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Abstract

Since policymakers increasingly regard foreign aid as a means to manage international flows of migrants, it is important to obtain accurate empirical evidence on the complex link between aid and migration. Recent research has shown that the impact of foreign assistance on migrant flows is highly heterogenous across aid categories. In this paper, we focus on a dimension of heterogeneity that has so far not been considered in the literature, namely whether or not the delivery of foreign aid is associated with a transfer of resources to the recipient country. We show in a first step that non-transferred aid is quantitatively important, accounting for more than 25 percent of overall aid given by OECD DAC donors in 2016. Running separate gravity-type regressions for transferred and non-transferred aid, we then find that transferred aid has a much stronger (negative) impact on migration than the previously used total aid variable that includes the non-transferred component. As may be expected, non-transferred aid itself does not appear to affect migrant flows. A high share of non-transferred aid would therefore be at odds with donors' stated goal of tackling the root causes of migration.

Keywords

Foreign Aid, Migration

JEL: F22, F35, O15

1. Introduction*

At least since the large movements of refugees and other migrants to the EU in 2015, many policymakers see the scaling-up of foreign aid as a key instrument to stem migrant inflows. The underlying argument is that long-term development assistance can help address the root causes of migration through the creation of earning opportunities, quality education and better public services, thereby giving people an incentive to stay at home.

When it comes to assessing the impact of aid on emigration in order to verify whether policymakers' claims are justified, a main challenge is to account for the heterogeneity of the relationship between aid and migration – which is to be expected since aid can serve many different purposes, ranging from support of civil society to the establishment of large-scale infrastructure. Recent empirical research has provided some evidence in this regard by disaggregating foreign aid along various lines. For example, Lanati and Thiele (2018b) hypothesise that, broadly speaking, foreign aid can either raise incomes or improve public service provision within recipient countries. Using Clemens et al.'s (2012) distinction between early-impact aid, which may generate income growth in the short to medium term, and late-impact aid, which immediately affects non-monetary dimensions of well-being but may lead to higher incomes only in the very long run, Lanati and Thiele find that a rise in late-impact aid is associated with falling emigration rates. Gamso and Yuldashev (2018a) compare the effects of rural and urban development aid on international migration. They find that countries that receive larger amounts of rural development aid have lower emigration rates, which is mainly attributed to additional investments in agricultural sector capacity building. By contrast, no significant link could be detected between aid to urban areas and migration.

Two further studies by Lanati and Thiele (2018a) and Gamso and Yuldashev (2018b) detect differential impacts on migration across sectoral aid categories. Lanati and Thiele (2018a) investigate the relationships between emigration rates and inflows of aid for social infrastructure, physical infrastructure and production sectors. All three aid categories have a statistically significant negative effect on emigration rates, but only the impact of aid to the social sector is relevant in quantitative terms. According to the estimates provided by Gamso and Yuldashev (2018b), emigration rates are lower where governance aid is higher, whereas aid intended to promote economic or social development does not affect emigration rates.

A common pattern that emerges from all these studies is that any major impacts of aid on migration tend to run through improved public services that provide incentives for people to stay in their home countries. There is no indication of empirically relevant income-enhancing effects of foreign aid that might give rise to increased emigration by allowing would-be migrants to incur the costs of moving to destination countries.

In this paper, we focus on another important dimension of heterogeneity that has so far been neglected in the literature, namely whether or not the delivery of foreign aid is actually associated with a transfer of resources to the recipient country. We depart from Qian's (2015) observation that a substantial share of the foreign aid reported by OECD Development Assistance Committee (DAC) donors is spent within their own borders. This so-called *non-transferred* aid is usually not considered a separate analytical category, even though it can be expected to differ fundamentally from *transferred* aid as concerns its impact on outcome variables such as emigration rates.[1] In line with the discussion

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1 Note that the inaccuracies that may result from simply aggregating transferred and non-transferred aid are not restricted to the estimates of the aid-migration relationship presented in this paper. A similar reasoning applies to large parts of the aid effectiveness literature, including the long-standing controversy on whether foreign aid raises economic growth.

above, aid that involves a transfer of resources to the recipient country may affect migration decisions through raising individual incomes and/or improving the quality of public services. By contrast, in the absence of a resource transfer would-be migrants do not experience such direct tangible benefits, which implies that non-transferred aid is unlikely to be effective in tackling the root causes of migration. There may still be some indirect impacts of non-transferred aid on migration, for example if experts paid by donor governments provide useful advice that helps improve institutional quality in recipient countries.

Our contribution to the literature is twofold. First, we update and extend Qian's (2015) previous account of the non-transferred aid delivered by OECD donors. In particular, we discuss in some detail how spending on refugees within donor countries evolved after the recent refugee crisis, and why such spending is regarded as part of international development cooperation at all. It turns out that the surge in foreign aid since 2015 has largely been driven by steeply increasing in-donor refugee costs. Second, we analyse whether and to what extent separating transferred aid from non-transferred aid qualifies previous estimates of the relationship between aid and migration. To the best of our knowledge, we are the first to make this distinction in the empirical aid effectiveness literature. Our regression results suggest that transferred aid has a markedly stronger impact on migration than total aid including the non-transferred component. Future research will have to show whether this carries over to other parts of the aid effectiveness debate, such as the link between foreign aid and economic growth. As expected, non-transferred aid itself does not appear to affect migrant flows.

The remainder of the paper is structured as follows. In Section 2, we provide an overview of the composition and quantitative importance of non-transferred aid in OECD DAC donor countries, putting a focus on the 10 donors with the largest aid disbursements. Section 3 first describes the econometric approach as well as the data employed in the empirical analysis, and then presents and discusses the regression results. Section 4 concludes.

2. The Significance and Pattern of Non-Transferred Aid

We divide foreign aid into *transferred* and *non-transferred* aid based on the classification proposed by Qian (2015). Non-transferred aid comprises all forms of assistance spent within donor borders such as *School Training*, *Imputed Student Costs*, *Administrative Costs*, *Development Awareness*, *Refugee Costs* and *Debt Relief* (see Table A1 for a brief description of each item). We add to Qian's classification the volume of aid spent on *Donor Personnel*, which includes costs for experts, consultants, teachers, academics, researchers, volunteers and contributions to public and private bodies for sending experts to developing countries. Debt Relief is included because technically it is not considered a transfer of new resources to recipient countries. However, unlike the other modes of non-transferred aid delivery, it may give rise to an indirect transfer of resources: reducing the overall debt burden could raise economic growth, e.g. through higher private or public investment (see, for example, Marcelino and Hakobyan, 2014). It could also encourage governments to spend more on public services such as schools and health care services, which in turn may curtail emigration. In one of our robustness checks below we address this issue by separately estimating whether a rising share of debt relief in total aid leads to changes in emigration levels.

Among the remaining components of non-transferred aid, in-donor refugee costs stand out. Unlike other items such as awareness campaigns, which might help raise support in donor countries for scaling up foreign aid, they are virtually unrelated to development in recipient countries. One might therefore wonder why these costs count as official development aid (ODA) at all.[2] The OECD's DAC argues that expenditures in donor countries for the sustenance of refugees – including food, shelter and training –

[2] One might be inclined to suspect that the countries most affected by the recent refugee crisis lobbied to count the costs of hosting the refugees as part of their ODA quota. This is not the case, however: specific instructions on the reporting of in-donor refugee costs were already introduced by the OECD's DAC in 1988 (OECD, 2016).

during the first twelve months of their stay constitute a kind of humanitarian assistance for those who are forced to leave their home countries (OECD, 2018). In doing so, the organisation deviates from its general principle of defining development aid as assistance to developing countries and the people living in these countries.

Figure 1 plots the percentage of foreign assistance that is not transferred to the recipient country over the period 2006 to 2016 for the top 10 donors (in 2013) and for all members of the OECD's DAC combined. From a peak of almost one third in 2006, the share of non-transferred aid for all DAC members fell to about 20% and roughly stayed at that level until 2014. It rose again in the period 2014-2016, from 18% to 26%. The two large non-EU donors – Japan and the United States – tend to rely less on non-transferred aid than the average, while EU countries with the exception of the United Kingdom generally spend larger portions of foreign assistance within their own borders. Interestingly, this pattern applies to both *traditional* as well as *new* EU donors. Table A2 in the Appendix shows that in 2016 ex-communist EU members such as Bulgaria, the Czech Republic, Hungary, Latvia, Slovenia and Lithuania delivered more than 40% of their aid in the form of non-transferred assistance.

From Figure 2, which depicts non-transferred aid by type for all donor countries over time, it can clearly be seen that the peak in 2006 is due to exceptionally high debt relief,[3] whereas the recent rise in non-transferred aid has predominently resulted from an increase in in-donor refugee costs.[4] Other forms of non-transferred aid have remained roughly constant over the period under consideration.

The recent surge in in-donor refugee costs is undoubtedly related to the 2015 European refugee crisis and the arrival of unprecedented numbers of migrants on the Southern European coasts. This becomes obvious when looking at the most affected EU countries.[5] Among the preferred final destinations for refugees, Germany increased foreign assistance in the form of refugee costs from 1% to 30% of total ODA over the period 2014-2016, while in the case of Sweden the share almost doubled from 25% in 2014 to 49% in 2015 (Figure 3). For Italy and Greece, the main EU countries of first arrival for irregular migrants, refugee costs even accounted for the vast majority of the foreign aid budget in 2016, with 66% and 92% respectively (Table A2).

3. Econometric Analysis

Having shown that non-transferred aid is a relevant category in quantitative terms, we now investigate empirically how taking it explicitly into account affects estimates of the relationship between aid and migration.

a. Method and Data

Our econometric specification builds on a standard gravity model of international migration (e.g. Beine and Parsons, 2015), to which we add the overall aid received by country i from all donors j as a factor potentially affecting migration decisions, along the lines of previous studies by Berthélemy et al. (2009) as well as Lanati and Thiele (2018a, 2018b). The baseline regression equation is given by

$$EM_{ijt} = \alpha_i + \alpha_{jt} + O_{it-2} * \nabla + OD_{ijt-2} * \vartheta + e_{ijt} \quad (1)$$

[3] See Nunnenkamp and Thiele (2013) for a discussion of the debt-related measures – for example large-scale debt reductions for Nigeria and Iraq, but also debt relief operations within the framework of the HIPC initiative – that were taken in the mid-2000s.

[4] The recent rise in overall aid disbursements reported for OECD DAC donors is largely due to the surge in refugee costs (OECD, 2017).

[5] It has to be noted that data on in-donor refugee costs are not necessarily comparable between donors as reporting practices vary in terms of categories of refugees included, types of expenditures covered and methodology used to assess costs (OECD, 2016).

Bilateral emigration flows EM_{ijt} from origin i to destination j are regressed on a number of origin-specific factors O_{it-2} as well as dyadic factors OD_{ijt-2}.[6] In addition to the aggregate aid received by country i, we consider a standard set of origin-specific control variables. These comprise socioeconomic push factors (GDP per capita and the share of unemployed people), a variable that controls for the quality of governance (political stability), the incidence of conflict, demographic push factors at origin – which we capture by the total dependency ratio, i.e. the total population aged less than 15 or over 64 as a share of the working age population – and the size of the population. We are not including destination characteristics, as the impact of those factors will be absorbed by the inclusion of destination-time fixed effects. Among the dyadic determinants we distinguish time-varying migrant network effects, which we capture by the pre-determined stock of migrants from country i living in country j, from a time-invariant component of migration costs proxied by physical and linguistic distance as well as past colonial relationships.

All the covariates are predetermined with respect to migration flows, with a lag of two periods ($t-2$). This at least partly addresses concerns that our aid variable may be endogenous due to reverse causality.[7] In addition, only the bilateral part of the total ODA that country i receives is potentially affected by migration from country i to country j, e.g. because migrants successfully lobby the government in the destination country to allocate more aid to their country of origin (Lahiri and Raimondos-Møller 2000). We are therefore confident that reverse causality is not a major issue in our estimation, but still refrain from making strong causal claims regarding the link between aid and migration.

To further attentuate potential estimation biases, we include origin (α_i) as well as destination-time (α_{jt}) fixed effects. In particular, the inclusion of α_{jt} absorbs the impact of migration policies, which are likely to be highly significant drivers of migration decisions but for which data are often not readily available. This specification also allows us to account for multilateral resistance to migration.[8] Failing to do so in the gravity framework could lead to significant biases in the estimated coefficients of the determinants of migration (Bertoli and Fernandez-Huertas Moraga, 2013). The inclusion of destination-time fixed effects will completely account for multilateral resistance to migration in receiving countries, which is likely to be the most imptortant factor in the context of international migration, given the key role that migration policies of the destination country play (Beine and Parsons, 2015). Moreover, in the Appendix we show that adding origin-time dummies to Equation 1 leaves all the dyadic coefficients substantially unchanged (Table A5).[9] The resulting estimates of origin-year fixed effects are then used as the dependent variable to estimate the impact of foreign aid with a two-step approach (Table A6).[10] The estimated coefficients are in line with the standard regression results presented in this paper. This makes us confident that our model effectively captures multilateral resistance to migration in origin countries as well.

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6 As in some previous studies (see for instance Ortega and Peri, 2013; Berthélemy et al., 2009), we regress bilateral emigration on origin-specific factors such as the volume of ODA received, controlling for the size of origin's population. This is roughly equivalent empirically to estimating the effect of ODA per capita on bilateral emigration rates. We alternatively ran the regression with emigration rates as the dependent variable (Table A3 in the Appendix) and obtained very similar results for our main variables of interest, which we find reassuring.

7 Predetermined values with larger lags would further attenuate the issue of reverse causality; however, they also lead to a smaller sample size due to the reduced time-span. We estimated Equation (1) using controls at different lags ($t-1$ and $t-4$) and obtained similar results (available upon request).

8 Multilateral resistance to migration denotes the fact that the choice of a potential migrant to move to a given destination country depends not only on the attractiveness of the country of destination relative to the country of origin, but also on how this relates to the opportunities to move to other destinations.

9 This result is in line with Parsons (2012).

10 A detailed discussion of the two-step approach applied to gravity models is provided by Head and Mayer (2014).

Regressions are run separately on transferred aid as well as non-transferred aid using the classification discussed above. In accordance with previous gravity model applications (e.g. Beine and Parsons, 2015), we rely on the Poisson pseudo-maximum likelihood (PPML) approach to estimate Equation (1). Our preferred choice is driven by the share of zeros that is fairly low but not negligible (around 12% of total observations). As Silva and Tenreyro (2006) pointed out, the presence of zeros creates correlation between the covariates and the error term, leading to an inconsistency of OLS estimates. To check for the robustness of our results, we compare the PPML estimates of Equation (1) with their OLS counterparts.

The sample used in the econometric analysis includes 29 donor (migrant destination) countries and 125 recipient (migrant origin) countries. The period under consideration is 2009–2016. For total aid received – our main variable of interest – data are gross disbursements expressed in 2016 constant US dollars from the OECD Creditor Reporting System (CRS) dataset. Non-reported values of ODA are treated as zeros. Data on migration – both the bilateral stocks of immigrants born in country *i* and resident in country *j* as well as the annual bilateral migration flows – are from the OECD international migration database.[11] The missing observations in the migration dataset are automatically dropped. We take three- years averages ($t-1$, $t-3$) for the total aid received to account for the volatility of annual aid flows. The rest of the covariates are constructed and have the same source as described in Lanati and Thiele (2018a). Basic descriptive statistics for all variables are shown in Table A3 of the Appendix.

b. Regression Results

Table 1 reports our baseline estimates of Equation (1) using PPML (columns 1-3) and OLS (columns 4-6). The model is estimated for total ODA as well as the transferred and non-transferred aid components. Our main variable of interest – the aggregate ODA received – is negatively associated with migration flows. In line with Lanati and Thiele (2018a; 2018b), the effect of total ODA on emigration is moderate but non-negligible: a 10% increase in ODA would decrease bilateral emigration on average by 1%. The impact of transferred aid on migration is about 50% higher than that of total ODA, whereas non-transferred assistance does not seem to affect emigration. Reassuringly, this pattern holds across estimators, although the coefficients of our variable of interest are lower in absolute value when estimated using a log linear model.[12]

Among the control variables, all those that are significant have the expected sign. A larger diaspora, linguistic affinity and a colonial relationship all spur migration flows. Conversely, the larger the distance between origin and destination (i.e. the greater the migration costs), the lower, on average, the associated migration flows. The dependency ratio also has the expected negative effect on migration flows: a high total dependency ratio indicates a scarcity of workers to support both the young and the elderly, which reduces the likelihood of emigration. As hypothesised, unemployment in countries of origin constitutes a push factor for would-be migrants. The impacts of income at origin, political stability, conflict and

[11] We are aware of the limitations of the OECD International Migration Database regarding the comparability across OECD destinations (see Ortega and Peri (2013) and Mayda (2010) for a discussion). While the existing inconsistencies can make a pure cross-country comparison inaccurate, it is reasonable to argue that changes over time can be compared. To test the robustness of our results, we re-estimate Equation (1) using migration data from Eurostat for a subsample of European destinations. For these destinations, migration statistics are calculated according to more harmonised criteria (see Eurostat (2018) for information on the comparability of the Eurostat dataset). The estimates, which are available upon request, are in line with the results presented in this paper.

[12] The results of estimating Equation (1) are also similar when using the Tobit approach (EK Tobit) suggested by Eaton and Kortum (2001), which according to Head and Mayer's (2014) Monte-Carlo simulations provides consistent estimates in the presence of a substantial share of zeros. The statistics of this robustness check are not shown but are available upon request.

population are insignificant.[13] The first three of these variables have already been found to have ambiguous effects in previous research (see, for instance, Ortega and Peri, 2013; Beine and Parsons, 2015; Lanati and Thiele, 2018a).

The insignificant coefficient of population is surprising given the use of emigration flows as a dependent variable; it may signal model mis-specification due to omitted variables. To address this issue, we augment the gravity specification by including asymmetric-dyadic fixed effects, which capture unobserved factors potentially correlated both with the error term and the explanatory variables (Faye and Niehaus, 2012; Lanati and Thiele, 2018b). As shown in Table 2, the coefficients for the control variables maintain the same sign as in the previous model; however, the effects of population, income per capita and political stability all become statistically significant. The estimated impact of the ODA received is slightly lower than in the baseline for both transferred and non-transferred aid, with the latter again being statistically insignificant, leaving the conclusion of the baseline regression substantially unaffected.

Furthermore, our disaggregated analysis has potential limitations that are a consequence of the macro orientation of the research question, i.e. the aim to explain the aggregate migration response to foreign aid. While the share of *non-transferred* aid is fairly substantial (see Figure 1), the exclusion of all the volume of *transferred* assistance in Equation (1) may lead to biased estimates due to model mis-specification. To address this omitted-variable bias, we follow Aleksynska and Peri (2014) and use the fact that the value of ODA labelled as "*non-transferred*" (Non-Transferred Aid), is equal to aggregate ODA (Aggregate Aid) multiplied by the corresponding share of non-transferred aid (Non-Transferred Share), i.e. Non-Transferred Aid = Aggregate Aid * Non-Transferred Share. Hence, by taking logs and using log properties, we can separate the effect into two terms: ln (Aggregate Aid) + ln (Non-Transferred Share). The same reasoning applies to the main components of non-transferred aid such as *Debt Relief, Administrative Costs* and *Refugee Costs*, as well as for transferred aid. The advantage of this type of specification is that aggregate ODA absorbs omitted variables that affect both aid and migration, allowing us to isolate and disentangle the extra impact of transferred aid and different non-transferred aid categories on migration flows. In accordance with our predictions, the results reported in Table 3 suggest that an increase in the share of non-transferred assistance does not affect the decision to emigrate. This also holds for the specific components of non-transferred aid, including debt relief, which we argued above might indirectly shape the incentives of would-be migrants. By contrast, a higher share of transferred aid is clearly associated with lower emigration.

4. Concluding Remarks

In this paper, we have first shown that non-transferred aid accounts for a substantial share of overall ODA given by OECD DAC donors, and that the recent scaling-up of aid reported by the OECD is predominently due to a steep increase in in-donor refugee costs. In a second step, we have examined the role of non-transferred aid in estimating the relationship between aid and migration. Running separate regressions for transferred and non-transferred aid, we obtain robust evidence that only the former has a statistically significant (negative) effect on emigration from developing countries. The high share of non-transferred aid that we observe for various donors is therefore at odds with the frequently stated goal of tackling the root causes of migration. Such spending may serve important purposes, e.g. to assist arriving refugees in meeting their basic needs, but it is not the same as transferring resources to developing countries. Including the non-transferred categories in overall aid figures overestimates the amount of money available for improving living conditions in low-income countries.

[13] The results are robust to the inclusion of alternative institutional variables which proxy for the quality of the recipients' government (*Regulatory Quality*) and democracy (*Voice and Accountability*). The estimates of these alternative specifications are available upon request.

Our results for transferred aid point in the same direction as previous research that points to a dampening effect of aid on migration through the provision of public services. In quantitative terms, transferred aid has a markedly stronger impact on migration than total aid including the non-transferred component, but the link is still fairly modest: taking our point estimates at face value, a doubling of transferred aid would lower emigration by about 15%. The rise in aid that would translate into a sizeable reduction of emigration thus appears to be unrealistically high.

From a conceptual point of view, it is important to note that the relevance of accounting for non-transferred aid is not limited to the relationship between aid and migration. Whether or not aid is spent in the recipient country is, for example, also likely to matter in terms of its impact on economic growth. Future research that makes a distinction between transferred and non-transferred aid in aid-growth regressions in order to check whether previous results hold up would be highly welcome as it might add a new perspective to one of the most controversial debates in the international development literature.

A further promising avenue for future research would be to consider heterogeneity not only in foreign aid but also in the migration variable. The only existing study that does so is Moullan (2013), who examines the impact of aid targeted at the health sector on the emigration rates of physicians. Additional analyses along these lines – for instance regarding the association between aid for higher education and the emigration of students, or the differential impact of different kinds of aid on high-skilled versus low-skilled emigration from developing countries – would help obtain a more nuanced picture of the link between aid and migration that can better inform policymaking.

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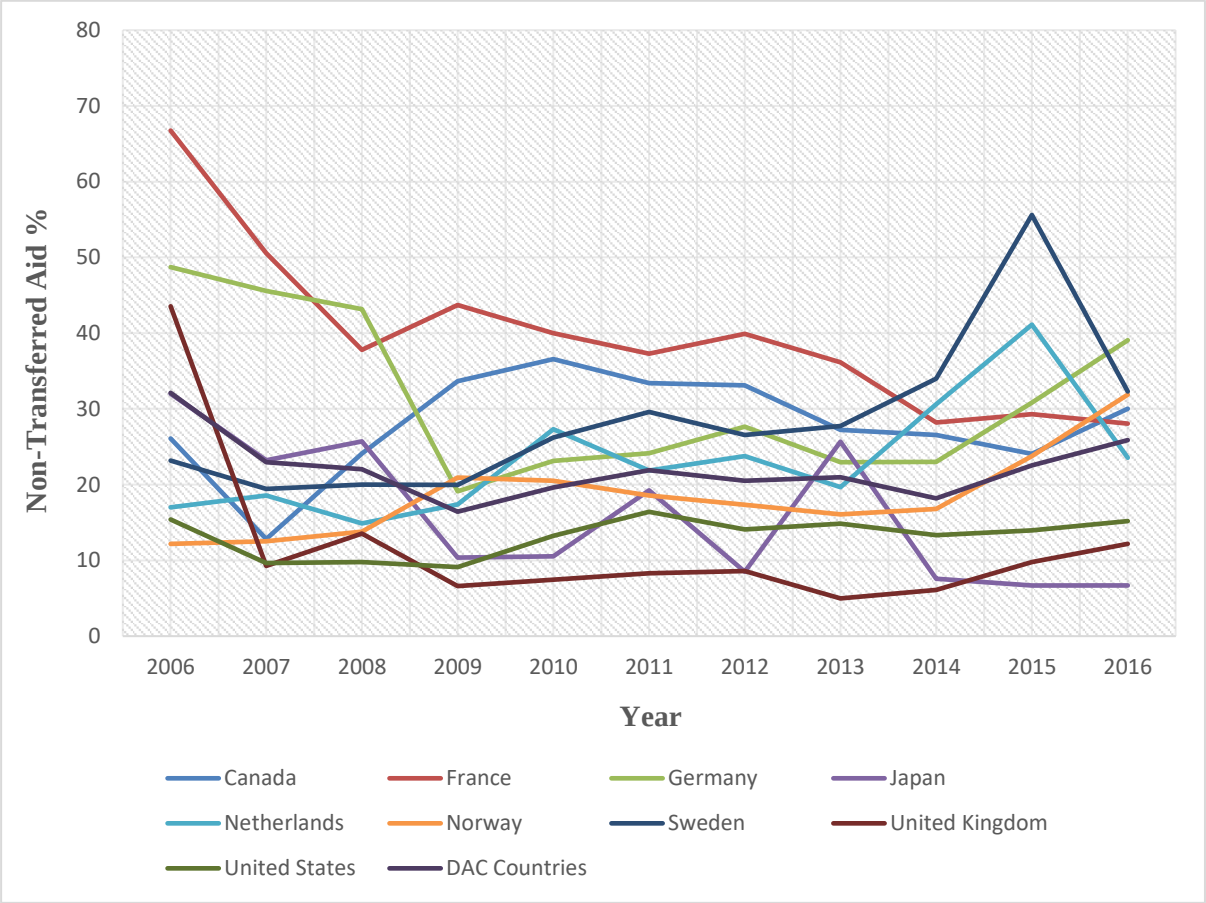
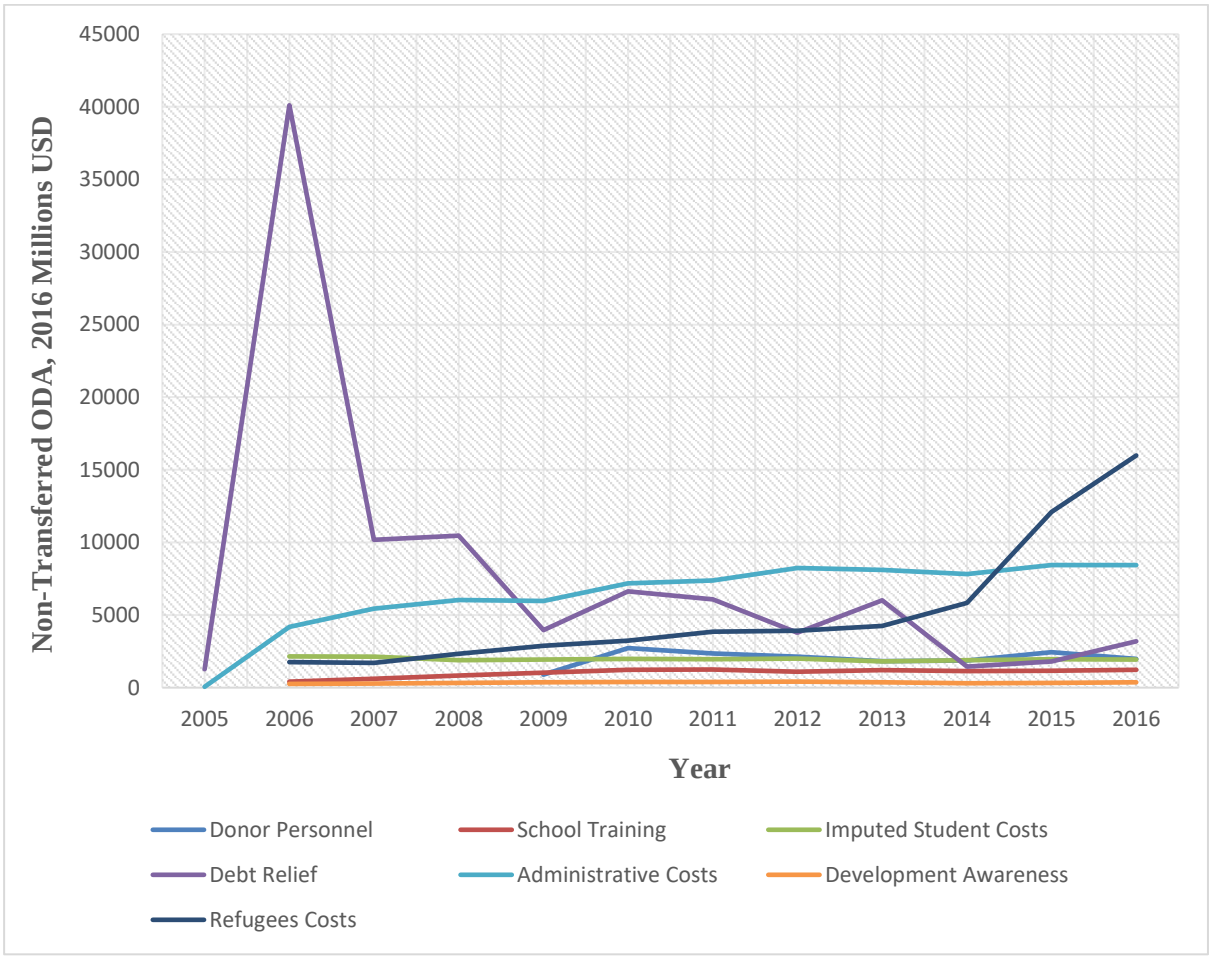
Fig. 1: Non-Transferred Aid for Top 10 donors and for all DAC Countries combined, 2006-2016



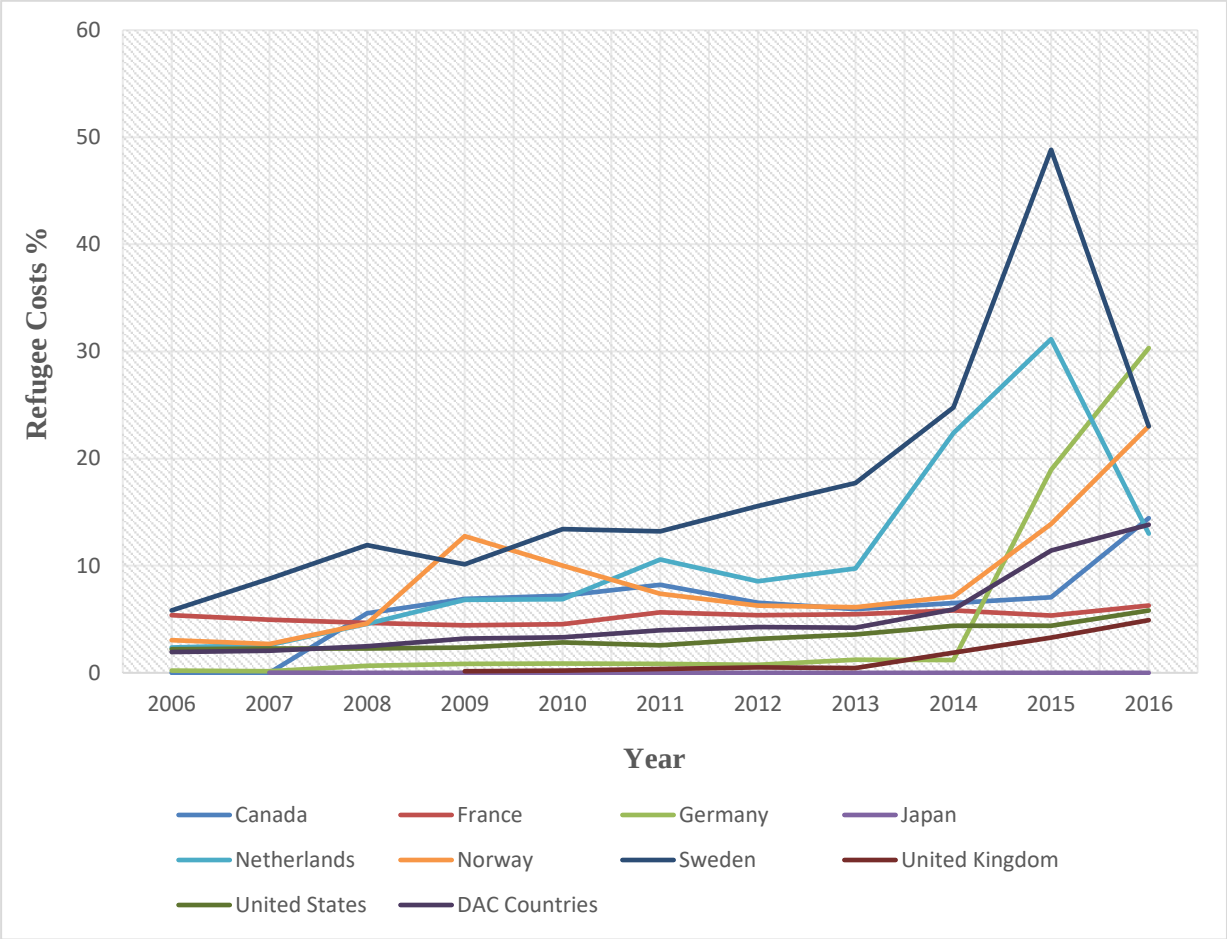
Notes: A top donor is defined according to ODA disbursement in 2013. Data taken from the OECD.

Fig. 2: Non-Transferred Aid by type for all donors, 2006–2016



Notes: All values are shown in 2016 USD. Data taken from the OECD.

Fig. 3: Refugee Costs for Top 10 donors and for all DAC Countries combined, 2006-2016



Notes: A top donor is defined according to ODA disbursement in 2013. Data taken from the OECD.

Table 1 – Baseline Regression Results

	(1)	(2)	(3)	(4)	(5)	(6)
Estimator	PPML	PPML	PPML	OLS	OLS	OLS
Dep. Variable	Emigrants	Emigrants	Emigrants	Log Emigrants	Log Emigrants	Log Emigrants
ODA Type	***Total ODA***	***Transf. ODA***	***Non-Transf. ODA***	***Total ODA***	***Transf. ODA***	***Non-Transf. ODA***
	3 Years Avg.	3 Years Avg.	3 Years Avg.	3 Years Avg.	3 Years Avg.	3 Years Avg.
Log Diaspora (o to d)	0.623***	0.623***	0.622***	0.669***	0.669***	0.669***
	(41.47)	(41.52)	(41.41)	(55.42)	(55.44)	(55.37)
Log GDP (o)	0.268	0.179	0.381	-0.0587	-0.0740	-0.0373
	(1.30)	(0.88)	(1.84)	(-0.42)	(-0.53)	(-0.27)
Log ODA (o)	**-0.106***	**-0.165*****	**-0.0281**	**-0.0617**	**-0.0915****	**-0.0172**
	(-2.15)	**(-3.38)**	**(-1.09)**	**(-1.95)**	**(-2.63)**	**(-1.32)**
Log Distance (o d)	-0.327***	-0.326***	-0.327***	-0.334***	-0.335***	-0.334***
	(-11.03)	(-11.07)	(-10.98)	(-12.42)	(-12.42)	(-12.40)
Common Language (o d)	0.297***	0.298***	0.296***	0.325***	0.325***	0.326***
	(7.19)	(7.21)	(7.20)	(9.02)	(9.01)	(9.02)
Log Population (o)	0.718	0.921	0.647	-0.346	-0.277	-0.374
	(0.82)	(1.07)	(0.68)	(-1.00)	(-0.81)	(-1.03)
Dependency Ratio (o)	-0.0450***	-0.0456***	-0.0439***	-0.0117	-0.0117	-0.0115
	(-3.95)	(-4.16)	(-3.75)	(-1.96)	(-1.96)	(-1.92)
Conflict (o)	0.0698	0.0871	0.0561	0.0137	0.0206	0.00842
	(1.20)	(1.51)	(0.95)	(0.39)	(0.58)	(0.24)
Political Stability (o)	-0.0843	-0.0979	-0.0636	-0.0762*	-0.0829*	-0.0671
	(-1.29)	(-1.50)	(-0.97)	(-2.18)	(-2.38)	(-1.90)
Unemployment (o)	0.0326*	0.0323*	0.0321*	0.0116	0.0115	0.0101
	(2.51)	(2.48)	(2.50)	(1.60)	(1.60)	(1.41)
N	12537	12537	12537	11181	11181	11181
Dest*Year FE	X	X	X	X	X	X
Origin FE	X	X	X	X	X	X
Zeros	1,356	1,356	1,356	0	0	0
Destination Countries	29	29	29	29	29	29
Origin countries	125	125	125	125	125	125

t statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Robust Standard Errors are included. The model includes the intercept. For foreign aid we take the 3-year average. So total ODA received at time t -1 is the 3-years average between t - 1 and t - 3. The first 3 columns show the estimates of Eq. (1) using PPML for *total*, *transferred* and *non-transferred* aid, respectively. Columns 4-6 report the correspondent estimates using OLS.

Table 2 – Adding Dyadic Fixed Effects

	(1)	(2)	(3)
Estimator	PPML	PPML	PPML
Dep. Variable	Emigrants	Emigrants	Emigrants
ODA Type	***Total ODA***	***Transf. ODA***	***Non-Transf. ODA***
Log Diaspora (o to d)	0.114	0.109	0.118*
	(1.90)	(1.82)	(1.97)
Log GDP (o)	0.465***	0.371**	0.556***
	(3.36)	(2.69)	(3.96)
Log ODA (o)	**-0.0822***	**-0.147*****	**-0.0144**
	(-2.39)	**(-4.63)**	**(-0.79)**
Log Population (o)	1.086*	1.244*	1.123*
	(2.03)	(2.31)	(2.02)
Dependency Ratio (o)	-0.0410***	-0.0419***	-0.0397***
	(-5.42)	(-5.91)	(-5.15)
Conflict (o)	0.0231	0.0383	0.0143
	(0.56)	(0.94)	(0.34)
Political Stability (o)	-0.139***	-0.153***	-0.124**
	(-3.51)	(-3.95)	(-3.19)
Unemployment (o)	0.0341***	0.0338***	0.0339***
	(3.80)	(3.77)	(3.76)
N	11574	11574	11574
Dest*Year FE	X	X	X
Dest*Origin FE	X	X	X
Zeros	954	954	954
Destination Countries	22	22	22
Origin countries	125	125	125

t statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Robust Standard Errors are included. The model includes asymmetric dyadic fixed effects.

Table 3 – Including ODA Shares

	(1)	(2)	(3)	(4)	(5)	(6)
Estimator	PPML	PPML	PPML	PPML	PPML	PPML
Dep. Variable	Emigrants	Emigrants	Emigrants	Emigrants	Emigrants	Emigrants
Share ODA		***Transferred***	***Non-Transferred***	***Debt Relief***	***Refugee Costs***	***Admin.Costs***
Log Diaspora (o to d)	0.114	0.105	0.112	0.113	0.121*	0.113
	(1.90)	(1.77)	(1.86)	(1.90)	(2.02)	(1.89)
Log GDP (o)	0.465***	0.339*	0.446**	0.466***	0.499***	0.459***
	(3.36)	(2.54)	(3.26)	(3.38)	(3.48)	(3.31)
Log ODA (o)	**-0.0822***	**-0.156*****	**-0.0906****	**-0.0834***	**-0.0807***	**-0.0763***
	(-2.39)	**(-4.85)**	**(-2.89)**	**(-2.52)**	**(-2.37)**	**(-2.13)**
Log Share ODA (o)		**-0.390*****	**0.0183**	**0.000313**	**0.00329**	**0.00641**
		(-3.77)	**(0.89)**	**(0.13)**	**(1.56)**	**(0.32)**
Log Population (o)	1.086*	1.820**	1.269*	1.101*	1.112*	1.057*
	(2.03)	(3.27)	(2.27)	(2.08)	(2.07)	(2.04)
Dependency Ratio (o)	-0.0410***	-0.0406***	-0.0406***	-0.0410***	-0.0399***	-0.0409***
	(-5.42)	(-6.00)	(-5.35)	(-5.40)	(-5.25)	(-5.37)
Conflict (o)	0.0231	0.0566	0.0280	0.0238	0.0202	0.0218
	(0.56)	(1.36)	(0.67)	(0.57)	(0.49)	(0.53)
Political Stability (o)	-0.139***	-0.163***	-0.147***	-0.139***	-0.137***	-0.138***
	(-3.51)	(-4.21)	(-3.71)	(-3.53)	(-3.48)	(-3.52)
Unemployment (o)	0.0341***	0.0334***	0.0344***	0.0341***	0.0341***	0.0341***
	(3.80)	(3.71)	(3.82)	(3.79)	(3.81)	(3.82)
N	11574	11574	11574	11574	11574	11574
*Dest*Year FE*	X	X	X	X	X	X
Dest*Origin FE	X	X	X	X	X	X
Zeros	954	954	954	954	954	954
Destination Countries	22	22	22	22	22	22
Origin countries	125	125	125	125	125	125

t statistics in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Robust Standard Errors are included. Columns 3-6 report the estimates of Eq. (1) in which the effect of non-transferred aid is separated into two terms: ln (Aggregate Aid) + ln (Non-Transferred Share).

Table A1: Non-Transferred Aid - Categories

Category	Short description
Debt relief	Any form of debt reorganisation which relieves the overall burden of debt. It encompasses all actions relating to debt (forgiveness, conversions, swaps, buy-backs, rescheduling, refinancing).
Development Awareness	Spending in donor country for heightened awareness/interest in development co-operation designed to increase public support (brochures, lectures, special research projects, etc.).
Imputed Student Costs	Indirect ("imputed") costs of tuition in donor countries.
Administrative Costs	Administrative costs of development assistance programmes not already included under other ODA items as an integral part of the costs of delivering or implementing the aid provided. This category covers situation analyses and auditing activities. As regards the salaries component of administrative costs, it relates to in-house agency staff and contractors only; costs associated with donor experts/consultants are to be reported under category *Donor Personnel* or *Project Type Interventions*.
Refugee Costs	Official sector expenditures for the sustenance of refugees in donor countries during the first twelve months of their stay.
School Training	Financial aid awards for individual students and contributions to trainees.
Donor Personnel	Costs for experts, consultants, teachers, academics, researchers, volunteers and contributions to public and private bodies for sending experts to developing countries

Source: OECD, *http://www.oecd.org/dac/stats/type-aid.htm*

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