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Foreign Aid and responsiveness of bilateral refugee inflows

Marina Murat*

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Abstract. This paper tests the effects of Aid from 14 OECD donor economies on bilateral asylum seeker inflows from 113 developing countries during 1993-2013. Results are that Aid affects asylum seeker inflows nonlinearly in the pc income of the origin country, in a 'U' shaped fashion, with a turning point at 9,150 pcGDP, PPP2011$. Aid has also cross-donor negative spillovers and regional effects. Overall, deterring effects concern especially Sub Saharan countries. Moreover, Aid does not influence bilateral voluntary migration. Making Aid transfers conditional on improvements in political and economic institutions in recipient countries can strengthen their effects on asylum seeker inflows.

JEL Classification: F35, F22, I38, J15

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We weren't looking for a better life, we were just looking for life.[1]

I. Introduction.

The inflows of asylum seekers have greatly increased since the start of the years 2000 and are expected to continue to grow in the future. This has prompted a debate among policy makers, politicians and scholars on the possibility of influencing the inflows – possibly at their source – with instruments of economic policy. Naturally, the attention has turned to foreign Aid, one of the very few instruments available at the international level. However, opinions on its efficacy and even its effects differ widely. At one extreme, Aid is conceived as a way of helping countries to overcome the crisis that generates the flows of refugees, and hence to eliminate the reasons for seeking refuge abroad. At the other, it is seen as extra economic means provided to resource-constrained individuals, who will use them to move to rich countries.

This difference in opinions is present among politicians, and partly also among scholars. In particular, economists traditionally considered refugee movements a political phenomenon and devoted more attention to the determinants of the voluntary international migration (Van Hear, 2011). Moreover, they analysed foreign Aid less than other potential determinants. Perhaps because of this, empirical studies on the link Aid – bilateral refugee flows are scarce and results heterogeneous. Among the few exceptions, Thielemann (2004) finds that Aid transfers as a share of GDP positively affect asylum applications in 20 OECD countries during 1985-1999; Neumayer (2005), instead, finds that Aid has no effect on asylum applications in Western Europe during 1982-1999.

This paper seeks to measure the impact of bilateral Aid on asylum seeker inflows from 113 sending countries in 14 OECD destination countries for each year over the period 1993-2013. In principle, by improving living and economic conditions in the recipient country, Aid both discourage and support refugee migration. As either result can depend on countries' conditions, I test whether Aid effects vary with the level of development of origin countries. Further tests concern the impact of bilateral Aid on voluntary bilateral migration. They help to compare the potential effects of Aid on asylum seekers and immigrants, and shed light on its overall impact. A rich array of fixed effects, lagged values and different specifications are used to control for potential endogeneity and the robustness and sensitivity of results.

International norms treat migrants and refugees differently. The 1951 Refugee Convention defines a refugee 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." The two types of movements, forced and voluntary, seem to differ also empirically. A refugee is a person who flees the home country to escape war or persecution, but would rather not leave. The refugee does not choose the destination, nor the destination chooses her, as it would happen in a totally voluntary setting. On the other hand, a migrant is a person who leaves the country for any other reason and chooses where to

[1] Bilal Askaryar, *NPR*, January 28, 2017.

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, only from the end of the second world war international Aid is officially recognized as a transfer of resources from one country to another in the form of donations and, as a minor share, of grants. As stated by the OECD, Aid has the goal of improving living conditions in the recipient country: 'Official Development Aid (ODA) is administered with the promotion of the economic development and welfare of developing countries as its main objective'. In fact, the reasons for providing Aid were often independent from real needs in the recipient country. (Boone, 1996; Alesina and Dollar, 2000; Collier and Dollar, 2002; Lancaster, 2007, Jones 2015). This suggests they may have also been independent from the causes of refugee flows.

This study's main findings are as follows. Bilateral Aid affects asylum seeker inflows nonlinearly in the average income of the origin country. Specifically, it reduces asylum applications from poor countries and encourages them from medium-income developing ones. In particular, the deterring effect is stronger on applications from Sub Saharan Africa. In addition, Aid has cross-donor spillover effects of negative sign: more Aid from other donors lowers the number of asylum applications in the OECD destination. Furthermore, bilateral Aid to the region surrounding a recipient country affect asylum inflows from that country. At the same time, bilateral Aid has no effect on bilateral migration. Hence, bilateral Aid can influence the inflows of asylum applicants without, as a side effect, influencing those of immigrants. The rest of the paper is organized 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.

II. Related literature

There has been more empirical investigation on the determinants of voluntary migration than on those of refugee movements. Several studies find that the main determinants of voluntary migration are economic, and among these the most important are per capita income and income growth in origin and receiving countries. In Hatton and Williamson (2005), Mayda (2010), Grogger and Hanson (2011), Ortega and Peri (2013), and several other authors, bilateral migration positively depends on the difference between average incomes in destination and origin countries. A positive effect of income at destination is in Bauer and Zimmermann (1998), Hartog and Vriend (1989), Katseli and Glystos (1989), and Lundborg (1991). These findings suggest that emigration decreases with development in the origin economy (Ortega and Peri, 2013, find a negative effect of per capita income on emigration). However, other studies find that an increase of per capita income in the origin country initially boosts emigration, and has the opposite effect only after a certain stage of development. This bell-shaped function of emigration in average income is present in Martin and Taylor (1996), de Haas (2007) and other authors. Using cross-country data Clemens (2014) provides evidence on an inverted 'U' relation between migration and development. The author hypothesises that the inverted

bell-shaped relation could hold also in the long-run, a length of time longer than that of most panel databases. Other significant economic causes of migration, among which unemployment, are reviewed and tested in Docquier et al. (2014).

Other determinants of voluntary migration concern political and institutional factors. Aid, as a potential cause of migration, has received less attention than other factors. Among the exceptions is the book *Aid in Place of Migration*?, edited by Böhning et al. (1994), which contains several studies on the link Aid-migration. However, as Martin (1994) recognizes in the epilogue, they reach different and contrasting results. Faini and Venturini (1993) hypothesise a non-linear relationship between Aid and development, with Aid initially fostering emigration from poor countries, where would-be migrants face resource constraints, and exerting the opposite effect after they reach a certain level of average income. Similar hypotheses are in Schiff (1994), Vogler et al. (1997), and Vogler and Rotte (2000). Berthélemy et al. (2009), using cross-country data from a wide set of countries, finds that bilateral Aid encourages migration from the poorest economies and reduces it from less poor ones. Also analysing a cross-section of countries, Belloc (2015) 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 test also the impact of Aid transfers to neighbouring economies of countries in 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.

Regarding the potential determinants of refugee migration, Marfleet (2006), Schmeidl (1997), Davenport et al. (2003), Moore and Shellman (2007) and Hatton (2009) find protest and oppression, conflict, and genocide in the home country significantly affect the stocks of refugees. Looking at the determinants of asylum applications in Western countries, Neumayer (2005) finds that they largely coincide with those of refugees, but political drivers are stronger for refugee migrations, while economic incentives dominate for voluntary migrants. However, refugees and asylum seekers also respond to economic factors. In Neumayer (2005) and Hatton (2009), levels and changes of per capita GDP in the origin country negatively influence them: outflows diminish with development. As seen above, among few others, Thielemann (2004) and Neumayer (2005) specifically focus on the effects of Aid on refugees and asylum seekers.

III. Data and descriptive statistics

From 1950, the United Nations High Commissioner for refugees (UNHCR) provides standardized cross-country data on refugees and asylum seekers. From 1969, the main source of standardized data on the Official Development Aid (ODA) provided and received by countries is the OECD statistics division. 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. Asylum seekers are individuals who have sought international protection and

whose claims for refugee status have not yet been determined (UNHCR). Data on countries that gained independence after the fall of the Soviet Union are available only from 1993; hence, this is the initial year of the dataset. Asylum applications from the list of 113 origin countries account for almost 80% of all asylum application in the selected OECD destinations (and 70% of asylum applications in all Western OECD countries), during the period considered. Data on foreign Aid, regarding the Official Development Assistance (ODA: net disbursements) from each donor/destination country to each recipient/origin is extracted from OECD Statistics. A complete list of variables and sources, together with the list of origin countries, is in Table A.1.

From the last two decades, Aid and bilateral asylum seeker inflows experienced some important changes. Because of the fall of the Berlin wall, the level of asylum applications was high at the beginning of the period, but fell rapidly afterwards. Many refugees from the former republics of the Soviet Union returned home, and fewer asylum seekers moved to the selected OECD destinations (Figure 1). Another important wave of asylum seeker inflows – still underway and expected to last for the next years – started with the terrorist attacks of 9/11/2001 and the subsequent military conflicts in Afghanistan and Iraq. The Balkans' ethnic conflicts, the 'Arab spring' in Middle Eastern and North African countries, and political turmoil in countries of Sub Saharan Africa, also determined substantial increases in asylum applications in OECD countries. Similarly, bilateral Aid falls at the start of the period considered. Subsequently, it grows from 2000 until 2006, to decrease again afterwards.

The main turns and changes in the paths of bilateral Aid and asylum applications partly coincide with modifications in the list of top origin and recipient countries. Table A.2 lists the twenty top origin countries of asylum applications and bilateral Aid recipients during 1993-2000 and 2001-2013. It shows that there are fewer applicants from Eastern Europe in the second period, and more from the Middle East South Saharan Africa.

IV. Estimation strategy

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

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

where Y_{odt} is the (log of the) number of asylum applications of individuals from country o in country d during year t, and lnY_{odt-1} its lagged value. T_{odt} includes dyadic variables. First among these is the variable of interest, bilateral Aid provided by the OECD country d to developing country o; its effect can be positive or negative depending on whether it provides more incentives to remain or resources needed to flee the country, and on

whether it affects individuals' preferences for the donor across possible destinations.[2] Other dyadic variables are: distance between origin and destination, meant to capture the effective cost of international migration and cultural dissimilarity between countries; stocks of migrants from country *o* in country *d* at time *t*, a proxy of family and social network ties; a time-invariant dummy taking value one if the origin country was a colony of the destination economy in 1945 and zero otherwise, accounting for similarity in institutions, language and culture between origin and destination, supposed to decrease the costs of migration. O_{ot} comprises origin country variables, which are: Aid received from all countries other than *d*, which, as above, can provide reasons for not leaving and means for doing so, and include an 'attraction for the donor' component (in this case, for a country different from *d*); GDP per capita, the main proxy for development and individuals' resources, which can boost or deter asylum seeker flows; population, which accounts for the size of the country; the degree of political terror and the lack of civil liberties, both potentially important push factors (Hatton, 2004 , Neumayer, 2004); natural disasters (proxied by the number of deaths), also expected to be a push factor (Naudé, 2010, Neumayer, 2005); refugees to other countries (all countries other than *d*), expected to be positively related to asylum seeker applications in *d*, because some countries can be more prone to produce refugees than others (Moore and Shellman, 2007; Hatton and Williamson, 2005). D_{dt} includes terms concerning the destination country, they are: per capita GDP at destination, a proxy of expected earnings, potentially a pull factor for asylum seekers (Neumayer, 2004); population, an indicator of the extension of the labour market; the unemployment rate, signalling the likelihood of finding a job at destination, having an expected negative effect. Policies at destination concerning asylum seekers should also significantly influence the number of applications. As there are no standardized indicators on these policies, I use two proxies: the first, very imperfect in that it includes pull and push elements, is the rate of rejection of asylum demands from origin *o* in country *d* at year *t.* The second, more precise, is an index built by Hatton and Moloney (2015) based on yearly changes in the tightness of refugee policies in the selected countries.

As said above, the impact of Aid on asylum inflows can be positive or negative depending on how individuals react to the availability of extra economic resources. In turn, this can depend on the resources they can already rely on, or, in other words, the level of development of the recipient economy. To test this hypothesis, subsequent specifications include the interaction between bilateral Aid and per capita income in the origin country:

$$lnY_{odt} = \alpha_d + \alpha_{do} + \alpha_{ot} + \alpha_{dt} + \lambda lnY_{odt-1} + \beta T_{odt} + \phi(ln\ Bilateral\ Aid_{odt})*(ln\ pc\ GDPo_{ot}) + \delta D_{dt} + \varepsilon_{odt} \quad (2)$$

[2] More aid to a country can intensify the attractiveness of the donor country for individuals of the recipient country. 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, all of which can decrease the costs of migration.

These more complete specifications will also include origin-by-year, destination-origin and destination fixed effects. The former should capture all time-varying terms that are constant across destinations *d* and only vary by year and country of origin. Destination-origin effects can account for time-invariant factors that affect each pair of origin-destination countries that are not captured by variables included in the regression. Dyadic time-invariant variables of the base specification will in this case be excluded because of collinearity. Destination fixed effects will account for factors of the destination country that are invariant or change very slowly along time, such as culture or institutions. In further regressions, destination-by-year will replace origin-by-year fixed effects. They are meant to capture time-varying terms that are constant across origins *o* and only vary by year and country of destination. In this case, all time varying variables of destination countries are excluded from the regressions because of collinearity. Symmetrically with respect to the previous specification, origin fixed effects will be included to account for time-invariant factors at origin.

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 affect bilateral Aid.[3] Using specifications similar to those of Czaika and Mayer, I test the effect of flows of asylum applications and refugee stocks on bilateral Aid with data from the present study's database, more extended in time.

These tests, however, are not conclusive. The variable asylum seekers can be autoregressive, which can reintroduce the problem of endogeneity in specifications (1)-(2). They include the lagged dependent variable as a regressor, but even this can be not sufficient if, for example, the mere increase in asylum applications in country *d* triggers a response in terms of Aid to their home country. To control for this possibility, in a further specification, independent variables are lagged five periods. Short-term confounding factors and reverse causality of asylum seekers on Aid are arguably less of a concern with longer time lags in the explanatory variables. Moreover, a five-year interval allows a fuller response of asylum inflows to variation of bilateral Aid and of other variables. Finally, a still more complete specification will include both destination-time and origin-time fixed effects together with destination-origin and time dummies. This is a very demanding specification, as it absorbs all bilateral-specific factors as well as origin and destination time varying factors. Measurement will therefore be entirely concentrated on within country-pair time variations.

V. Results

V.1. Base specifications

Results of the estimation of equations (1)-(2) are in Table 1. 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

[3] In Czaika and Mayer, asylum seekers affect bilateral Aid more than refugee stocks. This result can be unexpected because refugees (applicants who in the past obtained the permanent refugee status) had more time to integrate into the country's society and economy, form ethnic networks, and become able to influence Aid transfers. Asylum applicants reached the country only recently and face a substantial chance of not becoming refugees (rejection rates are above 58%, Table A.3), which can make them less able to affect the country's choices on Aid.

information from the zero-flow observations.[4] Variables regarding Aid, such as *Bilateral Aid* and *Aid all others*, are lagged one period to allow their effects to influence asylum seekers. The main hypothesis is that *Bilateral Aid* transfers can influence asylum inflows from the origin (recipient) to the destination (donor) country, but coefficient on the variable is not signed a priori. All specifications include a time trend and year fixed effects; the OLS-FE specifications include also country effects (2-5), in further specifications country*time fixed effects are added (columns 6-9).

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. The latter spans from 0.86 in the OLS specification of column 1 to 0.54 in the OLS-FE specification of column 6, showing that asylum applications are persistent when lagged one period. However, the coefficient further shrinks – in column 7 – and becomes not significant – in columns 8 and 9 – when the lag comprises five years. This lack of persistence in the longer run can derive from the changes in asylum inflows that occurred during the timespan considered (Figure 1, Table 1).

Our variable of interest, *Bilateral Aid*, has no significant effect on the dependent variable (columns 1-3). A similar result is in Neumayer (2005). More interestingly, when nonlinearity in average income is taken into account, coefficients on both *Bilateral Aid* and the interacted variable *(Bilateral Aid) *(pc GDP$_o$)* are significant (columns 4 and 6-9). The signs – negative on *Bilateral Aid* and positive on the interaction – show that the total effect of bilateral Aid on asylum seeker inflows is negative for the poorest countries and positive for the medium income (developing) ones. The total effect of total bilateral Aid is calculated summing the coefficients on bilateral Aid and on the interaction between bilateral Aid and per capita GDP of the origin country, evaluated a different levels of per capita GDP.

Column 5 includes origin-time, destination, country-pair and time fixed effects, which excludes all time-varying variables concerning origin countries because of collinearity. This specification takes into account the potential heterogeneity between leavers and non-leavers in origin countries (Ortega and Peri, 2013). The specification of column 6 substitutes origin-time with destination-time fixed effects that control for time varying factors not captured by the variables included in the regression, among which, for example as asylum and refugee policies in destination countries. To account for the possibility of endogeneity, the interacted variable, *(Bilateral Aid) * (pc GDP$_o$)*, and all cofactors are lagged five years in columns 7 - 9. Column 7 includes origin-time fixed effects, together with destination, country-pair and time fixed effects, while column 8 controls for destination-time effects. In them, results remain similar to those of column 4: the coefficient on *bilateral Aid* is negative and the coefficient on the interacted term is positive; both are significant at the 1% level. Column 9 reports the results of the more exacting specification, where all possible fixed effects are included – time, destination-origin, destination-time and origin-time (origin and destination fixed effects are 'absorbed' by the destination-origin effects). Results concern only within country-pair variations. As in

[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.

previous specifications, the number of asylum applicants originating from the poorest countries decreases and that from less poor ones increases as a consequence of Aid transfers. This complete array of fixed effects and the five-years' lag help to rule out the existence of endogeneity.

However, to further control for potential reverse causation, I test the direct influence of asylum seekers and refugee stocks on bilateral Aid. As in Czaika and Mayer (2011), I use OLS-FE – with FE concerning year, time, country and country-pair –, and PPLM – with the dependent variable in levels and zeros included as in the original data –. Results are in Table A.4. Coefficients on refugee stocks are significant, but the flows of asylum applicants have no effect on the bilateral Aid of the destination country. This result provides further support to the conclusion that endogeneity can be ruled out from the nexus bilateral Aid-asylum seekers of Table 1.

Further findings concern the influence of economic and political characteristics of origin and destination countries on asylum applications. Concerning the origin country, coefficients show that asylum applications diminish as per capita income increases. In the pooled OLS and the FE specifications of columns 1 and 2, coefficients on *pc* GDP_o are negative and significant. In column 2, a 10% increase in average income diminishes asylum applications by about 3.9%, significance at 1%. This supports previous findings in Hatton (2009) and Neumayer (2005). To control for the linearity of this effect, I include the squared term of per capita income in column 3. Results on *pc* GDP_o and *pc* GDP_o*^2* are that the coefficient on the main term is non-significant, and that on the squared term is negative and significant at 10%. This supports the above finding that development in the home country reduces the number of potential asylum seekers moving to the OECD destination. Moreover, in the subsequent specifications the total effect of *pc* GDP_o is calculated as the sum of the coefficient on the variable and on the interacted term, evaluated at the average value of *Bilateral Aid*: it turns out to be always negative and significant (columns 3-9).

As expected, political characteristics of the origin countries strongly influence asylum seeker inflows. Coefficients on *Political terror* and lack of *Civil liberties* are always high and significant. A 10% decrease in political terror lowers the number of asylum applications in the OECD destination by 3.87% (column 6). The effect is long lasting: after 5 years, applications decrease by 3.18% (column 8). Significance is always at 1%. Similarly, a 10% increase in civil liberties decreases asylum applications by 2.08% (column 6), and by 1.22% after five years (column 8). These results provide support to Moore and Shellman (2007), where high levels of dissident violence and government terror increase the number of refugees relative to the number internally displaced.

Some countries can be more prone to produce refugees than others (Moore and Shellman, 2007). Coefficients on *Refugees to other countries* (all countries other than *d*) are positive and significant in all specifications, except column 8, where the variable is lagged 5 years; this is consistent with the changes in asylum flows occurred during the last two decades (Figure 1). Natural disasters appear to have no effect on the inflows of asylum seekers in the OECD destination. 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 flight to distant destinations. The result can suggest that people regard natural disasters as temporary phenomena that will be overcame and pose no need of leaving for a distant destination. However, disaggregated results in the next Section show that the response to natural disasters is heterogeneous across world regions.

Regarding the destination country, as expected, a higher unemployment rate discourages asylum seekers. Specifically, if unemployment at destination increases by 1 percentage point, asylum applications diminish from 2.4% to 2.8 % in columns 1-5, and by 10.7%, in column 7; significance is always at 1%. The result, robust to all specifications, supports previous findings (Thielemann, 2004). On the other hand, average income at destination is not significant. A similar result is in Hatton (2016) and other studies on refugees and asylum seekers. It suggests that asylum seekers value the prospect of employment more than the expected level of wages. This differs from empirical findings on voluntary migration, where income at destination tends be a strong and robust pull factor.

Also as expected, migrant networks at destination and institutional and cultural similarity between origin and destination country, positively affect asylum applications. Moreover, distance between origin and destination significantly reduces the inflows of asylum seekers. This is consistent with empirical data showing that the great majority of world asylum seekers and refugees move to near countries, and only a minority migrate to the more distant OECD destination.[5] None of the origin countries in the sample are located in the same region of, or share a border with, the selected rich Western economies.

What are the effects of bilateral Aid, negative and positive, at different levels of income? Moreover, what would the costs of Aid policies be? To compute the total effect of bilateral Aid at different level of per capita income, I use the coefficients of the most complete specification, of column 9. In it, an increase of 10% in bilateral Aid to poor countries, such as Burundi, Eritrea, Liberia, Malawi, the Democratic Republic of Congo, Central African Republic or Afghanistan, reduces the number of applicants by about 0.06%. The same increase in bilateral Aid to medium income developing economies, such as Turkey, Libya, Chile, Saudi Arabia, Kuwait or United Arab Emirates, rises the number of applicants by about 0.05%. Significance for negative and positive coefficients is at 5%. In an intermediate subset of countries, bilateral Aid has no effect. From this follows that an increase of 10% of bilateral Aid to, for example, Eritrea, which corresponds to extra $914,200 (the average bilateral Aid to the country is $9.142 million, with the increase is $10.06 million), leads to 23 fewer applications (the average number of asylum applications from Eritrea is 376.4, multiplied by the above coefficient of – 0.06, gives – 23). Hence, the 'cost', in terms of Aid transfers, of reducing applications from Eritrea by one unit is $39,748. Similar calculations applied to Afghanistan – a stronger Aid recipient but also a wider source of asylum seekers – show that a 10% increase in bilateral Aid to the country, which

[5] Hatton (2009) 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 5% 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.', pg. 187.

corresponds to $14.47 million of extra transfers, determines a decrease of 77 applications. Hence, the 'cost' of each non-application from Afghanistan is $187,922.

Aid donations made by countries generate negative cross-donor spillovers. In Table 1, the coefficient on *Aid from all others*, concerning the transfers of all countries except *d* to country *o*, is negative and significant: a 10% increase in *Aid from all others* lowers the flows of asylum seekers from *o* to *d* by 0.04% (column 6). The effect persists after a five-year interval (column 8). These negative and significant cross-country spillover effects can be driven by the well-known opposing forces concerning, on the one hand, stronger incentives to remain in the home country, on the other, more resources to leave, and a third factor: fewer people, among those leaving, move to the OECD destination. Presumably, they will be attracted by the (non-*d*) donor country. The aggregate result is a reduction in the flows to the OECD destination. Indirectly, this supports the hypothesis of Aid transfers comprising an 'attraction for the donor' component, which in this case deviates flows from the OECD destination.[6]

V.2 World regions

This Section presents the results of testing the impact of Aid and the other main cofactors disaggregated into world areas. One implication of the effect of bilateral Aid being nonlinear in income is that it can be expected to vary across world regions with different levels of development. A related issue concerns the possibility of bilateral Aid to the area surrounding the origin country affecting asylum seekers from that country. Asylum seekers in a country located near to the home country face different options, such as staying in the host country, returning to the homeland, moving to a destination other than *d*, or migrating to donor country *d*. To test the influence of this indirect effect, I add the variable *Bilateral Aid region* to the above regressions, which reports the Aid provided by donor *d* to countries in the region surrounding *o* (Regions are listed in Table A.3). A negative coefficient on *Bilateral Aid region* implies that any (or a mix) of the first three options prevails, while a positive coefficient is the result of the choice to move from the temporary shelter plus the 'attraction' effect exerted by *d*.

Results are in Table 2. In order to keep the coefficients on all time-varying cofactors, I use a specification that controls for trend, time and country-pair effects, but do not include country-time effects.[7] Coefficients are obtained by multiplying *Bilateral Aid*, $pc\ GDP_o$ and the interaction term with a categorical variable on world

[6] A world economy with competitive countries minimizing the expenditure in Aid for given levels of a social welfare function and negative Aid spillovers can be characterized by multiple equilibria. Given world transfers to a specific destination, a donor can choose to reduce its own attraction effect and benefit from the attraction for other donors by reducing its Aid transfers. However, a generalized move of this kind would produce inferior equilibria: it would significantly worsen living conditions in the poorest countries, leading to an increase in asylum inflows from them (Table 1). Jones (2015) finds evidence of positive bandwagon effects, especially among larger donors.

[7] It corresponds to the specification of column 4 in Table 1. In Table 1, coefficients on bilateral Aid of columns 4 and 9 (the most exacting specification) do not differ significantly between them. The total effect of bilateral Aid, calculated as the sum of the coefficient on bilateral Aid and on the interacted variable, evaluated at the average level of per capita income at origin, is 0.008 in column 4 and 0.01 in column 9. Hence, I use the specification that keeps most of the coefficients on cofactors, and allows comparing them across regions.

regions. All regressions include all cofactors, but for reasons of space, only coefficients on variables of interest are shown.

Model 1 confirms that the above aggregate findings on bilateral Aid (in Table 1) were driven by countries in Sub Saharan Africa: coefficients on *Bilateral Aid* and the interacted variable are non-significant in all other world regions, except Eastern Europe. Results regarding Sub Saharan Africa (column 3) are not surprising, given that many of the poorest countries in the world are in this region, while those on Eastern Europe (column 1) are unexpected, because the per capita incomes of these countries are not low compared to those of other world regions. However, a closer examination of the data reveals that results in column 1, Model 1, depend on an outlier: Bosnia and Herzegovina. With the Kosovo war, asylum applications from this country rose substantially, and diminished rapidly afterwards. When I exclude this country from the sample, the magnitude of the coefficient on *Bilateral Aid* in column1 shrinks and loses significance. At the same time, coefficients on column 3, concerning Sub Saharan Africa, do not depend on specific economies.

Aid transfers from country *d* to the area surrounding country *o*, *Bilateral Aid area*, significantly influence asylum seeker inflows from the African continent, but with opposite signs in the North and the South of the Sahara. They pull applicants from North Africa, and increase the incentives to stay in the South of the Sahara. In this region, the coefficient on *Bilateral Aid area*, – 0.034, significant at 10% (column 3, Model 2), reinforces direct influence of bilateral Aid, also negative. The two negative effects add up and are consistent with the mostly regional nature of asylum seeker movements in the area (Lucas 2006, UNCHR). In North Africa, the coefficient on *Bilateral Aid area* is positive and, in absolute value, stronger: 0.104, with significance at 1%. In this area, where direct *Bilateral Aid* has no significant effect, the pull effect of regional Aid concerns asylum seekers who have already fled the home country, and move to the OECD donor from a regional location. It can be observed that North Africa is also the region where political terror has the strongest push effect on asylum seekers (column 2).

Coefficients on *Aid from all others*, all donors except the destination, *d*, are negative in all regions, except South and Central Asia (column 4). In line with the previous aggregate results of Table 1, Aid transfers from other donors to Africa, The Middle East, South America and Europe significantly decrease applications in the OECD destination. Differently, more Aid from other countries to South and Central Asia significantly increase asylum applications. This suggests a preference of asylum seekers from this region for the OECD destination, no matter what donor is providing Aid.

Considered together, these disaggregated results help to highlight the importance and significance of political and economic factors in countries of different regions in influencing asylum seekers. The coefficients on *Political terror* and *pc GDP*$_o$ tend to be both significant, except in some cases where one or the other prevails. Specifically, political terror is the strongest push factor of asylum seekers from North Africa and North and Central America, two regions where per capita income has no significant influence on asylum applications. Among the two, the effect of *Political terror* in driving applications from North Africa (coefficient is 0.65) is strongest than on those from North and Central America (coefficient is 0.31; in both

cases significance is at 1%). On the other hand, economic conditions appear to drive applications from Far East Asia and Oceania, where political variables have no effect. At the same time, asylum applications from this region decrease rapidly with development: the coefficient on *pc GDP*$_o$ is – 0.61, significance is at 1% (Model 1, row 4).

The coefficients on *Civil liberties* support these results, they are positive in all regions, except North Africa: a lack of civil liberties in the home country produces asylum flows to the Western economy (column 2, Model 5). The atypical result in North Africa – lower levels of civil liberties at home are correlated with less asylum applications – can be motivated by the region, together with the Middle East and South and Central Asia, having the lowest levels of civil liberties, and, as already mentioned, the highest levels of political terror. This suggests that people are less able to move from the North African country and reach the OECD destination when obstacles to civil liberties increase. As noted in de Haas (2010), lack of freedoms may decrease people's capabilities to migrate.

Interestingly, *Natural disasters*, which had no effect on asylum applications at the aggregate level, negatively and significantly affect asylum applications from South and Central Asia: a 10% increase in natural disasters reduces asylum seeker flows to the OECD destination by 0.4%, significance at 1% (column 4, Model 6). The negative coefficient shows that people react differently to natural and political dangerous situations. While the latter represent strong incentives to leave, calamitous natural events, perhaps because they are perceived as transitory, or because of the ensuing reduction in economic resources, are a reason for not moving to the OECD destination.

While the effects of push factors differ across world regions, the influence of pull forces appear to be more homogenous. Unemployment in the destination country, when significant, has a negative effect. Differently from expected, *pc GDP*$_d$ also has a negative effect (columns 7 and 8, Table 2). This, again, supports the hypothesis that asylum seekers value stability and employment opportunities at destinations more than the level of expected wages. Results also show that ethnic networks at destination, proxied by stocks of migrants from the home country, have a significant pull effect on asylum seekers from Sub Saharan Africa and Eastern Europe, but not on those from other regions. What is more, the coefficient on the variable is negative and significant for asylum applicants from South America (Columns 9). This negative coefficient helps to explain the non-robust aggregate effect of the variable *Immigrant stocks* in Table 1. In particular, it may imply that forced and voluntary immigrants from this region constitute different networks, which remain separate and do not overlap.

V.3 Sensitivity and robustness.

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 that improves living conditions in the recipient country could influence the choices - regarding staying, leaving, and destination - of potential refugees. However, it may be argued that people in

perilous and unsustainable situations might be more influenced by humanitarian Aid, which is specifically conceived for extreme conditions, than by broad donations that can reach them indirectly, if at all. Hence, in an alternative specification, a variable reporting data on *Humanitarian bilateral Aid* from *d* to *o* substitutes *Bilateral Aid*, and its effect on 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. Results are not strictly comparable with those of previous regressions because observations on *Humanitarian bilateral Aid* are about 50% of those on *Bilateral Aid*. Moreover, the geographical distributions of the two types of Aid differ: humanitarian Aid is more concentrated in countries that are poor, politically dangerous and subject to natural disasters. Results are in column 1 of Table 3: the coefficient on *Humanitarian bilateral Aid* is negative, small, 0.025, and significant at the 1% level.[8] To control whether also humanitarian Aid is nonlinear in the average income of the origin country, I added to the previous specification the interacted variable, (*Humanitarian bilateral Aid*) * (*pc_GDP origin*). Resulting coefficients on the main term and on the interacted variable, not shown to save space, are both not significant. Hence, humanitarian Aid has a deterring effect on asylum seeker inflows, and this effect is invariant in the origin countries' average incomes. All specifications in Table 3 include time trend, time, country-pair and country fixed effects.

In previous regressions, the influence of migrant networks in the destination country on the inflows of asylum applicants has been mixed: positive but not robust in the aggregate results of Table 1 and positive and significant only for Sub Saharan Africa and Eastern Europe in the disaggregated analysis of Table 2. To further analyse the impact of immigrants, I substitute the variable *Immigrant stocks* with *Immigrant inflows* (from the OECD dataset), concerning flows of migrants from *o* to *d*. Results show that, as expected, the coefficient is positive and significant, but small: a 10% increase in *Immigrant inflow*s at destination increases asylum applications by only 0.47% (column 2, Table 3). Another possible explanation for the lack of robustness of coefficients on *Immigrant stocks* (in Table 1), and the positive but low coefficient on *Immigrant inflows*, is that perhaps asylum seekers rely more on refugees – previously asylum applicants themselves – than on immigrants. If refugees and migrants in the host country have separate networks, different results may arise. The raw data appear to support this possibility: the simple correlation between asylum seekers and immigrant stocks is 0.35, while the correlation between asylum seekers and refugees is 0.74. However, the coefficient on the variable *Refugees* (stocks of refugees from country *o* in *d*) is not significant (column 3, Table 3). This result partially differs from Davenport et al. (2003), where past refugee migration positively influences refugee stocks (the dependent variable here is asylum applications).

Another issue concerns the possibility of sample heterogeneity and structural break. As seen above, the intensity and geographical composition of asylum seeker flows and bilateral Aid transfers change during the period considered (Figure 1 and Table A.2). A question that naturally arises is whether the influence of

[8] 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.

Bilateral Aid is homogeneous through time. A turning point is at the beginning of years 2000, when Aid grows and asylum application slightly decline; it can be related to the terrorist attacks of 11 September 2001 in the United States, which lead to a tightening of several Western countries' policies on immigration. To test this possibility, *Bilateral Aid* is split into two periods. For the first period, it is multiplied to a dummy taking value 1 in years 1993 to 2002 and zero otherwise, and for the second to a dummy with value 1 in years 2003-2013 and zero otherwise (column 4, Table 3). Results show that coefficients on bilateral Aid and on the interacted variable do not differ significantly between the two periods. Hence, aggregate results are not heterogeneous through time.

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 of such policies is the proportion of rejected applications from country *o* in country *d*. UNHCR provides data on the rates of rejection only from year 2000. Results show that the variable *Proportion of rejections* has no significant effect on asylum seekers (column 5). The variable equals one minus the recognition rates used by Neumayer (2004), who, instead, 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 is based on 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. I rescaled the index to positive values and transformed it in logs. Column 6 of Table 3 shows the effects of destination countries' policies on asylum seeker inflows. The coefficient on the *Asylum Policy Index* has the expected sign and is significant at the 5% level: a 10% increase in the index reduces asylum applications by about 1.2%. In Hatton and Moloney (2015) the index is in levels and policies have stronger effects, but their dataset includes only origin countries with a number of asylum applicants strictly positive and higher than 300.

Columns 2-6 in Table 3 show that coefficients on *Bilateral Aid* do not change significantly with the above controls concerning immigrant flows, refugee stocks, rates of rejection, and policy index. A further issue are zeros in the dependent variable: they correspond to about 22% of the total observations, which is not a proportion that should lead to biases in coefficients.[9] However, to check for this possibility, I use the Pseudo Poisson Maximum Likelihood (PPML) method of estimation, proposed by Santos Silva and Tenreyro (2010). With it, the dependent variable can be used in levels rather than in logs and zero values of asylum applications can be included as they are. Column 7 reports the PPML coefficients on bilateral Aid, the interacted variable, and other cofactors. Results remain very similar to previous specifications.

[9] There is only one country-pair in one 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%.

A possible check might consist in substituting missing observations of the dependent variable for zeros, and running the regressions on the augmented dataset. Missing values in asylum applications. However, this would be justified only if missing observations correspond to very low numbers of asylum seekers, but a check on the countries' sources of data shows that they do not. Each country's statistics depend on specific practices and methods of data collection, not on the magnitude of the flows. For example, OECD Population Statistics report figures from Canada only from year 1996, but national sources of statistics show that substantial numbers of asylum applicants and refugees were present in the country before that year. As similar evidence is available for other destinations, hence, I do not perform the substitution.

V.4 Asylum seekers and immigrants. Policy implications.

Do the same factors affect migrant and asylum seeker international movements? The question has clear implications for Aid policies, which could be implemented with the explicit goal of affecting asylum applicants, but have unintended effects on migrants, and hence on overall immigration. For example, Aid to some countries might deter asylum seekers but attract immigrants, or vice versa. Hence, tests on the respective determinants is useful to make clear the potential effects of policies. Given previous empirical findings, economic factors can be expected to have a leading role in influencing migrants' decisions and political forces in influencing the choices of refugees and asylum seekers.

Tables 4 and 5 reports results when the dependent variable is *Immigrant inflows* in country *d* from country *o*. Table 4 shows aggregate coefficients, Table 5 reports disaggregated results on the variable of interest, bilateral Aid, and the per capita GDP of the origin country. For reasons of space, Table 5 reports only the coefficients on the above two variables, but regressions include all cofactors, as well as time, country and country-pair effects. In the first column of Table 4, year, time and country-pair effects are controlled for, while columns 2-3 report coefficients of the more exacting specification that includes also destination*time effects, and hence captures the effects of destination country's characteristics and policies.

As expected, the determinants of immigrant inflows tend to differ from those of asylum seekers (of Tables 2-4). In the first place, our variable of interest, *Bilateral Aid*, does not influence immigrant inflows (columns 1-3, Table 4). The result is robust to the interaction of bilateral Aid with the average income of the origin country (column 3, Table 4). Hence, Aid to the poorest countries decrease asylum applications without affecting voluntary immigration. At a more disaggregated level, *Bilateral Aid* has a negative small and significant effect (coefficient -0.02, significance at 10%) on immigrants from North Africa (Table 5). This result does not provide support to Berthélemy et al. (2009) and Belloc (2015), where bilateral Aid encourages migration from, respectively, poor countries and Sub Saharan Africa.

Moreover, development in the origin country has an inverted 'U' effect on immigrant inflows in the OECD economy: development initially boosts and subsequently curbs migration (columns 1-3, Table 4). It differs from the above results on asylum seekers, where development in the home country had an inverse effect on asylum applications. The result in Table 4 gives support to Faini and Venturini (1993), Clemens

(2014) de Haas (2011) and other studies, mentioned above, on migration. However, a more disaggregated analysis shows that the bell-shaped effect is heterogeneous across world areas. The coefficient on per capita income is significant only in some areas, and in one case, development has a 'U' effect on migration. Specifically, the turning point for the developing countries of North and Central America occurs to a per capita income of 3,500 US$, which is above the region average of 3,080 US$. In South and Central Asia, the turning point is at 3,093 US$, far above the average of 1,100 US$. Differently, in Eastern Europe the turning point was at 1,750 US$, while per capita income, of 3,015 US$, is already beyond this level. Hence, development in the home country boosts immigrant flows from South and Central Asia, from the developing economies of North and Central America and, at a decreasing speed, from Eastern Europe, but not from other world regions. Interestingly, the effect of per capita income on immigrants from South America follows the opposite pattern: it is 'U' shaped. Development decreases immigration. The turning point, at which immigration would start to increase, is well beyond the existing level of income: the function reaches a minimum at 13,000 US$, while the region per capita income is of 9,780 US$ (per capita GDP figures are in constant 2005 US$).

A third difference between the determinants of immigrant and asylum seeker concerns the per capita income at destination, which significantly and positively influence immigrant inflows (coefficient is 0.35, significance at 5%; column 1 of Table 4). This marks a clear distinction between the two types of international movements: expected income is a strong pull factor for voluntary migrants, while the likelihood of being employed matters more for asylum seekers (average income at destination is not significant, or is negative in Tables 2-4). The positive effect of average income at destination for immigrants supports previous findings of the empirical literature (among others, Ortega and Peri, 2013; Mayda, 2010; Hatton and Williamson, 2005).

Finally, also as expected, an important push factor for asylum seekers, political terror, exerts a weak effect on migrants: the coefficient on *Political terror* is 0.057 (columns 2-3 in Table 4), while it was 0.387 in the regressions with asylum seekers as dependent variable (column 6, Table 1). In both cases, significance is at 1%. The lack of *Civil liberties* is also a weaker push factor for immigrants than for asylum seekers: coefficients on the variable are 0.105 in the immigrants regression (columns 2-3, Table 4), and 0.208 in the asylum seekers regression (column 6, Table 1).

VI. Summary and conclusions

This paper measured the impact of bilateral Aid from 14 OECD donors to 113 developing countries on asylum seeker inflows during 1993-2013. Using this comprehensive dataset, I have found that bilateral Aid deter asylum seeker inflows from poor countries, with a per capita income below 1,400 constant 2005 US$ (which correspond to 9,150 PPP 2011 US$), and encourages them from medium-income developing economies. Most of the Aid deterring effects concern countries in Sub Saharan Africa. Bilateral Aid has also a regional indirect influence: transfers to the area surrounding an origin country can affect the asylum applications from that origin. These effects are negative in Sub Saharan Africa, reinforcing the deterring effect of Aid provided directly to the origin country, and are positive and significant in North Africa. However, Aid

to this region only attracts asylum seekers who have already fled the home country. Foreign Aid has also negative cross-donor effects: more Aid from other donors reduces the number of asylum applications in the OECD destination. A more restricted form of Aid, humanitarian Aid, has a linear negative effect on asylum seeker inflows: a 10% increase in bilateral humanitarian Aid reduces asylum applications by 0.2%.

Further results are that lower levels of political terror and enhanced civil liberties, as well as higher levels of development, strongly reduce asylum applications. Hence, while the direct effect of bilateral Aid on asylum seeker inflows tends to be small, Aid transfers made conditional on improvements in the political and economic institutions of the recipient country can have a broader impact on asylum seeker inflows.

This paper has also tested the impact of bilateral Aid on voluntary immigration. I found that Aid transfers have no effects on immigration. This implies that bilateral Aid transfers to the poorest countries, as well as bilateral humanitarian Aid, reduce asylum seeker inflows without encouraging immigration. Moreover, migration from Africa, the world region with the highest concentration of poor countries, decreases with development. More generally, improvements the political situation in the home country reduce both forced and voluntary migration.

References

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

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.

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

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 C.A., 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.

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 1), 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.
Dustmann C., Fasani, F., Frattini, T., Minale, L., Schönberg U., 2016. On the Economics and Politics of Refugee Migration, *CREAM*, CPD 16/16.
Grogger, J., Hanson, G.H., 2011. Income Maximization and the Selection and Sorting of International Migrants, *Journal of Development Economics* 95(1), 42–57.
Jones, S., 2015. Aid Supplies Over Time: Addressing Heterogeneity, Trends, and Dynamics, *World Development*, (69), 31-43.
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., 2005. European asylum policy, *National Institute Economic Review* 194, 106–19.
Hatton, T.J., 2009. The rise of asylum: What happened and why, *The Economic Journal*, 119(535), 183–213.
Hatton, T.J., Lim, A., 2005. Australian asylum policy: The Tampa effect, *Agenda: A Journal of Policy Analysis and Reform* 12(2), 115–30.
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.
Katseli, L.T., 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.
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.
Ortega, F., Peri, G., 2013. The effect of income and immigration policies on international migration, *Migration Studies*, 1(1), 47–74
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.

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

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.

Van Hear, N., 2011. Forcing the Issue: Migration Crises and the Uneasy Dialogue between Refugee Research and Policy, *Refugee Studies*, 25 (1), 2-24.

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(1), 99-115.

Figure 1. - Bilateral Aid and Asylum seeker inflows (ln)

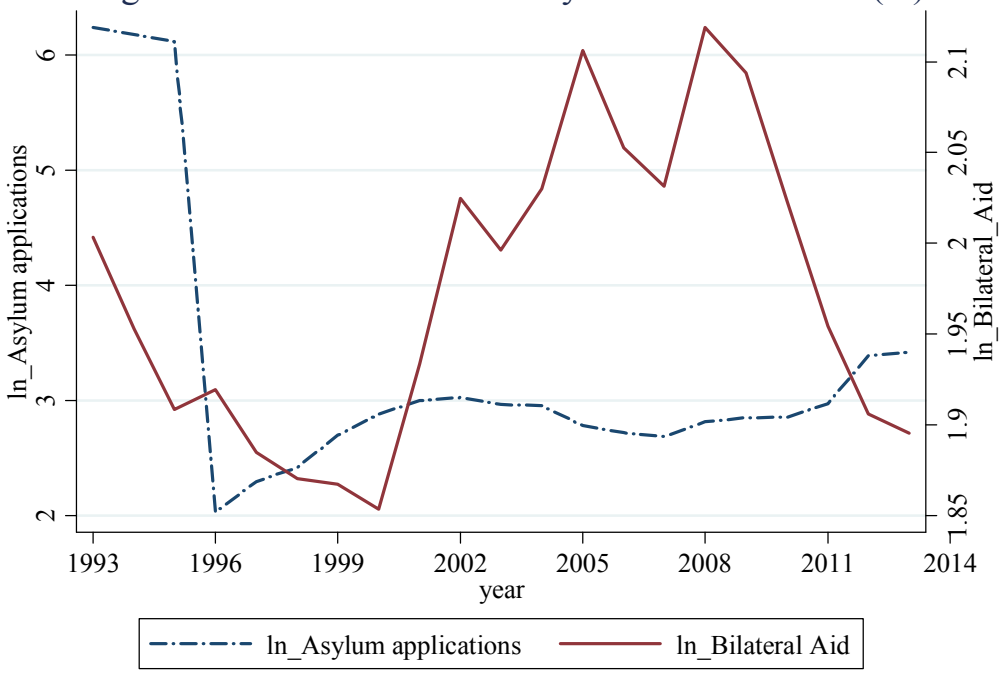

Table 1. - Base specifications. Dependent variable: asylum applications.

	(1) OLS	(2) FE	(3) FE	(4) FE	(5) FE	(6) FE	(7) FE	(8) FE	(9) FE
							Five year lag		
Asylum applications$_{t-1}$	0.864***	0.575***	0.575***	0.575***	0.545***	0.543***	0.021**	0.005	-0.010
	(0.005)	(0.009)	(0.009)	(0.009)	(0.006)	(0.009)	(0.009)	(0.011)	(0.008)
Bilateral Aid$_{t-1}$	0.003	0.008	0.007	-0.140***	-0.072	-0.103**	-0.253***	-0.210***	-0.202***
	(0.004)	(0.007)	(0.007)	(0.046)	(0.052)	(0.044)	(0.071)	(0.074)	(0.063)
Bilateral Aid$_{t-1}$*pc_GDP origin				0.021***	0.013*	0.015**	0.038***	0.029***	0.028***
				(0.006)	(0.007)	(0.006)	(0.010)	(0.011)	(0.009)
ln_Distance_w	-0.194***								
	(0.013)								
Colony_45	0.145***								
	(0.031)								
Immigrant stocks$_{t-10}$	0.136***	0.016	0.016	0.014	-0.013	-0.008	0.197***	0.208**	0.085*
	(0.015)	(0.035)	(0.034)	(0.034)	(0.032)	(0.035)	(0.047)	(0.082)	(0.046)
Aid from all others$_{t-1}$						-0.038***		-0.079***	
						(0.010)		(0.016)	
pc_GDP origin	-0.030***	-0.389***	0.129	-0.434***		-0.460***		-0.326***	
	(0.007)	(0.052)	(0.258)	(0.054)		(0.050)		(0.093)	
pc_GDP origin^2			-0.037**						
			(0.019)						
Population origin	0.013*	0.410***	0.294**	0.422***		0.413***		-0.041***	
	(0.007)	(0.132)	(0.147)	(0.132)		(0.123)		(0.011)	
Political_terror	0.232***	0.375***	0.375***	0.375***		0.387***		0.318***	
	(0.026)	(0.033)	(0.033)	(0.033)		(0.031)		(0.050)	
Civil Liberties	0.050***	0.208***	0.201***	0.206***		0.208***		0.122*	
	(0.019)	(0.047)	(0.047)	(0.047)		(0.043)		(0.067)	
Natural disasters	-0.005	-0.001	-0.001	-0.001		-0.002		-0.001	
	(0.003)	(0.004)	(0.004)	(0.004)		(0.004)		(0.005)	
Refugees other destinations	0.024***	0.022***	0.024***	0.021***		0.023***		-0.022**	
	(0.003)	(0.007)	(0.007)	(0.007)		(0.007)		(0.011)	
pc_GDP destination	-0.061	-1.573***	-1.566***	-1.541***	-1.601***		-2.396***		
	(0.040)	(0.262)	(0.262)	(0.262)	(0.227)		(0.376)		
Population destination	0.064***	-0.424	-0.429	-0.433	-0.205		-4.917***		
	(0.007)	(0.350)	(0.350)	(0.350)	(0.309)		(0.563)		
Unemployment rate	-0.024***	-0.027***	-0.027***	-0.027***	-0.028***		-0.107***		
	(0.002)	(0.004)	(0.004)	(0.004)	(0.003)		(0.008)		
Observations	19,385	19,385	19,385	19,385	19,450	19,385	14,573	10,426	14,573
R-squared	0.884	0.908	0.908	0.908	0.922	0.920	0.919	0.899	0.932
Time trend	yes	yes	yes	yes	yes	yes	yes	yes	yes
Time effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country-pair effects	no	yes	yes	yes	yes	yes	yes	yes	yes
Origin effects	no	yes	yes	yes	yes	yes	yes	yes	yes
Destination effects	no	yes	yes	yes	yes	yes	yes	yes	yes
Origin*time	no	no	no	no	yes	no	yes	no	yes
Destination*time	no	no	no	no	no	yes	no	yes	yes

Notes: Robust standard errors clustered in country-pairs in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The panel is an unbalanced panel comprising data from 1993 to 2013.

Table 2. - World regions. Dependent variable: asylum applications

		(1) Eastern Europe	(2) North Africa	(3) Sub Saharan Africa	(4) South & Central Asia	(5) Middle East	(6) Far East Asia & Oceania	(7) South America	(8) North & Central America	Observations	R-squared
Model 1	Bilateral Aid_{t-1}	-0.837**	-0.168	-0.290***	0.110	0.038	0.278	0.277	-0.295	19,385	0.908
		(0.352)	(0.374)	(0.067)	(0.176)	(0.318)	(0.224)	(0.307)	(0.284)		
	Bilateral Aid_{t-1}*pc_GDP_o	0.104**	0.023	0.044***	-0.011	-0.002	-0.032	-0.033	0.042		
		(0.042)	(0.048)	(0.010)	(0.026)	(0.041)	(0.030)	(0.038)	(0.038)		
	pc GDP origin	-1.226***	-0.283	-0.374***	-0.461***	-0.580***	-0.536***	-1.383***	-0.213		
		(0.204)	(0.297)	(0.065)	(0.092)	(0.166)	(0.127)	(0.191)	(0.187)		
	Total effect pc GDP origin	-0.970***	-0.210	-0.290***	-0.457***	-0.567***	-0.614***	-1.419***	-0.122		
		(0.180)	(0.269)	(0.062)	(0.078)	(0.131)	(0.088)	(0.178)	(0.173)		
Model 2	Bilateral Aid area	0.031	0.104***	-0.034*	0.022	0.003	0.046	0.034	0.029	19,385	0.908
		(0.026)	(0.034)	(0.020)	(0.014)	(0.023)	(0.029)	(0.024)	(0.030)		
Model 3	Aid from all others	-0.143***	-0.129**	-0.041**	0.180***	-0.057**	-0.008	-0.110***	-0.035	19,385	0.908
		(0.034)	(0.053)	(0.016)	(0.040)	(0.027)	(0.021)	(0.041)	(0.047)		
Model 4	Political terror	0.666***	0.645***	0.388***	0.231**	0.414**	-0.046	0.318***	0.310***	19,385	0.908
		(0.122)	(0.132)	(0.041)	(0.093)	(0.169)	(0.119)	(0.109)	(0.113)		
Model 5	Civil Liberties	0.580***	-1.371***	0.162***	0.604***	0.584***	0.193	0.101	0.306*	19,385	0.908
		(0.124)	(0.245)	(0.060)	(0.172)	(0.204)	(0.172)	(0.094)	(0.171)		
Model 6	Natural disasters	0.010	0.010	0.004	-0.043***	-0.010	-0.003	0.013	0.008	19,385	0.908
		(0.019)	(0.016)	(0.005)	(0.010)	(0.013)	(0.012)	(0.013)	(0.011)		
Model 7	Unemployment $rate_d$	-0.017	-0.006	-0.039***	-0.033***	-0.017	0.004	-0.024***	-0.013	19,385	0.908
		(0.011)	(0.012)	(0.005)	(0.008)	(0.012)	(0.011)	(0.009)	(0.010)		
Model 8	pc GDP destination	-2.909***	-0.499	-1.338***	-1.320***	-1.740***	-2.272***	-2.512***	-0.789**	19,385	0.908
		(0.408)	(0.445)	(0.259)	(0.312)	(0.366)	(0.345)	(0.343)	(0.373)		
Model 9	Migrant $stocks_{t-10}$	0.325***	0.586**	0.021	-0.095	0.099	-0.062	-0.684***	0.070		
		(0.098)	(0.271)	(0.041)	(0.073)	(0.149)	(0.120)	(0.144)	(0.095)		

Notes: Robust standard errors clustered in country-pairs in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The panel is an unbalanced panel comprising data from 1993 to 2013.

Table 3. - Sensitivity. Dependent variable: Asylum applications

	(1) Humanitarian Aid	(2) Immigrant inflows	(3) Refugee stocks	(4) Time periods	(5) Prop. of rejected	(6) HM policy index	(7) PPML
Asylum applications$_{t-1}$	0.591***	0.556***	0.568***	0.573***	0.497***	0.564***	0.635***
	(0.014)	(0.009)	(0.010)	(0.009)	(0.010)	(0.009)	(0.014)
Bilateral humanitarian Aid$_{t-1}$	-0.025**						
	(0.010)						
Bilateral Aid$_{t-1}$		-0.093**	-0.132**		-0.129**	-0.119**	-0.103*
		(0.046)	(0.052)		(0.051)	(0.047)	(0.061)
Immigrant inflows		0.047***					
		(0.009)					
Refugee stocks			-0.003				
			(0.009)				
Bilateral Aid$_{t-1}$ 93-02				-0.155***			
				(0.056)			
Bilateral Aid$_{t-1\ 0}$3-13				-0.154***			
				(0.046)			
Proportion rejected					-0.043		
					(0.049)		
Asylum Policy Index						-0.119***	
						(0.021)	
Bilateral Aid$_{t-1}$*pc_GDP origin		0.016**	0.022***		0.019***	0.020***	0.038**
		(0.006)	(0.007)		(0.007)	(0.007)	(0.017)
Bilateral Aid$_{t-1}$ 93-02*pc_GDP origin				0.027***			
				(0.008)			
Bilateral Aid$_{t-1}$ 03-13*pc_GDP origin				0.023***			
				(0.007)			
Immigrant stocks$_{t-10}$	0.093			0.015	0.003	-0.001	0.052
	(0.059)			(0.034)	(0.043)	(0.034)	(0.105)
Aid from all others$_{t-1}$	-0.025*	-0.044***	-0.051***	-0.044***	-0.028**	-0.046***	0.002
	(0.014)	(0.011)	(0.012)	(0.011)	(0.011)	(0.011)	(0.021)
pc_GDP origin	-0.343***	-0.481***	-0.469***	-0.448***	-0.596***	-0.479***	0.147
	(0.077)	(0.056)	(0.066)	(0.054)	(0.072)	(0.055)	(0.123)
Population origin	0.503**	0.576***	0.437***	0.503***	0.510***	0.449***	0.700
	(0.203)	(0.136)	(0.155)	(0.143)	(0.171)	(0.137)	(0.866)
Political_terror	0.432***	0.325***	0.378***	0.366***	0.303***	0.385***	0.318***
	(0.051)	(0.033)	(0.039)	(0.033)	(0.036)	(0.033)	(0.085)
Civil Liberties	0.275***	0.187***	0.265***	0.192***	0.134**	0.197***	0.392***
	(0.078)	(0.048)	(0.057)	(0.047)	(0.056)	(0.047)	(0.140)
Natural disasters	-0.003	0.001	-0.002	-0.002	0.003	-0.002	0.004
	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.011)
Refugees other destinations	0.006	0.027***	0.028***	0.023***	0.033***	0.019**	0.116**
	(0.011)	(0.007)	(0.010)	(0.007)	(0.010)	(0.007)	(0.054)
pc_GDP destination	0.636	-1.234***	-1.494***	-1.549***	-2.987***	-1.941***	0.516
	(0.415)	(0.261)	(0.312)	(0.262)	(0.343)	(0.284)	(0.717)
Population destination	0.214	-0.881***	-2.018***	-0.467	-0.482	-0.101	-2.602
	(0.515)	(0.328)	(0.418)	(0.351)	(0.414)	(0.361)	(2.037)
Unemployment r. destination	-0.016***	-0.020***	-0.023***	-0.027***	-0.042***	-0.030***	-0.093***
	(0.006)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.024)
Time trend	yes	yes	yes	yes	yes	yes	yes
Time effects	yes	yes	yes	yes	yes	yes	yes
country_pair effects	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
Observations	9,460	18,473	15,516	19,385	14,893	19,086	19,173
R-squared	0.922	0.911	0.896	0.908	0.920	0.906	0.780

Notes: Robust standard errors clustered in country-pairs in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The panel is an unbalanced panel comprising data from 1993 to 2013.

Table 4. - Dependent variable: Immigrant inflows.

	(1)	(2)	(3)
Immigrant inflows$_{t-1}$	0.608***	0.588***	0.588***
	(0.015)	(0.015)	(0.015)
Bilateral Aid$_{t-1}$	0.001	-0.001	0.050
	(0.004)	(0.004)	(0.181)
Bilateral Aid$_{t-1}$*pc_GDP origin			-0.007
			(0.050)
Bilateral Aid$_{t-1}$*pc_GDP origin^2			-0.000
			(0.003)
Immigrant stocks$_{t-10}$	0.021	0.009	0.008
	(0.026)	(0.025)	(0.025)
Aid from all others$_{t-1}$	-0.011	-0.010*	-0.011*
	(0.006)	(0.006)	(0.006)
pc_GDP origin	0.644***	0.754***	0.783***
	(0.174)	(0.165)	(0.202)
pc_GDP origin^2	-0.046***	-0.053***	-0.054***
	(0.013)	(0.012)	(0.014)
Population origin	0.052	0.112	0.105
	(0.094)	(0.089)	(0.089)
Political_terror	0.050**	0.057***	0.057***
	(0.022)	(0.021)	(0.021)
Civil Liberties	0.108***	0.105***	0.106***
	(0.028)	(0.027)	(0.027)
Natural disasters	-0.002	-0.002	-0.002
	(0.003)	(0.003)	(0.003)
Refugees other destinations	0.023***	0.025***	0.025***
	(0.005)	(0.004)	(0.004)
pc_GDP destination	0.353**		
	(0.155)		
Population destination	1.700***		
	(0.233)		
Unemployment destination	-0.023***		
	(0.002)		
Time trend	yes	yes	yes
Time effects	yes	yes	yes
country_pair effects	yes	yes	yes
Origin effects	yes	yes	yes
Destination effects	yes	yes	yes
Destination*time	no	yes	yes
Observations	19,461	19,461	19,461
R-squared	0.957	0.962	0.962

Notes: OLS, time and country-pair fixed effects in all regressions. Robust standard errors clustered in country-pairs in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5. - Dep. variable: Immigrant inflows

		(1)	(2)
Eastern Europe	Bilateral Aid$_{t-1}$	0.019	
		(0.015)	
	pc GDP origin		2.400***
			(0.715)
	pc GDP origin^2		-0.161***
			(0.045)
North Africa	Bilateral Aid$_{t-1}$	-0.020*	
		(0.011)	
	pc GDP origin		0.310
			(1.122)
	pc GDP origin^2		-0.030
			(0.072)
Sub Saharan Africa	Bilateral Aid$_{t-1}$	0.013	
		(0.008)	
	pc GDP origin		0.020
			(0.255)
	pc GDP origin^2		-0.010
			(0.019)
South & Central Asia	Bilateral Aid$_{t-1}$	-0.008	
		(0.011)	
	pc GDP origin		2.170***
			(0.443)
	pc GDP origin^2		-0.135***
			(0.032)
Middle East	Bilateral Aid$_{t-1}$	-0.009	
		(0.015)	
	pc GDP origin		1.637
			(1.543)
	pc GDP origin^2		-0.110
			(0.099)
Far East Asia & Oceania	Bilateral Aid$_{t-1}$	-0.014	
		(0.009)	
	pc GDP origin		-0.620
			(0.418)
	pc GDP origin^2		0.047
			(0.029)
South America	Bilateral Aid$_{t-1}$	-0.017	
		(0.014)	
	pc GDP origin		-2.172**
			(1.026)
	pc GDP origin^2		0.115*
			(0.062)
North & Central America	Bilateral Aid$_{t-1}$	-0.005	
		(0.017)	
	pc GDP origin		3.052***
			(1.088)
	pc GDP origin^2		-0.187***
			(0.065)
Observations		19,461	19,461
R-squared		0.957	0.957

Notes: OLS, time and country-pair fixed effects in all regressions. Robust standard errors clustered in country-pairs in parentheses. *** p<0.01, ** p<0.05, * p<0.1

APPENDIX

Table A.1 - Data definitions and sources

Variable	Definition	Source
Asylum seekers	Log of inflows of asylum seekers by nationality (from o to d), annual submissions.	OECD Population Statistics, and UNHCR statistics
Aid	Log of Official Development Assistance commitments (in 2013 US $)	OECD, International Development Statistics
Refugee stocks	Log of number of refugees from origin to destination country each year	UNHCR Statistics
Immigrant stocks	Log of number of migrants from origin to destination country, 1980, 1990, 2000.	World Bank, Bilateral Migration Database.
Immigrant flows	Log of immigrant flows from origin to destination, each year.	OECD, Bilateral Migration Statistics .
Distance	Log of weighted distance, in thousand km, between origin and destination	CEPII www.cepii.fr/francgraph/bdd/distances.pdf
Proportion rejected	share of rejected asylum applications on total applications in country d from country o at time t.	UNHCR Statistics
Asylum Policy Index	Log of composite index of policies concerning refugee status recognition. Varies between 1 and 16, with higher numbers indicating more restrictive policies	Hatton Moloney (2016)
Population (o,d)	Log of number of people in country o, d.	World Bank - World Development Indicators
GDP (o, d).	Log of Gross Domestic Product in country o, d. Constant 2005 US$.	World Bank - World Development Indicators
per capita GDP (o,d)	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.

Origin countries. Europe: ALB,BIH,BLR,MDA,MKD,MNE,SRB,TUR,UKR; North Africa: LBY , MAR, DZA, EGY, TUN; South of Sahara: AGO, BDI, BEN, BFA, BWA, CAF, CIV, CMR, COD, COG, COM, CPV, DJI, ERI, ETH, GAB, GAB, GHA, GIN, GMB, GNB, GNQ, KEN, RWA, SDN, SEN, SLE, SOM, TCD, TGO, TZA, UGA, ZAF, ZMB, ZWE, LBR, LSO, MDG, MLI, MOZ, MRT, MUS, MWI, NAM, NER, NGA; South and Central Asia: AFG, ARM, AZE, BGD, BTN, GEO, IND, KAZ, KGZ, LKA, MMR, NPL, PAK, TJK, TKM, UZB; Middle East: ARE, IRN, IRQ, JOR, LBN, SAU, SYR, YEM, KWT; Far East Asia: CHN, IDN, KHM, LAO, MNG, MYS, PHL, THA, VNM,PNG; South America: ARG, BOL, BRA, CHL, COL, GUY, PER, VEN, ECU; North and Central America: CUB, DMA, DOM, GTM, HND, HTI, JAM, NIC, SLV, TTO.

Table A.2 - Top 20 origin countries: Bilateral Aid and asylum seekers

1993-2000				2001-2013			
Bilateral Aid recipient		Origin of Asylum seekers		Bilateral Aid recipient		Origin of Asylum seekers	
Egypt	152.63	Serbia	3906	Iraq	355.14	Serbia	1597
China	83.77	El Salvador	2517	Afghanistan	219.58	Iraq	1495
Bosnia and	65.73	Turkey	2208	Nigeria	134.65	China	1385
Mozambiqu	61.66	Iraq	1977	Congo, D.R	130.78	Afghanistan	1253
Tanzania	57.70	Bosnia - He	1548	Ethiopia	95.28	Somalia	939
Indonesia	55.98	Guatemala	1490	Tanzania	87.89	Turkey	836
Côte d'Ivoir	54.51	Afghanistan	1363	Mozambiqu	81.45	Iran	743
Bangladesh	53.78	China	1273	Sudan	80.82	Pakistan	694
Papua New	50.93	Sri Lanka	1200	Pakistan	79.31	Nigeria	600
India	44.74	Somalia	1076	Kenia	63.82	Syria	543
Uganda	40.84	India	1001	Indonesia	62.55	Congo, D.R	531
Bolivia	40.60	Iran	984	India	62.52	Sri Lanka	530
Ethiopia	40.19	Pakistan	798	Uganda	59.12	Haiti	499
Vietnam	39.00	Congo, D.R	698	China	59.09	Eritrea	489
Cameroon	38.67	Haiti	647	Egypt	58.78	India	466
Zambia	37.29	Algeria	528	Colombia	55.70	Colombia	423
Nicaragua	36.94	Vietnam	462	Bangladesh	54.19	Armenia	354
Senegal	35.40	Nigeria	450	Vietnam	54.01	Algeria	350
Philippines	34.58	Armenia	431	Haiti	51.15	Bangladesh	306
Morocco	34.07	Albania	327	Serbia	50.06	Georgia	303

Notes: number of asylum seekers: yearly average in destination country. Bilateral Aid: yearly average in recipient country, in constant million US$.

Table A.3 - Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Bilateral Aid (mil constant US$)	27,875	29.14	133.44	0	13021.8
Aid from all others (mil. constant US$	31,976	667.75	1,038.43	2.44	25,330.12
Humanitarian Aid (mil. constant US$)	11,830	6.60	30.86	0	823.61
Asylum seekers	27,184	229.99	1,120.55	0	75,138.00
Refugees	21,148	1,333.45	7,583.05	1	350,000.00
Immigrant stocks	32,634	5,518.01	3,186.36	0	14,513.14
Immigrant inflows	27,651	1,402.56	5,431.31	0	165,000.00
Distance	33,222	7,099.01	3,468.03	491.77	18,008.29
Colony_45	33,222	0.04	0.19	0	1
pc_GDP origin (constant 2005 US$)	31,990	2,656.16	5,019.76	68.57	46856.84
Population origin (mil.)	33,194	44.00	159.45	0.07	1357.38
Refugees other destinations	32,858	89,473.83	312,136.00	0	3809767
Natural disasters (total deaths)	25,060	817.34	8,133.49	0	229566
Proportion rejected	22,148	58.22	3.34	53.13	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 U	33,222	37,551.37	9,251.12	19,447.84	69,094.75
Population destination (mil.)	33,222	50.02	70.98	4.31	316.50
Unemployment r. destination	33,222	7.58	3.50	2.53	26.12

Table A.4 - Dependent variable: Bilateral Aid

	OLS-FE	PPML	OLS-FE	PPML
	(1)	(2)	(3)	(4)
Bilateral Aid_{t-1}	0.459***	0.783***	0.464***	0.773***
	(0.016)	(0.023)	(0.015)	(0.025)
Asylum $applications_{t-1}$	0.010	0.004	0.004	-0.014
	(0.007)	(0.008)	(0.007)	(0.012)
Refugee stocks			0.015**	0.248*
			(0.007)	(0.127)
Immigrant stocks	-0.135***	0.172***	-0.143***	0.173***
	(0.035)	(0.039)	(0.035)	(0.046)
Distance		-0.044		-0.053
		(0.033)		(0.036)
Colony _45		0.171***		0.186***
		(0.049)		(0.053)
pc_GDP origin	-0.191***	-0.039	-0.237***	-0.034
	(0.066)	(0.028)	(0.058)	(0.031)
Population origin	0.572***	-0.064	0.616***	-0.072
	(0.155)	(0.049)	(0.124)	(0.052)
Political terror	0.085***	0.424***	0.140***	0.495***
	(0.033)	(0.103)	(0.035)	(0.118)
Civil liberties	-0.185***	-0.067	-0.234***	-0.097*
	(0.052)	(0.043)	(0.053)	(0.050)
Natural disasters	0.012***	0.055***	0.014***	0.058***
	(0.004)	(0.012)	(0.004)	(0.013)
Refugees other destinations	0.009	0.024	0.026***	0.019
	(0.007)	(0.017)	(0.008)	(0.019)
pc_GDP destination	0.627**	0.443***	0.696**	0.412***
	(0.294)	(0.130)	(0.283)	(0.136)
Population destination	2.177***	0.293***	1.983***	0.299***
	(0.415)	(0.038)	(0.367)	(0.041)
Unemployment r. destination	-0.017***	0.006	-0.014***	0.008
	(0.005)	(0.019)	(0.005)	(0.022)
Observations	19,086	19,086	14,706	14,706
R-squared	0.242	0.635	0.835	0.643
Number of country_pair	1,382	1,382	1203	1,203

Robust standard errors clustered in country-pairs in parentheses.*** p<0.01, ** p<0.05, * p<0.1. Time trend and time effects in all regressions. Country and country pair effects in OLS-FE. The panel is an unbalanced panel comprising data from 1993 to 2013.

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