Disasters, Donors, and Democracy: Matching Donor Types and Aid Channels in Post-Disaster Humanitarian Aid Giving

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August 16, 2012

Abstract

Research into the determinants of foreign aid giving suggests different predictions for the effect of recipient country democratic institutions on the probability and amount of aid given by donor countries. While some suggest that better governance in recipient countries may increase the amount of aid provided by donors, others adhere to the notion that less democratic recipient governments may be better poised to exchange donor aid for recipient policy concessions. Furthermore, most of this current research makes the assumption that donors are homogenous in their preferences for foreign aid distribution. This paper uses humanitarian aid distribution following natural disasters to distinguish between donor types based on their responsiveness to disasters and tests whether different donor types channel aid based on the presence or absence of democratic institutions in a recipient country. The results suggest that stronger democratic institutions in recipient countries increase the probability of bilateral aid giving for donors highly responsive to disasters, while strong democratic institutions have no significant effect on the probability of bilateral aid giving for donors that have low levels of humanitarian responsiveness to disasters.

Introduction

When deciding whether or not to provide foreign aid to a country (either via official development aid or disaster relief), many researchers argue that the presence or absence of

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democratic institutions in the recipient country affects the probability and level of aid disbursals by a donor country. Opinions differs, however, on the expected effect (positive or negative) of these democratic institutions on the disbursal of aid. Some argue that the presence of democratic institutions such as rule of law should encourage an increase in aid flows directly to the recipient country. For example, Fink and Redaelli (2011) argue that the presence of democratic institutions will ensure that bilateral aid will be funneled to those in need by helping to "facilitate and encourage the provision of foreign emergency aid". Furthermore, many adhere to the notion that aid can be more effective in the presence of democratic institutions, which should prompt donors to funnel aid to places with higher institutional quality (Svensson, 1999; Burnside and Dollar, 2000; WorldBank, 1998). These scholars find evidence for this type of donor giving in empirical results using both official development aid as well as post-disaster aid flows (Alesina and Dollar, 2000; Raschky and Schwindt, 2012). Other empirical results, however, show no effect of recipient country democratic institutions on the disbursal of post-disaster aid (Fink and Redaelli, 2011).

Another group of scholars argues that the presence of democratic institutions may actually hinder the true strategic nature of foreign aid giving. Bueno de Mesquita and Smith (2009) theorize that donor governments provide aid in exchange for policy concessions from the recipient governments leaders. Certain leaders, which rely on small coalitions and weaker democratic institutions, are better strategic targets for donor governments since these leaders are better able to divert these funds to themselves or their political cronies in exchange for a given policy concession. The presence of strong democratic institutions in a recipient country, therefore, should result in a decrease in the probability and amount of aid provided by donor countries. Although Bueno de Mesquita and Smith (2009) present a detailed formal model in support of this theory, their empirical results using official development aid suggest that the presence of strong democratic institutions in a recipient country has little effect on the likelihood of providing official development aid. Other empirical results, however, have supported their theory by showing a significant negative effect of strong recipient coun-

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try democratic institutions on the disbursal of official development aid (Alesina and Weder, 1999).

This paper argues that the competing theoretical predictions and empirical results in the literature stem from neglecting to account for heterogeneity in the preferences of donors in their disbursal of aid. Donors that place a high value on humanitarian reasons for giving prefer to provide bilateral aid to democratic recipients who they believe will help facilitate the disbursal of aid according to the true needs of their citizens. Conversely, donors who place a high value on strategic reasons for giving prefer to give bilateral aid to less democratic recipients who they believe are more likely to provide policy concessions in exchange for aid. This paper uses a dataset of post-disaster aid disbursals to distinguish between donor types based on their level of responsiveness to need and tests whether different donor types channel aid (bilaterally or multilaterally) based on the presence or absence of democratic institutions in a recipient country. The results suggest that stronger democratic institutions in recipient countries increase the probability of bilateral aid giving for donors highly responsive to disasters, while strong democratic institutions have no significant effect on the probability of bilateral aid giving for donors that have low levels of humanitarian responsiveness to disasters.

The next section reviews the current literature on the determinants of foreign aid giving while the following section presents a theory of post-disaster donor giving based on donor types and aid channels. The final three sections outline the research design, present the results, and conclude.

Disasters & Donors

During the last two decades, the world has experienced several utterly devastating natural disasters. Figure 1 shows the total number of deaths and estimated damages caused by natural disasters from 1992-2009. The 2004 Indian Ocean Tsunami, Hurricane Katrina in

2005 and the 2008 earthquake in China caused spikes in both deaths and estimated damages in recent years. These large-scale disasters, along with numerous recurring ones such as seasonal floods, have caused much destruction across the world.
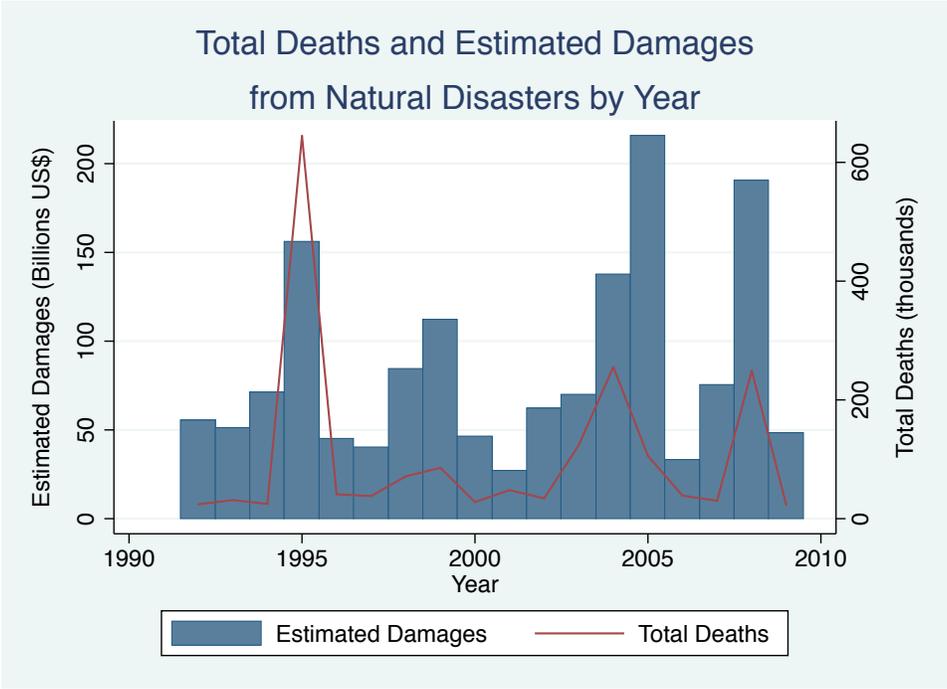

Figure 1: Deaths and Damages Caused by Natural Disasters. *Source: www.emdat.be*

The international aid community has responded to these natural disasters with increasing levels of humanitarian aid. In 2004, the Indian Ocean Tsunami prompted the largest amount of humanitarian aid giving in history with more than $6 billion provided for the affected countries (see Figure 2). Other major disasters, including the 2005 Kashmir earthquake and the 2008 Sichuan earthquake, also prompted donors to provide more than $1 billion in humanitarian aid for victims in each of those devastated countries. What prompts such an outpouring of humanitarian aid giving following these natural disasters?

Foreign aid research has established that donors have different reasons for giving. Early research on donor giving distinguished between two competing views of why countries might provide foreign aid: 1) the humanitarian view of aid, which proposes that the amount of aid
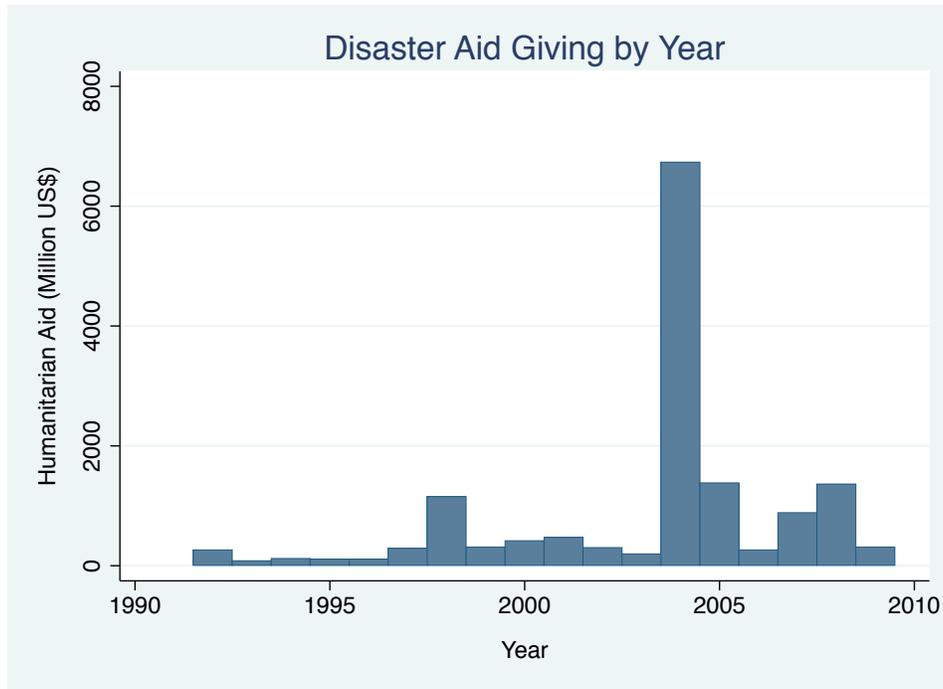
Figure 2: Humanitarian Aid Giving. *Source: www.fts.unocha.org*

received by low-income countries should be proportional to their social and economic needs and 2) the foreign policy view of aid, which postulates that aid is used to advance the strategic interest (economic, military, etc.) of the donor country (McKinlay and Little, 1977). To test these views, McKinlay and Little (1977) analyze official development aid, which consists of total grants and all loans with a grant element of at least 25% received minus repayments of principal (WorldBank, 2012). They find no evidence for the humanitarian view that levels of foreign aid are correlated with social and economic needs of the recipient country, but do find strong evidence that strategic interests of the donor country dominate aid disbursal decisions. An extension of this view looks at the motivation behind providing aid through multilateral aid giving versus bilateral aid giving. Maizels and Nissanke (1984) use a study of British aid disbursements to show that multilateral aid giving seems to conform to the humanitarian view while bilateral aid giving seems to conform to the foreign policy view.

Numerous studies have continued in this tradition of distinguishing between humanitarian

and strategic reasons for the provision of foreign aid. These authors have argued that trade, UN voting similarities, the possession of a UN Security Council seat, colonial heritage, Cold War influence and other factors weigh heavily in the strategic decisions of donors and tend to overshadow the humanitarian reasons for giving (Alesina and Dollar, 2000; Kuziemko and Werker, 2006; Dreher et al., 2009; Dunning, 2004; Bearce and Tirone, 2010). Recent research has looked at humanitarian versus strategic motivations in the context of providing relief aid following disasters (Fink and Redaelli, 2011; Raschky and Schwindt, 2012). The results suggest that strategic factors also weigh heavily in the provision of post-disaster emergency aid. But is this the case for all donors?

Whether looking at official development aid or humanitarian aid, most of the empirical literature on foreign aid practices has assumed homogenous preferences for aid donors. Schraeder, Hook, and Taylor (1998) were an early exception by comparing the determinants of foreign aid giving among the American, Japanese, French and Swedish governments. Using official development aid in their empirical analysis, they argued that each government had a unique strategic focus that drove its foreign policy agenda. Fink and Redaelli (2011) looked at the individual determinants of providing post-disaster humanitarian aid for five donors and found some differences in the key determinants of aid disbursals. As a group, however, the foreign aid literature has either looked at a few donors separately or included all donors into an analysis that has failed to analyze the differences in donor preferences.

Determining how to measure the preferences of donors is a challenge for researchers. One such metric used to compare the generosity of donors is simply the amount of foreign aid provided as a percentage of the donor nation's gross national product. By this measure, the United States, by far the largest overall donor of foreign aid, ranks near the bottom of OECD donors while Sweden ranks first (OECD, 2012). This measure, however, does not reflect the response of a given country to the level of need in a recipient country. A variety of measures based on income as well as health and social outcomes exists to measure a country's need (Coudouel et al., 2002). But the challenge is in determining which of these measures best

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reflects the baseline against which some donors may choose to provide foreign aid.

This paper uses natural disasters to determine a baseline level of need that could prompt a humanitarian response. Natural disasters, though not completely random as some places are more disaster-prone than others, do provide a shock of economic need to a given place and time. This shock creates variation in levels of demonstrated need based on the intensity of the disaster in a given location. If donor governments donate disaster aid based on need, then we should see a strong correlation between high levels of devastation and large levels of aid provided for that disaster. This paper uses the effect of disaster impact on post-disaster humanitarian aid giving for each individual OECD donor country as a measure of the overall level of *responsiveness* to need for that donor. This concept of responsiveness refers to the empirical reality of how governments provide funding for varying levels of humanitarian need, controlling for their strategic interests in those recipient countries. As the impact of a disaster increases, a donor country that scores high on this responsiveness measure would provide a larger amount of aid than a donor country that scores low on this measure, while controlling for strategic giving. This measure of responsiveness is used to parse out donor types by distinguishing between the aid preferences of each of the donors. Thus, a high responsive donor would be more humanitarian in their giving preferences while a low responsive donor would be more strategic in their giving preferences.

In addition to responding to a crisis, donors have to decide through which channel (e.g. bilaterally or multilaterally) to provide the post-disaster aid. In making this calculation, donors must determine the extent to which they are providing aid for humanitarian or strategic purposes and the likelihood that the aid provided could be used to achieve their preferred goals. Boone (1996) argues that, for some countries, official development aid is highly fungible and may be used by the recipient country for alternative purposes. The extent to which foreign aid may be channeled into other purposes may depend on the presence or absence of democratic institutions in the country (Bueno de Mesquita and Smith, 2009). Raschky and Schwindt (2012) argue that the presence of democratic institutions such as

the rule of law should encourage countries to provide more disaster aid bilaterally, since the aid has a better chance of flowing to the disaster victims. But if a donor wants to use the aid strategically, then the presence of strong democratic institutions in a recipient country may be a hindrance to the foreign policy desires of the donor country (Bueno de Mesquita and Smith, 2009). This paper uses the responsiveness of donor countries to disasters and their choice of channels to determine the conditions under which the presence of democratic institutions have an effect on providing aid directly to recipient country governments. The following section outlines the theory and offers empirical predictions.

Donor Types & Aid Channels

Following a natural disaster, the donor government provides some resources to help citizens of another country in their natural disaster response. The donor government has three potential actions: 1) whether or not to provide post-disaster aid in a given disaster situation 2) if they choose aid, the amount of aid to provide to the recipient country and 3) if they choose aid, the channel through which to provide aid to the victims of a disaster in a given country. The donor country has two main objectives in this process: 1) to reduce the level of suffering following a disaster and 2) to obtain policy concessions from the national government leader in exchange for disaster aid distribution. The ability to reduce the level of suffering following a disaster depends on selecting the most effective distribution channel to ensure that the citizens with the most need receive the most help. Maximizing policy concessions also involves the strategic selection of distribution channels and depends on the ability of the national government leader to divert funds for political purposes.

Following a disaster, donor governments balance both humanitarian and strategic considerations to determine their optimal level of humanitarian aid to provide to a recipient government. Donors, however, vary in the extent to which humanitarian or strategic goals dominate their aid allocation decision-making process. While Bueno de Mesquita and Smith

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(2009) provide insight into the exchange of aid for policy concessions, the authors fail to distinguish the extent to which governments distribute aid based on humanitarian versus strategic concerns and the extent to which they expect policy concessions in return. The authors assume that all donor countries focus exclusively on extracting policy concessions. In contrast, those that argue for a humanitarian view of giving fail to account for the ways in which democratic institutions may hinder the strategic nature of aid. In a disaster situation, donors may balance their desire to respond to those in need with their desire to extract policy concessions and this mix of motives is likely to vary across countries (for an empirical analysis of differing motivations for aid giving by donor countries, see Schraeder, Hook, and Taylor (1998)).

Depending on the type of donor government (humanitarian or strategic), the decision of which channel through which to provide post-disaster aid (either via the recipient government or an NGO) may be different. Strategic governments have a low level of responsiveness to the impact of natural disasters. Higher levels of need following a disaster have little or no effect on the probability or amount of disaster aid provided (after controlling for strategic motivations). Humanitarian donors, conversely, have a high level of responsiveness to the impact of natural disasters. The greater the impact of the disaster, the more disaster aid these governments provide (also while controlling for their strategic motivations).

The fungibility of aid and its potential translation into policy concessions can make a small coalition government with weak democratic institutions a more attractive channel for low responsive donors, but a less attractive channel for donors with high responsiveness who are concerned that their disaster aid may not reach the intended victims. These high responsive, humanitarian donors may be more interested in providing post-disaster aid for these recipient countries to NGOs as these organizations are more likely to distribute the disaster aid to the most affected victims. In these weakly democratic or undemocratic environments, circumventing the power structures in society (by channeling aid away from the government) can provide a more optimal allocation of resources targeted at the citizens

most in need in a disaster situation (Albala-Bertrand, 1993).

In contrast, in large coalition governments with strong democratic institutions, high responsive donors may be more likely to provide aid directly to the recipient government since they believe leaders in these countries are less likely to divert relief aid from those in need. Low responsive donors, however, are less inclined to provide bilateral aid to large coalition governments with strong democratic institutions as this would reduce their chances for obtaining policy concessions in exchange for providing aid. This leads to the following hypotheses for this paper:

> *H1: As the level of humanitarian responsiveness increases, the positive effect of stronger democratic institutions on the probability of providing aid directly to the recipient government will increase.*

> *H2: At high levels of humanitarian responsiveness, the presence of stronger democratic institutions will have a significant positive effect on the probability of providing disaster aid directly to the recipient government.*

> *H3: At low levels of humanitarian responsiveness, the presence of stronger democratic institutions will have a significant negative effect on the probability of providing disaster aid directly to the recipient government.*

Research Design

The data source used for disasters comes from the Emergency Events Database (EM-DAT), which is maintained by the WHO Collaborating Centre for Research on the Epidemiology of Disasters (CRED). This database tracks worldwide disasters and gathers information on the impact of those disasters including death tolls, the number of people affected and the estimated economic impact for each individual disaster. It includes information on more than 18,000 mass disasters that have occurred throughout the world since 1900 (CRED, 2012).

The source for humanitarian aid is from the Financial Tracking System (FTS) of the Office of the Coordination of Humanitarian Affairs (OCHA). This data set covers all disasters for

which OCHA has issued an appeal for funding since 1992, which includes more than 1000 separate disasters. Each entry in this data set includes information on the name of the donor (countries, NGOs and private), the specific channel (direct to the government, multilateral agencies, NGOs) and a description of the type (cash or in-kind contributions) and the amount of aid provided (OCHA, 2012).

The final data set used in this paper includes 321 disasters from 1992-2005. Recent literature on foreign aid giving identifies a change in the strategic nature of foreign aid disbursal following the end of the Cold War and much subsequent work attempts to account for this change in behavior (Dunning, 2004; Bearce and Tirone, 2010). Limiting the data to the post-Cold War period avoids this confounding influence. For this paper, the sample is limited to the 34 OECD donors, which account for more than 90% of the disaster aid provided from states during this time period. As these countries provide the majority of disaster aid, they serve as leaders in the process of aid giving. Furthermore, most of the non-OECD donors had too few observations to be able to estimate a *responsiveness* variable from their donations. The unit of analysis is the disaster-donor-recipient triad. For model 1, all 34 potential donors are paired with each disaster-recipient pair.[1]

The first step in the analysis involves determining the level of humanitarian responsiveness for a given OECD donor. This is accomplished by performing a separate estimation for each donor using the following OLS regression:

$$aid_{ijdt} = \beta_0 + \beta_1 deaths_{jdt} + \beta_2 colony_{ij} + \beta_3 distance_{ij} + \beta_4 trade_{ijt} + \beta_5 gdp_{jt} + \beta_6 population_{jt} +$$

$$\beta_7 oil_{jt} + \beta_8 affinity_{ijt} + \beta_9 democracy_{jt} + \epsilon \quad (1)$$

The dependent variable *aid* is the natural log of the total amount of aid provided by donor i to recipient j for disaster d in year t. The main independent variable *deaths* denotes the natural log of the total number of deaths in disaster d. The remaining independent variables

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[1]Almost all of the disasters pair with just one recipient country. A notable exception is the 2004 Indian Ocean Tsunami. Thus, this event pairs multiple recipients with the same disaster and each disaster-recipient pair is then paired with each of the 34 donors to create unique disaster-donor-recipient triads.

include several that have been common in the foreign aid literature and control for a variety of strategic reasons why donors might provide aid to a given recipient. The variable *colony* denotes whether or not j was a colony of i while *distance* identifies the natural log of the distance between the the capitals of i and j (CEPII, 2012). The *affinity* variable measures the level of similarity in UN voting between country i and country j in year t and ranges from -1 (least similar interests) to 1 (most similar interests) (Strezhnev and Voeten, 2012). Equation 1 also includes the natural log of the total volume of trade (imports + exports) between the donor and recipient countries (COW, 2012). The variables *gdp* and *population* denote the natural log of the GDP and population, respectively, of the recipient country while *oil* is a dummy variable which indicates whether oil revenues constitute at least 30% of the recipient country's GDP in year t (WorldBank, 2012).

For the final variable, *democracy*, this paper uses two different measures for the recipient country j. The first measure comes from selectorate theory and indicates the size of the winning coalition in the recipient country (Bueno de Mesquita et al., 2003). This concept refers to the number of people needed from the broader selectorate (those able to choose a leader) whose support is necessary for a leader to remain in power. In small coalition nations such as military juntas, the leader would maintain the support of the winning coalition via the distribution of private goods to select individuals, while in large coalition nations, the leader would better maintain the support of the winning coalition via the distribution of public goods. The variable ranges from 0 (small coalition) to 1 (large coalition). The second measure used as a robustness check for democracy is the revised combined polity score, which scores each country on a scale from -10 (autocratic) to 10 (democratic) (Marshall et al., 2012).

Table 1 below presents the results from combining all of the countries into a pooled regression for Equation 1.[2]   In this table, Model 1 uses coalition size as a measure for

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[2]A measure for democracy is included in models for both equation 1 and equation 2 (presented below) as it makes theoretical sense that the democratic institutions in a recipient country may have an effect on donor country giving at both the initial stage of deciding how much to give as well as the second stage of

democracy, while Model 2 uses the combined polity score to measure democracy. The results in the two models are very similar. As expected, the number of deaths in a given disaster has a significant positive effect on the total amount of relief aid provided by a donor country. Furthermore, poorer countries attract more relief aid from OECD donors. As expected, a strong trading relationship increases the amount of aid provided by a donor country. Also, consistent with earlier research, donors are more generous with disaster aid for recipients with dissimilar voting patterns in the United Nations (Fink and Redaelli, 2011; Raschky and Schwindt, 2012).

Several variables do not reveal an expected significant relationship with the total amount of disaster aid provided. Having a former colony relationship and being close in proximity do not have a statistically significant effect on the provision of post-disaster aid. The most notable statistically insignificant coefficients for the purposes of this paper are the ones associated with each of the *democracy* variables. This result corresponds to the results found in Bueno de Mesquita and Smith (2009). It appears that, in the pooled sample, neither an increase in the size of the coalition in a recipient country (thus becoming more democratic) nor an increase in the polity score (also becoming more democratic) has a significant effect on the allocation of disaster aid provided by OECD donors.[3]

After obtaining results from the pooled regression of donors, the next step involved estimating Equation 1 for each of the 34 OECD donors separately. The values for the individual donor coefficients for *deaths* serve as a proxy for the level of humanitarian *responsiveness* for a given donor country. This concept refers to the empirical reality of how governments provide funding for varying levels of humanitarian need, controlling for their strategic interests in those recipient countries. At higher levels of humanitarian responsiveness, countries have a stronger preference for humanitarian interests in providing post-disaster aid. At lower

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deciding whether or not to give bilaterally. Calculating the models in Table 1 without including a measure for *democracy* yields virtually identical results (which is unsurprising given the substantively small and statistically insignificant coefficient associated with the variables used to measure democracy in each model).

[3]The results from Table 1 are almost identical for each model when removing the largest donor (U.S.) or the largest disaster (2004 Indian Ocean Tsunami) from the sample.

Table 1: Determinants of the Provision of Post-Disaster Aid

	(1)	(2)
	Total Aid	Total Aid
Deaths	0.7561***	0.7569***
	(0.1497)	(0.1474)
Colony	0.5661	0.5619
	(0.3718)	(0.3702)
Distance	-0.1422	-0.1135
	(0.1935)	(0.2017)
Trade	0.5298***	0.5308***
	(0.0581)	(0.0582)
GDP	-0.7582***	-0.7466***
	(0.1972)	(0.1928)
Population	-0.2052	-0.2219
	(0.1843)	(0.1781)
Oil	-0.6383	-0.6445*
	(0.3669)	(0.3634)
Affinity	-2.3490***	-2.3432***
	(0.2892)	(0.2868)
Coalition Size	0.4781	
	(0.5486)	
Polity Score		0.0082
		(0.0216)
Constant	21.0117***	21.0391***
	(2.6257)	(2.6665)
N	6828	6828

Standard errors clustered by year.

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

levels of humanitarian responsiveness, countries have a stronger preference for strategic interests when providing post-disaster aid. Thus, once we control for strategic motivations, the coefficient on the variable *deaths* obtained for each country should reflect the purely humanitarian motivations of each donor (with some error) and help distinguish between donor types.

Table 2 presents the Responsiveness Index extracted from the analysis of Equation 1 for each country and used for Equation 2.[4] The country with the highest level of responsiveness to disasters was Japan with a coefficient of 1.62. Controlling for the various strategic reasons for giving, the impact of disasters had a larger effect on the amount of disaster aid provided by Japan than for any other donor. Other countries commonly listed as humanitarian donors (e.g. Sweden) are also near the top of the list. With a score of .88, the United States falls in the middle of the list, slightly above the OECD average of .76 (and notably less strategic and more humanitarian in this process than commonly assumed in the literature). Nine countries scored zero, indicating that the death toll in a disaster had no significant effect on the amount of relief aid given by that particular country. These results provide an avenue for distinguishing between donor types and factor into the main model of the paper described in the next section.

Results

The key model of this paper uses the interaction of donor types (measured by their responsiveness) and recipient country democracy to predict the probability of bilateral aid given

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[4]The analysis resulting in the Responsiveness Index used coalition size as the measure for democracy in the model. Estimating the model with the combined polity score as the measure for democracy instead of coalition size resulted in slight changes to the values of the index scores for each country. The rank ordering of countries from high to low responsiveness, however, was unchanged. Furthermore, using the alternative index in the final model of the paper yielded similar results.

Table 2: Responsiveness Index of OECD Donors

Donor	Responsiveness Index
Japan	1.62
United Kingdom	1.45
Switzerland	1.39
Italy	1.30
Canada	1.20
France	1.15
Sweden	1.02
Netherlands	1.01
Spain	0.98
Germany	0.93
Norway	0.90
United States	0.88
Belgium	0.84
Denmark	0.80
Ireland	0.78
Republic of Korea	0.77
Luxembourg	0.72
Finland	0.71
Turkey	0.69
Greece	0.66
Austria	0.60
Mexico	0.48
Czech Republic	0.44
Estonia	0.40
Iceland	0.35
Australia	0.00
Chile	0.00
Hungary	0.00
Israel	0.00
New Zealand	0.00
Poland	0.00
Portugal	0.00
Slovakia	0.00
Slovenia	0.00
OECD Average	0.76

by the 34 OECD donors following a disaster. The probit model is below:

$$Pr(bilateral_{ijdt} = 1|X) = \phi(\beta_0 + \beta_1 responsive_i + \beta_2 democracy_{jt} + \beta_3 responsive_i * democracy_{jt})$$

(2)

For this model, the sample includes only those observations where a donor provided some form of relief aid (whether bilateral, multilateral, or both) to the recipient in a given disaster and includes 2151 donor-disaster-recipient triadic observations. The dependent variable is a dummy variable indicating 1 if some portion of the aid provided was given bilaterally and 0 otherwise. As mentioned above, the variable *responsive* is the coefficient on the variable *deaths* in model 1 for each country i. The two variables used for *democracy* are the coalition size of the recipient country j in year t and a dummy variable for democracy that equals 1 if the combined polity score for a recipient country j in year t is greater than 5 and 0 otherwise. The final term is an interaction term between the first two variables.

Table 3 presents the results of the model estimation of Equation 2. The model in column 1 uses coalition size in the recipient country as a measure for democracy. The model in column 2 uses the dummy variable for democracy derived from the combined polity score. Given the use of interactive terms in this model, however, the regression table provides little useful information concerning both the point estimates and the confidence intervals surrounding them (Brambor, Clark, and Golder, 2006; Ai and Norton, 2003). To more accurately portray the estimates and confidence intervals for the non-linear model specified in Equation 2, Figure 3 is a difference in predicted probabilities graph. The figure shows the difference in predicted probabilities of providing bilateral aid for a 1-unit change in coalition size across different levels of donor humanitarian responsiveness. As the variable measuring democracy (*coalition*) ranges from 0 to 1, the graph depicts the predicted probability of providing bilateral aid for a large coalition government minus the predicted probability of providing bilateral aid for a small coalition government for different donor types.

Consistent with Hypothesis 1, as the level of humanitarian responsiveness in donors increases, an increase in recipient country democratic institutions increases the probability

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Table 3: The Effects of Responsiveness and Democracy on the Provision of Bilateral Aid

	(1) Pr(bilateral=1|X)	(2) Pr(bilateral=1|X)
Responsiveness Index	0.1550	0.3053
	(0.8209)	(0.6479)
Coalition	0.2597	
	(0.4943)	
Responsive*Coalition	0.4359	
	(0.4730)	
Polity		0.0226
		(0.2445)
Responsive*Polity		0.2259
		(0.2345)
Constant	-0.8578	-0.6972
	(0.7382)	(0.5886)
N	2151	2151

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; Standard errors clustered by donor.
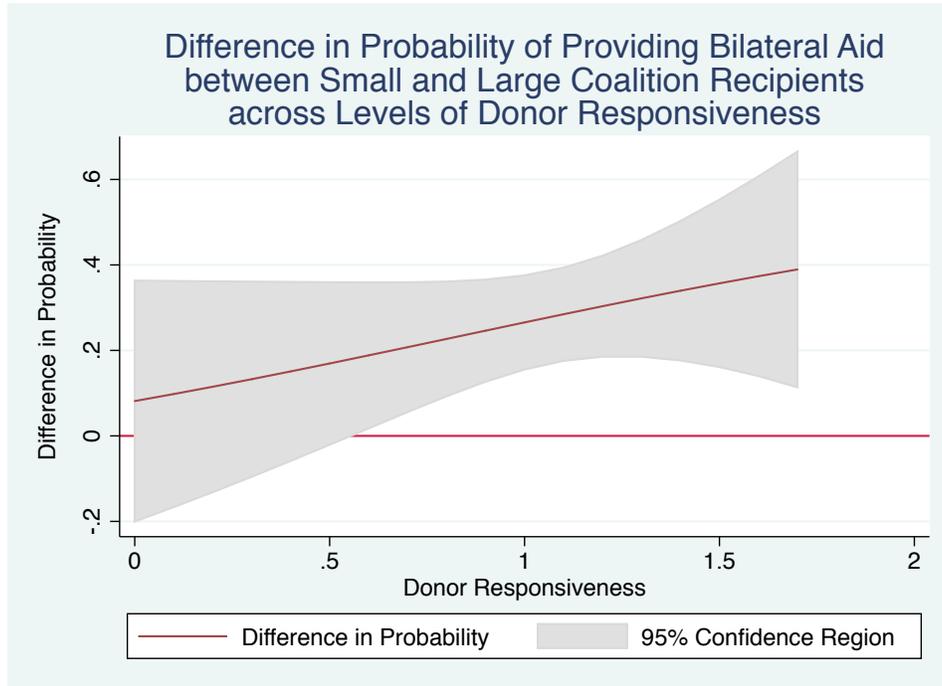

Figure 3: Coalition Size, Responsiveness and Bilateral Aid

of providing bilateral aid following a disaster. This is evident from Figure 3 as the difference in predicted probabilities of providing aid to a large coalition recipient compared to a small coalition recipient is increasing in donor responsiveness. The more responsive a given donor, the more likely they are to reward improving democratic institutions with the provision of aid directly to the government. Furthermore, consistent with Hypothesis 2, at high levels of humanitarian responsiveness, increasing the coalition size of a recipient country results in a significant positive effect on the likelihood of providing bilateral aid. For the United States, which has a responsiveness index (.88) that is slightly above the average of the OECD donors (.76), a shift from a small coalition to a large coalition recipient country increases the probability of providing bilateral aid by 23 percentage points (from 24% to 47%). For Japan, the most responsive country in the sample, a change from a small coalition to a large coalition country results in an even larger increase in the predicted probability of providing bilateral aid of 38 percentage points. For large coalition recipients that experience a natural disaster, Japan has a predicted probability of providing bilateral aid of more than 64% compared with a predicted probability of only 27% for small coalition recipients. Figure 3 also reveals that the impact of stronger democratic institutions in a recipient country has no statistically significant effect on the probability of providing bilateral aid for low responsive donors. The difference in predicted probabilities is not significantly different than 0 for countries with a responsiveness index less than about .6. These results do not confirm Hypothesis 3, which predicted a significant negative effect on the propensity to give bilaterally for low responsive donors. The results do, however, demonstrate the different reactions to stronger recipient country democratic institutions in low responsive and high responsive donor countries. For low responsive donors, a shift in a recipient country from a less democratic to a more democratic regime has no significant effect on their propensity to provide disaster aid bilaterally, while the same shift can more than double the probability of giving bilateral aid for high responsive donors.

Figure 4 presents the difference in predicted probabilities of providing bilateral aid for

a democratic versus a nondemocratic recipient across different levels of donor humanitarian responsiveness. These results are consistent with the coalition size measure of democratic institutions used in Figure 3 above. The effect of a democratic recipient on the probability of providing bilateral aid is increasing in donor responsiveness levels, which confirms Hypothesis 1. Furthermore, for highly responsive donors, the presence of democratic institutions in a recipient country increases the likelihood of providing bilateral aid. Sweden (a country commonly thought to be highly humanitarian in its giving) has a responsiveness index of 1.02. A shift in the recipient country to a democracy results in an increase of 10 percentage points in the predicted probability for Sweden of providing bilateral aid (from 35% to 45%). For Japan, the most responsive in the sample, the same shift toward democracy results in an even larger increase in the predicted probability of providing bilateral aid from 42% to 57%. Finally, Figure 4 reveals that the impact of stronger democratic institutions in a recipient country has no statistically significant effect on the probability of providing bilateral aid for low responsive donors. The difference in predicted probabilities is not significantly different than 0 for countries with a responsiveness index less than about .7. The results from Figures 3 and 4, therefore, suggest that donors have different preferences for how the presence of stronger democratic institutions in disaster-affected countries affects their propensity to provide aid directly to the recipient government.

Conclusion

This paper contributes to the extensive literature on the determinants of foreign aid giving by distinguishing between donor types with different preferences in their levels of humanitarian responsiveness to disasters. Classifying donors by type provides a way to adjudicate between competing theoretical predictions and empirical results concerning the effect of recipient country democratic institutions on the provision of foreign aid. Using disasters and the provision of relief aid via different channels, the results suggest that as donors become
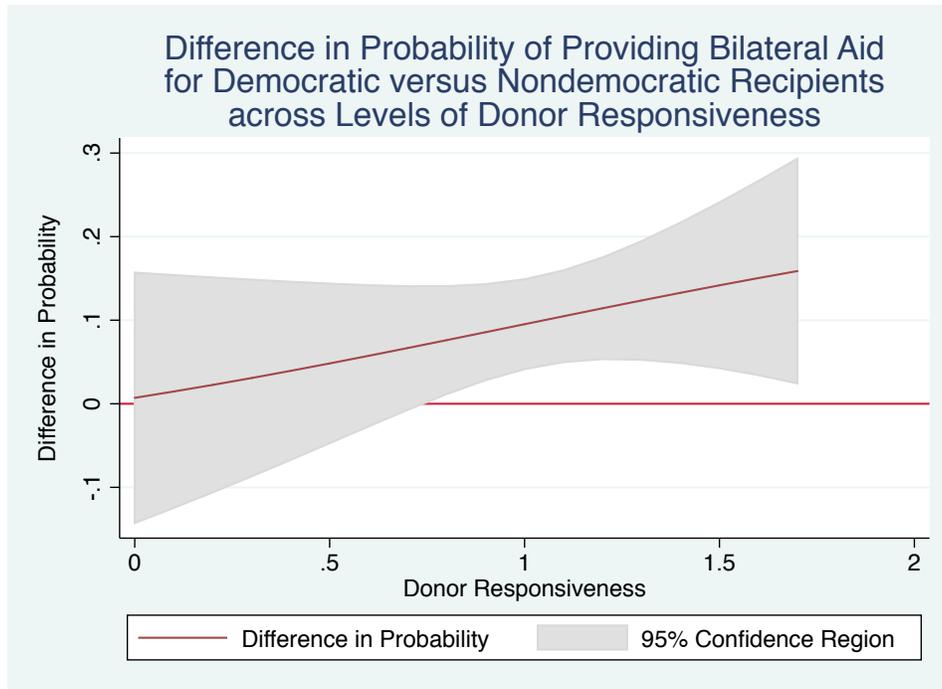
Figure 4: Polity, Responsiveness, and Bilateral Aid

more responsive to natural disasters, the effect of stronger democratic institutions on the probability of providing aid bilaterally increases. For high responsive donors, the presence of strong institutions signals that aid provided directly to the government should filter to those in need, while the same distribution to victims is in question in recipient countries lacking such institutions. Conversely, for low responsive donors, who may be more interested in policy concessions than in responding to humanitarian need, improving democratic institutions in a disaster-affected country has no effect on their probability of providing aid bilaterally.

Several avenues exist for future research. One possible extension would be to compare the highly democratic OECD donors with some of the less democratic donors to determine whether donor country democratic institutions influence the provision of bilateral aid via the same mechanisms described above. Another extension would be to compare state donors with multilateral and NGO donors to determine if preferences are heterogeneous between as well as within each of these groups of donors.

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