Does Aid Help Refugees Stay? Does Aid Keep Refugees Away?

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Abstract: Political decision-makers advocate foreign aid as a powerful tool to reduce flows of refugees struck by humanitarian crises. This article analyzes whether and to what extent inflows of foreign aid are indeed effective in reducing the net flows of refugees from recipient countries. More specifically, we estimate the causal effects of total aid inflows on total refugee outflows in a monadic setting, as well as the effect of aid inflows on the flow of refugees to the respective donor country in a dyadic setting. We combine refugee data from UNHCR for 143 countries of origin over the 1976-2014 period with OECD data on bilateral official development assistance. The interaction of donor-government fractionalization and a recipient country's probability to receive aid provides a powerful and excludable instrumental variable, controlled for the levels of the interacted variables, various control variables, and fixed effects for country and time. At the monadic level, our results provide no evidence that total aid inflows reduce refugee outflows. The aid becomes however more successful with an increasing share of humanitarian aid in total aid. At the dyadic level, donors appear to be successful in reducing refugee inflows into the donor country itself, in particular when given to allies. We also find evidence that aid causes a reduction of refugee flows if aid is given to countries bordering the refugees' homes.

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1. INTRODUCTION

Politicians and pundits advocate foreign aid as a supposedly powerful tool to reduce flows of refugees struck by civil wars, natural disasters, and other humanitarian crises, for at least two reasons. One, development cooperation is seen to "fight the causes of flight and expulsion."[1] Two, Western politicians tie aid to recipient countries' cooperation in reducing the flows of refugees and accepting to take back some of those who donors aim to repatriate.[2]

Indeed, the share of foreign aid in donor budgets surged during the recent European refugee crisis, though much of the "aid" is spent in donor rather than recipient countries.[3] Recent empirical research confirms that donors systematically channel aid to reduce the flow of migrants and refugees to donor countries, controlled for recipient-country need (Czaika and Mayer 2011, Bermeo and Leblang 2015). The European Union makes this policy explicit, for example in charging its High Level Working Group on Asylum and Migration (established in 1998) with assessing "the effectiveness of aid and development strategies in the battle to limit economic migration" (see van Selm 2004, cited in Parsons and Winters 2014). In 2013, according to the then-President of the European Commission José Manuel Barroso, the European Union must continue their "political and development action to improve the living conditions in the countries of origin, working with them there, so that people do not have to flee their homes."[4] While some studies have focused on the correlation between aid and migration,[5] there is no causal evidence on whether and to what extent the aid is effective in achieving the donors' goal to reduce the flow of refugees to their shores. This is the question we aim to address in this paper.

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[1] See, for example, German Chancellor Angela Merkel's speech at the United Nations Sustainable Development Summit (https://www.bundesregierung.de/Content/EN/Reden/2015/2015-09-25-merkel-newyork-un_en.html, accessed October 16, 2016).

[2] Recent examples include the German Interior Minister Thomas de Maizière, the German Vice Chancellor Sigmar Gabriel, and the Austrian Foreign Minister Sebastian Kurz (see http://www.spiegel.de/international/germany/refugee-crisis-leads-to-new-focus-of-german-foreign-policy-a-1062116.html and https://www.euractiv.com/section/development-policy/news/austria-seeks-eu-aid-suspension-for-countries-rejecting-failed-refugees/, accessed October 7, 2016).

[3] See for example the European Commission's press release, April 13, 2016 http://europa.eu/rapid/press-release_IP-16-1362_en.pdf (accessed October 2, 2016).

[4] See the European Commission's 2013 Statement by President Barroso following his visit to Lampedusa http://europa.eu/rapid/press-release_SPEECH-13-792_en.htm (accessed October 11, 2016).

[5] Parsons and Winters (2014) summarize the literature on aid and migration (rather than flows of refugees). The bulk of studies focuses on correlations rather than causation (e.g., Lucas 2005). Berthélemy et al. (2009) instrument aid with development, population, and institutions; Moullan (2013) uses GMM-type internal instruments. None of these convincingly address the exclusion restriction. For what it is worth, it seems that aid is positively rather than negatively correlated with migration outflows. This contrasts recent findings by Lanati and Thiele (2017) who find a negative link between total aid and a recipient country's emigration rate.

Specifically, we analyze whether inflows of foreign aid are effective in reducing the outflows of refugees from recipient countries. We estimate the effects of total aid inflows on total refugee outflows in a monadic setting, as well as the effect of aid inflows on refugee outflows to the respective donor country in a dyadic setting. Our dataset combines refugee data from the United Nations High Commissioner for Refugees (UNHCR) for 143 origin countries over the 1976-2014 period with data from the OECD on bilateral development assistance and humanitarian aid.

We identify the causal effect of aid relying on an instrumental variable (IV) suggested in Dreher and Langlotz (2015). Variation in the amount of aid a recipient country receives over time is identified by changes in the degree of government fractionalization of its donor countries. Higher fractionalization increases donor government expenditures, which in turn increases the amount of aid given by a donor. Countries that generally receive more aid from a donor have a higher probability to receive a larger chunk of increases in aid compared to countries that hardly receive aid from a donor. The probability to receive aid thus represents the cross-country dimension of our instrument. The IV is then constructed as the interaction of donor government fractionalization and the recipient countries' probability to receive aid. Controlling for government fractionalization and the probability to receive aid through the inclusion of country- and time-specific fixed effects, the interaction provides a powerful and excludable instrument.

To foreshadow our results, we find no robust evidence that total aid inflows reduce refugee outflows. Only with a long delay of twelve years or more we find refugee-reducing effects of aid. However, donors appear to be successful in reducing refugee inflows into the donor country itself. This effect is most pronounced one and two three-year periods after the aid has been disbursed. These findings are robust when we use various alternative definitions of our control variables, use yearly data instead of three-year averages, drop island countries and other potential outliers, allow for different lag structures of our covariates, or broaden the definition of our dependent variable to cover asylum seekers in addition to refugees.

We complement the main analysis with a number of additional tests. First, we find that aid given to the origin countries' neighbors reduces the number of refugees in donor countries. In concert with the findings of the main analysis, this could be interpreted as evidence that donors successfully use their aid to induce countries bordering the refugees' homes either to block refugee flows or to absorb the migrants themselves. Second, our results suggest that aid to countries allied with the donor is more effective in reducing refugee flows. Third, changes

in the root causes of refugee flows—disasters, or repression of human rights, for example—do hardly change the effect of aid. Finally, we analyze whether humanitarian aid, the component of official development assistance that is targeted at humanitarian crises, is more effective than total foreign aid.[7] At the monadic level, we indeed observe that aid reduces the number of refugees once the share of humanitarian aid in total aid is sufficiently high.

Our contribution to the literature is threefold. First, by focusing on the number of refugees and people in refugee-like situations, we add to the aid effectiveness literature, which has been largely (but not exclusively) concentrated on the aid-growth nexus (e.g., Burnside and Dollar 2000, Galiani et al. 2017). Second, we contribute to the still underdeveloped strand of the migration literature that focuses on understanding the causes of flows of migrants, refugees, and asylum seekers (Neumayer 2005, Barthel and Neumayer 2015). Finally, our paper relates to the public debate about how (not) to respond to refugee crises and the ongoing European refugee crisis in particular (e.g., Moraga and Rapoport 2015, Maystadt and Verwimp 2015, Aiyar et al. 2016).

We proceed as follows. In the framework of a push-pull theory of migration (Lee 1966), Section 2 discusses the mechanisms through which foreign aid can affect the volume of refugee flows as a whole as well as to a particular donor country. In Section 3, we present our data and empirical strategy to identify causal effects of development aid on refugee flows. Section 4 presents and discusses our empirical findings, while Section 5 tests the robustness of these results. The final section summarizes our findings and highlights the implications on how governments can use foreign aid when facing humanitarian crises around the globe.

2. HOW AID CAN AFFECT REFUGEE FLOWS

Foreign aid can affect the push and pull factors on refugee flows in a number of important ways. Push factors refer to longer-term development-related outcomes in the origin countries but also to peoples' immediate concerns when being hit by crises. The broader literature on migration has shown that outflows depend on GDP per capita, trade flows, population size, economic and political freedom, human rights, and the age structure of the population (Berthélemy et al. 2009, Parsons and Winters 2014). Scholars have also investigated whether war and natural and man-made catastrophes affect out-migration (e.g., Neumayer 2005,

[7] This assumes that aid is not fully fungible, as any distinction of aid according to sectoral purposes would then be meaningless. See Van de Sijpe (2012) and Milner et al. (2016).

Laczko and Aghazarm 2009). We expect these push factors to determine the flow of refugees as well. To the extent that foreign aid alleviates unmet humanitarian needs, economic hardship, and other push factors, it should thus reduce the flow of refugees.

However, the literature on aid effectiveness is mixed. There is no robust evidence on whether or not aid affects economic growth (Doucouliagos and Paldam 2008, Dreher and Langlotz 2015, Galiani et al. 2017), economic and political freedom (Dreher and Gehring 2012), or trade (Cadot et al. 2014).[8] When aid fails to deliver development, or even hurts development either directly or via its adverse effects on democracy, institutions, conflict, the terms of trade, and income inequality (Bjørnskov 2010, Rajan and Subramanian 2011, Clemens 2014, Nunn and Qian 2014, Ahmed 2016, Bluhm et al. 2016), refugee flows may even increase. To the extent that emergency aid saves lives, but fails to deliver hope and development, the pool of potential refugees increases. Foreign aid can also have the perverse effect of creating more potential refugees in the first place as it incentivizes governments to reduce their engagement in disaster prevention and preparedness (Cohen and Werker 2008; Raschky and Schwindt forthcoming). Even if development aid improves the well-being of the recipient population, the aggregate effect on refugee flows is unclear. Increases in income do not only incentivize potential refugees to stay, they might also enable people to pay traffickers and thus lead to larger refugee flows in total. In line with this, Dao et al. (2016) show that development increases people's capabilities and aspirations and causes more people to emigrate.

Aid can have more immediate effects as well. Humanitarian aid is given to alleviate the consequences of humanitarian crises, including natural disasters, wars, and famines. Providing food, tents, medicine, and other basic needs reduces immediate pressure to seek refuge abroad. What is more, aid inflows are often highly visible to the affected population and might foster beliefs of a better future at home, to the extent that people expect the aid to improve their future lives.

We expect the donors' motive for giving aid to be crucial for its effect (Dreher et al. 2016). Donors explicitly use parts of their aid to put pressure on recipient governments. They condition it on the deterrence of out-migration (Azam and Berlinschi 2009). For example, recipient governments are expected to strengthen their border controls and fight human trafficking. Moreover, aid is used in exchange for recipient governments to facilitate the

[8] Werker (2012), Doucouliagos (2016), and Dreher et al. (2017) provide recent surveys of the aid effectiveness literature.

repatriation of refugees.[9] Aid labelled as "humanitarian" is most likely to be used for this purpose, as the bulk of it is disbursed at times of particular pressure on donor countries. We expect humanitarian aid to be particularly effective in reducing the number of refugees.

Foreign aid can affect pull factors as well. It is sometimes argued that aid benefits the donors in addition to or rather than the recipient. To the extent that aid makes *donor* countries better off—in terms of trade-induced development (Martínez-Zarzoso et al. 2009), access to natural resources (Finney 1983), or political concessions from the aid recipients (Vreeland and Dreher 2014)—the donor country becomes more attractive as a host. Since donors care about the visibility of their projects, aid has the potential to improve (or deteriorate) perceptions of the donor among the recipient population (e.g., Dietrich et al. 2015, Milner et al. 2017). Parts of it are invested in search and rescue operations that assure that refugees actually reach their destination country.

Taken together, we have no clear expectation about the overall effect of total aid on refugee flows. While we still start the empirical analysis examining the net effect of overall aid on refugee flows, our hypotheses can be summarized according to a number of dimensions. The first dimension concerns the timing of aid. Parts of the push and pull factors introduced above are indirect and have the potential to change the flow of refugees in the medium-term, to the extent that they positively or negatively affect development-related outcomes in the donor or recipient countries. In order for these effects to deliver, we need to allow sufficient time to pass between the disbursement of aid and the potential effect. Given the mixed results of the aid effectiveness literature concerning the effects of aid on development, we have no strong expectations regarding the medium-term and long-term effect of aid on refugee flows.

We expect the effect of aid on refugee flows to be more pronounced in the short-run, given that parts of the aid directly aim at addressing immediate needs during humanitarian crises and some aid is directly used to pressure recipient governments to reduce refugee flows or to facilitate repatriation. In line with that expectation, humanitarian aid is arguably more

[9] Anecdotes are easy to find. For example, the German Minister of the Interior argued in 2015 that since a lot of development aid has been directed to Afghanistan, "one can expect that the Afghans stay in their country." (https://www.bundesregierung.de/Content/DE/Artikel/2015/10/2015-10-28-de-maizi%C3%A8re-statements.html, accessed 22 February 2017). According to German Vice chancellor Sigmar Gabriel "[i]t cannot be that you take the aid, but not your own citizens" (http://www.zeit.de/politik/deutschland/2016-01/sigmar-gabriel-entwicklungshilfe-fluechtlingskrise-nordafrika, accessed 22 February 2017). Similarly, former French President Nicolas Sarkozy expressed his hope "that development aid will be made conditional on readmission visas and the fight against illegal immigration" (http://web.archive.org/web/20170127220901/https://www.sarkozy.fr/international_europe_terrorisme, accessed 22 February 2017). All quotes are our translations.

effective in reducing the number of refugee flows compared to other aid, given that it directly targets the need of people affected by crises. A dimension that is important to our analysis concerns the level of aggregation. Donor governments are not necessarily motivated by humanitarian goals but to some extent aim to reduce the flows of refugees to their own country. They provide aid to countries affected by humanitarian crises and their neighbors in order to strengthen the capacity to host large flows of refugees in their home region. The ultimate goal is to discourage refugees to move towards the donor country. While aid spent this way would not affect the total flow of refugees, it has the potential to reduce the flows of refugees to the donor spending the aid. Moreover, visible aid projects, independently of whether they appear effective or counter-productive, are also more likely to affect attitudes with respect to specific donors, rather than with respect to all donors at the same time. We thus expect the effects of aid to be more pronounced at the dyadic—donor-origin—relationship compared to the aggregate—recipient-centric—level of analysis.

Fourth, we expect that it matters whom the aid is given to. Donors use aid also to support neighboring countries to host refugees. We therefore investigate whether the number of refugees in donor countries is reduced by aid given to the origin countries' neighbors. We also expect certain types of recipient governments to be more likely to cooperate with the donor in response to aid. We expect a donor's political allies to be more likely to be compliant with repatriation agreements, given that they have more to lose from not honoring the agreement than non-allied countries.

3. DATA AND METHOD

We study the effect of development aid on refugee flows at two levels of analysis. In a first step, we take the perspective of the country of origin and analyze whether total aid inflows reduce the number of refugees leaving the country. In a second step, we turn to the dyadic (donor-origin) level and test whether aid reduces refugee flows from the country receiving the aid into the respective donor country. Our first regression model is the following:

$$Ref_{i,t} = \beta_1 Aid_{i,t-z} + \beta_2 X_{i,t} + \eta_i + \tau_t + \varepsilon_{i,j,t}, \quad (1)$$

where $Ref_{i,t}$ is the natural logarithm of net refugee flows from origin country i to the entire world (data from UNHCR 2015) in a period t, and $Aid_{i,t-z}$ is bilateral net Official Development Assistance (ODA) as a share of origin-country GDP in periods t-z, with z

ranging between zero and five.[10] We take data from the OECD (2016) and cover aid provided by all 28 bilateral donors of the OECD's Development Assistance Committee (DAC).[11] The covariate vector $X_{i,t}$ is a set of origin-specific characteristics—the so-called push factors. It includes the lagged log of the stock of all refugees from origin country i in the world (UNHCR 2015), the log of population size, the share of young in the population (both from World Bank 2016), the number of people affected by natural and man-made catastrophes (Guha-Sapir et al. 2016), trade as a share of GDP (IMF 2015), a binary indictor of democracy (Cheibub et al. 2010, updated in Rode and Bjørnskov 2016), an index of economic freedom (Gwartney et al. 2015), an index of human rights (Fariss 2014), a binary variable indicating conflicts with more than 25 battle-related deaths (Gleditsch et al. 2002), and the log of GDP per capita (World Bank 2016).[12]

We further control for fixed effects at the origin-country- and period-level, η_i and τ_t. The resulting estimation dataset covers 143 countries of origin over the 1976-2014 period.[13] We average all data over three years to smooth out yearly fluctuations, as is common in the aid effectiveness literature.[14] Standard errors are clustered at the origin-country level.

Our second regression model is at the donor-origin-period level:

$$Ref_{i,j,t}=\beta_1 Aid_{i,j,t-1} + \beta_2 X^1{}_{i,j,t} + \beta_3 X^2{}_{i,t} + \beta_4 X^3{}_{j,t} + \eta_{i,j} + \tau_t + \varepsilon_{i,j,t}, \quad (2)$$

where $Ref_{i,j,t}$ is the natural logarithm of net refugee flows from origin country i to donor country j in a three-year period (UNHCR 2015). $Aid_{i,j,t-1}$ is the amount of net ODA disbursed by donor j to origin country i in period $t-1$ as a share of GDP (OECD 2016).

[10] We compute net flows by taking the first difference in refugee stock values from period t to period t-1. Note that net flows turn negative in a small number of cases (5 percent of our observations in the dyadic dataset). We replace them with zero following Moore and Shellman (2007) and add one to all observations before taking logs. ODA includes all transfers (i) that are provided by official agencies to developing countries and multilateral institutions; (ii) with the main objective of economic development and welfare; and (iii) which are concessional, reflecting that the grant element is at least 25 percent.

[11] For a list of donor and origin countries included in the analysis, see Appendix A.

[12] We provide detailed definitions of all variables in Appendix B and descriptive statistics in Appendix C. To test the robustness of our findings, we later also replace the Fariss human rights index with the physical integrity rights measure from CIRI (2016), the conflict dummy with the number of terror events (START 2016), the total number of people affected by disasters with the number of deaths caused by disasters (Guha-Sapir et al. 2016), and the democracy dummy with the Polity IV index (Marshall et al. 2010). We replace bilateral trade measured as a share of GDP with the log of constant bilateral trade flows.

[13] We only include recipient countries that have been at least once on the "DAC List of ODA Recipients" over the 1997-2013 period. To make our results comparable across model specifications, we restrict the sample in all models to those observations included in the regressions that contain all control variables. This choice does not affect our main findings.

[14] See, for example, Dreher and Lohmann (2015) and Galiani et al. (2016). Much of the literature on aid and growth averages over four or five years. We prefer to focus on shorter periods so that we can include deeper lags in our regressions. We return to this below.

Following the literature on the determinants of refugee and migration flows at the dyadic level (e.g., Moore and Shellman 2007, Berthélemy et al. 2009, Beine et al. 2016), all regressions contain three vectors of contemporaneous control variables that vary either at the country-pair-period level ${X^1}_{i,j,t}$, the origin-period level ${X^2}_{i,t}$, or the donor-period level ${X^3}_{j,t}$. The vector ${X^1}_{i,j,t}$ includes those country-pair-specific factors that vary over time: the lagged stock of refugees from origin country i in donor country j (UNHCR 2015), an index of bilateral entry restrictiveness (DEMIG 2015), and bilateral trade as a share of GDP (IMF 2015).[15] The vector of origin-specific covariates ${X^2}_{i,t}$ captures the same push factors already introduced above. Finally, the vector of donor-country-specific covariates ${X^3}_{j,t}$ includes the pull factors, which mirror the variables introduced as push factors above, but at the donor-country level (and excluding the share of young people in the population).[16] We also add an index of donor-specific entry restrictiveness that is independent of the origin country to capture the host country's overall level of restrictiveness.

All regressions also include country-pair-fixed effects $\eta_{i,j}$ and period-fixed effects τ_t. By including country-pair-fixed effects, we capture all time-invariant country-pair factors such as common language, geographic distance, contiguity, and colonial ties, which are usual determinants of refugee or migration flows (Berthélemy et al. 2009, Ortega and Peri 2013). We cluster standard errors at the donor-origin level. The resulting dataset at the dyadic level covers refugee flows from 143 origin countries to the 28 donor countries over the 1979-2014 period.[17] We again average data into three-year periods.

While we report conditional correlations between aid and refugee flows for comparison (estimated with OLS), aid and refugee flows are arguably jointly determined by variables we cannot control for in our analysis. What is more, to some extent refugee flows determine the amount of aid a country receives (Czaika and Mayer 2011, Bermeo and Leblang 2015). We therefore rely on IV regressions rather than OLS to test our hypotheses. Our instrumental variable for bilateral aid follows Dreher and Langlotz (2015). The instrument is an interaction of a time-variant variable – donor political fractionalization

[15] We start by assigning a value of zero to all observations in our base year 1976. We then add a value of one in each year in which the restrictiveness of entry across all laws increases. In analogy, the index decreases by one in a year where the donor country has on average loosened entry restrictions. Results are similar when we restrict the index to cover laws addressing refugees and asylum seekers only (available on request).

[16] Note that we do not include a democracy indicator for the donor countries as we are looking at a rather homogeneous group of donors.

[17] At this level of analysis, we lose two years, as the UNHCR refugee dataset does not include any flows to the 28 DAC donor countries before 1978.

$FRAC_{j,t}$ – and a time-invariant variable that varies at the country-pair level – the probability of receiving aid from a particular donor $\bar{P}_{i,j}$. The resulting interaction thus varies both across time and space. More precisely, we exploit the exogenous variation resulting from a differential effect of donor political fractionalization for regular and irregular aid recipient (origin) countries. As is well-established in the political-economy literature, donor government and legislature fractionalization are important determinants of overall government expenditures, due to the logrolling involved when more parties govern in concert (Volkerink and de Haan 2001, Scartascini and Crain 2002). Overall government expenditures in turn determine the size of the aid budget, which then results in positive or negative aid shocks at the recipient country level (Dreher and Fuchs 2011, Brech and Potrafke 2014).

As measure for political fractionalization, we use Beck et al.'s (2001) government fractionalization data for most of the 28 DAC donor countries. This variable measures the probability that two randomly-chosen deputies from among the parties forming the government represent different parties. In analogy to Dreher and Langlotz (2015), we replace government fractionalization with legislature fractionalization if a country's political system does not yield variation in government fractionalization over time. This is the case for Canada and the United States throughout the entire sample. The United Kingdom and France also stand out, as their political systems rely on majority election rather than proportional representation. But since government fractionalization shows some variation there, we rely on government fractionalization in our main regressions. Below, we test robustness to how we code these four countries in a number of ways, where we (1) replace government fractionalization with legislature fractionalization for the United Kingdom and France, (2) drop the United States and Canada, and (3) drop the United Kingdom and France in addition.

Dreher and Langlotz (2015) follow Nunn and Qian (2014) in defining the probability of receiving aid from donor j as $\bar{P}_{i,j} = \frac{1}{38}\sum_{y=1}^{38} P_{i,j,y}$ where $P_{i,j,y}$ is a binary indicator variable that is one when recipient i received a positive amount of aid from donor j in year y.

When analyzing the aggregated effects at the origin-period level, we follow a similar procedure as in Dreher and Langlotz (2015) by first generating an IV at the donor-origin level, which we then aggregate over all 28 donor countries. Before running the Two-Stage Least Squares (2SLS) procedure at the recipient level, Dreher and Langlotz (2015) run a regression at the donor-recipient-period level where bilateral aid is predicted from the exogenous IV –

$FRAC_{j,t} * P_{i,j}$ – that varies at the dyadic level.[18] $FRAC_{j,t} * P_{i,j}$ is the interacted instrument, with $FRAC_{j,t}$ as its time-varying component and $P_{i,j}$ as a component that varies over recipient countries. This step is used for creating an instrument that can be aggregated across donors to derive an IV at the recipient-period level. In our setting with just one dyadic instrumental variable, this procedure is equivalent to aggregating this variable over all donors j and using the aggregated term as an IV at the recipient-period level. We therefore aggregate the interaction term $FRAC_{j,t} * P_{i,j}$ over all donors j. The sum $\sum_j FRAC_{j,t} * P_{i,j}$, which varies over recipients i and period t, is then used as the IV for $Aid_{i,t}$ in equation (1). The first-stage regression at the recipient-period level thus becomes:

$$Aid_{i,t} = \beta_1 \left(\sum_j FRAC_{j,t} * P_{i,j} \right) + \beta_2 X_{i,t} + \eta_i + \tau_t + \varepsilon_{i,j,t}, \quad (3)$$

where $X_{i,t}$ is the same set of control variables as in equation 1. After aggregating over all donors, we control for the sum of the levels of the interaction $\sum_j FRAC_{j,t}$ and $\sum_j P_{i,j}$ by including period-fixed effects τ_t and origin-fixed effects η_i. The remaining variation in the first-stage regression is then introduced by the interaction term only. Results are identical to using the zero-stage procedure as described in Dreher and Langlotz (2015).

While we refer the reader to Dreher and Langlotz (2015) for a more detailed description of our IV, note that the intuition behind it follows the logic of a difference-in-difference approach. We investigate whether there is a differential effect of donor-government fractionalization on the amount of aid given to countries with a high compared to a low probability of receiving aid from this donor. The identifying assumption is that refugee flows from countries with differing probabilities of receiving aid will not be affected differently by changes in donor political fractionalization, other than via the impact of aid, controlled for recipient-country and period-fixed effects and the other variables in the model. In other words, as in any difference-in-difference setting, we rely on an exogenous treatment and the absence of different pre-trends across groups. Controlled for period-fixed effects, donor political fractionalization cannot be correlated with the error term and is thus clearly exogenous to aid. In order for different pre-trends to exist, these trends across countries with a high compared to a low probability to receive aid would have to vary in tandem with period-to-period changes in donor fractionalization. Given that donor fractionalization follows no obvious trend in our data, we consider this unlikely.

[18] This procedure has been applied in the trade and aid context before to make use of an IV that varies at the dyadic level (e.g., Frankel and Romer 1999, Rajan and Subramanian 2008).

4. RESULTS

4.1 Does Aid Help Refugees Stay?

We present our main results in two sets of regressions. The first focuses on the effect of the total amount of aid disbursed in recipient countries on the number of refugees leaving the country. We show these results in Table 1. Column 1 reports the unconditional effect of aid on refugee flows, focusing on the OLS regressions. Column 2 adds those control variables that are unlikely to be channels for how aid affects refugee flows, while column 3 shows results with the complete set of controls.

As can be seen from columns 1–3, there is a significant and negative correlation between aid and the number of refugees. However, this should not be interpreted as evidence of a negative causal effect of aid on refugee outflows. Endogeneity is likely to be eminent. For example, aid donors may avoid fragile countries that are a typical source of refugees.

Most of the control variables, if statistically significant, show the expected pattern. Reflecting push factors, we find refugee outflows to increase if the country of origin is affected by a conflict or war and to decrease with the respect of human rights in countries of origin (column 3). Less intuitively, refugees are more likely to leave more open countries, which could however reflect the ease to emigrate. None of the other control variables reaches statistical significance at conventional levels.

Columns 4–6 show the regressions estimated with 2SLS, in analogy to those reported with OLS. The first-stage F-statistics given in the table demonstrate the power of our instrument. We find no statistically significant effect of aid on refugee flows in any of the regressions. The coefficient hardly changes when we include our control variables, which implies that the potential effects of aid on these variables do not bias the coefficient of aid in either direction. This result is in line with our expectation that overall aid does not sufficiently contribute to development to measurably affect the sum of refugee flows after a three-year-period. To account for the more immediate effects of aid, column 7 replaces lagged aid with contemporaneous aid. We again do not observe a significant effect of aid on refugee flows. It thus seems that aggregate aid does not substantially affect crisis management and economic prospects either – at least not to the extent that it significantly reduces the number of refugee flows.

Table 2 tests whether aid affects refugee flows after longer time lags. Panel A shows the aggregate 2SLS regressions with aid lagged by various periods, instrumenting aid with the appropriate lags of our instrument. All data are again averages over three-year periods and we use the same specification as shown in column 4 of Table 1. Panel B of Table 2 uses yearly data instead of averages over three-year periods. In both settings, the results are more encouraging when evaluating aid as a tool to reduce refugee flows compared to the more immediate results discussed above. Indeed, there is some evidence that aid reduces refugee flows—but only after four 3-year time periods, or twelve years. To provide an example, the coefficient on the aid variable lagged by four periods implies that an increase in aid by one percent of GDP decreases the number of refugees today by roughly one third. However, these long-term gains come at a cost. Our regressions using contemporaneous or once lagged values of aid point at short-term increases rather than decreases of refugee flows in response to increased aid flows. The corresponding coefficients on aid are both positive but only statistically significant at the ten-percent level. Taken together, our results at the aggregate level show that development aid can hardly be considered a panacea to reduce refugee flows. We only observe significant decreases in aggregate refugee outflows after twelve years.

4.2 Does Aid Keep Refugees Away?

In light of the largely insignificant causal effects of aid on refugee flows reported in the previous subsection, aggregate aid does not appear to be successful in enabling people to stay in their home country, at least not at the short- or medium-term. However, donor governments could still achieve their goal to reduce refugee inflows into their own country. To test this, the second set of regressions shows results for the dyadic model, focusing on whether and to what extent aid affects the number of refugees migrating from the country receiving the aid to the specific donor that grants it. Table 3 shows the results. In none of the three specifications of columns 1–3 is the correlation between aid and refugee flows statistically significant at conventional levels.

Results are strikingly different when we turn to our IV estimates. First, note again the strong F-statistics shown at the lower end of the table, highlighting the power of our instrument. Second, the coefficients for aid are statistically significant at the one-percent level (columns 4–6). The results show that bilateral aid substantially reduces net refugee outflows from the country receiving the aid to the donor granting it. The coefficient implies that an

increase in aid by one percent of GDP decreases the number of refugees by between 97.9 percent (column 5) and 99.6 percent (column 6). To put our results in perspective, note that the average bilateral aid disbursements as a share of GDP in our sample is 0.16 percent. Based on our estimates, we would thus expect refugee flows to the average donor country to be almost cut in half if the donor doubles its aid engagement to the average recipient country.

Column 7 shows the effect of contemporaneous aid on refugee flows. According to the results, there is none. This implies that the immediate effect of aid and the expectations resulting from it are insufficient to change people's decisions on emigration. The effects of aid —if any—seem to evolve over a longer period of time rather than being immediate.

We again investigate the timing in more detail. Panel A of Table 4 shows the dyadic 2SLS regressions with aid lagged by various periods, while Panel B of Table 4 uses yearly data instead of averages over three-year periods. As can be seen from panel A, the negative effect of aid on refugee outflows fades out over time. The effect is most pronounced one and two periods after the aid is disbursed. The effect remains negative in the third period after the aid is disbursed, but fails to reach statistical significance.[19] The results in panel B using yearly data are overall similar. The negative coefficient of aid is significant from the first year after the aid has been disbursed, and stays consistently significant until seven years after disbursement. The coefficient stays negative up to 12 yearly lags, but fails to reach statistical significance in most of the more distant years.[20] Taken together, these results show that aid is effective in reducing refugee inflows from recipient countries for a substantial period of time.

4.3 Exploring the mechanisms

We proceed with investigating how aid to the origin's neighbor countries affects the number of refugees in the donor country. Rather than testing whether aid given to a country is effective in reducing the flow of people from that same country, we test whether the evidence is compatible with the hypothesis that aid is used to induce neighbor countries to host them. We therefore replicate Tables 1 and 3 and replace aid as a share of GDP with average aid received by all countries *n* that share a boarder with country *i*, as a share of their GDP ("Mean Neighbor Aid/GDP").

[19] When we add further lags, the coefficient of aid is positive, but the instrument loses power. We also run regressions including all lags at the same time. However, the power of the instruments is insufficiently low to derive any conclusion from this.

[20] Again, when we add further lags (14 to 17 years), the coefficient of aid turns positive when aid is lagged by 14 and 16 years, but the instrument's power falls below the critical threshold of ten.

We instrument neighbor aid with the interaction of donor government fractionalization interacted with the probability that a neighbor receives aid from the donor. We use a zero-stage regression at the neighbor-origin-donor-year level. We then collapse predicted aid to the neighbor countries by taking the mean of all neighbors *n* for each origin-donor pair. Our instrument is then the mean of predicted bilateral aid to GDP of an origin country's neighbors (received from a specific donor) in year t, which we again average over three-year periods. In the dyadic setting, we predict average neighbor aid as a share of GDP with the resulting instrument. In the monadic setting, we use total bilateral aid from all donors, resulting in the sum of the predicted mean neighbor aid from all donors of all neighbors of each country *i*.

The results in Table 5 show that aid from donor *j* to neighbor countries *n* reduces refugee flows into donor country *j* from country *i*. In concert with the findings of the main analysis above, these results show that donors successfully use their aid to induce countries bordering the refugees' homes either to block refugee flows or to absorb the migrants themselves.

We next test the hypothesis that aid to allies is particularly effective in reducing the number of refugees. Our proxy for alliances builds on countries' voting in the United Nations General Assembly (UNGA). Specifically, we use the absolute distance between donor and recipient ideal point estimates, taken from Bailey et al. (2017). UNGA voting alignment is frequently used to measure political alliances (e.g., Alesina and Dollar 2000, Kersting and Kilby 2014, 2016). We prefer ideal point distances over simple affinity scores, as the former uses UNGA resolutions that were identical over time to "bridge observations," thus separating shifts in political alignment from mere changes in the UN agenda. Our regressions in Table 6 include this measure in tandem with its interaction with aid. As additional instrument, we therefore include our interacted instrument from the main analysis interacted with UNGA voting.[23] As can be seen, the negative effect of aid on refugee inflows tends to be stronger the more aligned the two countries are. The marginal effect is illustrated in Figure 1. The figure shows that as long as UNGA distance is below 3 (on a 0-5 scale), the effect of aid on refugee numbers is negative and significant, implying that aid is more effective in reducing refugee inflows when given to allies. Such countries are on more friendly terms with the donor and also have more to lose from not honoring agreements. A donor's political allies are thus arguably more compliant with repatriation agreements compared to other countries.

[23] We also test this at the monadic level, where we (i) include voting distance to the United States and (ii) the average distance to all 28 bilateral donors.

Finally, we turn to humanitarian aid. Specifically, we interact aid with the donor share that is devoted to humanitarian aid projects. We include our instrument from the main analysis and add its interaction with the share of humanitarian aid as second instrument. As can be seen in Table 7, the results for the monadic regression provide some evidence that humanitarian aid is more effective in reducing aggregate refugee flows. The result is thus in line with our expectation that humanitarian aid is more effective in reducing refugee flows compared to total aid.

Columns 3 and 4 of Table 7 turn to the dyadic level. There is no significant interaction; however, the first-stage F-statistic is borderline. Taken at face value, our results imply that humanitarian aid, which arguably lacks a strong strategic component, is effective in reducing total refugee flows, while total aid reduces the number of refugees to the donor country only.

The next section tests the robustness of our main results.

5. TESTS FOR ROBUSTNESS

We perform several tests of the robustness of our main findings. First, we change the definitions of some of our control variables to make sure that our results are not driven by these choices. Specifically, we replace (log) Disaster Affected by (log) Disaster Deaths (Gupta-Sapir et al. 2016), Trade/GDP by (log) Trade (in constant values), Fariss's Human Rights index by the Physical Integrity Rights from CIRI (Cingranelli et al. 2016), Conflict/War with (log) Terror Attacks (START 2016), and Cheibub et al.'s (2001) Democracy indicator with the Polity 2 index (Marshall et al. 2010). We build on our specification presented in column 6 of Tables 1 and 3, respectively, and replace one covariate at the time. In the dyadic setting, we replace both the respective origin- and donor-specific variables. In all specifications, our F-statistics remain above the critical value of ten indicating that our instrument remains strong. Our conclusions on the effect of aid on refugee flows are unchanged (see Appendix D for details). Second, we add the amount of aid provided by the remaining 27 DAC donor countries as a share of origin-country GDP as an additional control variable to the regression at the dyadic level. Again, our findings are virtually unaffected (see again Appendix D). Third, we test whether there is a non-linear effect of aid. The results in the dyadic setting show no evidence for a nonlinear effect of aid on refugee flows, which supports the choice of our baseline specification. The coefficient on the linear aid term

remains similar in size and statistically significant at the one-percent level (Appendix D). The F statistics on the squared term in the monadic setting is too low for meaningful interpretation.

Fourth, we enlarge the definition of our dependent variable to cover asylum seekers, i.e., persons claiming refugee status, in addition to those that have already obtained such status. Our qualitative conclusions remain the same (Appendix E). Fifth, we exclude the origin countries in Latin America from our sample. Arguably, the refugee dynamics are different in the Americas as the United States is the only industrialized country that can be reached overland. Our main results hold (Appendix E). Sixth, our conclusions hold when we use one-year lags rather than contemporaneous values of our covariates or when we replace the first lag of the refugee stock variable by a two-year lag (Appendix E).

Finally, we test the robustness with respect to alterations in the definitions of our IV for the reasons outlined above. Specifically, we (1) replace government fractionalization with legislature fractionalization for the United Kingdom and France, (2) drop the United States and Canada, and (3) drop the United States and Canada in addition to the United Kingdom and France. Our results, available on request, are similar.

6. CONCLUSIONS

This article analyzed whether and to what extent inflows of foreign aid reduce the outflows of refugees from countries receiving the aid. Our results show no robust effect of total aid inflows on total refugee outflows in a monadic setting, over the 1976-2014 period. Only with very long delays of twelve years and more, we observe significant refugee-reducing effects of total aid. However, we find aid to reduce the number of refugees once the share of humanitarian aid exceeds a certain threshold. Humanitarian aid thus seems to be successful in achieving its goals to some extent.

When we investigate the effect of bilateral aid inflows on refugee outflows to the respective donor country in a dyadic setting, we find that donors are successful in reducing the flow of refugees to the donor itself, over the 1979-2014 period, in particular when given to allies. These results suggest that total foreign aid is successful in reducing the flow of refugees to the donor country, but it fails to enable refugees to stay at home.

While our analysis focused on the effects of aid on refugee flows to developed countries that are active as foreign aid donors, future research might want to improve our understanding whether and to what extent aid can improve (or worsen) the situation of

developing host countries. The discrepancy between our results based on aggregate and dyadic regressions could be the result of donors successfully using the aid to divert the flow of refugees to other, less developed, countries. Anecdotal evidence suggests that donors use their aid to induce countries close to those in crises to accept larger flows of refugees than they would otherwise receive.[24] Indeed, our results show that aid given to a country's neighbors reduces refugee flows to the donor countries.

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[24] For example, the Prime Minister of Belgium explained his country's pledge of EUR 75 million for Syria at an international donor conference with the following: "75 million to allow the refugees to stay in their own region. The international support is intended to improve the refugees' living conditions. Health, education, better sanitary conditions and also better access to the labour market must be the priority. It is important that we encourage the refugees to stay in the region near their country of origin and to provide dignified living conditions. The support and commitment of the international community can make the difference" (see http://premier.be/en/belgium-pledges-75-million-eur-syria-international-donor-conference; accessed October 16, 2016).

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Table 1: Aggregated refugee flows and official development aid (1976-2014)

	OLS			IV			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Aid/GDP, lagged	-0.105**	-0.110**	-0.110**	0.246	0.270	0.128	
	(0.043)	(0.043)	(0.043)	(0.204)	(0.232)	(0.196)	
Aid/GDP							0.113
							(0.260)
(log) Refugee Stock, lagged			0.009			0.013	0.000
			(0.051)			(0.052)	(0.056)
(log) Population		0.797	-0.100		0.865	0.419	0.354
		(0.860)	(0.890)		(0.801)	(0.984)	(1.036)
Share of Young Population		-0.005	-0.027		-0.038	-0.038	-0.028
		(0.055)	(0.051)		(0.068)	(0.055)	(0.056)
(log) Disaster Affected		-0.018	-0.025		-0.049	-0.038	-0.028
		(0.043)	(0.041)		(0.049)	(0.043)	(0.043)
Trade/GDP		0.004***	0.003***		0.003***	0.003***	0.002
		(0.000)	(0.001)		(0.001)	(0.001)	(0.002)
Democracy			-0.100			-0.231	-0.172
			(0.540)			(0.591)	(0.594)
Economic Freedom			-0.095			-0.203	-0.182
			(0.304)			(0.284)	(0.286)
Fariss Human Rights			-1.655***			-1.653***	-1.630***
			(0.299)			(0.305)	(0.305)
Conflict/War			1.104*			1.094	1.276*
			(0.653)			(0.692)	(0.672)
(log) GDP p.c.			0.104			0.838	0.599
			(0.561)			(0.778)	(0.929)
Observations	1374	1374	1374	1374	1374	1374	1408
Kleibergen-Paap F stat.				18.516	16.067	18.745	8.493
Kleibergen-Paap LM stat.				17.227	15.336	16.217	8.816
K-P LM stat. p-val.				0.000	0.000	0.000	0.003

Notes: Standard errors in parentheses; significance levels: * 0.10 ** 0.05 *** 0.01.

Table 2: Timing of the effects at the aggregate level (2SLS, 1976-2014)

Lags	**no lag**	**1-period**	**2-period**	**3-period**	**4-period**	**5-period**
	(1)	(2)	(3)	(4)	(5)	(6)
	A. 3-year-periods					
Aid/GDP	0.230	0.246	-0.046	-0.151	-0.393**	-0.355*
	(0.299)	(0.204)	(0.181)	(0.189)	(0.191)	(0.195)
Observations	1408	1374	1250	1120	987	855
Kleibergen-Paap F stat.	9.108	18.516	13.166	16.213	16.770	18.447
Kleibergen-Paap LM stat.	9.983	17.227	11.358	13.508	14.283	14.931
K-P LM stat. p-val.	0.002	0.000	0.001	0.000	0.000	0.000
	B. yearly					
	no lag	**1-year**	**2-year**	**3-year**	**4-year**	**5-year**
Aid/GDP	0.367*	0.332*	0.233	0.214	0.139	0.105
	(0.213)	(0.184)	(0.172)	(0.167)	(0.139)	(0.146)
Observations	3970	3938	3815	3693	3570	3444
Kleibergen-Paap F stat.	10.743	14.410	14.995	16.065	15.720	13.090
Kleibergen-Paap LM stat.	11.120	14.324	14.273	14.630	13.546	11.251
K-P LM stat. p-val.	0.001	0.000	0.000	0.000	0.000	0.001
	B. yearly (continued)					
	6-year	**7-year**	**8-year**	**9-year**	**10-year**	**11-year**
Aid/GDP	0.118	0.050	0.043	-0.042	-0.195	-0.214
	(0.150)	(0.122)	(0.129)	(0.127)	(0.135)	(0.132)
Observations	3315	3185	3055	2925	2794	2663
Kleibergen-Paap F stat.	13.343	17.068	18.553	19.383	20.619	21.863
Kleibergen-Paap LM stat.	11.263	14.018	15.357	16.159	17.095	18.382
K-P LM stat. p-val.	0.001	0.000	0.000	0.000	0.000	0.000
	B. yearly (continued)					
	12-year	**13-year**	**14-year**	**15-year**	**16-year**	**17-year**
Aid/GDP	-0.245**	-0.292**	-0.268**	-0.274**	-0.234**	-0.310**
	(0.119)	(0.125)	(0.117)	(0.110)	(0.112)	(0.124)
Observations	2543	2423	2304	2187	2070	1958
Kleibergen-Paap F stat.	22.331	22.887	23.754	24.800	27.817	30.000
Kleibergen-Paap LM stat.	18.502	18.670	18.931	19.236	20.895	22.013
K-P LM stat. p-val.	0.000	0.000	0.000	0.000	0.000	0.000

Table 3: Dyadic refugee flows and official development aid (1979-2014)

	OLS			IV			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Aid/GDP, lagged	-0.016	-0.011	-0.017	-4.035***	-3.862***	-5.502***	
	(0.020)	(0.019)	(0.016)	(1.211)	(1.326)	(1.780)	
Aid/GDP							-0.843
							(0.805)
(log) Refugee Stock, lagged			0.200***			0.214***	0.190***
			(0.011)			(0.027)	(0.013)
Donor (log) Population		2.493***	1.709***		2.429***	1.562**	1.764***
		(0.308)	(0.236)		(0.528)	(0.666)	(0.241)
Donor (log) GDP p.c.		-0.444***	-0.245***		0.248	0.761*	-0.104
		(0.115)	(0.090)		(0.299)	(0.394)	(0.236)
Donor (log) Disaster Affected		0.027***	0.033***		0.016**	0.019*	0.031***
		(0.004)	(0.004)		(0.008)	(0.010)	(0.006)
Donor Economic Freedom		0.128***	0.117***		0.140**	0.135*	0.121***
		(0.035)	(0.033)		(0.056)	(0.072)	(0.039)
Bilateral Entry Restrictiveness		-0.245***	-0.205***		-0.151	-0.072	-0.124
		(0.088)	(0.071)		(0.172)	(0.223)	(0.096)
Donor Entry Restrictiveness		0.027***	0.014***		0.017**	-0.001	0.020***
		(0.005)	(0.004)		(0.008)	(0.011)	(0.004)
Donor Fariss Human Rights		-0.027	0.006		-0.107*	-0.107	0.017
		(0.030)	(0.026)		(0.061)	(0.079)	(0.035)
Donor Conflict/War		-0.104	0.024		0.214	0.488	0.104
		(0.131)	(0.091)		(0.347)	(0.444)	(0.088)
Bilateral Trade/GDP		0.000	-0.000		-0.002	-0.006	-0.000
		(0.000)	(0.000)		(0.003)	(0.005)	(0.001)
(log) Population		0.239**	0.021		0.156	-0.588**	-0.154
		(0.105)	(0.091)		(0.153)	(0.290)	(0.183)
Share of Young Population		0.010*	0.001		0.011	-0.004	-0.004
		(0.006)	(0.005)		(0.010)	(0.012)	(0.007)

(log) Disaster Affected				0.028***	0.023***	0.009***
	(0.003)	(0.003)		(0.008)	(0.009)	(0.003)
(log) GDP p.c.		-			-0.995***	-0.356**
		(0.054)			(0.356)	(0.168)
Democracy		0.037			0.166*	0.062
		(0.036)			(0.097)	(0.043)
Economic Freedom		-			-0.070	-0.181***
		(0.027)			(0.072)	(0.027)
Fariss Human Rights		-			-0.263***	-0.277***
		(0.021)			(0.054)	(0.024)
Conflict/War		0.046			0.103	0.047
		(0.048)			(0.095)	(0.051)
Observations	30428	30428	30428	30428	30428	32052
Kleibergen-Paap F stat.			14.780	11.978	11.328	9.283
Kleibergen-Paap LM stat.			14.482	11.780	11.141	9.168
K-P LM stat. p-val.			0.000	0.001	0.001	0.002

Notes: Standard errors in parentheses; significance levels: * 0.10 ** 0.05 *** 0.01.

Table 4: Timing of the effects at the dyadic level (2SLS, 1979-2014)

	(1)	(2)	(3)	(4)	(5)	(6)
			A. 3-year periods			
Lags	**no lag**	**1-period**	**2-period**	**3-period**	**4-period**	**5-period**
Aid/GDP	-0.843	-5.502***	-5.660***	-1.529	3.564**	6.782**
	(0.805)	(1.780)	(1.677)	(1.055)	(1.688)	(3.382)
Observations	32052	30428	27989	24638	21352	17954
Kleibergen-Paap F stat.	9.283	11.328	13.367	9.150	7.622	4.900
Kleibergen-Paap LM stat.	9.168	11.141	13.122	9.039	7.520	4.849
K-P LM stat. p-val.	0.002	0.001	0.000	0.003	0.006	0.028
			B. yearly			
Lags	**no lag**	**1-year**	**2-year**	**3-year**	**4-year**	**5-year**
Aid/GDP	-0.633	-1.270**	-3.006***	-2.855***	-2.302***	-2.519***
	(0.451)	(0.534)	(0.852)	(0.773)	(0.603)	(0.661)
Observations	88884	87376	85353	82989	79884	76718
Kleibergen-Paap F stat.	10.477	12.150	15.831	18.254	22.094	21.728
Kleibergen-Paap LM stat.	10.358	11.981	15.567	17.915	21.636	21.284
K-P LM stat. p-val.	0.001	0.001	0.000	0.000	0.000	0.000
			B. yearly (continued)			
Lags	**6-year**	**7-year**	**8-year**	**9-year**	**10-year**	**11-year**
Aid/GDP	-3.391***	-1.460**	-1.043	-2.350**	-0.255	-0.831
	(0.924)	(0.678)	(0.698)	(1.059)	(0.713)	(0.648)
Observations	73456	70259	67067	63870	60704	57517
Kleibergen-Paap F stat.	17.381	13.688	10.551	7.891	8.138	10.054
Kleibergen-Paap LM stat.	17.062	13.484	10.423	7.812	8.049	9.910
K-P LM stat. p-val.	0.000	0.000	0.001	0.005	0.005	0.002
			B. yearly (continued)			
Lags	**12-year**	**13-year**	**14-year**	**15-year**	**16-year**	**17-year**
Aid/GDP	-0.794	0.955	2.350**	1.440	2.769*	1.744
	(0.603)	(0.712)	(1.106)	(0.939)	(1.417)	(1.324)
Observations	54629	51827	48853	45999	43163	40487
Kleibergen-Paap F stat.	11.925	10.159	7.745	6.077	5.724	3.909
Kleibergen-Paap LM stat.	11.730	9.999	7.650	6.017	5.684	3.893
K-P LM stat. p-val.	0.001	0.002	0.006	0.014	0.017	0.048

Notes: Standard errors in parentheses; significance levels: * 0.10 ** 0.05 *** 0.01.

Table 5: Mean neighbor aid at the monadic and dyadic level (2SLS, 1976/79-2014)

	Monadic				Dyadic			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Including islands		Excluding islands		Including islands		Excluding islands	
Mean Neighbor Aid/GDP, lagged	-0.221	-0.414**	-0.348**	-0.402**	-1.114***	-0.735	-1.247***	-1.101*
	(0.149)	(0.204)	(0.166)	(0.172)	(0.352)	(0.603)	(0.374)	(0.584)
Aid/GDP, lagged		0.467		0.498		-3.437***		-3.204***
		(0.294)		(0.351)		(1.244)		(1.188)
Observations	1383	1353	1128	1108	30005	30005	24568	24568
Kleibergen-Paap F stat.	24.611	5.996	15.253	5.244	19.193	6.347	17.530	7.136
Kleibergen-Paap LM stat.	10.817	10.710	7.077	9.403	14.419	12.434	12.971	13.925
K-P LM stat. p-val.	0.001	0.001	0.008	0.002	0.000	0.000	0.000	0.000

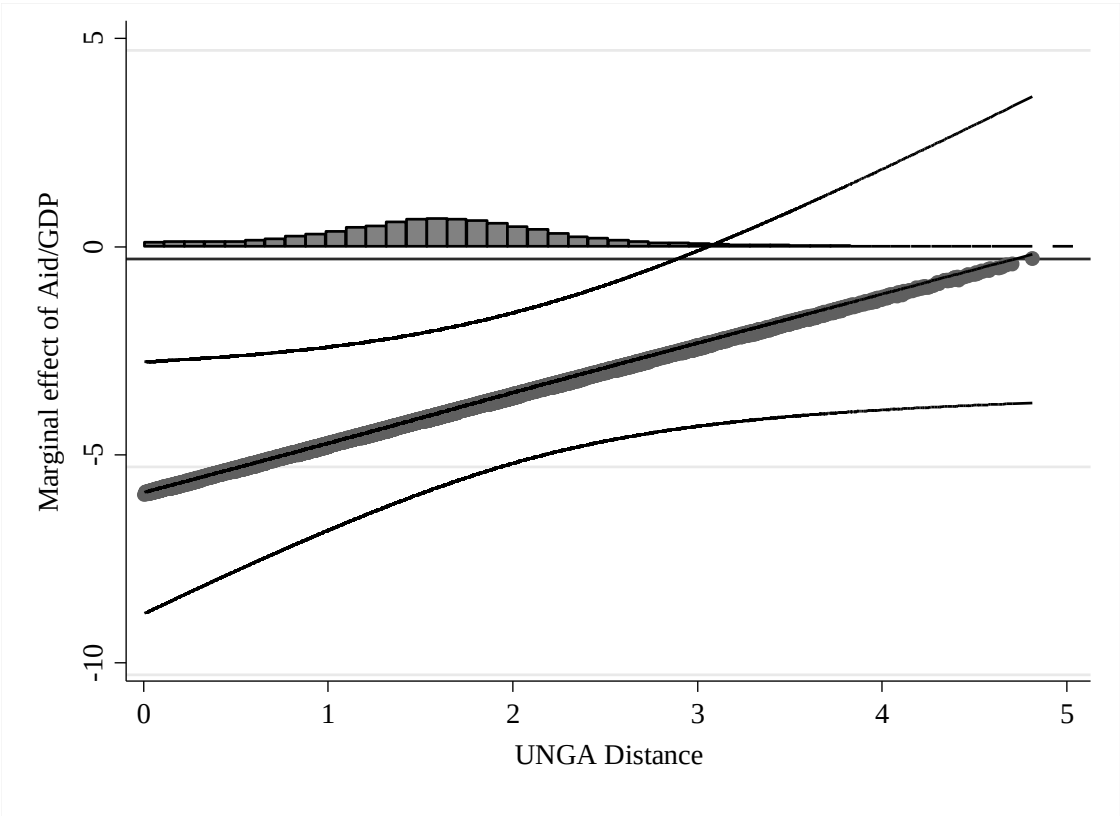
Notes: Standard errors in parentheses; significance levels: * 0.10 ** 0.05 *** 0.01.

Table 6: Interaction with UNGA voting distance at the dyadic level (2SLS, 1979-2014)

	(1)
Aid/GDP, lagged	-5.687***
	(1.817)
Aid/GDP * UNGA Distance, lagged	1.173*
	(0.707)
UNGA Distance, lagged	-0.094
	(0.151)
Observations	36948
Kleibergen-Paap F stat.	7.437
Kleibergen-Paap LM stat.	14.557
K-P LM stat. p-val.	0.000

Notes: Standard errors in parentheses; significance levels: * 0.10 ** 0.05 *** 0.01.

Figure 1: Effect of aid on refugee flows conditional on political distance



Notes: Marginal effects plot based on column 1, Table 7.

Table 7: Aggregated and dyadic refugee flows and humanitarian aid (2SLS, 1976/78-2014)

	Monadic		Dyadic	
	(1)	(2)	(3)	(4)
Aid/GDP, lagged	0.258	0.114	-4.077***	-5.512***
	(0.211)	(0.196)	(1.228)	(1.776)
Aid/GDP * Share Humanitarian, lagged	-3.367*	-3.393**	1.390	-0.537
	(1.812)	(1.692)	(2.267)	(2.771)
Share Humanitarian, lagged	16.103*	13.871**	0.212	0.151
	(8.309)	(6.760)	(0.175)	(0.158)
Control variables	No	Yes	No	Yes
Observations	1374	1374	30428	30428
Kleibergen-Paap F stat.	9.685	10.330	7.285	5.771
Kleibergen-Paap LM stat.	17.923	17.744	14.281	11.352
K-P LM stat. p-val.	0.000	0.000	0.000	0.001

Notes: Standard errors in parentheses; significance levels: * 0.10 ** 0.05 *** 0.01.

Appendix A: List of countries

Origin countries			
Afghanistan	Cote d'Ivoire	Lesotho	Saudi Arabia
Albania	Djibouti	Liberia	Senegal
Algeria	Dominican Republic	Libya	Serbia
Angola	Ecuador	Macao	Seychelles
Antigua and Barbuda	Egypt	Macedonia	Sierra Leone
Argentina	El Salvador	Madagascar	Singapore
Armenia	Equatorial Guinea	Malawi	Slovenia
Aruba	Eritrea	Malaysia	Solomon Islands
Azerbaijan	Ethiopia	Maldives	Somalia
Bahamas	Fiji	Mali	South Africa
Bahrain	French Polynesia	Malta	South Sudan
Bangladesh	Gabon	Mauritania	Sri Lanka
Barbados	Gambia	Mauritius	St Lucia
Belarus	Georgia	Mexico	St Vincent & Grenadines
Belize	Ghana	Micronesia	Sudan
Benin	Grenada	Moldova	Suriname
Bhutan	Guatemala	Mongolia	Swaziland
Bolivia	Guinea	Montenegro	Syria
Bosnia and Herzegovina	Guinea-Bissau	Morocco	Tajikistan
Botswana	Guyana	Mozambique	Tanzania
Brazil	Haiti	Myanmar	Thailand
Brunei	Honduras	Namibia	Timor-Leste
Burkina Faso	Hong Kong, China	Nepal	Togo
Burundi	India	New Caledonia	Tonga
Cambodia	Indonesia	Nicaragua	Trinidad and Tobago
Cameroon	Iran	Niger	Tunisia
Cape Verde	Iraq	Nigeria	Turkey
Central African Republic	Israel	Oman	Turkmenistan
Chad	Jamaica	Pakistan	Uganda
Chile	Jordan	Palestinian Admin. Areas	Ukraine
China	Kazakhstan	Panama	United Arab Emirates
Colombia	Kenya	Papua New Guinea	Uruguay
Comoros	Kiribati	Paraguay	Uzbekistan
Congo, Dem.Rep.	Korea, Rep.	Peru	Vanuatu
Congo, Rep.	Kosovo	Philippines	Venezuela
Costa Rica	Kuwait	Qatar	Vietnam
Croatia	Kyrgyz Rep.	Rwanda	Yemen
Cuba	Laos	Samoa	Zambia
Cyprus	Lebanon	Sao Tome and Principe	Zimbabwe
Donor countries			
Australia	France	Korea	Slovak Republic
Austria	Germany	Luxembourg	Slovenia
Belgium	Greece	Netherlands	Spain
Canada	Iceland	New Zealand	Sweden
Czech Republic	Ireland	Norway	Switzerland
Denmark	Italy	Poland	United Kingdom
Finland	Japan	Portugal	United States

Appendix B: Variables, definitions and sources

Variable name	Description	Data source
(Bilateral) Aid/GDP	(Bilateral) ODA net total, current prices (USD) divided by recipient GDP. At the monadic level we take the sum of ODA Net over all DAC donors divided by recipient GDP.	OECD (2016), Table DAC2a, WDI (World Bank 2015)
(Bilateral) Humanitarian Aid/GDP	Humanitarian Aid total, current prices (USD) divided by recipient GDP. At the monadic level we take the sum of Humanitarian Aid over all DAC donors divided by recipient GDP.	CRS/OECD (2016)
(Bilateral) Mean Neighbor Aid/GDP	Mean of bilateral Aid/GDP in all neighboring countries (donor-specific). At the monadic level we use the mean of aid from all DAC donors as a share of GDP.	OECD (2016), Table DAC2a, WDI (World Bank 2015)
(Bilateral) Trade/GDP	Sum of bilateral exports and imports as a share of origin GDP. At the monadic level we take the sum of bilateral trade over all donors.	IMF DOTS (2015), own calculation
(Donor) Economic Freedom	(Donor) Economic Freedom, chain linked index.	Gwartney et al. (2015)
(Donor) Fariss Human Rights	(Donor) Fariss latent mean: human rights index.	Fariss (2014), download 2016
(Donor) Log Disaster Affected	Log of number of people being affected by a disaster (in the donor country).	EM-DAT (Guha-Sapir et al. 2016)
(Donor) Log Disaster Deaths	Log of number of casualties from disasters (in the donor country).	EM-DAT (Guha-Sapir et al. 2016)
(Donor) Log GDP p.c.	(Donor) Log of GDP per capita (constant 2010 US$).	WDI (World Bank 2016)
(Donor) Log Population	(Donor) Log of population total.	WDI (World Bank 2016)
(Donor) Log Terror Attacks	(Donor) Log of sum of terror attacks.	START (2016)
(Donor) Physical Integrity Rights	(Donor) Physical Integrity Rights Index.	CIRI (Cingranelli et al. 2016)

Bilateral/Donor Entry Restrictiveness	Index of entry restrictiveness: Zero for all observations in the base year 1976. The index increases (decreases) by one if the entry restrictiveness of all laws increases (decreases) in a year. Bilateral Entry Restrictiveness is defined with respect to laws addressing a specific origin country.	Own construction based on DEMIG (2015)
Conflict/War	Dummy 1 for conflict and/or war, above 25 battle-related deaths in a given year.	UCDP/PRIO Armed Conflict Dataset, version 2014 (Gleditsch et al. 2002)
Democracy	Democracy index: dummy that is one for democracies.	Cheibub et al. (2010), extended by Rode and Bjørnskov (2016)
Fitted Aid/GDP	Instrumental variable, constructed from the bilateral zero-stage regression.	Own construction
Fractionalization (Frac)	Probability that two deputies picked at random from among the government parties will be from different parties.	Database of Political Institutions, version 2015 (Beck et al. 2001; Cruz et al. 2016)
Log (Bilateral) Trade	Log of sum of bilateral exports and imports in constant USD. At the monadic level we take the sum of bilateral trade over all donors.	DOTS (IMF 2015), WDI (World Bank 2016), own calculation
Log (Total) Refugee Stock	Log of refugee stock in a specific donor country. At the monadic level we take the worldwide stock (Total).	UNHCR (2015)
Log Refugee Flow (Worldwide)	Log of net refugee flows, difference between refugee stock in t and t-1 in a specific donor country. At the monadic level we take the worldwide flows.	UNHCR (2015)
Other Donor Aid	Sum of aid provided by all other 27 donors, current prices (USD) divided by recipient GDP (donor-specific).	OECD (2016), Table DAC2a, WDI (World Bank 2015)
Polity 2	Polity IV democracy index, ranges from -10 to 10: Autocracies (-10 to -6); Democracies (6 to 10);	Polity IV project

	Anocracies (-5 to 5).	(Marshall et al. 2015)
Probability over all Periods	Probability of receiving aid from donor *j* within the whole observation period from 1975-2012.	Own construction based on ODA data from OECD
Share of Young Population	Population aged between 0 and 14 in the origin country.	WDI (World Bank 2016)
UNGA Distance	The absolute distance between country A and country B posterior mean ideal point.	Bailey et al. (2017)

Appendix C: Descriptive statistics at the dyadic level

Variable	Count	Mean	Std.dev.	Min	Max
Refugee Flow	30428	69.18	1275.06	0.00	123851.34
Refugee Stock	30428	213.77	2942.46	0.00	195941.67
(Bilateral) Aid/GDP	30428	0.16	0.76	-1.37	43.14
(Bilateral) Humanitarian	30428	0.00	0.06	-0.00	5.26
Fractionalization	30428	0.35	0.25	0.00	0.83
GDP p.c.	30428	5656.64	9333.73	120.71	109586.38
Donor GDP p.c.	30428	37693.76	17293.98	5662.02	106734.26
Population	30428	41006395.0	1.55e+08	62137.00	1.36e+09
Donor Population	30428	36933939.7	57650126.0	267468.34	3.16e+08
Democracy	30428	0.47	0.49	0.00	1.00
Polity 2	27482	1.25	6.54	-10.00	10.00
Conflict/War	30428	0.17	0.34	0.00	1.00
Donor Conflict/War	30428	0.02	0.12	0.00	1.00
Disaster Deaths	30428	575.97	4418.95	0.00	100000.00
Donor (log) Disaster Deaths	30428	160.70	709.68	0.00	6877.33
Disaster Affected	30428	1500154.55	11501206.3	0.00	1.82e+08
Donor Disaster Affected	30428	76766.39	400405.22	0.00	4714417.50
Terror Attacks	30428	21.64	91.90	0.00	2003.33
Donor Terror Attacks	30428	14.10	35.06	0.00	274.00
Fariss Human Rights	30428	0.11	1.12	-2.80	3.14
Donor Fariss Human Rights	30428	2.11	1.00	-0.49	4.70
Physical Integrity Rights	25375	4.41	2.07	0.00	8.00
Donor Physical Integrity	28020	7.20	0.96	3.33	8.00
Share of Young Population	30428	36.72	8.71	13.59	51.30
Economic Freedom	30428	5.91	0.81	3.27	8.70
Donor Economic Freedom	30428	7.34	0.52	5.82	8.64
Bilateral Trade/GDP	30428	1.67	11.71	0.00	1128.19
Bilateral Entry Restrictiveness	30428	-0.06	0.37	-6.00	2.00
Donor Entry Restrictiveness	30428	-1.41	3.69	-14.67	11.67
(log) Refugee Flow	30428	0.58	1.48	0.00	11.73
(log) Refugee Stock	30428	1.02	1.99	0.00	12.19
(log) GDP p.c.	30428	7.79	1.30	4.79	11.60
Donor (log) GDP p.c.	30428	10.43	0.49	8.64	11.58
(log) Population	30428	15.66	1.93	11.04	21.03
Donor (log) Population	30428	16.50	1.47	12.50	19.57
(log) Bilateral Trade	30243	15.52	6.54	0.00	48.64
(log) Disaster Deaths	30428	2.63	2.25	0.00	9.04
(log) Disaster Affected	30428	5.42	4.73	0.00	19.00

Donor (log) Disaster Affected	30428	3.95	3.75	0.00	14.10
(log) Disaster Deaths	30428	2.63	2.25	0.00	9.04
Donor (log) Disaster Deaths	30428	2.30	1.83	0.00	6.59
(log) Terror Attacks	30428	1.10	1.46	0.00	7.59
Donor (log) Terror Attacks	30428	1.33	1.36	0.00	5.12
(log) Bilateral Trade	30243	1.31e+17	9.57e+18	0.00	1.48e+21

Notes: Based on dyadic level, sample from Table 2, column 1.

Appendix D: Robustness (alternative control variables)

	(1)		(2)	
	Aggregated		**Dyadic**	
	coef. for L.Aid/GDP (s.e.)	[Cragg-Donald F stat.] {Kleibergen-Paap F stat.}	coef. For L.Aid/GDP (s.e.)	[Cragg-Donald F stat.] {Kleibergen-Paap F stat.}
(log) Disaster Deaths	0.139	[19.520]	-5.782***	[10.831]
	(0.198)	{18.860}	(1.892)	{10.880}
(log) (Bilateral) Trade	0.187	[18.437]	-5.482***	[11.456]
	(0.214)	{18.832}	(1.758)	{11.528}
Physical Integrity Rights	0.102	[9.884]	-4.041***	[16.564]
	(0.340)	{8.658}	(1.206)	{17.005}
(log) Terror Attacks	0.080	[19.554]	-5.607***	[11.007]
	(0.202)	{17.648}	(1.853)	{10.706}
Polity 2	0.137	[10.899]	-5.457***	[13.065]
	(0.297)	{11.663}	(1.768)	{11.785}
Other Donor Aid, lagged			-5.983***	[9.814]
			(2.067)	{9.693}
L.Aid/GDP, squared	0.284	[19.763]	-5.759***	[11.270]
	(0.205)	{18.745}	(0.709)	{11.328}

Notes: We report coefficients of lagged Aid/GDP based on our baseline specification presented in column 6 of Tables 1 and 3, respectively, and replace one covariate at the time. We replace (log) Disaster Affected by (log) Disaster Deaths, (Bilateral) Trade/GDP by (log) (Bilateral) Trade, Fariss Human Rights by Physical Integrity Rights, Conflict/War with (log) Terror Attacks, and Cheibub et al. (2001) Democracy with Polity 2. We also added lagged Other Donor Aid as an additional covariate to column 6 of Table 2.

Appendix E: Robustness (alternative dependent variables and samples)

	(1)		(2)	
	Aggregated		**Dyadic**	
	coef. for L.Aid/GDP (s.e.)	[Cragg-Donald F stat.] {Kleibergen-Paap F stat.}	coef. For L.Aid/GDP (s.e.)	[Cragg-Donald F stat.] {Kleibergen-Paap F stat.}
DV: refugees + asylum seekers	-0.145	[9.068]	-2.966***	[11.981]
	(0.311)	{9.231}	(1.122)	{12.731}
Sample: exclude Americas	0.318	[15.296]	-3.312***	[14.793]
	(0.234)	{13.752}	(1.129)	{12.485}
Covariates lagged by one year	0.279	[23.332]	-5.116***	[15.583]
	(0.210)	{19.549}	(1.542)	{13.459}
Refugee stock lagged by two years	0.152	[14.986]	-4.297***	[13.958]
	(0.240)	{14.209}	(1.358)	{13.358}

Notes: We report coefficients of lagged Aid/GDP based on our baseline specification presented in column 4 of Tables 1 and 3, respectively, and apply the following changes. In column (1), we broaden the definition of our dependent variable (DV) to cover asylum seekers in addition to refugees. In column (2), we exclude origin countries in Latin America.