (2), we exclude the UNICEF National Committees and the National Red Cross and Red Crescent Societies, which constitute the most important private donors of humanitarian aid in the majority of donor countries (see Appendix 1). The effect of the official humanitarian aid dummy variable is again statistically significant at the one-per cent level, and the magnitude of the effect is, with 8.5%, even larger than in our baseline in Column (2) of Table 3.

In Column (3), we change the dependent variable and use a recipient country's share in a donor country's total private humanitarian aid allocations instead of the private humanitarian aid dummy variable. This allows us to account for size differences in a donor country's private humanitarian aid portfolio. To account for the many zeros and the right-skewed distribution of the dependent variable, we estimate a Poisson pseudo-maximum likelihood (PPML) model.³¹ We come to the same qualitative conclusion as with the private humanitarian aid dummy variable. A recipient's share in a donor country's total private humanitarian aid allocation increases with the share provided by the official humanitarian donor of the respective home country to the same recipient.

In Column (4), we explore the timing of the effect of official humanitarian aid: We include the one- and two-year lag of the official humanitarian aid dummy variable and also control for the same lags of the dependent variable, that is, the private humanitarian aid dummy variable. All three official humanitarian aid variables are positive and jointly significant at the one-per cent level. This appears to be driven by the contemporaneous official humanitarian aid dummy and its second lag, while the one-year lag, albeit positive, does not show a significant effect.³²

In Columns (5) and (6), we run a sector-specific analysis for food and health aid to investigate whether our main finding holds for the two most important sectors in humanitarian aid.³³ For this purpose, we only considered food and health aid, respectively, when constructing the private and official humanitarian aid dummy variables. In both cases, we find the expected positive effect. While the effect is highly significant in the case of health aid (at the one-per cent level), it is marginally insignificant for food aid (p -value: 0.108). These less precise estimates may suggest that (official and private) food aid is more often influenced by urgent needs (e.g., stemming from food crises) rather than the

³⁰Estimation results based on the third specification with donor–recipient-pair and year fixed effects are shown in Appendix S2.

³¹Note that the PPML estimator is well behaved in the presence of a large share of zeros in the dependent variable (Silva, João, & Tenreiro, 2011).

³²However, all three dummy variables are significant in a regression based on Equation (3) (Appendix S2).

³³Food and health aid together account for about 30% of humanitarian aid if we disregard the missing observations in the data with respect to the sector variable (the missing observations account for about 40% of total humanitarian aid).

political and institutional imperatives of official and private donors. In fact, the effect of official humanitarian food aid turns out to be statistically significant at the one-per cent level when we do not control for recipient country-year fixed effects (see Appendix S2).

Finally, to make sure that our results are not driven by outliers, we rerun our baseline regression in Column (2) of Table 3 and exclude each time one of the recipient countries (Appendix S3), one of the donor countries (Appendix S4) or one of the years covered in our analysis (Appendix S5) from our sample. Our main finding is robust to these modifications of the estimation sample.

4.3 | Instrumental variables estimation

Although the inclusion of various sets of fixed effects helps mitigate endogeneity concerns, we cannot fully alleviate concerns about reverse causality and omitted-variable bias. For example, NGOs may be faster in decision-making in the light of a humanitarian crisis given their smaller bureaucratic apparatus. Thus, it could be that NGOs first make their decisions on humanitarian aid giving and, subsequently, bilateral donor governments respond to those decisions by filling funding gaps. Likewise, corporations may provide disaster relief to affected investment locations and follow-up with lobbying at government institutions to send additional support to the very same locations, again leading to a reverse causality problem. To provide an example for a potential omitted-variable bias, national media coverage in donor countries of specific humanitarian crises abroad may affect both official and private humanitarian aid and thus lead to a spurious correlation between the two.³⁴ What is more, the deterioration or improvement of bilateral political relations between donor and recipient countries may affect both official and private humanitarian aid since private donors may share the foreign policy preferences of the government.

To further reduce endogeneity concerns, we use a novel instrumental variable (IV) that relies on variation in the leadership of ministries responsible for official humanitarian aid that is—as we argue—reasonably exogenous to the provision of private humanitarian aid. Specifically, our IV is a binary variable for the gender of the humanitarian aid minister interacted with a recipient country's probability of receiving humanitarian aid from a particular official donor. Controlling for donor-year and recipient-year fixed effects, we obtain an arguably exogenous instrument in the spirit of Nunn and Qian (2014). Our approach is inspired by Dietrich and Wright (2015) and Ziaja (2020) who also exploit variation in the gender-specific political decision-making to construct an IV for types of foreign aid.

To spell out our line of reasoning, we expect to see increases in the budget of a ministry when a male humanitarian aid minister assumes office. As Fuchs and Richert (2018) discuss, government members aim at maximising the budget of their respective ministry, but both genders might experience differing levels of success in obtaining large budgets at the cabinet table. Research in behavioural economics indeed suggests that women fare worse in negotiation outcomes, including salary negotiations (e.g., Gerhart & Rynes, 1991; see Croson & Gneezy, 2009 for a literature review). Applying these findings to political negotiations, it could be the case that male ministers are more successful in negotiating for larger aid budgets than female ministers, which would then likely translate into a larger number of country-year pairs that receive aid from a given donor. We expect to observe such a pattern in the case of humanitarian aid. What is more, we expect recipient countries that receive humanitarian aid more frequently from a particular donor government to be more likely to suffer from reductions

³⁴Focusing on the role of the media in humanitarian aid provision, Eisensee and Stromberg (2007) find US relief to be lower in times when events with high media attention, such as the Olympic Games, crowd out news coverage of disaster events.

in the humanitarian aid budget compared to countries that are rarely among the recipients. Obviously, the probability term of the interaction is endogenous. However, this is not of concern as we can fully control for this endogeneity by including the probability of receiving official humanitarian aid as a control variable in our model. We discuss the underlying assumptions and potential (but unlikely) violations of our exclusion restriction at length in Appendix S6. We also discuss the construction of the required new data set on ministers responsible for the provision of humanitarian aid in the same appendix. A notable weakness of our approach is that our local average treatment effect uses variation induced by changes in the humanitarian aid ministers' gender and is thus not necessarily representative for a broader set of donor countries, such as China and the Gulf States, which have not yet filled this position with a woman.

Columns (7) and (8) of Table 4 show the results when we estimate Equation (2), our preferred specification, with our instrumental variables approach. While Column (7) shows the first stage of the IV probit model, Column (8) displays the second stage with the instrumented official humanitarian aid dummy variable. In the first stage, the IV turns out negative and statistically significant at the one-per cent level. This is in line with our expectation that female ministers negotiate smaller budgets at the cabinet table, which in turn makes it less likely that frequent recipients receive humanitarian aid. The first-stage *F*-statistic is 12.3, that is, clearly above the critical value of 8.96 for a maximum bias in the IV of less than 15%, and thus demonstrates the power of our IV (Stock & Yogo, 2005). In the second stage, the effect of official on private humanitarian aid turns out positive and statistically significant at the one-per cent level. Although our IV is not perfect (as we discuss in detail in Appendix S6), we interpret this as suggestive evidence that private humanitarian aid tends to follow the official humanitarian aid allocation of their respective home country in the sense that the official donor's action has a significant influence on private donors' decisions on whether to engage in aid giving in a given humanitarian crisis.

4.4 | NGO versus corporate aid

We also analyse whether our main finding that private humanitarian aid tends to “follow the flag” holds for both NGO aid and corporate aid when we analyse these types of humanitarian aid separately.³⁵ Appendices 5 and 6 provide full regression results. With respect to the standard explanatory variables, we find some informative differences in the allocations of NGOs and corporate donors. First, per capita GDP is highly significant and negative for NGOs, while it is insignificant for corporate donors. Thus, while we can observe a clear poverty focus in the case of humanitarian aid provided by NGOs, there is no statistically significant evidence that corporate donors are more likely to provide aid to poorer recipient countries, which arguably have more difficulties in responding to humanitarian crises on their own. However, if we look at the need indicators that specifically capture victims from natural and man-made disasters, the analysis suggests that corporate donors are more responsive than NGOs. In particular, the number of people affected by disasters only has a statistically significant effect on humanitarian aid in the case of corporate donors (Columns (1) and (3) in Appendices 5 and 6). This finding is rather surprising given the often-stated proposition that NGOs are relatively need-oriented, while corporate donors are rather perceived as being subject to pressure from shareholders, customers and employees.³⁶

³⁶This finding may be driven by NGOs being more likely to have a permanent presence in the recipient country even if levels of aid change, while the typical corporate donor carries out only temporary aid activities in response to specific emergency. We thank an anonymous reviewer for this suggestion.

³⁵NGO aid also includes aid from non-corporate private foundations.

Another interesting difference in the allocation patterns of NGOs and corporate donors can be observed when it comes to the effect of UNGA voting. There is some evidence that suggests that greater disagreement between the corporate donors' home country and the recipient country in UNGA voting has a positive effect on the likelihood that corporate donors will give humanitarian aid. This finding is in striking contrast to the results presented in Table 2 with respect to official bilateral donors who give more humanitarian aid to politically aligned recipient countries. It may be interpreted as an indication that corporate donors do not follow their home country when it comes to political motives. The positive coefficient even suggests that companies want to balance bad political relations. By providing corporate aid, they may want to signal that political tensions should not affect commercial ties between countries. By contrast, the allocations from NGOs do not seem to be responsive to political distance between donor and recipient country.

With respect to commercial interests, the export share is highly significant in the first and second specification for corporate donors, which corroborates the idea that companies use aid to further their commercial interests (Columns (1) and (2) of Appendix 6). However, the variable lacks significance in the third specification where we control for time-invariant donor–recipient relations (Column (3) of Appendix 6). Not surprisingly, we find less evidence for NGOs being influenced by commercial motives. The export share enters significantly in the second specification only (Column (2) of Appendix 5).

With respect to our main hypothesis, that is, whether private humanitarian aid tends to “follow the flag”, we find clear evidence in support of the hypothesis for both NGOs and corporate donors. Throughout our specifications, the effect of the official humanitarian aid dummy is significant (at least at the five-per cent level). In Columns (4) and (5) of Appendix 5, we report the IV estimation of the second specification for the allocation of NGO aid.³⁷ The first-stage estimation again shows that our instrument is statistically significant at the one-per cent level and the *F*-statistic is 11.2. The second stage in Column (5) confirms our main result that private humanitarian aid tends to “follow the flag”: The official humanitarian aid dummy variable is again positive and significant at the one-per cent level, suggesting that the effect of official humanitarian aid on NGO aid is causal.

4.5 | Donor country-specific estimations

Huge differences exist between countries in the extent to which the respective government engages with the business sector. As summarised by Rieth (2009), the public development actors in the United States, for example, are more open to business engagement than their more skeptical counterparts in Germany and the United Kingdom. Likewise, the degree of official cofinancing of NGOs differs significantly between donor governments. While the share of official funds in the total budgets of German NGOs amounts to approximately 40% (about 30% in the case of humanitarian aid), official funds only account for about 20%–25% in the budgets of US NGOs and less than 20% in the case of Switzerland.³⁸ We thus expect heterogeneity across private donors in the extent to which donors react to the official donor of their respective home country. To test this, we run separate regressions for each donor country.

³⁷For corporate aid, the estimation does not converge. This is probably the case because of the low number of observations (303).

³⁸These figures are based on samples of NGOs. They are taken from Dreher, Nunnenkamp, Öhler, et al. (2012), Dreher, Nunnenkamp, Thiel, and Thiele (2012) and Nunnenkamp and Öhler (2012).

We estimate logit regressions with recipient country and year fixed effects and include the number of other bilateral donors to test whether the aid allocation decisions by a country's private donors are following their home country's official humanitarian aid allocation pattern to a larger extent compared to that of other donor countries.³⁹ This allows us to distinguish between private humanitarian aid “following the flag” and a general bandwagon effect described in Fink and Redaelli (2011), according to which, donors are more likely to give emergency aid when any other major donor participates in the aid process. At the same time, this variable captures unobserved country- and time-specific need variables, which may lead to “herding” (Frot & Santiso, 2011), for which we cannot control here, on contrary to our preferred specification of Equation (2).

As can be seen from Table 5, the official humanitarian aid dummy is statistically significant in eight out of 23 countries: China, France, Ireland, South Korea, Spain, Sweden, the United Kingdom and the United States of America. However, we only find the presence of the home country to have a significantly larger effect than the presence of another bilateral donor (at least at the five-per cent level) in the case of China, Sweden and the United States of America. A separate analysis for NGO and corporate aid (not shown) reveals that these results are driven by the allocations of NGOs and not by those of corporate donors. Furthermore, it shows that the presence of official UK humanitarian aid in a recipient country has a significantly larger effect on NGO aid from the United Kingdom compared to the presence of another bilateral donor (at the ten-per cent level). Taken together, our results reveal a large heterogeneity in the extent to which private aid tends to “follow the flag”.

Finally, we delve deeper into the Chinese case, where we found evidence that private donors “follow the flag”, to illustrate how donors follow their home government. Anecdotal evidence indeed suggests that Chinese allocations of official and private humanitarian aid are closely aligned. This is evident in joint announcements of relief operations. For example, in the aftermath of the 2016 Typhoon Haima in the Philippines, the spokesperson of China's Ministry of Foreign Affairs announced that humanitarian aid by the Red Cross Society of China would accompany the government's own disaster relief.⁴⁰ Beyond that, Chinese official “instructions” exist that guide Chinese actors in their humanitarian assistance activities (Hirono, 2018). While only a small number of Chinese NGOs, such as the Red Cross Society of China, had the permission to provide international assistance until the early 2010s, more recently NGO activities in international disaster aid are actively supported by the Chinese government with the objective “to promote people-to-people diplomacy” (Hirono, 2018: 28). To illustrate an exemplary sequence of official and private humanitarian aid, consider China's disaster relief after floods in Myanmar in 2015. First, the embassy released a statement on China's official bilateral aid, which amounted to US\$300,000. However, at the same time, the ambassador requested support by non-government donors and “called on Chinese enterprises, companies and institutions in Myanmar to actively follow up the flood rescue program and collect charity donations as well as goods to take part in the flood rescue action”.⁴¹ This highlights that private and official forms of humanitarian assistance are closely interlinked.

³⁹We estimate unconditional fixed effects logit estimations because, in the case of conditional fixed effects logit models, it is not possible to obtain meaningful marginal effects (Wooldridge, 2002).

⁴⁰See <http://www.scio.gov.cn/32618/Document/1495341/1495341.htm> (accessed 26 July 2020).

⁴¹See https://europe.chinadaily.com.cn/world/2015-08/03/content_21491603.htm (accessed 26 July 2020).

TABLE 5 Does private humanitarian aid follow the flag? Donor country-specific logit estimations with the private humanitarian aid dummy as the dependent variable

Donor country	Official HA dummy	Number of other bilateral donors	Number of recipient countries	Number of observations
Australia	−0.718 (0.499)	0.462 (0.079) ^{***}	32	529
Austria	0.751 (0.921)	0.303 (0.120) ^{**}	21	225
Belgium	0.385 (0.517)	0.328 (0.063) ^{***}	27	426
Canada	0.744 (0.552)	0.321 (0.063) ^{***}	42	613
China	2.932 (1.219) ^{**}	0.358 (0.150) ^{**}	25	294
Denmark	0.858 (0.568)	0.324 (0.075) ^{***}	40	609
Finland	−0.499 (0.617)	0.405 (0.066) ^{***}	37	574
France	0.959 (0.547) [*]	0.426 (0.064) ^{***}	54	844
Germany	0.332 (0.583)	0.361 (0.056) ^{***}	55	908
Ireland	2.354 (1.247) [*]	0.741 (0.208) ^{***}	25	292
Italy	0.001 (0.501)	0.428 (0.077) ^{***}	32	522
Japan	0.209 (0.373)	0.339 (0.052) ^{***}	57	936
Korea (South)	3.014 (1.504) ^{**}	1.025 (0.382) ^{***}	19	236
Kuwait	−0.227 (0.655)	0.373 (0.076) ^{***}	22	311
Netherlands	1.090 (0.675)	0.396 (0.065) ^{***}	46	753
Norway	1.133 (1.082)	0.382 (0.088) ^{***}	37	494
Qatar	0.212 (0.649)	0.338 (0.081) ^{***}	37	442
Spain	0.932 (0.502) [*]	0.353 (0.057) ^{***}	50	821
Sweden	2.548 (0.753) ^{***}	0.260 (0.063) ^{***}	48	756
Switzerland	−0.327 (0.486)	0.325 (0.048) ^{***}	77	1,069
United Arab Emirates	0.264 (0.597)	0.213 (0.068) ^{***}	30	287
United Kingdom	0.692 (0.292) ^{**}	0.377 (0.040) ^{***}	87	1,444
USA	1.389 (0.413) ^{***}	0.323 (0.036) ^{***}	96	1,593

Notes: The estimations include the standard explanatory variables and recipient country and year fixed effects. Standard errors clustered by recipient country in parentheses.

Abbreviation: HA, humanitarian aid.

*** $p < .01$.

** $p < .05$.

* $p < .1$.

5 | CONCLUSION

An increasing number of private donors are entering the international development landscape. The same is true in the realm of humanitarian assistance, which is an important type of foreign aid where the goal is to save lives, alleviate suffering and maintain human dignity in the face of humanitarian crises. This development spreads hope of growing aid giving and of a better allocation of aid, which would be in the aggregate less influenced by the geopolitical preferences of donor governments. Our study adds to the small empirical literature on private aid giving with the first multidonor country



multirecipient country panel analysis of private aid allocation and its linkages to official aid giving for both NGO and corporate private aid.

The empirical results from studying humanitarian aid giving from 2000 to 2016 do not provide evidence for independent and more need-oriented aid giving from private actors. First, our results show that the allocation of private humanitarian aid indeed tends to follow the aid allocation of the respective official donor, that is, it lacks independence from official aid decisions. This finding holds whether we use a binary variable or a recipient's share in a donor's total aid allocation as dependent variable. It is robust against the inclusion of various fixed effects, estimating instrumental variables models and analysing food and health aid separately. This pattern can be observed for both NGOs and corporate donors alike. Considering that previous research found geographic clustering among official donors (e.g., Aldasoro, Nunnenkamp, & Thiele, 2010; Davies & Klasen, 2019), our findings suggest that private donors are not very likely to change the existing reality of donor darlings and orphans. Second, we find that corporate private donors lack poverty orientation in their aid allocation given that poor countries typically require more resources to overcome humanitarian crises. Moreover, the results do not suggest that private donors are more inclined to work in difficult institutional environments where corruption is high when compared to official donors. These results on aid allocation decisions are disappointing from a humanitarian perspective.

At the same time, some observations provide reasons for more optimism. First, our analysis reveals a large heterogeneity across donor countries with respect to whether private humanitarian aid tends to “follow the flag”. More precisely, we find that the aid allocations of private donors of eight out of 23 donor countries are statistically significantly aligned to the aid allocations of their governments. However, only in the case of China, Sweden, the United Kingdom and the United States can we interpret our findings as evidence for a tendency to “follow the flag”. Although this is consequential since the United Kingdom and the United States are the most important contributors of private humanitarian aid, this finding also suggests that government dependence is not necessarily inherent in private humanitarian aid giving. Measures should be taken to reduce government influence in private humanitarian aid giving. Second, it is encouraging that, in contrast to official humanitarian aid, private humanitarian aid does not appear to be swayed by political distance, as we find no statistically significant relationship between private humanitarian aid allocations and countries' voting behaviour in the United Nations.

Our results speak only indirectly to the question of whether private humanitarian aid is more or less effective in alleviating humanitarian crises. Given that private tends to follow official humanitarian aid, our study provides few reasons to believe that private outperforms official humanitarian aid. Nevertheless, future research should devote more attention to this question. Another natural next step would be to broaden our analysis beyond humanitarian assistance to cover all types of private aid. This will require the need for the challenging but important task to construct a comprehensive multidonor country multirecipient country panel database on private development aid. Finally, while our paper shows that private humanitarian aid tends to “follow the flag”, we cannot say anything about the relative importance of the several suggested mechanisms throughout our paper. For example, we cannot conclude whether the close alignment of private and official flows is mainly the outcome of government coercion and anticipatory obedience by private donors, of the governments predominantly financing NGO projects in their favoured countries, or whether private donors may just want to benefit from complementarities to reduce costs. Future research should make use of micro data to shed more light on the relative importance of these drivers of why NGO and corporate aid tend to “follow the flag”.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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APPENDIX 1

LARGEST PRIVATE DONORS OF HUMANITARIAN ASSISTANCE BY FINANCIAL AMOUNT COMMITTED (2000–2016)

Country	Largest private donors			Largest corporate private donor
	Rank 1	Rank 2	Rank 3	Rank 1
ARE	Khalifa Bin Zayed Al Nahyan Foundation	Dubai Cares (UAE)	Red Crescent Society of the United Arab Emirates	RAK Ceramics
AUS	UNICEF National Committee/Australia	Australian Red Cross	Australia for UNHCR	Kleenheat Gas
AUT	Austrian Red Cross	UNICEF National Committee/Austria	ACT Alliance/Diakonie	—
BEL	UNICEF National Committee/Belgium	Belgian Red Cross	SOLIDAR INGO CONSORTIUM	—
CAN	UNICEF National Committee/Canada	Canadian Red Cross Society	Canadian Food Grains Bank	Mastercard Foundation
CHE	International Federation of Red Cross and Red Crescent Societies	Swiss Solidarity	UNICEF National Committee/Switzerland	Novartis
CHN	Red Cross Society of China	HNA Group	ACT Alliance/Amity Foundation	HNA Group
DEU	UNICEF National Committee/Germany	German Red Cross	Deutsche Bank AG	Deutsche Bank AG
DNK	UNICEF National Committee/Denmark	Danish Red Cross	ACT Alliance/DanChurchAid	LEGO Foundation
ESP	UNICEF National Committee/Spain	Spanish Red Cross	Espana con ACNUR	CAN Foundation
FIN	UNICEF National Committee/Finland	Finnish Red Cross	Nokia	Nokia
FRA	UNICEF National Committee/France	Fondation de France	French Red Cross	Total
GBR	Disasters Emergency Committee (UK)	UNICEF National Committee/United Kingdom	Start Fund	Anglo American Plc.
IRL	UNICEF National Committee/Ireland	Irish Red Cross Society	GOAL	Actavis Group
ITA	UNICEF National Committee/Italy	Agenzia Italiana Risposta Emergenze	Italian Red Cross	Pirelli & C. Societa per Azioni



Country	Largest private donors			Largest corporate private donor
	Rank 1	Rank 2	Rank 3	Rank 1
JPN	UNICEF National Committee/Japan	Japanese Red Cross Society	Daiichi Sankyo	Daiichi Sankyo
KOR	UNICEF National Committee/Korea (Republic of)	Korean Church Federation of Support for North Korea	Korean Sharing Movement	National Agricultural Cooperative Federation
KWT	Rahma International-Social Reform Society	Kuwait Red Crescent Society	International Islamic Charitable Organization	Equate Petrochemical
NLD	UNICEF National Committee/Netherlands	IKEA Foundation	Netherlands Red Cross	IKEA Foundation
NOR	UNICEF National Committee/Norway	Norwegian Red Cross	ACT Alliance/Norwegian Church Aid	—
QAT	Qatar Charity	Sheikh Thani bin Abdullah Foundation for Humanitarian Services	Education Above All Foundation	Doha Bank
SWE	UNICEF National Committee/Sweden	Swedish Red Cross	ACT Alliance/Church of Sweden	Ericsson
USA	US Fund for UNICEF	Bill and Melinda Gates Foundation	American Red Cross	Business Roundtable

Source: Authors' own calculations based on aid data from UNOCHA (2017).

APPENDIX 2

BIVARIATE CORRELATIONS BETWEEN PRIVATE AND OFFICIAL HUMANITARIAN AID (2000–2016)

Country	Correlation between private and official bilateral humanitarian aid
Spain	0.57
Australia	0.55
Canada	0.47
Kuwait	0.43
United States of America	0.43
Norway	0.42
Qatar	0.38
Austria	0.34
France	0.33
Netherlands	0.32
Finland	0.30

Country	Correlation between private and official bilateral humanitarian aid
Denmark	0.30
Sweden	0.26
Ireland	0.25
Italy	0.24
Japan	0.24
China	0.22
Germany	0.20
United Kingdom	0.19
Belgium	0.13
Switzerland	0.10
Korea (South)	0.03
United Arab Emirates	0.02

Source: Authors' own calculations based on aid data from UNOCHA (2017).

APPENDIX 3

DESCRIPTIVE STATISTICS

Variable	Obs.	Mean	SD	Min	Max
Private HA dummy	59,041	0.05	0.22	0	1
Private food HA dummy	59,041	0.01	0.08	0	1
Private health HA dummy	59,041	0.01	0.10	0	1
NGO HA dummy	59,041	0.05	0.22	0	1
Corporate HA dummy	59,041	0.00	0.05	0	1
Private HA share	59,041	0.01	0.06	0	1
Official HA dummy	59,041	0.21	0.41	0	1
Official HA share	59,041	0.01	0.04	0	1
Official food HA dummy	59,041	0.09	0.29	0	1
Official health HA dummy	59,041	0.07	0.25	0	1
Ln population	56,580	15.59	2.11	9.15	21.00
Ln per capita GDP	54,533	7.83	1.11	5.27	9.99
Ln people affected by disasters	59,041	6.42	5.41	0	19.66
Ln disaster-related deaths	59,041	2.61	2.46	0	12.34
Ln conflict-related deaths	59,041	1.01	2.30	0	11.14
Control of corruption	56,810	−0.45	0.65	−1.87	1.59
UNSC	59,041	0.05	0.22	0	1
UN voting distance	51,782	1.42	0.80	0.00	4.71
Export share	53,148	0.00	0.00	0.00	0.09
Gender	59,041	0.27	0.45	0	1
Probability of receiving HA	59,041	0.21	0.28	0	1
Gender * probability	59,041	0.07	0.20	0	1

APPENDIX 4

DOES PRIVATE HUMANITARIAN AID FOLLOW THE FLAG? AVERAGE MARGINAL EFFECTS OF OFFICIAL HUMANI- TARIAN AID ON PRIVATE HUMANITARIAN AID, INTERAC- TIONS WITH NEED VARIABLES

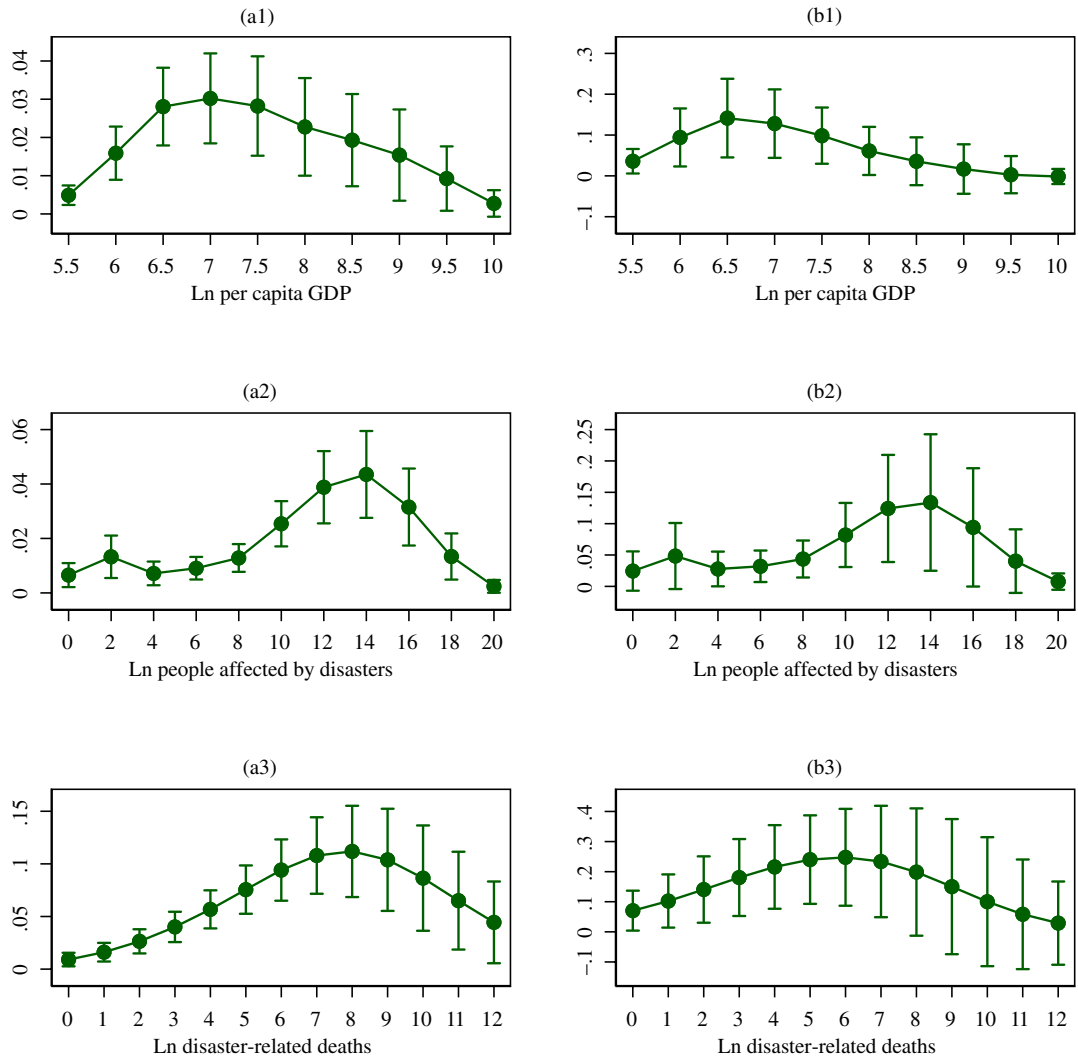


FIGURE A1 The figure reports average marginal effects of official humanitarian aid (HA) on private HA for various values of one of three need variables indicated at the bottom of each subfigure. In panels A1–A3, the variable of interest is the official bilateral HA dummy. In panels B1–B3, the variable of interest is the share of official bilateral HA. Average marginal effects and 95% confidence intervals are estimated based on the regressions in Columns (2) and (5) of Table 3 with an additional interaction term between the variable of interest and the respective need variable. [Colour figure can be viewed at wileyonlinelibrary.com]

APPENDIX 5

DOES NGO HUMANITARIAN AID FOLLOW THE FLAG? ESTIMATIONS WITH THE NGO HUMANITARIAN AID DUMMY VARIABLE AS THE DEPENDENT VARIABLE

	(1)	(2)	(3)	(4)	(5)
	Logit	Logit	Conditional logit	IV First stage	Probit
Official HA dummy	2.152*** (0.147)	0.740*** (0.106)	1.785*** (0.101)		2.742*** (0.355)
Ln population	−0.013 (0.061)		0.849 (1.695)		
Ln per capita GDP	−0.245*** (0.078)		−1.580*** (0.493)		
Ln people affected by disasters	0.021 (0.019)		0.012 (0.014)		
Ln disaster-related deaths	0.177*** (0.045)		0.188*** (0.039)		
Ln conflict-related deaths	0.077** (0.033)		0.044 (0.036)		
Control of corruption	−0.333* (0.180)		0.269 (0.362)		
UNSC	−0.184 (0.286)		−0.119 (0.304)		
UNGA voting distance	0.064 (0.133)	−0.334 (0.316)	0.207 (0.201)	−0.051*** (0.011)	0.028 (0.096)
Export share	6.489 (9.270)	31.591** (15.395)	18.263 (34.744)	2.981*** (0.795)	1.195 (5.454)
Probability of receiving HA				1.079*** (0.021)	−2.316*** (0.538)
Gender*probability				−0.074*** (0.021)	
F-statistic					11.185
Donor-year FE	YES	YES	NO	YES	YES
Recipient-year FE	NO	YES	NO	YES	YES
Donor–recipient-pair FE	NO	NO	YES	NO	NO
Year FE	NO	NO	YES	NO	NO
Number of recipient countries	140	117	113	117	117
Number of observations	44,337	14,596	15,925	14,596	14,596

Notes: Standard errors clustered by recipient country in parentheses. Abbreviation: HA, humanitarian aid. *** $p < .01$. ** $p < .05$.

* $p < .1$.



APPENDIX 6

DOES CORPORATE HUMANITARIAN AID FOLLOW THE FLAG? ESTIMATIONS WITH THE CORPORATE HUMANITARIAN AID DUMMY VARIABLE AS THE DEPENDENT VARIABLE

	(1)	(2)	(3)
	Logit	Logit	Conditional logit
Official HA dummy	2.583*** (0.526)	2.433** (0.970)	2.603*** (0.527)
Ln population	−0.432*** (0.125)		−0.290 (2.805)
Ln per capita GDP	0.189 (0.163)		−1.412 (1.132)
Ln people affected by disasters	0.133** (0.063)		0.114* (0.068)
Ln disaster-related deaths	0.596*** (0.078)		0.481*** (0.087)
Ln conflict-related deaths	0.074 (0.056)		0.122 (0.096)
Control of corruption	−0.023 (0.516)		0.593 (0.696)
UNSC	0.332 (0.520)		−0.095 (0.616)
UNGA voting distance	0.178 (0.209)	1.524** (0.712)	0.626 (0.431)
Export share	28.004*** (8.513)	391.784*** (110.963)	−96.780 (110.910)
Donor-year FE	YES	YES	NO
Recipient-year FE	NO	YES	NO
Donor–recipient-pair FE	NO	NO	YES
Year FE	NO	NO	YES
Number of recipient countries	140	39	47
Number of observations	8,466	303	1,696

Notes: Standard errors clustered by recipient country in parentheses. Abbreviation: HA, humanitarian aid. *** $p < .01$. ** $p < .05$.

* $p < .1$.