Murat, Marina

Working Paper

Foreign aid, bilateral asylum immigration and development

GLO Discussion Paper, No. 378

Provided in Cooperation with:
Global Labor Organization (GLO)

Foreign aid, bilateral asylum immigration and development

Marina Murat*

August 2019

Abstract. This paper measures the links between aid from 14 rich to 113 developing economies and bilateral asylum applications during years 1993 to 2013. Dynamic panel models and Sys-GMM are used. Results show that asylum applications are related to aid nonlinearly in the level of development of origin countries, in a U-shaped fashion, where only the downward segment proves to be robust to all specifications. Asylum inflows from poor countries are negatively, significantly and robustly associated with aid in the short run, with mixed evidence of more lasting effects, while inflows from less poor economies show a positive but weak relation with aid. Moreover, aid leads to negative cross-donor *spillovers*. Applications linearly decrease with humanitarian aid. Voluntary immigration is not linked to aid. Overall, the reduction in asylum inflows is stronger when aid disbursements are conditional on economic, institutional and political improvements in the recipient economy.

JEL Classification: F35, F22, J15

Keywords: foreign aid, asylum seekers and refugees, development.

1. Introduction.

During the decade from 2006 to 2015, asylum applications in OECD countries grew more than fivefold, from 316,330 to 1,661,500 and are expected to continue rising. This has generated an intense debate on asylum permits and refugees' integration but also, increasingly, on the feasibility of influencing the inflows at their source with economic policy measures. One suitable policy instrument is foreign aid, but views differ widely on its effectiveness and especially on its real effects. On the one side, it is maintained that aid helps countries to overcome the political and economic crises that cause the asylum inflows, and hence helps to deter them, while on the other it is said that aid mainly allows resource-constrained people in poor countries to afford the costs of migration, and hence boosts applications.

Both views find supports in the economic literature, which provides differing answers. A clear example is the collection of studies on the relation between aid and migration edited by Böhning and Schloeter-Paredes (1994). In it, scholars concertedly try to uncover the basic relation linking aid and migration, but reach contrasting results (Martin, 1994). Views and studies on forced migration also differ. In Thielemann (2004), aid has a positive influence on asylum inflows in 20 OECD countries during the 1985-1999 period; in Neumayer (2005) aid has no effect on applications in Western Europe during the years 1982-1999. Dreher et al. (2019) find the impact of aid on refugee flows to the world and to the aggregate of OECD countries to be initially positive, to become negative after some years. One reason for these diverse results is the nature of aid itself: its main purpose is that of improving living and economic conditions in the recipient country, and improved living conditions can both prevent and encourage migration and refugee flows.

This paper measures the links between bilateral aid and asylum seeker applications from 113 developing countries in 14 OECD destination economies for each year over the period 1993-2013. Given the a priory uncertain sign of the impact of aid, I hypothesise that it depends on the level of development of the recipient country, and use average income as a rough proxy od development. Specifically, I test whether the links between aid and asylum inflows vary with the level of per

capita income in the applicants' home countries. As aid transferred with the aim of influencing asylum inflows can unintendedly lead to voluntary immigration, I also test this potential secondary relationship. This paper adds to the existent literature in three main ways: it focuses explicitly on foreign aid as a policy tool designed to influence forced migration; it tests whether this influence varies with the level of development of the recipient country; and it measures its overall association with inflows, forced and voluntary.

International norms and agreements outline the difference between refugee and voluntary migration. A refugee is a person who 'owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country' (Refugee Convention, 1951). Differently, a migrant is a person who leaves the country for any other reason. There is a grey area between the two types of migration, but there is also a significant difference: the refugee flees the home country to escape an extremely critical situation but she would rather not leave. She does not choose the destination, nor does the destination choose her, as it would happen in a totally voluntary setting. On the other hand, a migrant chooses where to move given a clearly defined set of alternatives and opportunities, including the destination country's policies on immigration (Dustmann et al. 2016).

While forced migration is as old as human history, international aid is officially recognised as a transfer of resources from one country to another only since the end of the second world war. The majority of aid transfers take the form of donations; a minor proportion consists of grants. OECD states that 'Official Development Aid (ODA) is administered with the promotion of the economic development and welfare of developing countries as its main objective'. Hence, aid is expected to positively affect development.[1] The empirical literature is inconclusive on the effects of aid

---

[1] The real impact of aid on growth and institutions remains elusive, as it depends on diverse factors, among which the incentives of recipients and donors in transferring and receiving aid. Several studies find that a substantial part of the aid provided by rich economies is unrelated to the real needs of recipient countries, (Boone, 1996; Alesina and Dollar, 2000; Collier and Dollar, 2002; Lancaster, 2007; Fuchs et al., 2014; Jones, 2015). However, there is a certain degree of agreement on a change of approach of Western donors after the end of the cold war. While during the cold war the

disbursements on the economy, institutions and social norms of the recipient country, but directly, and through them, bilateral aid can be expected to be associated with subsequent asylum inflows.

This study's main findings are that the relation of bilateral aid with asylum inflows varies with average income in the origin country: asylum inflows from poor countries are negatively and significantly associated with bilateral aid disbursements in previous years, while applications from medium-income developing economies are positively but weakly related to aid transfers. Only the negative relation between bilateral aid and asylum inflows is robust to all specifications and cofactors. In addition, aid generates negative cross-donor *spillovers*: asylum applications in the OECD destination are negatively associated to aid disbursements from other countries. A further result is that aid transfers have no association with voluntary immigration. Hence, bilateral aid is followed by less asylum applications but has no influence on immigration. I use a dynamic panel empirical model with a rich array of fixed effects and specifications – including System GMM in levels and differences – to control for potential endogeneity and the robustness and sensitivity of results. The rest of the paper is organised as follows. Section 2 reviews and resumes the related literature, Section 3 presents data sources and descriptive statistics, Section 4 describes the estimation strategy, Section 5 presents and discusses results, and Section 6 concludes.

2. Related literature.

A general finding of the empirical literature on the determinants of forced and voluntary migration is that economic factors tend to be more important for voluntary migration, and political factors for forced migration (Neumayer 2005). According to the neoclassical model, migration should respond to the difference between average income in origin and destination countries. Empirically, this difference affects migration in Hatton and Williamson (2005), Mayda (2010), Grogger and Hanson (2011), Ortega and Peri (2013), and several other studies. A positive effect of

political allegiance of recipients was decisive, afterwards, their economic and institutional development became more important.

income at destination is in Hartog and Vriend (1989), Katseli and Glystos (1989), Lundborg (1991), and Bauer and Zimmermann (1998). Given everything else, emigration should decrease with development in the origin economy. Ortega and Peri (2013) find that per capita income negatively affects emigration, while it only marginally influences emigration to OECD countries in Dao et al. (2018a). The neoclassical hypothesis is not supported in studies where the increase in migration appears to be boosted initially by income growth, and discouraged only after a certain level of development is reached. This bell-shaped pattern of emigration, called the 'mobility transition', is present in Martin and Taylor (1996), de Haas (2007), Clemens (2014) and other authors. Several studies evidencing this inverted 'U' relationship are based on cross-country data. Clemens (2014) claims that the pattern might hold also in the long run, a timespan that goes beyond that of most panel databases. Other potential determinants of migration tested in empirical studies concern economic factors such as unemployment and political and institutional characteristics of countries (among others, Hatton and Williamson 2005; Docquier et al. 2014).

Foreign aid is one potential determinant of peoples' decisions to migrate. On this topic, the link between aid and migration, the empirical literature reaches quite diverse results. Focusing on overall migration, Faini and Venturini (1993) hypothesise that emigration is related to aid as it is to income: in a bell-shaped fashion. They assume that aid consists mostly in income transfers that loosen the resource constraints of would-be migrants. Studies on the link aid-migration collected in *Aid in Place of Migration?* (Böhning et al., 1994) reach contrasting findings (Martin, 1994). Schiff (1994), Vogler et al. (1997), and Vogler and Rotte (2000) also hypothesise a bell-shaped relationship between aid, development and migration. Berthélemy et al. (2009), using cross-country data from a wide set of countries, find that bilateral aid encourages migration from the poorer economies and reduces it from less poor ones. Belloc (2015), also using a cross-section of countries, finds a positive relationship, in this case linear, between foreign aid and total emigration from South Saharan countries. In Nyberg Sørensen et al. (2003), aid to poor countries has no unique effects on migration to rich economies. The authors also test the impact of aid transfers to neighbouring

economies of countries with a political crisis. In a press article, (Clemens and Sandefur, 2015) state that the aid-development-migration nexus is positive: more aid to poor countries boosts immigrant flows to rich economies. Most studies on aid and migration are based on migrant stocks. Using migration flows, Lanati and Thiele (2017) find a negative relationship between aid and migration, which holds even for the poorest countries.

Several studies find the migration of refugees and asylum seekers depends strongly and significantly on political and institutional factors, such as protest, oppression, conflict and genocide in the origin country (Marfleet 2006; Schmeidl 1997; Davenport et al. 2003; Moore and Shellman 2007; and Hatton 2009). Among the economic determinants, in Neumayer (2005), Hatton (2009) and Hatton and Moloney (2015), refugee and asylum seeker flows diminish with higher income in the home country; this contrasts the 'mobility transition' hypothesis. Other potential determinants of refugee and asylum flows are migrant networks; they can lower the costs of international movements and facilitate further inflows from the home country. In Neumayer (2004), the stocks of asylum seekers exert a pull effect on new asylum applicants. Hatton (2016) finds a positive influence of immigrant stocks on asylum applications. In Davenport et al. (2003), past refugee migration positively influences refugee stocks. As seen above, the empirical literature on the direct link between aid and asylum seekers or refugees is scarce, and results diverge (Thielemann, 2004; Neumayer, 2005). Dreher et al. (2019) find short and medium run correlations of aid with refugee flows to differ.

3. Data and descriptive statistics

The United Nations High Commissioner for Refugees (UNHCR) provides standardised cross-country data on refugees and asylum seekers since 1950, and the OECD statistics division is the main source of standardised data on Official Development Aid (ODA) since 1969. I built a panel database by using data from UNHCR extracted from OECD Statistics on the asylum applications submitted by people from 113 developing countries in 14 destination economies – Australia,

Austria, Belgium, Canada, Denmark, France, Germany, Italy, Netherlands, Norway, Spain, Sweden, United Kingdom and United States –each year during 1993-2013. The period starts when data from former ex-communist countries in Eastern Europe became available. Asylum seekers are individuals who have sought international protection, and whose claims for refugee status have not yet been determined (UNHCR). Asylum applications from the list of 113 origin countries account for almost 80 per cent of all asylum application in the selected OECD destinations (and 70 per cent of asylum applications in all Western OECD countries), during the period considered. Data on foreign aid, regarding the ODS (net disbursements) from each donor (destination country for asylum seekers) economy to each recipient (origin country of asylum applicants) are extracted from OECD Statistics. A complete list of variables and sources, and the list of developing countries, is in Table A1.

Figure 1 shows a high number of asylum applications the beginning of the period considered, which are partly due to the fall of the Berlin wall in 1989 and decrease rapidly afterwards, with the consolidation of the new world order. Many refugees from the former republics of the Soviet Union return home, and new applications in the selected OECD destinations decrease. Another important wave of asylum applications – still underway and expected to last for the next few years – started with the terrorist attacks of September 2001 and the subsequent military conflicts in Afghanistan and Iraq. Substantial increases of asylum inflows followed also the Balkans' ethnic conflicts, the 'Arab spring' in Middle Eastern and North African countries, and political turmoil in countries of Sub Saharan Africa and central Asia. During the period 1993-2013, bilateral aid initially falls, then grows from 2000 until 2006, and decreases again afterwards. These turns partly coincide with changes of the composition of aid recipients and of countries of origin of applicants: from 2002, there are fewer asylum applications from Eastern Europe and more from the Middle East and Sub-Saharan Africa.

4. Estimation strategy

In order to study the correlations between foreign aid and asylum applications, I use dynamic panel regressions. The dependent variable is the number of asylum applications made during each year in the destination country. The base regression is:

$$lnY_{odt} = \lambda lnY_{odt-1} + \beta T_{odt} + \gamma O_{ot} + \delta D_{dt} + \varepsilon_{odt}, \tag{1}$$

where lnY_{odt} is the (log of the) number of asylum applications made by individuals from country o in country d during year t; lnY_{odt-1} is its value lagged one year; it should capture the influence of former asylum seekers on new inflows. T_{odt} includes other dyadic variables. Among them is the variable of interest, aid provided by the OECD country d to developing country o. Aid should have a positive or negative coefficient depending on whether it provides incentives to remain or to leave the country and, in the second case, on how it influences individuals' preferences across possible destinations.[2] Another group of dyadic cofactors is migrant networks. Studies generally test the impact of only one network, either that of asylum applicants, refugees or migrants (Davenport et al., 2003; Neumayer, 2004; Hatton 2016). The implicit assumption is that the three blend in a unique composite aggregate, defined only by the country of origin. However, in the real world these networks and their effects may remain distinct. For example, voluntary migrants and refugees or asylum seekers may reach the host country in different periods, belong with different social classes or ethnic groups in the home country, or hold different political, religious or cultural orientations. This can make their allegiance to the origin country weaker than their fidelity to their own specific group. Hence, immigrant and refugee networks can exert different pull effects on asylum applicants.[3] Based on this paper's data, the correlation coefficient between *Asylum seekers*,

---

[2] More aid from a country can intensify the attractiveness of the donor among alternative destinations. The presence of a donor in the recipient country, or projects funded by the donor, creates opportunities for contacts between the local population and the donor. More generally, it provides knowledge on the donor's social norms, institutions and culture, which can decrease the costs of migration.

[3] This can apply especially, but not only, to countries of origin with strong internal divisions determined by religion or ethnicity. Political divisions may also matter. Some evidence suggests that refugees from Latin America who flew their countries during the dictatorships of the seventies of last century scarcely interact with economic immigrants from their home countries who arrived later.

Bilateral refugees and *Bilateral immigrant inflows* is below 0.3, too low to hypothesise that they are reunited in a unique network. Therefore, they will be included as distinct cofactors. Distance between origin and destination, a time-invariant dyadic variable, should capture the effective cost of international migration and of cultural dissimilarities between countries. *Bilateral trade agreements* between origin and destination (a dummy taking value one in the presence of agreements and zero otherwise) can increase reciprocal knowledge between partners and are expected to lower the costs of bilateral movements of people.

O_{ot} concerns factors regarding origin countries. Per capita GDP, the main economic proxy for the country's level of development, can facilitate or deter asylum seeker inflows: higher income implies more resources to escape, but also weaker incentives to leave. Population accounts for the size of the country. Higher levels of political terror and lack of civil liberties should both be strong push factors (Hatton 2004; Neumayer 2004). Natural disasters (proxied by the number of deaths) can boost outflows (Naudé 2010; Neumayer 2005). The number of refugees from the origin country to all destinations except d should be positively correlated to applications in d; Moore and Shellman (2007) and Hatton and Williamson (2005) find that some countries are more prone to 'produce' refugees than others. Similar to bilateral transfers, aid from all other countries (all countries except d) can provide incentives to remain or opportunities to leave. It, however, includes an 'attraction for the donor' component that can 'deviate' asylum seekers from d.

D_{dt} concerns characteristics of the destination country. Per capita GDP at destination is a proxy for expected earnings, and potentially a pull factor (Neumayer 2004). Population approximates the extension of the labour market. The unemployment rate signals the difficulty of finding a job and has an expected negative coefficient. Policies at destination concerning asylum seekers should also significantly influence the number of applications, but no standardised indicators on these policies are available. Hence, I use two proxies: the first is the rate of rejection of asylum demands from origin o in country d at year t. It is a weak proxy, since it includes both

pull and push elements. The second, more reliable, is an index built by Hatton and Moloney (2015) based on yearly changes in the tightness of refugee policies in the selected countries.

The impact of aid on asylum applications can depend on how individuals react to the improved environment at home and the extra opportunities to leave. To test whether the level of development influences this response, subsequent specifications include the interaction between bilateral aid and per capita income in the origin country:

$$lnY_{odt} = \lambda lnY_{odt-1} + \beta T_{odt} + \phi(ln\ Bilateral\ aid_{odt-1})*(ln\ pc\ GDP\ orig._t) + \gamma O_{ot} + \delta D_{dt} + \alpha_d + \alpha_{\circ} + \alpha_{do} +$$

$$\alpha_{ot} + \alpha_{dt} + \varepsilon_{odt} \tag{2}$$

(ln Bilateral aid_{odt-1})*(ln pc GDP orig._t) is the interacted term, expected to be significantly associated to applications. However, as for the main term, *Bilateral aid_{odt-1}*, no hypothesis is formulated on the sign of this coefficient. Wider sets of fixed effects will be used to control for multilateral resistance to migration (MRM): people's bilateral flows do not depend solely on the relative attractiveness of origin and destination countries, but also on the one of alternative destinations (Bertoli and Fernández-Huertas, 2012). Endogeneity and reverse causation can be an issue if aid and asylum seekers influence each other. Using a panel dataset on 18 donor and 148 recipient countries during the period 1992-2003, Czaika and Mayer (2011) find that asylum seekers and refugees in the destination economy positively influence bilateral aid. To account for potential endogeneity, I use System GMM specifications in levels and differences based on Blundell and Bond (1998) and Roodman (2009a,b). I also check for the suitability of instrumental variables used in the empirical literature on aid and refugee migration (Dreher et al. 2019).

5. Results

5.1. Base specifications.

The base results of the estimation of equations (1)-(2) are in Table 1. The variable of interest, *Bilateral aid*, is expected to affect asylum movements from origin (recipient), *o*, to destination (donor), *d*. Its coefficient is not signed a priori, but I hypothesise that it is correlated with the average income of the origin country. The dependent variable is the log of the annual applications for asylum – plus one – for each country pair. Adding one allows me to keep the information from the zero-flow observations[4]. The variables *Bilateral aid*, *Bilateral refugees* and *Bilateral immigrants* are lagged one period to allow their influence to affect asylum seekers. All regressions include a time trend and year fixed effects. In column 3, country effects are controlled for. In column 4, the 2SLS specification is used. Tests in columns 5-7 are based on the System-GMM specification in levels and differences. In column 6, the interacted term is not included, but *Bilateral aid* is split in quintiles of the income of the origin country; therefore, its effects are linear.

The pooled OLS estimates provide a first idea of how the data are correlated without controlling for country fixed effects, and therefore overestimate the coefficient on the lagged dependent variable. This coefficient spans from 0.82 in the OLS specification of column 1 to 0.56 in the OLS-FE specification of column 3. It is always significant at the one per cent level, evidencing that past asylum seekers have a robust influence on new applications. As expected, the value of the coefficient in the System-GMM specification lies between the values of the OLS and OLS-FE coefficients (Roodman, 2009a).

The variable of interest, *Bilateral aid*, has a negative and significant relation with asylum applications in column 1.[5] Column 2 shows that this aggregate coefficient can vary with income levels in the origin country: coefficients on *Bilateral aid* and on the interacted variable (*Bilateral*

---

[4] Part of foreign aid is concessional in character and conveys a grant element (OECD). As an effect of interest repayment, some figures are negative. However, they are a very small proportion of total observations and have been substituted by zeros.

[5] Following Alesina et al (2013), the share of variation in asylum application explained by foreign aid can be calculated by excluding *Bilateral aid* from the regression of column1. This makes the R-squared to shrink from 0.871 to 0.868. Hence, Bilateral aid accounts for 0,3 % of the total variation in asylum applications and 2,3% of the residual variation left unexplained by the control variables. The latter is calculated as (0.871 - 0.868)/(1- 0.868). The same procedure shows that the exclusion of *Bilateral aid* and (*Bilateral aid*)*(*pcGDP orig*) produces almost identical figures.

aid)*(pc GDP orig.) are not significant, but suggest that bilateral aid has a negative association with asylum applications for low levels of income at home and a positive one for medium-income developing countries. Except for column 4, where the relation is linear, subsequent regressions confirm this U-shaped relationship: coefficients on *Bilateral aid* are always negative and significant, and are positive and smaller on the interacted variable in columns 3, 5 and 7.

The 2SLS specification of column 4 is a first attempt to deal with potential endogeneity. Dreher et al. (2019) measure the impact of aid on asylum flows to the world and to the OECD group of countries by using an instrumental variable (IV) based on an index of govern fractionalization in the destination country and the probability of the developing economy of receiving aid (defined as the average of past aid transfers). I built the IV following their procedure. In regressions, not shown to save space, I also added the 'affinity' IV proposed by Alesina and Dollar (2000), based on dyads' coincidence of votes at the United Nations, but it failed first stage tests. Results in column 4, based on the Dreher et al. (2019) IV, show that *Bilateral aid* has a negative and linear relation with asylum inflows, stronger than in other specifications in Table 1, and in further tests this study, to be seen below. With the IV specification, a one per cent increase in aid transfers decreases applications by 0.4 per cent, independently of the level of development of the home country. Adding the interacted variable makes the instruments to fail the first stage tests. More generally, this approach shares the general weakness of fixed effects dynamic models: coefficients are biased, even controlling for endogeneity with 2SLS (Nickell, 1981).

Hence, in what follows I use the System-GMM specification in levels and differences, which leads to consistent and unbiased results. In columns 5-7, *Bilateral aid*, *Bilateral refugees*, *Bilateral immigrants* and the lagged dependent variable are specified as potentially endogenous regressors; all other variables are treated as predetermined and instrumented with their own lags and differences. Sys-GMM results confirm the U-shaped relationship of previous tests: coefficients on aid and on the interacted variable in columns 5 and 7 respectively are negative and positive; significance is at the five per cent level. More specifically, in column 5, the turning point takes

place at an average income of about 3000$ at constant 2011 US$. The reported values of tests on serial correlation and over-identification restrictions confirm the validity of results.[6] In column 6, the linear effect of aid on applications is tested in relation to different income levels of developing countries.[7] Specifically, the per capita income is split in quintiles, and aid is multiplied by a dummy taking value one for each quintile and zero otherwise. Coefficients on *Bilateral aid* are negative for poor countries in the first three quintiles and positive for higher income levels. This confirms previous results, with a difference: in column 6 only negative coefficients of the lower two quintiles are significant (at the five per cent level), while in columns 5 and 7, coefficients (with opposite signs) and significance are similar in the two segments of the U-shaped relationship. In column 7, the variable of interest, *Bilateral aid*, is a share of the *pcGDP* of the origin country.[8] Several empirical studies use this measure, as well as that of aid/GDP. Results are as above: a negative coefficient on *Bilateral aid/pcGDP* and a positive and smaller one on the interacted term, both with significance at the five per cent level. To test for the robustness of these results, in column 1 of Table A3, logs on *Bilateral ai*d were taken without adding one. The presence of zero asylum flows between countries in certain years makes observations to drop by about 20%, but previous results are confirmed.

More specifically, what is the impact of aid on asylum at different levels of development of home countries? The *Total effect of Bilateral aid* is the result of the sum of the coefficient on *Bilateral aid* plus the coefficient on the interacted variable, at each level of *pcGDP orig.*. Considering column 5, the coefficient on *Total effect of Bilateral aid* for the poorer countries, such as Afghanistan, Burundi, Eritrea, Ethiopia, Liberia, Malawi, the Democratic Republic of Congo, Central African Republic, is - 0.051, with significance level at five per cent (standard error 0.023). For less poor economies, the magnitude of the coefficient is - 0.036, with significance at 10 per cent

---

[6] The size of the panel is N= 1582 (country-pairs), T = 21 (years). Although there might seem to be a high number of number of instruments, it is always lower than N (Roodman, 2009b).
[7] I thank an anonymous reviewer for suggesting this test.
[8] Bilateral aid as a share of the per-capita income of the recipient country decreases with the country's level of development. It varies from 0.13% in the lowest income quintile, to less than 0.003% in the highest quintile. Detailed figures are available from the author upon request.

(s.e. 0.019). Aid transfers to countries at intermediate levels of development have no effect on asylum applications. They are again significant, this time with a positive coefficient of 0.048, and significance at the five per cent level (s.e. 0.022), for richer developing economies, such as Argentina, Brazil, Chile, Saudi Arabia, Kuwait or United Arab Emirates. Results are quite similar in column 1 of Table A3, where logs on the dependent variable were taken without adding one. Results are also similar in column 6 of Table 1, where aid links with aid are split in income quintiles. Therefore, aid coefficients are related to the country's level of development in all specifications, except in the 2SLS model of column 4. Overall, only the negative relation of bilateral aid with asylum is always significant: a one per cent increase in bilateral aid to the recipient country is associated with less asylum applications from that country, in a measure between 0.05 (column 5) and 0.4 per cent (column 4).

Coefficients on bilateral aid are small, but they report short run effects. Their long-run elasticities are defined by (coefficient on *Bilateral aid* $_{t-1}$) / (1 − coefficient on Y_{t-1}). For example, in column 6, where the coefficient on Y_{t-1} is 0.82, the long run effect of bilateral aid on applications from countries of the first income quintile is -0.28 (s.e. 0.13), on applications from countries of the second quintile is -0.21 (s.e. 0.9), on applications from countries of higher quintiles, significance is below the 10 per cent level. Hence, a ten per cent increase in bilateral aid to a poor country will permanently decrease applications by almost three per cent. Medium run effects will be considered below.

These findings show that aid to poor countries provides individuals with incentives and resources to stay, while transfers to medium-income economies can be positively related to applications. More generally, this suggests that aid to poor countries has a stronger impact in improving living conditions than in loosening the resource constraints of potential asylum applicants. If the dominant force at work were the resource-constraint, then the response of inflows from poor countries would be positive, and stronger than that from medium-income economies. Rather than the U-shaped pattern evidenced by this paper's results, a bell-shaped relationship in

income between aid and asylum applications would emerge (as hypothesised, among others, by Clemens and Sandefur 2015). More generally, this study's results are consistent with the definition of asylum seekers and refugees as individuals who are forced to leave their country, but would rather not move (Dustmann et al. 2016). Especially in poor countries, foreign aid can represent the critical support that allows people to remain, or to move temporarily to a nearby country. At the other extreme, aid to medium-income developing countries has a less crucial impact on living conditions but, by increasing the knowledge on the donor economy, can attract asylum seekers. On average, they are endowed with higher levels of human capital and would face lower costs of integration at destination than applicants from the poorer countries (Dao et al., 2018a).

Further findings are that both refugees and immigrant networks exert a pull effect on asylum seeker inflows. On average, there is a positive interaction between immigrant, refugee and asylum networks from the same origin country. Moreover, once endogeneity is controlled for, immigrants exert a stronger effect on asylum applicants than refugees (except for column 6). This can be due to immigrants being more settled in the host country, and hence being more able to provide effective support. Distance, as expected, has a negative and significant impact: a one per cent increase in distance leads to a decrease in applications that ranges from 0.16 to 0.2 per cent. This is consistent with empirical evidence showing that the great majority of world refugees move to nearby countries, with only a minor proportion of them migrating to the more distant OECD destination.[9] None of the origin countries in the sample is in the same region of, or shares a border with, the selected Western economies.

An important result is that asylum applications in rich countries decrease as origin countries develop; this finding is robust to the different specifications of Table 1, and, it will be seen below, through all specifications in this study. The coefficient on *pcGDP orig.* is always negative and

---

[9] Hatton (2009, p.187) reports that '[o]nly a small proportion of those who are displaced become asylum seekers in Western countries and fewer still are accepted as genuine refugees. The applications to industrialised countries are on average less than five per cent of the refugee stock [during 1970-2005]. Most of those who are counted as refugees by the UNHCR are displaced into neighbouring countries and often into the poverty and squalor of refugee camps near the border.'

significant. The total effect of per capita income is shown in a separate row where the variable is interacted with *Bilateral aid*. The *Total effect* of *pcGDP* orig. is the sum of the coefficient on *pcGDP orig.* and on the interacted term (*Bilateral aid)*(pc GDP orig.)* evaluated at the average value of *Bilateral aid*. It is always negative and significant. Interestingly, the *pcGDP* of the origin country has a negative, strong and significant effect also in the 2SLS regression of column 6 (oppositely to Dreher et al., 2019). This negative effect of development on asylum supports similar findings in Hatton (2009) and Neumayer (2005). It implies that any positive influence of aid on growth contributes to indirectly deter asylum inflows. More generally, this paper's results contrast the hypothesis that aid transfers to developing countries, directly or indirectly, boost asylum applications (Clemens and Sandefur, 2105).[10] The coefficient on *Population orig.* is positive and significant in columns 1-4 and 5. Regarding the destination economy, both average income, which can be considered a proxy for the expected wage, and the size of its population, have no robust effects on asylum applications.

5.2. Robustness and sensitivity.

Table 2a shows the results of testing the effects of further cofactors on asylum applications. Column 1 includes variables concerning more characteristics of the destination country and column 2 of the origin economy; column 7 is the most complete specification. As expected, the coefficients on the rate of unemployment in the destination country are negative and significant (columns 1 and 7). If unemployment at destination increases by one per centage point, asylum applications diminish by about two per cent, with significance at one per cent (column 7). Similar coefficients, not shown to save space, are in Table 2b. This result supports previous findings (Thielemann 2004). As in

---

[10] The negative impact of *Bilateral aid* on applications from poor countries could be compatible with a different interpretation if, as some studies hypothesise, the relationship between development and asylum outflows were bell-shaped, *and if* aid had a detrimental effect on either the growth or level of income. I tested for non-linearity in the relation between per-capita income and asylum flows, as well as for the effect of *Bilateral aid* on income growth. Results show that, as in all specifications in this study, the relation between per-capita income at home and asylum applications is linearly negative and significant. Moreover, *Bilateral aid* is positively related to growth in recipient countries. Hence, in poor economies, more aid and more income strengthen the incentives to stay. They are reinforced by aid both directly and indirectly. Regression results are available from the author upon request.

Table 1, the per capita GDP at destination has a non-robust impact on asylum applications. A similar finding is in Hatton (2016) and other studies on refugees and asylum seekers. Combined with the more robust result on unemployment, it suggests that asylum seekers value the prospect of employment above that of wage levels.

Also as expected, political conditions in the origin country strongly influence individuals' decisions to move to the OECD destination. An increase in political terror and lower levels of civil liberties substantially affect applications (columns 2 and 7). Hatton (2015) finds political terror to be one of the most important and robust determinants of asylum flows. In Table 2a, a one-point increase in the five-point scale of *Political terror*, increases asylum applications by about 12 per cent. In Moore and Shellman (2007), higher levels of dissident violence and government terror increase the number of refugees relative to the number of internally displaced. The tendency of the origin country to be prone to 'produce' refugees, *Refugees to other countries*, has a small and not significant influence on applications in the OECD destination (columns 2 and 7). Similarly, natural disasters have no influence on the number of asylum seekers. This can suggest that people consider natural disasters as transitory phenomena, which can be overcome without moving to a faraway OECD country. A similar result is in Moore and Shellman (2007) and Clemens (2014). Neumayer (2005) finds that natural disasters and famine generate internal or cross border migration, rather than flight to distant destinations.

What is the influence of aid provided by all other countries on the applications to the Western destination, *d*? The regressor *Aid from all others* includes all donors except *d*. Columns 3 and 7 show that it generates negative and significant cross-donor *spillovers*: aid transfers from all other countries to *o* reduces applications from *o* in *d*. This can be partly due to aid making living conditions more bearable in the origin country, and partly to its attraction-for-the-donor effect, which, in this case, 'deviates' asylum seekers to non-*d* donors[11]. A similar question concerns the

---

[11] A world economy where countries minimize the expenditure in aid for given levels of social welfare functions and negative aid *spillovers* can be characterised by multiple equilibria. Given other countries' transfers to a specific

effect of aggregate aid – from all donors including d – on the applications from country o to d. Differently from *Bilateral aid*, the variable *Total aid* varies only across developing countries. The negative coefficient on *Total aid*, lagged one year, and the positive and smaller one on the interacted term *(Total aid$_{t-1}$)*(pcGDP orig.)*, both significant at the one per cent level, confirm and reinforce the above results: aid deters asylum seeker inflows from the poorer countries and can attract applicants from medium-income developing economies (column 4). Bilateral trade agreements between countries improve the reciprocal knowledge on the partner's institutions and social costumes and norms, potentially decreasing the costs of migration. Hence, a reasonable expectation is that *Bilateral trade agreements* has a positive influence on asylum applications. However, the coefficient on the variable is not significant, neither in column 6 nor in 7.

Table 2b presents the results of further tests of robustness and sensitivity. Cofactors are included in the regressions, but coefficients are not reported to save space. As in Table 2a, all regressions are based on the System-GMM in levels and differences, except for column 1, where I use the Pseudo Poisson Maximum Likelihood (PPML) method of estimation, proposed by Santos Silva and Tenreyro (2010), with time and country fixed effects. A potential issue relates to zeros in the dependent variable. They about 18 per cent of the total observations, which is not a proportion that should lead to biases in coefficients[12], but I use the PPML estimator to check for this possibility, and for potential heteroskedasticity. With it, the dependent variable can be used in levels rather than in logs and zero values of applications can be included as they are. Column 1, reporting the PPML coefficients on *Bilateral aid* and the interacted variable, show that results remain very similar to those of previous specifications.

The empirical literature finds that destination countries' policies and norms on the recognition of the status of refugee affect the flows of asylum seekers. A first, imperfect proxy for

---

destination, a donor can choose to reduce its own attraction effect by reducing its aid transfers, and benefit from the attraction to the other donors. However, a generalised move of this kind would produce inferior equilibria: by worsening living conditions in poor countries, it would lead to higher aggregate asylum inflows (Table 1). Jones (2015) finds evidence of positive bandwagon effects, especially among larger donors.

[12] There is only one country-pair-year – in 33,222 – with zeros for both asylum seekers and bilateral aid (Denmark-Comoros). The proportion of zeros in the variable of interest, bilateral aid, is 4.5 per cent.

such policies is the proportion of rejected applications from country o in country d. UNHCR provides data on the rates of rejection only since year 2000. Results show that the variable *Proportion of rejections* has no significant effect on asylum seekers (column 2). The variable equals one minus the recognition rates used by Neumayer (2004), who finds a very small but positive effect of recognition rates on the inflows of asylum seekers to Western European countries during the period 1982-1999. A more precise indicator of countries' policies on refugees is the *Asylum Policy Index* built by Hatton and Moloney (2015). It concerns 48 origin countries and 19 destinations – including the selected 14 OECD countries of this study – during 1997-2012; it varies between destinations and is constant across origins. Its values range between − 4 and 11, with higher numbers indicating more restrictive policies. Column 3 of Table 2b shows the effects of this indicator of destination countries' policies on asylum applications. The coefficient on the *Asylum Policy Index* has the expected sign and is significant at the one per cent level: a one-point increase in the index reduces asylum applications by about 1.3 per cent. In Hatton and Moloney (2015), policies have stronger effects, but their dataset comprises only origin countries with more than 300 asylum applicants, while the present study has a more extended database, which includes also observations with zero applicants. To control for temporal policy shocks concerning all origin countries, the policy index is interacted with time dummies in column 4 of Table A3. Coefficients are below the significance level.

A different issue concerns the possibility of sample heterogeneity and structural break. The patterns (Figure 1) and the geographical composition of asylum seeker flows and bilateral aid change after year 2000: asylum applications start to decline while aid transfers continue to increase. At the same time, the share of asylum seekers from Eastern Europe declines. The tightening of several Western countries' policies on immigration following the terrorist attacks of 11 September 2001 may partly explain the temporary decline in total asylum inflows, but other factors can also be at work. Hence, *Bilateral aid* is split into two periods: first, it is multiplied by a dummy taking value one in years 1993-2002 and zero otherwise and, second, by a dummy taking value one in

years 2003-2013 and zero otherwise (column 2, Table 2b). Results show that the results on bilateral aid and on the interacted variable are similar in the two periods. Hence, the hypothesis of homogeneity and absence of structural break cannot be rejected,

However, the impact of aid on inflows is smaller in the second period. This may be due to the same reasons that make the two periods to differ. One is improved economic and social conditions in most of Eastern Europe; another is the terrorist attacks of September 2001. Improved living conditions imply both fewer incentives to leave and less need of external aid. This weakens the link between the two variables. At the same time, the higher instability in regions of Middle East and Central Asia (Afghanistan, Iraq, then Syria, Yemen) after 9/11 weakens the impact of aid on asylum outflows, while it increases that of political terror. To test these hypotheses, I have re-estimated model 5 of Table 2.b after excluding Eastern Europe, the Middle East and Central Asia from the sample. This makes the coefficients on bilateral aid and the interacted variable in the two periods more similar. Interestingly, they become similar because coefficients in the first period shrink, which suggests that, during the first period, aid to these regions had the expected influence on refugee inflows. Regressions from the author upon request.

Up to now the variable of interest, *Bilateral aid*, concerned the totality of aid transfers (including development, education, trade, infrastructure, other purposes, and humanitarian aid). The underlying hypothesis was that all aid improving living conditions in the recipient country could influence the choices –of staying, leaving, and destination – of potential refugees. However, it can be hypothesised that people in critical and extreme situations may be more directly influenced by humanitarian aid, which is specifically conceived for these events, than by broad transfers. Hence, a variable reporting data on *Humanitarian bilateral aid* from *d* to *o* replaces *Bilateral aid*, and its relation with asylum seekers is tested. Data on humanitarian aid are extracted from the same OECD dataset on foreign aid that provides the data on Official Development Assistance used above, but results are not strictly comparable because observations are about 50 per cent of those on *Bilateral aid*. Moreover, the geographical distributions of the two types of aid recipients differ: humanitarian

aid is more concentrated in poor and politically dangerous countries. Results show that the coefficient on *Humanitarian bilateral aid* is about - 0.07, with significance at the five per cent level (column 5, Table 2b).[13] To control whether humanitarian aid is also related to the average income of the origin country, I tested the effect of the interacted variable, (*Humanitarian bilateral aid$_{t-1}$*)*(*pcGDP orig.*), but results, not shown to save space, on the main term and on the interaction are both not significant. Hence, humanitarian aid has a deterring effect on asylum seeker applications that is invariant in the origin countries' average incomes.

The long run influence of *Bilateral aid* has been considered above, but the significance of coefficients in the medium run is also of interest. To this purpose, the sample has been split into two parts, each comprising countries below or above median income, and the *Bilateral aid* variable has been lagged several periods. Splitting the sample is useful in order to capture the relation between the impact of aid and the level of development without using the interacted variable. A lagged interacted variable in the Sys-GMM specification in levels and differences would substantially increase the risk of instruments proliferation and error autocorrelation (Roodman, 2009 a,b). Columns 6 and 7 of Table 2b show that the first and sixth lags of *Bilateral aid* in poor countries are negative and significant, while none of the lags in the group of less poor countries is significant. Table A4 reports coefficients on intermediate lags. When only the first lag is considered, to a 10 per cent increase in bilateral aid to poor countries corresponds a 0.63 per cent drop in applications the following year (column 1, Table A4). The lowest two quintiles in Table 1, column 6, report a similar result. On the other hand, coefficients in less poor countries do not follow a clearly defined path: the first lag is positive, but the third, fourth and fifth lags are negative and significant (columns 7, 9, 10, 11 in Table A4), evidencing that the upward sloping segment of the U-shaped relationship between aid and applications is not robust. In both samples, coefficients on a seventh lag are non-significant. Because of the gradual shrinking of the sample size, lags beyond the

---

[13] Nyberg Sørensen et al. (2003) state that 'aid selectivity tends to allocate development aid to the well performing countries and humanitarian assistance to the crisis countries and trouble spots. However, development aid is more effective than humanitarian assistance in preventing violent conflicts, promoting reconciliation and democratization, and encouraging poverty-reducing development investments by migrant diasporas.' pg.6.

seventh are not tested. Hence, there is a significant and substantial negative relationship between aid flows to poor developing countries in one year and asylum applications the following year, though this relationship is not evident the four years that follow. Specifications with six years lags find a significant negative relationship with asylum applications six years later, but this finding can be contingent on the lag structure chosen. However, tests on coefficients show that they are always jointly significantly different from zero, except for column 5 (Table A4). The balance of this evidence supports a stronger short-term negative relationship between aid and asylum applications, with suggestive but weaker evidence of a further delayed relationship requiring further investigation.[14]

My central hypothesis, that the level of development of the origin country can influence the relation of aid with asylum applications, finds support in the data. However, in principle, other characteristics of countries could also influence the impact of aid. To test this possibility, I interacted *Bilateral aid* with two variables that have a robust influence on asylum applications, and in principle could influence aid effects: they are *Distance* and *Political terror*. In the first case, the link of aid with asylum inflows can be expected to be stronger for closer countries, with lower costs of immigration; in the second, aid might deter asylum inflows more effectively where political terror is not at the highest levels. Situations of high political and civil disruption can weaken the effects of aid transfers. In both cases, coefficients on the interacted variables are not significant. Subsequently, I tested the interactions between *Bilateral aid* and the other regressors; also these coefficients on the interacted variables are not significant. Results, not shown to save space, are available upon request.

A possible further check might consist in substituting zeros for the missing observations of the dependent variable (about 22 per cent of total observations), and running the regressions on the augmented dataset. The substitution would be justified only if it were reasonable to presume that missing observations coincide with very low numbers of asylum applicants. However, a check on

---

[14] I thank an anonymous reviewer for suggesting this analysis.

the countries' sources of data shows this not to be the case. Each country's statistics depend on specific practices and methods of data collection rather than on the magnitude of the flows. For example, figures from Canada in OECD Population Statistics are available only since year 1996, but Canadian sources of data show that substantial numbers of asylum seekers and refugees were present in the country before that time. As similar evidence is available for other destinations, I do not perform the substitution.

5.3 Aid and immigration.

Does bilateral aid affect voluntary migrant inflows? This question matters because aid transfers meant to influence asylum inflows might have unintended effects on immigrants. For example, aid to poor countries might deter asylum seekers but boost voluntary immigration. Hence, testing the association of aid with voluntary migration is useful to uncover the overall relation of aid with inflows – forced and voluntary –.

Table 3 depicts the results of using *Immigrant inflows* in country d from country o instead of *Asylum applications*; cofactors remain the same. All regressions include time trends and time effects. As stated above, the general expectation is that voluntary migration is more affected by economic factors and less by political disruption than asylum migration. Results on the variable of interest are that *Bilateral aid* has no effect on immigrants: coefficients on the variable are positive in column (1), concerning the OLS regression, and not significant and mostly negative in the other regressions. In column (2), the OLS-FE specification includes country and country-pair effects. Columns (3)-(6) are based on System-GMM tests in levels and differences, where *Bilateral aid*, *Asylum applications*, *Bilateral refugees,* and the lagged dependent variable are included as potentially endogenous and the other variables as predetermined. Column (4) tests whether the impact of *Bilateral aid* on immigrants is correlated with the average income of the origin country. Results show that the coefficients on the interacted term and on *Bilateral aid* are not significant.

Hence, there is not a unique and robust link between aid and voluntary migration; this supports the results of previous research (Böhning et al., 1994).

A related and highly debated question concerns the indirect effects of aid on migration, especially through its potential positive influence on growth. As seen above, some authors hypothesise a bell-shaped relationship between aid, emigration and development (among others, Faini and Venturini 1993; de Haas 2010, 2011; Clemens 2014). In Table 3, the influence of the average income of the home country on immigrant flows is positive in all specifications, but it is not always significant. To test whether the income effect is non-linear, Column (5) includes the squared term of *pcGDP orig*. There, both the results, on *pcGDP orig.* and on the squared term, are non-significant. Hence, development has a non-robust effect on immigrant flows. This supports Dao et al. (2018a), who find that income has a minor role on the upward-sloping segment of the bell-shaped 'mobility transition'. More generally, the results of Table 3 show that aid neither has a direct effect on immigrant inflows, nor an indirect one through development.

Other results are that, differently than expected, the average income of the destination country is not a robust pull factor of immigration. The coefficient is negative and significant in column 1, and positive and significant in the OLS-FE specification of column 2. With the Sys-GMM specification, the coefficient is always negative and significant (columns 4-6). These results contrast the thesis that migration is strongly driven by differences between the incomes levels of origin and destination country (Hatton and Williamson 2005; Mayda 2010; Ortega and Peri 2013). On the other hand, the dimension of the country, proxied by *Population dest.*, appears to be a robust pull factor (columns 1-6), while higher levels of unemployment exert the opposite effect (column 6).

More importantly, push factors that strongly affect asylum and refugee migration, such as *Political terror* and *Civil liberties*, either have no influence or work in in the 'wrong' direction with immigration. The coefficient on *Political terror* is very small and non significant; while the negative and significant coefficient on *Civil Liberties*, shows that a decrease in civil liberties in the home country is correlated with *less* migration to the Western economies (columns 4 and 6). In

sum, asylum and voluntary migration differ in important aspects: bilateral aid has no effect on voluntary migration; higher levels of income at home are negatively associated with asylum applications but have uncertain links with immigration; political factors are quite important in explaining asylum inflows, and not significant in determining immigration. One shared determinant is unemployment in the destination economy: it is negatively correlated with both types of inflows.

6. Summary and conclusions.

The main question of this study was whether the inflows of asylum seekers in Western economies are associated to previous bilateral aid disbursements to their home countries. To this purpose, I measured the relation of bilateral aid from 14 Western donors to 113 developing countries with asylum seeker inflows during 1993-2013. Using this comprehensive dataset, I found that bilateral asylum applications from poor countries diminish with past with aid disbursements. The result is negative and significant in the short and the long run. Specifically, a 10 per cent increase in aid to countries with per capita income below the median level is followed by a reduction in asylum applications of above 0.6% the following year and 3% in the long run. On the other hand, applications from less poor countries are related positively with bilateral aid transfers in the short run and negatively in the medium run. Hence, only asylum applications from poor countries appear to be robustly, and negatively, associated with bilateral aid transfers. The estimated association does not arise from worldwide changes in total asylum flows (it is robust to time fixed effects), it does not arise from time-invariant heterogeneity in origin-destination pairs (it is robust to origin, destination, and dyad fixed effects), and it is robust to instrumental variables methods. These features lend substantial support to the interpretation of the estimates as a causal effect of aid on asylum flows. Moreover, asylum applications are negatively associated with humanitarian aid – a more restricted type of transfer – at all levels of income.

As in previous studies, political and institutional conditions in the home country, especially the level of political terror, are strong push factors of asylum flows into Western economies

(Hatton, 2015). One general, important, and robust result of this study is that economic development in the home country is negatively associated with asylum applications. It adds to the current debate on growth and migration, showing that the often hypothesised bell-shaped relation between the two, or 'mobility transition', does not apply to forced migration to rich Western countries. Higher per capita income in the home country is unambiguously related to lower numbers of asylum applications. A rationale for this result is that higher levels of income tend to be associated to better political and institutional conditions in the home country, all of which represent incentives to stay. Moreover, these findings imply that asylum inflows diminish with aid that promotes development.

Could aid to poor countries be negatively associated with asylum applications and at the same time be followed by higher voluntary immigration? Using different specifications and cofactors, I find that bilateral aid has no relation with immigrant inflows. More generally, in contrast with the 'mobility transition' hypothesis, the average income of the origin country has no robust relation with immigration. This implies that any positive effect of aid on growth would not attract immigration, even indirectly. At the same time, voluntary migration is strongly related to population levels in the origin country (Dao et al. 2018b), and expected employment in the country of destination. Hence, overall, aid transfers would be followed by less asylum inflows from poor countries and no changes in immigration.

Other results are that aid has negative cross-donor *spillovers*: more transfers from other donors are negatively associated with the number of asylum applications in the OECD destination. This makes free riding potentially appealing for individual donors. However, less aid, stalled development and negative political and institutional conditions in developing countries rise inflows in all destinations. Hence, concerted aid transfers made conditional on improvements in the economic and political institutions of the recipient country can have stronger overall relations with asylum inflows than uncoordinated and unconditional disbursements.

The authors declare that they have no conflict of interest.

References

Alesina A, Dollar D (2000) Who Gives Foreign Aid to Whom and Why? *Journal of Economic Growth* 5(1), 33–63.

Alesina A, Giuliano P, Nunn N. (2013) On the Origins of Gender Roles: Women and the Plough. *Quarterly Journal of Economics* 128 (2): 469–530

Balli H O, Sørensen B E (2013) Interaction Effects in Econometrics, *Empirical Economics* 45(1), 583.

Bauer T, Zimmermann K F (1998) Causes of International Migration: A Survey. In: Gorter, C., Nijkamp P, Poot J (Eds.) *Crossing Borders: Regional and Urban Perspectives on International Migration*, Ashgate, Aldershot, pp. 95-127.

Belloc F (2015) International Economic Assistance and Migration: The Case of Sub-Saharan Countries. *International Migration* 53(1), 187-201.

Berthélemy J C, Beuran M, Maurel M (2009) Aid and Migration: Substitutes or Complements? *World Development* 37 (10) 1589–1599.

Bertoli S, Fernández-Huertas Moraga J (2013) Multilateral resistance to migration. *Journal of Development Economics*, 102 (C), 79–100.

Blundell R, Bond S (1998) Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87:115–143.

Boone P (1996) Politics and the effectiveness of foreign aid. *European Economic Review* 40, 289-329.

Böhning W R, Schloeter-Paredes M-L, editors (1994) *Aid in Place of Migration? Selected Contributions to an ILO-UNHCR Meeting*, Geneva: International Labour Office, pp. VIII, 1-253.

Clemens M A (2014) Does development reduce migration? In: Lucas, R E B (Ed.) *International Handbook of on Migration and Economic Development*, E. Elgar; USA, pp. 152-185.

Clemens M A, Sandefur J (2015) A Self-Interested Approach to Migration Crises. Push Factors, Pull Factors, and Investing in Refugees. *Foreign Affairs*, September 27.

Collier P, Dollar D (2002) Aid allocation and poverty reduction. *European Economic Review* 46, 1475–1500.

Czaika M, Mayer A (2011) Refugee Movements and Aid Responsiveness of Bilateral Donors. *Journal of Development Studies* 47(3), 455-474.

Davenport CA, Moore W H, Poe S C (2003) Sometimes you just have to leave: Domestic threats and forced migration, 1964–1989. *International Interactions* 29, 27–55.

Dao T H, Docquier F, Parsons C, Peri G (2018a) Migration and development: Dissecting the anatomy of the mobility transition. *Journal of Development Economics*, 132, 88-101.

Dao T H, Docquier F, M. Maurel, P. Schaus (2018b) Global migration in the 20th and 21st centuries: the unstoppable force of demography. *FERDI Working paper* P223. <hal-01743799>.

de Haas H (2007) Turning the Tide? Why Development Will Not Stop Migration. *Development and Change* 38(5), 819–841.

de Haas H (2010) Migration Transitions: A Theoretical and Empirical Inquiry into the Developmental Drivers of International Migration. *IMI Working Paper* 24 (DEMIG Project Paper), University of Oxford: International Migration Institute.

de Haas H (2011) The determinants of international migration. Conceptualizing policy, origin and destination effects. *IMI Working Paper* 32 (DEMIG Project Paper 2), University of Oxford: International Migration Institute.

Docquier F, Peri G, Ruyssen I (2014) The Cross-country Determinants of Potential and Actual Migration. *International Migration Review*, 48(S1), S37–S99.

Dreher A, Fuchs A, Langlotz S (2019) The Effects of Foreign Aid on Refugee Flows, *European Economic Review*, 112 (3): 127–147.

Dustmann C, Fasani F, Frattini T, Minale L, Schönberg U (2016) On the Economics and Politics of Refugee Migration. *CREAM*, CPD 16/16.

Faini R, Venturini A (1993) Trade, aid and migrations: Some basic policy issues. *European Economic Review*, 37(2-3): 435-442.

Grogger J, Hanson, G H (2011) Income Maximization and the Selection and Sorting of International Migrants. *Journal of Development Economics* 95(1), 42–57.

Hartog J, Vriend N (1989). Post-War International Labour Mobility: The Netherlands. In: Gordon I, Thirlwall A P (Eds.) *European Factor Mobility*. Palgrave Macmillan, 74-94.

Hatton T J (2004) Seeking asylum in Europe. *Economic Policy* 38, 5–62.

Hatton T J (2009) The rise of asylum: What happened and why. *The Economic Journal*, 119(535), 183–213.

Hatton T J, Moloney J (2015) Applications for Asylum in the Developed World: Modelling Asylum Claims by Origin and Destination. *CEPR Discussion Paper* No. 10678.

Hatton T J, Williamson J G (2005) What fundamentals drive world migration? In: Borjas G J, Crisp J, (Eds.) *Poverty, International Migration and Asylum*. Basingstoke: Palgrave Macmillan, pp.15–38.

Jones S (2015) Aid Supplies Over Time: Addressing Heterogeneity, Trends, and Dynamics. *World Development*, (69), 31-43.

Katseli LT, Glystos N P (1989) Theoretical and Empirical Determinants of International Labour Mobility: A Greek-German Perspective. In Gordon I, Thirlwall A P (eds.) *European Factor Mobility*, Palgrave Macmillan, 95-115.

Lanati M, Thiele R (2017) The impact of foreign aid on migration revisited. *EUI Max Weber Program Working Paper* 2017/05.

Lancaster C (2007) *Foreign Aid: Diplomacy, Development, Domestic Politics*. The University of Chicago Press, Chicago.

Lucas R E B (2006) Migration and economic development in Africa: A review of evidence. *Journal of African Economies* 15(S2), 337–395.

Lundborg P (1991) Determinants of Migration in the Nordic Labour Market. *Scandinavian Journal of Economics* 93(3) 363-375.

Marfleet P (2006) *Refugees in a Global Era.* Basingstoke: Palgrave Macmillan.

Martin P (1994) Reducing emigration pressure: What role can foreign aid play? In: Böhning, W.R., Scholoeter-Paredes M.L. (Eds.) *Aid in Place of Migration?* Geneva: International Labour Office, 241-257.

Martin P, Taylor E J (1996) The Anatomy of a Migration Hump. In J. Taylor E.J. (Ed.) *Development Strategy, Employment, and Migration: Insights from Models*, Paris: OECD, pp. 43–62.

Mayda A M (2010) International migration: A panel data analysis of the determinants of bilateral flows. *Journal of Population Economics* 23 (4), 1249–1274.

Moore W H, Shellman S M (2007) Whither Will They Go? A Global Study of Refugees' Destinations. 1965-1995, *International Studies Quarterly* 51(4), 811-834.

Naudé W A (2010) The determinants of migration from Sub-Saharan African countries. *Journal of African Economies* 19, 330-56.

Neumayer E (2004) Asylum Destination Choice: What Makes Some European Countries More Attractive Than Others? *European Union Politics* 5(2), 155-180.

Neumayer E (2005) Bogus refugees? The determinants of asylum migration to Western Europe, *International Studies Quarterly* 49, 389-410.

Nickell S. (1981) Biases in Dynamic Models with Fixed Effects, *Econometrica*, 49(6), 1417-1426.

Nyberg-Sørensen N, Van Hear N, Engberg-Pedersen P (2003) Migration, Development and Conflict: State-of-the-Art Overview. In: Sørensen N N, Van Hear N (Eds.), *The Migration-Development Nexus*, Co-published by the United Nations and the International Organization for Migration, pp. 5-50.

Ortega F, Peri G (2013) The effect of income and immigration policies on international migration. *Migration Studies*, (1), 47–74

Roodman D (2009a) How to do xtabond2: An introduction to difference and system GMM in Stata. *The Stata Journal*. 9(1): 86–136.

Roodman D (2009b) A Note on the Theme of Too Many Instruments. *Oxford Bulletin of Economics and Statistics* 71(1): 135-158.

Santos Silva J M C, Tenreyro S (2010) On the Existence of the Maximum Likelihood Estimates in Poisson Regression. *Economics Letters*, 107(2), 310-312.

Schiff M (1994) How Trade, Aid, and Remittances Affect International Migration. *Policy Research Working Paper*, 1376, World Bank International Trade Division.

Schmeidl S (1997) Exploring the causes of forced migration: A pooled time-series analysis 1971-1990. *Social Science Quarterly* 78 (2), 284-308.

Thielemann E R (2004) Does policy matter? On governments' attempts to control unwanted migration. 112. *The Center of Comparative Immigration Studies*, University of California, San Diego, USA.

Vogler M, Rotte R (2000) The effects of development on migration. Theoretical issues and new empirical evidence. *Journal of Population Economics*, 13, 485-508.

Vogler M, Rotte R, Zimmermann K (1997) South–North Refugee Migration: Lessons for Development Cooperation. *Review of Development Economics*, (1), 99-115.

APPENDIX

Table A3 presents some further robustness tests. Regressions include all covariates but, to save space, only the coefficients of the variables considered are reported. In column 1, the logs on the dependent variable are taken without adding 1. This implies that about 18 per cent of observations, corresponding to zeros, are lost. Column 2 includes controls for multilateral resistance to migration. They are: origin-time effects, which should capture all time-varying terms that are constant across destinations d and only vary by year and country of origin; destination-time effects, meant to capture time-varying terms that are constant across origins, o, but vary year and country of destination; destination-origin dummies, which absorb all time-invariant dyadic variables that affect asylum applications; destination fixed effects, which account for factors of the destination country that are invariant or change very slowly along time, such as culture or institutions, and origin fixed

effects which absorb similar factors of the origin country. This is a very demanding specification, where measurement is entirely concentrated on within country-pair time variations.

It has been hypothesised that some applicants could be 'bogus' asylum seekers (Neumayer, 2005). For example, irregular immigrants who correctly foresee they will not be eligible for the refugee status might nonetheless apply for asylum, only to avoid deportation during time needed for the application to be processed. To control for this possibility, I restrict the sample to countries of origin with above average levels of political terror. Presumably, they are more likely to generate flows of 'genuine' asylum applicants. Large geopolitical shocks, such as the Afghan and Iraq wars, might affect Western countries' policies on asylum. In column 4, the *Asylum Policy Index* (previously tested in column 3, Table 2b) is interacted with time dummies. Column 5 includes the Dreher et al. IV among the instruments of the System-GMM specification. Results in columns 1 to 5, are as in previous tests.

Former colonial links between origin and destination country might alter the choices of asylum seekers among potential destinations, as well as those of donors among potential aid recipients. In column 6, *Bilteral aid* and the interacted term are multiplied, first, by a dummy taking value one if the origin country was a donor's colony in 1945 and zero otherwise, and, second, by a dummy taking opposite values. Results show that coefficients on the variable of interest, split between former colonies and other developing countries, are as in previous regressions; also, they do not differ between them at a statistically significant level. Results (not shown) do not change with the dummy *Colonies* included among regressors.

Balli and Sørensen (2013), find that the coefficients of interaction terms could be biased in settings where fixed effects are used.[15] The solution they propose is to de-mean the components of the interaction term within the groups for which the fixed effects are included. Hence, I did de-mean *Bilateral aid$_{t-1}$* within each origin-destination dyad and year, as well as *pcGDP orig.* within each

---

[15] I thank an anonymous reviewer for suggesting this test.

origin country and year (column 7). Column 8 reports coefficients when the OLS regression is run after excluding outliers. Results are as in previous regressions.
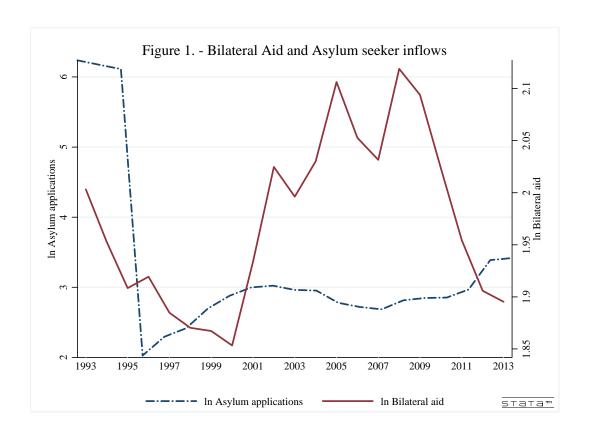
Figure 1. - Bilateral Aid and Asylum seeker inflows

Table 1. - Dependent variable: Bilateral asylum applications. Basic specifications.

	(1) Pooled OLS	(2) Pooled OLS	(3) OLS-FE	(4) 2SLS	(5) Sys-GMM	(6) Sys-GMM.	(7) Sys-GMM Aid% pcGDP
Asylum applications $_{t-1}$	0.824***	0.824***	0.563***	0.581***	0.803***	0.820***	0.816***
	(0.007)	(0.007)	(0.011)	(0.014)	(0.014)	(0.013)	(0.014)
Bilateral aid $_{t-1}$	-0.016***	-0.035	-0.158***	-0.403*	-0.202**		-0.317**
	(0.005)	(0.027)	(0.054)	(0.209)	(0.094)		(0.154)
(Bilateral aid $_{t-1}$)*(pcGDP orig.)		0.003	0.024***		0.029**		0.053**
		(0.004)	(0.008)		(0.013)		(0.025)
Bilateral Aid $_{t-1}$: Quin 1						-0.051**	
						(0.024)	
Bilateral Aid $_{t-1}$: Quin 2						-0.037**	
						(0.017)	
Bilateral Aid $_{t-1}$: Quin 3						-0.007	
						(0.015)	
Bilateral Aid $_{t-1}$: Quin 4						0.013	
						(0.018)	
Bilateral Aid $_{t-1}$: Quin 5						0.014	
						(0.026)	
Bilateral refugees $_{t-1}$	0.065***	0.065***	0.006	0.023*	0.054***	0.046***	0.045***
	(0.005)	(0.005)	(0.010)	(0.012)	(0.012)	(0.012)	(0.011)
Bilateral immigrant flows $_{t-1}$	0.051***	0.051***	0.062***	0.065***	0.099***	0.026	0.087***
	(0.006)	(0.006)	(0.012)	(0.018)	(0.024)	(0.021)	(0.023)
Distance	-0.166***	-0.165***			-0.164***	-0.201***	-0.169***
	(0.014)	(0.014)			(0.024)	(0.022)	(0.022)
pcGDP dest.	0.134***	0.136***	-0.487*	0.310	0.166***	0.214***	0.137***
	(0.036)	(0.037)	(0.279)	(0.503)	(0.055)	(0.050)	(0.046)
Population dest.	0.021**	0.021**	-3.263***	-1.473	-0.009	0.064***	-0.001
	(0.008)	(0.008)	(0.430)	(1.134)	(0.022)	(0.020)	(0.020)
pcGDP orig.	-0.062***	-0.068***	-0.585***	-0.334***	-0.143***	-0.104***	-0.085***
	(0.007)	(0.010)	(0.070)	(0.101)	(0.031)	(0.027)	(0.014)
Population orig.	0.025***	0.025***	0.333**	0.912***	-0.0001	0.053***	0.004
	(0.006)	(0.006)	(0.163)	(0.333)	(0.017)	(0.015)	(0.016)
Total effect of pcGDP orig.	*-0.062****	*-0.062****	*-0.537****		*-0.086****		
	(0.007)	*(0.007)*	*(0.067)*		*(0.014)*		
time dummies	yes	yes	yes	yes	yes	yes	yes
Country-pair effect	no	no	yes	yes	yes	yes	yes
Origin*time	no	no	no	yes	yes	yes	yes
Destination*time	no	no	no	yes	yes	yes	yes
AR(2)					0.002	0.002	0.002
AR(3)					0.102	0.098	0.103
Hansen J test (P-value)					0.084	0.198	0.068
Hansen diff. J test (P-value)					0.52	0.945	0.625
Number of instruments					1,010	1,057	990
F-test of excluded instr.				14.17			
Kleibergen-Paap rk LM stat.				14.054			
P-val				0.000			
Number of country_pair	1,185	1,184	1,185	1,147	1,183	1,185	1,183
Observations	14,099	14,099	14,099	14,055	14,076	14,099	14,076
R-squared	0.871	0.871	0.897	0.285			

Notes: Robust standard errors clustered by country-pairs in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Time trend in all regressions. Corrected standard covariance matrix, robust to panel-specific autocorrelation and heteroskedasticity. Constant not reported. The sample comprises data from 1993 to 2013. Variables are in logs. Columns (5-7): Sys-GMM, in levels and differences: LDV, Bilateral Aid, refugees and immigrants are treated as potentially endogenous, all other control variables are treated as predetermined. AR (2) and AR (3) are second and third-step Arellano-Bond test for serial correlation. AR(1), not reported, = 0. Column (6) Bilateral aid: pcGDP orig. split in quintiles. Total effect of pcGDP orig. is calculated by summing the coefficients on pcGDP orig. and on (Bilateral Aid t-1)*(pcGDP orig.), evaluated at the average level of Bilateral aid t-1.

Table 2.a - Dependent variable: Bilateral asylum applications. Robustness. Sys-GMM

	(1) Destination	(2) Origin	(3) Aid others	(4) Total aid	(5) Aid region	(6) Trade agreem.	(7) Full
Asylum applications $_{t-1}$	0.801***	0.785***	0.802***	0.809***	0.779***	0.803***	0.783***
	(0.014)	(0.014)	(0.014)	(0.003)	(0.014)	(0.014)	(0.014)
Bilateral aid $_{t-1}$	-0.182*	-0.235**	-0.178*		-0.286***	-0.205**	-0.194**
	(0.095)	(0.091)	(0.096)		(0.092)	(0.094)	(0.096)
(Bilateral aid $_{t-1}$)*(pcGDP orig.)	0.028**	0.033***	0.027**		0.040***	0.029**	0.030**
	(0.013)	(0.013)	(0.013)		(0.013)	(0.013)	(0.013)
Aid from all others			-0.042***				-0.038**
			(0.015)				(0.015)
Total aid$_{t-1}$				-0.158***			
				(0.024)			
(Total aid$_{t-1}$)*(pcGDP orig.)				0.019***			
				(0.003)			
Bilateral aid region $_{t-1}$					-0.026		
					(0.023)		
Bilateral refugees $_{t-1}$	0.048***	0.042***	0.056***	0.040***	0.062***	0.054***	0.034***
	(0.012)	(0.013)	(0.012)	(0.002)	(0.012)	(0.012)	(0.013)
Bilateral immigrant flows $_{t-1}$	0.097***	0.109***	0.101***	0.088***	0.108***	0.099***	0.108***
	(0.024)	(0.024)	(0.024)	(0.005)	(0.022)	(0.024)	(0.024)
Distance	-0.179***	-0.173***	-0.167***	-0.184***	-0.177***	-0.166***	-0.187***
	(0.025)	(0.025)	(0.024)	(0.006)	(0.026)	(0.025)	(0.026)
pcGDP dest.	-0.019	0.218***	0.140**	0.170***	0.256***	0.167***	-0.015
	(0.065)	(0.058)	(0.059)	(0.011)	(0.076)	(0.055)	(0.071)
Population dest.	-0.006	0.005	-0.019	0.010**	0.008	-0.009	0.004
	(0.022)	(0.024)	(0.024)	(0.004)	(0.023)	(0.022)	(0.025)
Unemploy. rate dest.	-0.017***						-0.021***
	(0.004)						(0.004)
pcGDP orig.	-0.138***	-0.134***	-0.152***	-0.203***	-0.131***	-0.143***	-0.136***
	(0.031)	(0.030)	(0.030)	(0.019)	(0.030)	(0.031)	(0.030)
Population orig.	0.002	-0.036*	0.012	0.020***	0.016	0.000	-0.025
	(0.017)	(0.019)	(0.016)	(0.004)	(0.016)	(0.017)	(0.018)
Refugees other destinations		0.003					0.010
		(0.006)					(0.006)
Political terror		0.127***					0.125***
		(0.013)					(0.013)
Civil liberties		0.023**					0.021**
		(0.009)					(0.009)
Natural disasters		0.003					0.003
		(0.005)					(0.005)
Bilateral trade agreements						-0.019	0.025
						(0.040)	(0.040)
Time dummies	yes	yes	yes	yes	yes	yes	yes
Regional dummies	no	no	no	no	yes	no	no
Country-pair effect	yes	yes	yes	yes	yes	yes	yes
Origin effects	yes	yes	yes	yes	yes	yes	yes
Destination effects	yes	yes	yes	yes	yes	yes	yes
AR(2)	0.002	0.003	0.003	0.002	0.003	0.002	0.003
AR(3)	0.107	0.122	0.104	0.102	0.106	0.1	0.132
Hansen J test (P-value)	0.086	0.081	0.089	0.111	0.26	0.088	0.094
Hansen diff. J test (P-value)	0.478	0.533	0.603	0.999	0.84	0.471	0.529
Number of instruments	1,011	1,014	1,011	990	1,104	1,010	1,017
Number of country-pair	1,183	1,181	1,183	1,185	1,183	1,183	1,181
Observations	14,076	14,055	14,076	14,099	14,076	14,076	14,055

Notes: Robust standard errors clustered by country-pairs in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Corrected standard covariance matrix, robust to panel-specific autocorrelation and heteroskedasticity. The sample comprises data from 1993 to 2013. Variables are in logs, except Unemploy. rate, Political terror, Civil liberties. Sys-GMM, in levels and differences: LDV, Bilateral Aid, refugees and immigrants are treated as potentially endogenous, all other

control variables are treated as predetermined. AR (2) and AR (3) are second-step and third-step Arellano-Bond test for serial correlation. AR(1), not reported, = 0.

Table 2.b. - Dependent variable: Bilateral asylum applications. Robustness. Sys-GMM, PPML

	(1) PPML	(2) % Rejected	(3) Policy Index	(4) Humanitarian aid	(5) Time periods	(6) Lags poor	(7) Lags other
Asylum applications $_{t-1}$	0.800***	0.800***	0.777***	0.701***	0.788***	0.811***	0.795***
	(0.014)	(0.014)	(0.014)	(0.023)	(0.014)	(0.025)	(0.026)
Bilateral Aid $_{t-1}$	-0.149***	-0.246***	-0.210**			-0.081**	-0.015
	(0.046)	(0.088)	(0.095)			(0.033)	(0.035)
(Bilateral Aid$_{t-1}$)*(pcGDP orig.)	0.046***	0.037***	0.032**				
	(0.014)	(0.012)	(0.013)				
Prop. Rejected applications		0.068					
		(0.068)					
Asylum Policy Index			-0.013***				
			(0.004)				
Bilateral humanitarian Aid $_{t-1}$				-0.068**			
				(0.030)			
Bilateral Aid$_{t-1}$ 93-02					-0.311***		
					(0.110)		
(Bilateral Aid 93-02)*(pcGDP orig.)					0.046***		
					(0.016)		
Bilateral Aid$_{t-1}$ 03-13					-0.152**		
					(0.059)		
(Bilateral Aid 03-12)*(pcGDP orig.)					0.021***		
					(0.008)		
Bilateral Aid $_{t-2}$						0.057	0.043
						(0.044)	(0.040)
Bilateral Aid $_{t-3}$						-0.009	0.068
						(0.040)	(0.051)
Bilateral Aid $_{t-4}$						0.025	-0.014
						(0.044)	(0.040)
Bilateral Aid $_{t-5}$						0.027	-0.062
						(0.039)	(0.040)
Bilateral Aid $_{t-6}$						-0.119***	-0.045
						(0.034)	(0.033)
Covariates	yes	yes	yes	yes	yes	yes	yes
AR (2)		0.001	0.003	0.016	0.003	0.077	0.051
AR (3)		0.294	0.165	0.761	0.135	0.905	0.681
Hansen J-test (P value)		0.052	0.069	0.372	0.152	0.183	0.184
Hansen diff. J-test (P value)		0.335	0.441	0.670	0.805	0.889	0.122
Number of instruments		939	985	864	1,035	532	454
Number of country-pair		1,173	1,181	1,016	1,183	629	563
Observations	14,076	11,473	13,886	7,528	14,078	6,519	5,560
						≤ med pcgdp	> med pcgdp
Sample	Full	2000-2013	Full	2000-2013	Full		

Notes: Robust standard errors clustered by country-pairs in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Corrected standard covariance matrix, robust to panel-specific autocorrelation and heteroskedasticity. The sample comprises data from 1993 to 2013; in column (4) from 2000 to 2013. Variables are in logs, except Unemployment, Civil liberties, Political terror and policy indexes. Time, country-pair and origin and destination effects in all regressions. Sys-GMM, in levels and differences: LDV, Bilateral aid, refugees and immigrants are treated as potentially endogenous, all other control variables are treated as predetermined. AR (2) and AR (3) are second and third-step A-B test for serial correlation. AR(1), not reported, = 0. Constant not reported. Column (1): R2 = 0.759. Covariates included in all regressions.

Table 3. - Dependent variable: Bilateral immigrant inflows.

	(1) Pooled OLS	(2) OLS-FE	(3) Sys-GMM	(4) Sys-GMM	(5) Sys-GMM	(6) Sys-GMM
Bilateral immigrant flows $_{t-1}$	0.924***	0.620***	0.850***	0.801***	0.850***	0.799***
	(0.005)	(0.016)	(0.018)	(0.022)	(0.017)	(0.022)
Bilateral aid $_{t-1}$	0.009***	-0.002	-0.009	-0.040	0.004	-0.022
	(0.003)	(0.004)	(0.009)	(0.067)	(0.009)	(0.067)
(Bilateral aid $_{t-1}$)*(pcGDP orig.)				0.007		0.006
				(0.009)		(0.009)
lln_asylum_plus1	0.042***	0.050***	0.085***	0.072***	0.070***	0.071***
	(0.003)	(0.005)	(0.011)	(0.009)	(0.008)	(0.009)
Bilateral refugees $_{t-1}$	-0.012***	0.029***	-0.015*	-0.001	-0.014*	-0.006
	(0.003)	(0.005)	(0.009)	(0.009)	(0.008)	(0.009)
Distance	-0.011		-0.016	-0.055**	-0.029*	-0.064***
	(0.008)		(0.019)	(0.024)	(0.017)	(0.024)
Bilateral trade agreements						0.008
						(0.025)
pcGDP dest.	-0.096***	1.171***	0.004	-0.120**	-0.087**	-0.243***
	(0.022)	(0.167)	(0.050)	(0.052)	(0.042)	(0.058)
Population dest.	0.060***	0.670***	0.126***	0.147***	0.119***	0.150***
	(0.005)	(0.253)	(0.016)	(0.020)	(0.014)	(0.019)
Unemployment dest.						-0.011***
						(0.003)
pcGDP orig.	0.032***	0.034	0.066***	0.070***	0.138	0.076***
	(0.004)	(0.042)	(0.017)	(0.023)	(0.152)	(0.024)
(pcGDP orig.)-squared					-0.005	
					(0.011)	
Population orig.	0.039***	0.178*	0.079***	0.108***	0.080***	0.109***
	(0.004)	(0.095)	(0.012)	(0.015)	(0.011)	(0.015)
Political terror				0.011		0.013
				(0.010)		(0.009)
Civil liberties				-0.029***		-0.027***
				(0.008)		(0.008)
Time dummies	yes	yes	yes	yes	yes	yes
Country-pair effects	no	yes	yes	yes	yes	yes
Origin effects	no	yes	yes	yes	yes	yes
Destination effects	no	yes	yes	yes	yes	yes
Ar (2)			0.008	0.008	0.008	0.008
AR (3)			0.384	0.357	0.377	0.343
Hansen J-test (P value)			0.144	0.16	0.138	0.152
Hansen diff. J-test (P value)			0.981	0.961	0.99	0.976
Number of instruments			1,028	1,012	1,038	1,014
Number of country-pair			1,187	1,183	1,187	1,183
Observations	14,024	14,024	14,024	13,981	14,024	13,981
R-squared	0.957	0.966				

Notes: Robust standard errors clustered by country-pairs in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Corrected standard covariance matrix, robust to panel-specific autocorrelation and heteroskedasticity. The sample is a panel comprising data from 1993 to 2013. Variables are in logs, except Unemployment, Civil liberties, Political terror. Pooled OLS: constant not reported. Sys-GMM, in levels and differences: LDV, Bilateral aid, refugees and immigrants are treated as potentially endogenous, all other control variables are treated as predetermined; variables are instrumented for using their own lags in level and differences. AR (2) and AR (3) are second-step and third-step Arellano-Bond test for serial correlation. AR(1), not reported, = 0.

Table A1 - Data definitions and sources. List of countries.

Variable	Definition	Source
Asylum seekers	Log of inflows of asylum seekers by nationality (from o to d). Submissions made during year t.	OECD Population Statistics, and UNHCR statistics
Aid	Log of Official Development Assistance commitments (in 2013 US $)	OECD, International Development Statistics
Humanitarian aid	Log of Humanitarian assistance (in 2013 US $)	OECD, International Development Statistics
Refugee stocks	Log of number of refugees from origin to destination country each year	UNHCR Statistics
Immigrant flows	Log of immigrant flows from origin to destination, each year.	OECD, Bilateral Migration Statistics.
Distance	Log of weighted distance, in thousand km, between origin and destination	CEPII www.cepii.fr/francgraph/bdd/distances.pdf
Proportion rejected	Share of rejected asylum applications on total applications in country d from country o at time t.	UNHCR Statistics
Asylum Policy Index	Log of composite index of policies concerning refugee status recognition. Varies between 1 and 16, with higher numbers indicating more restrictive policies	Hatton Moloney (2016)
Population orig. / dest.	Log of number of people in country o, d.	World Bank - World Development Indicators
pc GDP orig. / dest.	Log of per capita Gross Domestic Product in country o, d. Constant 2005 US$.	World Bank - World Development Indicators
Political terror	Scale from 1 to 5. Higher numbers indicate higher levels of political terror.	*The Political Terror Scale*. http://www.politicalterrorscale.org/
Civil liberties	Rating from 1 to 7: 1 represents the highest and 7 the lowest degree of civil liberties.	*Freedom House*. https://freedomhouse.org/report/methodology-freedom-world-2017
Natural Disasters	Number of deaths.	EM-DAT. The International Disaster Database. http://www.emdat.be/database
Unemployment rate destination	Unemployment rate in destination country	International Labour Statistics.
Bilateral Trade agreements	Bilateral preferential trade agreements, average of WTO-plus. Varies between 0 (no agreement) and 1 (agreement).	World Trade Organization. Preferential Trade Agreements.

Origin countries. Europe: Albania, Bosnia-Herzegovina, Belarus, Moldova, Macedonia, Montenegro, Serbia, Turkey, Ukraine; North Africa: Libya, Morocco, Algeria, Egypt, Tunisia; South of Sahara: Angola, Benin, Burundi, Burkina Faso, Botswana, Central African Republic, Côte d'Ivoire, Comoros, Congo Democratic Rep., Congo Cape Verde, Djibouti, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Equatorial Guinea, Kenya, Rwanda, Sudan, Senegal, Sierra Leone, Somalia, Chad, Togo, Tanzania, Uganda, South Africa, Zambia, Zimbabwe, Liberia, Lesotho, Madagascar, Mali, Mozambique, Mauritania, Mauritius, Malawi, Namibia, Niger, Nigeria; South and Central Asia: Afghanistan, Armenia, Azerbaijan, Bangladesh, Bhutan, Georgia, India, Kazakhstan, Kirghizstan, Sri Lanka, Myanmar, Nepal, Pakistan, Tajikistan, Turkmenistan, Uzbekistan; Middle East: United Arab Emirates, Iran, Iraq, Jordan, Lebanon, Saudi Arabia, Syria, Yemen, Kuwait; Far East Asia: China, Indonesia, Cambodia, Laos, Mongolia, Malaysia, Philippines, Thailand, Vietnam, Papua New Guinea; South America: Argentina, Bolivia, Brazil, Chile, Colombia, Guyana, Peru, Venezuela, Ecuador; North and Central America: Cuba, Dominica, Dominican Republic, Guatemala, Honduras, Haiti, Jamaica, Nicaragua, El Salvador, Trinidad and Tobago. Destination countries: Australia, Austria, Belgium, Canada, Germany, Denmark Spain, France, Great Britain, Italy, Netherlands, Norway, Sweden United States.

Table A2 - Summary statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Bilateral aid (mil constant US$)	27,875	29.1	133.4	0	13021.8
Aid from all others (mil. constant US$)	31,976	667.8	1,038.4	2.4	25,330.1
Humanitarian aid (mil. constant US$)	11,830	6.6	30.8	0	823.6
Asylum seekers	27,184	230	1,120.5	0	75,138
Refugees	21,148	1,333.4	7,583.1	1	350,000
Immigrant inflows	27,651	1,402.6	5,431.3	0	165,000
Distance	33,222	7,099	3,468	491.8	18,008.3
pc_GDP origin (constant 2005 US$)	31,990	2,656	5,019.8	68.6	46856.8
Population origin (mil.)	33,194	44.00	159.4	0.1	1357.4
Refugees other destinations	32,858	89,473	312,136	0	3809767
Natural disasters (total deaths)	25,060	817.34	8,133.5	0	229566
Proportion rejected	22,148	58.22	3.34	53.1	63.98
Asylum Policy Index	26,894	7.15	2.85	1	16
Political terror	32,536	2.97	0.95	1	5
Civil liberties	32,816	4.38	1.53	1	7
pc_GDP destination (constant 2005 US$)	33,222	37,551	9,251	19,448	69,094.8
Population destination (mil.)	33,222	50.02	70.98	4.3	316.5
Unemployment r. destination	33,222	7.58	3.50	2.5	26.1

Table A3. - Dependent variable: Bilateral asylum inflows

	(1) Sys-GMM ln asylum	(2) MRM	(3) Sys-GMM High PT	(4) OLS-FE API*dt	(5) Sys-GMM IV	(6) Sys-GMM Colonies	(7) Sys-GMM de-mean	(8) Pooled OLS No outliers
Asylum applications $_{t-1}$	0.786***	0.476***	0.753***	0.555***	0.803***	0.847***	0.736***	0.827***
	(0.017)	(0.008)	(0.019)	(0.011)	(0.014)	(0.018)	(0.014)	(0.007)
Bilateral Aid $_{t-1}$	-0.224**	-0.090	-0.188*	-0.216***	-0.220**		-0.177**	-0.045*
	(0.090)	(0.057)	(0.102)	(0.055)	(0.093)		(0.072)	(0.026)
(Bilateral Aid$_{t-1}$)*(pcGDP orig.)	0.032**	0.014*	0.025*	0.033***	0.031**		0.027***	0.004
	(0.013)	(0.008)	(0.014)	(0.008)	(0.013)		(0.010)	(0.004)
Bilateral Aid*Colonies $_{t-1}$						-0.224**		
						(0.113)		
(Bil. Aid Colonies $_{t-1}$)*(pcGDP orig.)						0.036**		
						(0.016)		
Bilateral Aid*No colonies $_{t-1}$						-0.264**		
						(0.121)		
(Bil. Aid No colonies $_{t-1}$)*(pcGDP orig.)						0.040**		
						(0.016)		
(Asylum Policy Index)*dt				-0.006				
				(0.007)				
Covariates	yes	yes	yes	yes	yes	yes	yes	yes
Time effects	yes	yes	yes	yes	yes	yes	yes	yes
Country effects	yes	yes	yes	yes	yes	yes	yes	no
AR(2)	0.007				0.002	0.002	0.003	
AR(3)	0.319				0.102	0.104	0.093	
Hansen J test (P-value)	0.212				0.089	0.937	0.192	
Hansen diff. J test (P-value)	0.124				0.495	0.955	0.894	
Number of instruments	990				1012	542	1000	
Number of country-pair	1,105	1,172	1,086		1,183	1,185	1,183	
Observations	11,581	14,099	9,502	13,907	14,076	14,099	14,076	14015
R-squared		0.931		0.896				0.874

Notes: Robust standard errors clustered by country-pairs in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Corrected standard covariance matrix, robust to panel-specific autocorrelation and heteroskedasticity. The sample comprises data from 1993 to 2013. Variables are in logs, except Asylum Policy Index (API). Sys-GMM, in levels and differences: LDV, Bilateral aid, refugees and immigrants are treated as potentially endogenous, all other control variables are treated as predetermined. AR (2) and AR (3) are second and third-step Arellano-Bond test for serial correlation. AR(1), not reported, = 0. Column (1) logs on Bilateral asylum, not +1. Column (2) also includes country*time effects. Constant and covariates not reported.

Table A4.- Dependent variable: Asylum applications. Further lags. Sys-GMM

	(1)	(2)	(3)	(4)	(5)	(6)		(7)	(8)	(9)	(10)	(11)	(12)
	Per-capita income ≤ median							Per-capita income > median					
Asylum applications $_{t-1}$	0.807***	0.802***	0.820***	0.810***	0.832***	0.811***		0.818***	0.813***	0.798***	0.778***	0.783***	0.795***
	(0.022)	(0.023)	(0.021)	(0.024)	(0.023)	(0.025)		(0.024)	(0.025)	(0.024)	(0.026)	(0.027)	(0.026)
Bilateral aid $_{t-1}$	-0.063***	-0.088***	-0.089***	-0.075**	-0.083**	-0.081**		0.053**	0.052*	0.051	0.055	-0.010	-0.015
	(0.020)	(0.033)	(0.034)	(0.035)	(0.036)	(0.033)		(0.022)	(0.031)	(0.032)	(0.034)	(0.033)	(0.035)
Bilateral aid $_{t-2}$		0.045	0.041	0.032	0.037	0.057			0.006	0.048	0.063	0.068	0.043
		(0.033)	(0.042)	(0.043)	(0.044)	(0.044)			(0.031)	(0.038)	(0.042)	(0.044)	(0.040)
Bilateral aid $_{t-3}$			0.010	0.030	0.032	-0.009				-0.088**	-0.023	0.072	0.068
			(0.034)	(0.040)	(0.042)	(0.040)				(0.035)	(0.048)	(0.046)	(0.051)
Bilateral aid $_{t-4}$				-0.047	-0.006	0.025					-0.093***	-0.038	-0.014
				(0.036)	(0.046)	(0.044)					(0.030)	(0.039)	(0.040)
Bilateral aid $_{t-5}$					-0.017	0.027						-0.088**	-0.062
					(0.035)	(0.039)						(0.036)	(0.040)
Bilateral aid $_{t-6}$						-0.119***							-0.045
						(0.034)							(0.033)
Covariates	yes	yes	yes	yes	yes	yes		yes	yes	yes	yes	yes	yes
AR (2)	0.035	0.052	0.065	0.103	0.09	0.077		0.025	0.033	0.032	0.039	0.062	0.071
AR (3)	0.401	0.413	0.309	0.284	0.287	0.905		0.088	0.095	0.179	0.333	0.396	0.657
Hansen J-test (P value)	0.34	0.303	0.195	0.217	0.167	0.183		0.185	0.254	0.2	0.196	0.159	0.205
Number of instruments	603	602	583	571	554	532		515	507	499	489	474	461
Number of country-pair	678	668	660	652	635	629		625	612	591	583	575	563
Observations	7,507	7,346	7,184	7,032	6,877	6,519		6,592	6,362	6,172	6,014	5,853	5,560
F(num., den.)		4.27	2.96	2.47	1.65	4.37			3.62	3.21	4.73	2.81	1.81
P>F		0.014	0.031	0.043	0.144	0.0002			0.027	0.023	0.0009	0.016	0.095

Notes: Robust standard errors clustered by country-pairs in parentheses: *** p<0.01, ** p<0.05, * p<0.1. Corrected standard covariance matrix, robust to panel-specific autocorrelation and heteroskedasticity. The sample comprises data from 1993 to 2013; in column (4) from 2000 to 2013. Variables are in logs. Time, country-pair and origin and destination effects in all regressions. Sys-GMM, in levels and differences: LDV, Bilateral aid, refugees and immigrants are treated as potentially endogenous, all other control variables are treated as predetermined. AR (2) and AR (3) are second and third-step A-B test for serial correlation. AR(1), not reported, = 0. Covariates not reported.