Reduction or Deflection? The Effect of Policy on Interconnected Asylum Flows

Abstract

We study the effects of asylum policy on asylum flows. The policy changes are examined both with regard to their direct effect on the flows to the country that made the changes, and with regard to their impact on the inflows to other countries. Finally, we analyse the effect of policy on the total outflow from the sending countries. The findings clearly suggest that both a direct effect and a deflection effect are at work. The results also indicate that stricter asylum policies in the destination clusters reduce the total outflow of asylum seekers.

JEL classifications: F22, J61, J68.
Keywords: International migration, Asylum policies, Asylum flows

1. Introduction

A tougher asylum policy in one receiving country probably will deflect asylum seekers to other destinations. The awareness of such a relationship is a main cause of tension between the European countries when it comes to the design of asylum policy. However, little empirical knowledge actually exists about the working and strength of such a mechanism.

In this paper we study the effects of asylum policy on asylum flows. The main questions analysed are if – and to what degree - a tightening of asylum policy in one country only redirects asylum flows to other destinations, or if the flows out of the countries of origin are reduced as well.

More specifically; we investigate the impacts of changes in the asylum policies of nine receiving countries located in the Northern part of Western Europe (NWE), from 1985 to 2010. The selected countries are: Austria, Belgium, The Netherlands, Switzerland, Germany, Denmark, Sweden, Norway and UK.

Two dependent variables are analysed: First, the bilateral (dyadic)[1], yearly, flows of asylum applicants from specific sending countries to one of the receiving countries in the NWE group. Second, the yearly total outflow of asylum seekers from each country of origin to all the OECD receiving countries.

The policy changes in the NWE countries are examined both with regard to their direct *effect* on the dyadic flows of asylum seekers to the country that makes the changes and with regard to their impacts on the dyadic inflows to the other countries in the NWE group, which we in the following refer to as the *deflection effect*. Finally, the policy changes in the NEW countries are examined with regard to the effect on *total* outflow, i.e., the impact on the total outflows of asylum seekers from the origin countries to all receiving OECD countries. Taking these two latter effects into account, we want to show that that restrictive migration policy implemented in developed countries may have two effects on bilateral asylum flows: some flows might be destroyed while some flows might only be deflected.

In our empirical approach we explore that asylum seekers from specific source countries tend to apply in a quite limited number of major destination countries. These patterns have been linked to historical ties, colonial past, cultural links, common languages, religion, geographical proximity, and common borders (Hatton 2009). In the following the term *destination cluster* refers to the group of main receiving countries which "historically"

[1] Dyadic flows is a term often used in the economic literature on migration and refer to bilateral migration flows between specific sending/and receiving countries. In this paper we use bilateral and dyadic asylum flows as interchange able terms.

has been selected by asylum seekers from a given origin. We deduce the deflection effect from the relationship between policy change in these destination cluster countries, and the inflow of asylum seekers - from the associated origins - to other receiving countries. That is, to other countries than those making the policy change. Correspondingly, we deduce the policy effect on total outflow from the relationship between the aggregated flow of asylum seekers out of an origin country and policy changes in the main receiving countries of this particular origin.

We have established a data base with detailed records of changes in the asylum policy, from 1980 to 2010, of the nine NWE countries. The construction of this data base builds on earlier overviews of immigration policy changes, collected by researchers with similar analytical purposes (Hatton 2009, Mayda 2010, Ortega and Peri 2013). In addition, we have collected information from the review of numerous articles, and other written sources, as well as consultations with experts in the different receiving countries.

Our theoretical approach is to consider asylum seekers as a particular class of utility optimizing international migrants. Asylum seekers, accordingly, make the decision about if and, eventually, where to seek asylum by comparing costs and benefits of seemingly available options. On this basis, and subjected to limited information, they choose the alternative which gives the highest expected utility. [2] The presence of earlier immigrants from the same origin may be the vital factor that places a receiving country within the destination cluster of applicants from a particular sending region. That is, since such a network in place may lower costs related to the gathering of information about - as well as the establishment in - locations very distant from home both geographically and culturally. Within this theoretical framework a more restrictive asylum policy is understood as raising the costs of applying for protection in the receiving country that conducts the change in question.

The paper proceeds as follows: In the next subsection we elaborate on the motivation and present earlier studies on the determinants of asylum flows. In section 2 we describe the asylum migration flows from the sending countries included in our analysis and the history of the national asylum policy reforms in the selected receiving countries. Section 3, in addition to a presentation of the micro foundation for the empirical analyses, includes descriptions of the data and a discussion of identification issues. In section 4 we present the results before concluding in section 5.

[2] The use of this utility approach does not mean that we do not consider asylum flows as forced migration. In the non-economic literature on both forced and voluntary migration, alternative models of individual action are discussed; also pointing to the importance of information, of networks and family-based decision making (De Haas 2010).

2. Flows and Reforms

In this section, we consider briefly the overall development in asylum flows from the early 1980s onwards. On this basis, we justify our choice of sample with regard to the sending and receiving countries that are included in the empirical analysis. Further, we describe, by summary statistics, the developments in the asylum policy of the main receiving countries in Western Europe. For this purpose, we first have to explain, in some detail, the construction of the asylum policy indexes used as independent variables in the subsequent empirical analysis.

2.1 Asylum Flows

The dependent variables in our analysis are of two strongly related kinds: Dyadic flows of asylum applications from sending to receiving countries, and aggregated flows from sending countries. The term "receiving country" signifies the country in which an asylum application is submitted and processed in the first instance. Similarly, "sending country" refers to the nationality (citizenship) of the applicant, which is our indicator for the origin country.

Due to our desire for a careful and through examination of the changes in asylum policy, we had to limit the number of receiving countries that are included in the analysis. The nine selected countries are located in a contiguous geographic area in the northern part of Western Europe (NWE). In addition to the geography, these countries have in common a high standard of living and a welfare system that is generous and well-functioning when compared to the rest of Europe, as well as to the rest of the world.

To avoid time series with small numbers which are broken by many missing values, we chose to include only the sending countries that have contributed to at least 1% of the total number of applications, from 1985 to 2010, in at least one of the nine receiving countries. Altogether, this rule leaves us with the 45 sending countries.[3]

What we actually observe is the yearly numbers of first instance asylum claims by origin and destination countries. This data has been collected by the UNHCR from the governments in the receiving countries since the early 1980s.[4] Such claims are, nearly always, submitted at the border or within the receiving country by applicants who have travelled from

[3] Afghanistan, Albania, Algeria, Angola, Armenia, Azerbaijan, Bangladesh, Bulgaria, Burkina Faso, Bosnia and Herzegovina, Cameroon, Czech Republic, Chile, China, Congo, Croatia, Democratic Republic of Congo, Eritrea, Ethiopia, Georgia, Ghana, Guinea, India, Indonesia, Iran, Iraq, Lebanon, Nigeria, Pakistan, Poland, Romania, Russia, Rwanda, Sierra Leone, Serbia, Slovak Republic, Somalia, Sri Lanka, Syria, Togo, Turkey, Viet Nam, Zimbabwe, Ukraine, Uganda.

[4] Published by the OECD: http://stats.oecd.org/Index.aspx?DataSetCode=MIG and by UNHCR: http://popstats.unhcr.org/en/asylum_seekers

their origin country without help from the UN refugee bodies or from other internationally recognised organisations.[5]

For these 45 countries we have collected all bilateral flows, i.e., the number of asylum seekers from one sending country to one of the nine NWE receiving countries, and total outflows; the aggregated yearly outflows of asylum seekers from one sending country to all the receiving countries which register asylum seekers by UNHCR.

During period we study a considerable share of the bilateral yearly flows are listed as missing (29 percent) and a lower share of the total outflows (21 percent). In general, a missing registration may occur in the data for different reasons. One reason is that there are no asylum seekers to register. The value may also be missing for some unknown reason, may be because the receiving country only registers flows which are relatively significant or have not yet started to report these numbers to UNHCR at all. So should we consider blanks as missing or as zero? We decided to approach this question in a pragmatic way. When analyzing the dyadic flows, we exclude the blank registrations in the main analysis, but while analyzing total outflows we do the opposite and include them as zeros. In the case of dyadic flows, it seems probable that many of the missing observations may be the result of inadequate reporting from individual receiving countries. As regards total outflows, it is more likely that a missing actually means that none or very few asylum seekers are coming from a particular source county in. That is, since for this to be wrong al destination countries must fail to report at the same time. However, whatever we do, this is a potential source of measurement error in the dependent variables.

These numbers reflect how many individuals have tried to enter the NWE countries through the asylum door. Since a high share of the first instance applications are turned down, they say very little about how many refugees are accepted into the receiving countries. According to Hatton (2011), only 28% of all the asylum seekers to one of the OECD countries, from 1982 to 2006, were recognised as being in need of protection, either according to the Geneva Convention (18%) or for humanitarian reasons (10%).

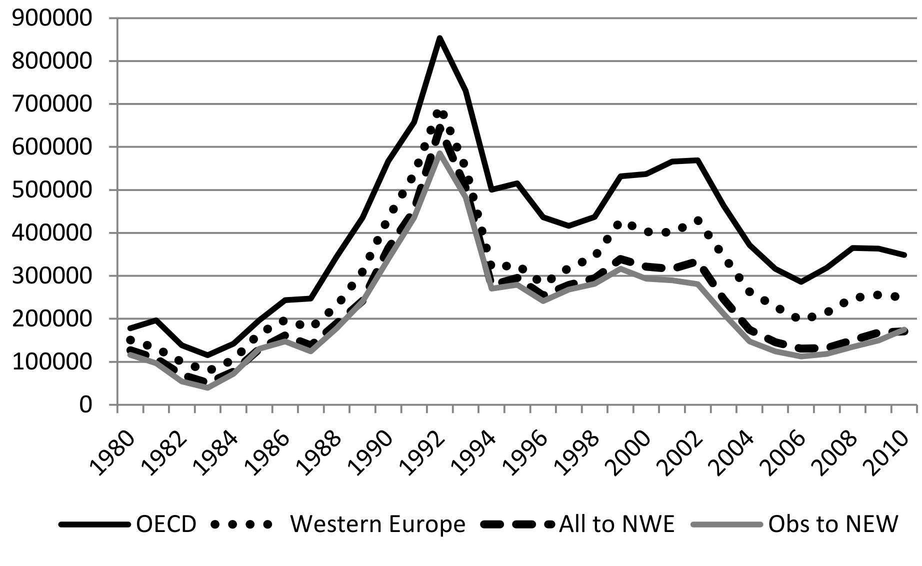
Figure 1 describes the development in asylum flows; in total numbers, as well as to Western Europe and the NWE countries, during the last three decades. The rise in total asylum flows during the 1980s, to a large extent, originated in Asian conflict areas such as the Iraq-Iran war and the battle between ethnic groups in Sri Lanka. The huge peak in the early

[5] Thus, the yearly quotas of UNHCR refugees, accepted as in need of protection before they arrive at their destination, are not included in the numbers.

1990s, however, resulted from the crisis in Bosnia-Herzegovina. In the next two decades, violent conflicts in Eastern Europe following the aftermath of the dissolution of the Soviet Union created considerable asylum flows. The Kosovo crisis in the late 1990s is one significant example in this respect. However, in early 2000, huge asylum flows, originating in Asia, were related to the resurgence of conflicts associated with the initiation of “The War on Terror”. Thus, only looking at the fluctuations in the total outflows, it seems clear that an intensification of socio-political turmoil acts as important push factor in the creation of asylum outflows.

Figure 1 clearly illustrates that Western Europe has received a huge share of the total flow of asylum seekers and that the NWE countries have been the dominant destination countries within this region, as well as in the world as a whole. During the entire period, this relatively northern part of Western Europe has received a major share of the total flow to this region. The solid grey line shows the aggregated sum of the dyadic asylum flows which are included in the analysis (i.e., the flows from the 45 sending countries in our sample to the nine NWE countries).

Figure 1. Yearly asylum flows to the OECD, Western Europe and the NWE countries, 1980-2010



The broken black line displays the total number of asylum seekers applying for protection in the NWE countries during the same period. Comparing the lines, we can establish that the asylum flows included in the analysis capture almost the entire inflow to the nine selected receiving countries.

Figure 2. The coefficients of variation between the NEW countries in terms of asylum inflows

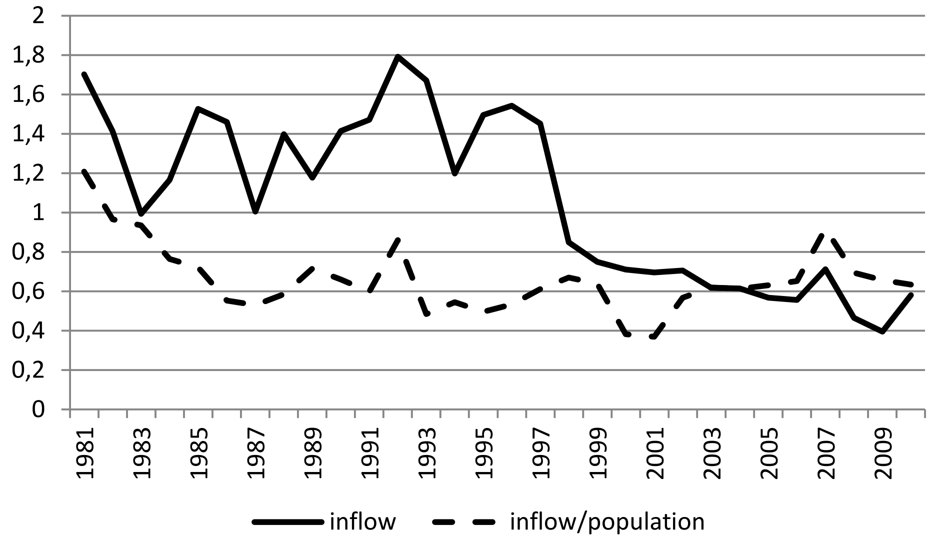


Figure 2 describes how the yearly inflow of asylum seekers to the NWE region has been distributed between the nine countries. The solid line displays the coefficients of variation for the absolute inflow to the nine countries. The fall in this measure of inequality from the mid-1990s is closely related to the fact that Germany strongly reduced their share of the total inflow. The broken line displays the coefficients of variation for the ratio of inflow to population size. The development in this measure shows that – relative to the country's population size – the asylum inflow became considerably more equally distributed from the early 1980s to the late 1990s. Figure A2 in the Appendix presents the yearly inflow of asylum seekers to the separate NWE countries relative to population size

2.2 Asylum Policy Reforms

To assess changes in the tightness of the asylum policy between years, we follow the guidelines in Hatton (2004, 2009, 2011) in that we construct three indexes, which are meant to capture reforms (changes in laws, rules, and practices) affecting the three main areas that together make up the receiving countries' asylum policies. The first area of reforms concerns the asylum seekers' access to the countries' territory and, accordingly, their actual possibility of applying for asylum. The second area is the asylum process itself, which starts when the application has been submitted. That is, conditions that affect the probability of being granted residence as a refugee, or for humanitarian reasons, if one is able to apply in the first place.

The last area of reforms concerns the welfare of the claimants, both while they are waiting for their application to be determined and, afterwards, when the applications have eventually been accepted.

More or less "tightness" refers to how a policy change (reform) affects the situation of the asylum seekers. If the situation, from their point of view, is becoming significantly less favourable, the index in question increases by one in the year the reform is implemented. In the opposite case, it decreases by one. If no significant changes take place within the relevant policy area, the index stays unchanged during the year in question. By this method of assessment, the reforms are modelled as leading to lasting changes in the asylum policy. That is, if a new law, rule or practice has been implemented during one year, it will continue to work in the following years until new reforms are conducted.

The assessments of policy changes are based on a variety of sources and consultations with experts in the nine receiving NWE countries. However, in the end, we had to conduct subjective evaluations about the direction and significance of each of the reforms in question.[6] The following indexes are employed in the analysis:

The Asylum Policy Index Access (APIA) picks up changes in conditions related to access to the territory of the host country. This concern's, among other things, the strictness of visa requirements, severity of penalties for trafficking, and sanctions against companies that transport asylum seekers across borders without the proper documents. The implementation of the Dublin II requirements has been included in this category since they limit the asylum seekers' ability to apply in more than one country.

The Asylum Policy Index Process (APIP) picks up changes in conditions related to the process of determining the status of the asylum seeker. This may concern reforms which widen or narrow the definition of refugee or the conditions for residence on humanitarian grounds. This may also concern the introduction of measures that make the decision-making process, and the implementation of its result, more (or less) efficient (i.e., from the point of view of the authorities in the host countries). Such measures may include fewer possibilities for appealing a negative decision, as well as wider openings for the detention and surveillance of rejected applicants.

The Asylum Policy Index Welfare (APIW) picks up changes in conditions related to the well-being of asylum seekers while they are waiting for their applications to be

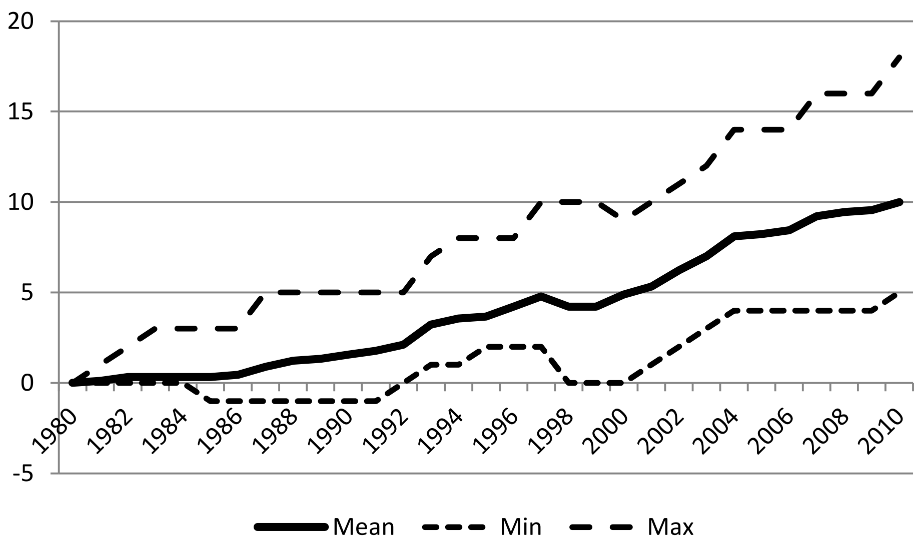
[6] We follow the guidelines of Hatton (2004, 2009) regarding the subdivision of the asylum policy into the three areas. However, the different types of policy reforms are not necessarily classified in the same way as in the Hatton-indexes. Each concrete policy change that we have considered to be substantial enough to affect one of the indexes are available from the authors.

determined and afterwards. This regards reforms related to the asylum seekers' access to benefits and employment, as well as their access to family reunification if granted residence.

Finally, **the Asylum Policy Index (API)** aggregates the changes in the preceding three indexes.

Since the modes of policy making vary considerably between countries, we have not been able to create a measure that can be used to compare the level of strictness in the asylum policy between countries. However, we think that these indexes may work to indicate significant changes in asylum policy tightness within a country (i.e., to assess whether a significant tightening or liberalisation in the country's policy has taken place from one year to another). Our examination of the nine countries' asylum policies takes 1980 as the point of departure. Even though we have not conducted a systematic investigation of this question, the general impression, from our examinations within each country, is that in 1980 the asylum policies in all the nine NWE countries were set at a relatively equal – and low – level of strictness.

Figure 3. The Asylum Policy Index (1980=0) in the North West European (NWE) countries, mean, max and min values from 1980-2010



In Figure 3, we describe the development in the asylum policy, from 1980 to 2010, by presenting the mean, maximum and minimum values of the aggregated index API for all the NWE countries.

In Figure A2 in the Appendix, the development is shown separately for each country. The overall picture shows a clear tendency towards a more restrictive policy. However, as can be seen in Figure A2, the countries seem to "pick up the stick" at different points in time. While Germany starts the process of tightening in the early 1980s, the UK, Belgium and Denmark join in from the early 1990s, and Norway as well as the Netherlands join in around the turn of the century.

3. The analytical approach

3.1 The micro foundation

We investigate the determinants of asylum flows, but our analysis is also closely linked to the economic literature that explains dyadic migration rates, in general. A main approach within this tradition has been to estimate such rates as a function of independent variables characterising the specific source (o) and destination country (r), only (Clark et al. 2007, Pedersen et al 2008, Lewer and den Berg 2008, Mayda 2010, Grogger and Hanson 2011, Beine et al 2011). This empirical set up, by construction, disregards the deflection effect.

Bertoli and Morage (2012, 2013), show how the functional relationship between bilateral (dyadic) migration rates (as defined in Equation 1; m_{oht}/Pop_{ot}) and their determinate in countries of origin and possible destinations may be deduced from random utility models (RUM) at the micro level. Within this framework dyadic migration rates may be satisfactory explained by characteristics of the sending (o) and recipient (r) country if the multinomial logit apply to the behaviour of individual decision makers. Employing the nested logit model as their micro foundation, Bertoli and Morage (2012, 2013) deduce a framework where migration rates, also may be affected by the attractiveness of alternative destinations (h≠r). Referring to the literature on trade flows (Anderson and van Wincoop 2003); they denote this phenomenon, which is quite close to our understanding of the deflection effect, the "Multilateral Resistance to Migration (MRM)".

The purpose of this sub-section is to show that our empirical approach, described in sub-section 3.2-3.4, may be interpreted as a linear approximation to a model deduced from this kind of nested logit micro- foundation. The scale of migration (asylum)[7] flows, from a country of origin; o, can be expressed:

(1) $m_{oht} = Pop_{ot}\, p_{oht}\, \eta_{oht}$,

$m_{ot} = Pop_{ot} p_{ot} \eta_{ot},\; p_{ot} = \sum_r^n p_{ort} = 1 - p_{oot}$

m_{oht} is the yearly flow of migrants from sending country, o, to receiving country, h=r, r ∈ R= {1,…,n}, or h= o ∈ O= {1,…,j}, r ≠o. m_{ot} is the total outflow of asylum seekers from o. We

[7] In this paragraph we use asylum flows and migration flows as interchangeable concepts

refer to pars of origin- and destination countries (o, r) as dyads. Pop_{ot} is the number of individuals, i, in country o, which at time t, potentially may seek asylum in country r≠o or stay home in country h=o. p_{oht} and p_{ot} average over the corresponding probabilities, that individual i , living in country o, will move (settle in) h; p_{ioht}, or move at all p_{iot}. η_{oht} and η_{ot} are spatially and serially uncorrelated error terms with: $E(\eta_{ort})=E(\eta_{ot})=1$.

Thus, the relationship between individual behaviour and the aggregated flows goes through the probability; p_{ioht}. Assume that the individual picks the destination which maximizes his or hers utility:

(2) $U_{ioht} = V_{oht} + \nu_{ioht},$

Where V_{oht} signifies the deterministic part of the utility experienced by individuals from the population of country o if they settle in destination h= r ∈ R or if they stay home; h= o. ν_{ioht} is the stochastic residual picking up the unobservable individual variation. Given the RUM context, ν_{ioht} is generated by a version of an underlying generalized extreme value (GEV) function. Assume, that $corr(\nu_{iort}, \nu_{ioht})=1-\tau^2$ for all r,h ∈ D; zero otherwise, and $corr(\nu_{iost}, \nu_{ioht})=1-\tau^2$; zero otherwise, for all s, h ∈ E. Where D and E are nests which represent a non-overlapping, and time fixed, partition of all alternative destinations (R= D∪E) and h=o is a singleton; a nest with only one alternative. [8] The probability that individual i, from origin country o, apply for asylum in receiving country r is then[9]:

(3) $p_{iort} = \frac{1}{H}[e^{\frac{V_{ort}}{\tau}}(\sum_{l\in D} e^{\frac{V_{olt}}{\tau}})^{\tau-1}]$, $\quad p_{ioot} = \frac{1}{H}e^{V_{oot}}$, $\quad p_{iot} = 1 - p_{ioot}$

$$H = (\sum_{l\in D} e^{\frac{V_{olt}}{\tau}})^{\tau} + (\sum_{k\in E} e^{\frac{V_{okt}}{\tau}})^{\tau} + e^{V_{oot}}$$

The log of odds of moving to r compared to staying at home:

(4) $\ln\left(\frac{p_{iort}}{p_{ioot}}\right) = \frac{V_{ort}}{\tau} - V_{oot} + MRM_{oDt}$ $\qquad MRM_{oDt} = (\tau-1)\ln(\sum_{l\in D} e^{\frac{V_{olt}}{\tau}})$

(5) $\ln\left(\frac{p_{iot}}{p_{ioot}}\right) = -V_{oot} + AP_{ot}$ $\qquad AP_{ot} = ln\left[(\sum_{l\in D} e^{\frac{V_{olt}}{\tau}})^{\tau} + (\sum_{k\in E} e^{\frac{V_{okt}}{\tau}})^{\tau}\right]$

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8 The exact same framework may be extended to involve k-nests.

9 In the case of the multinomial logit model ν_{ioht} is iid according to the Extreme value type-1 distribution. The choice probabilities should be described by (3), given τ=1, and are characterized by the independence of irrelevant alternatives (IIA), i.e., the relative probability of choosing between two destinations is independent of the attractiveness of other available choices. The expression for p_{iost}, s ∈ E, is, of course, exactly parallel to (3) for alternatives belonging to nest E.

According to Bertoli and Morage (2013) the last term in (4) represent the multilateral resistance to migration. The last term in (5) represent the aggregated pull exerted on potential migrants living in o from all destination countries.

Let $\overline{V_{oh}}$ signify the average of V_{oht} over all t. Relaying on a first order Taylor expansions around $\overline{V_{oh}}$, the last terms of (4) and (5) may be approximated:

(6) $\text{MRM}_{oDt} \approx C_{oD} - \sum_{l\in D} \gamma_{olD} (V_{olt} - \overline{V_{ol}})$, $\text{AP}_{ot} \approx C_o - \sum_{h\in D\cup E} \gamma_{oh} (V_{oht} - \overline{V_{oh}})$,

Where $\gamma_{olD} = \frac{\tau-1}{\tau} \bar{P}_{ol|D}$, $\gamma_{oh} = \bar{P}_{oh|D\cup E}$, $\bar{P}_{ol|D}$ signifies the probability of choosing destination l, conditional on that the nest D has been selected, and given that $V_{olt} = \overline{V_{ol}}$, all l ∈ D, and $\bar{P}_{oh|D\cup E}$ denotes the corresponding average probability of choosing h conditional on that either D or E have been selected.

3.2 The equations to be estimated

The average observable parts of the utilities are now specified as:

(7) $V_{oht} = \beta X_{ht} + \rho Y_h + \tau C_{oh} + \lambda C_t$,

Where V_{oot} (h=o) includes time variant origin attributes (X_{ot}), like political circumstances and economic conditions affecting the general level of living, as well as time invariant factors like climate (Y_o). Concerning the kind of push factors associated with the motives of asylum[10] migration we, within this context, agree with the formulation in Barthel and Neumayer (2012:5): *"Various degrees of pressure to leave against one's will are best understood as raising the costs of staying and the benefits of migration."*

V_{oht} (all h≠o)) include time variant characteristics of the potential receiving countries (X_{ht}), particularly the tightness of the asylum policy and variables affecting the level of living conditions. Y_h signifies time invariant factors in the country of destination and C_{oh}, constant factors affecting the costs or gains of applying for asylum in country h if coming from country o; like shared language or dyad specific policy measures which are unchanged in the period we study. Last, the cost of applying for asylum in all potential receiving countries may be affected by time varying factors common to all combinations of origins and destinations, C_t.

Based on equation (1) – (7) we establish the empirical relationships between our dependent variables, m_{ort}, m_{ot}, and a vector of observable independent variables (X) related to the political and economic development at the origin and at the destinations:

(8)
$$\text{Ln}\, m_{ort} = lnPop_{\,ot} + b_1 X_{r(t-1)} + b_2 X_{o(t-1)} + b_3\, WX_{ort-1}$$
$$d_t + d_o + d_r + d_{or} + E_{ort}$$

[10] We now go back to discuss determinants of asylum flows, i.e., in contrast to of migration flows in general.

(9) $\text{Ln}\, m_{ot} = ln\, Pop_{ot} - a_1 X_{o(t-1)} + a_3\, WX_{ot-1} + d_t + d_o + E_{ot}$

Where Pop_{ot} now signifies the population in the country of origin. $X_{r(t-1)}$ and $X_{o(t-1)}$ are observations of one year lagged, time varying, variables in receiving countries and origin countries, respectively. WX_{ort-1}, $WX_{ot-1}$are approximations to a weighted sums of pull factors in receiving countries belonging to the same nest as r (D). The design of these will be elaborated in paragraph 3.4. The d – variables represent fixed effects specific to origins (d_o) and receiving countries (d_r), as well as years (d_t) and dyads (d_{or}). In some of the model specifications of (8) we replace the observable X_{ot-1} variables by a origin-time fixed effect (d_{ot}). The error terms; $E_{ort}, E_{ot},$ accounts for the measurement errors and omitted variables.

Our methodological approach is to estimate different specifications of (8) and (9) by OLS, or by a Tobit procedures when missing are included as zero flows. This is similar to the main strategy chosen in most of the earlier studies analysing the determinants of dyadic migration flows in general (Pedersen et al. 2008, Mayda 2010, Ortega and Peri 2009, 2013, Grogger and Hanson 2011), and dyadic asylum flows in particular (Hatton 2004, 2009, 2011, Neumayer 2004, 2005).

3.3 The relationship between dyadic flows and total outflows

By definition the level of a dyadic flow, m_{ort} is the product of two elements: $m_{ort} = \alpha_{or} m_{ot}$, where α_{or} *is the share of the total outflow* of asylum seekers from the origin country o going to the destination country r. Thus, the change in the dyadic flow following a change in one of the independent variables, included in (8), may in general be expressed as:

(10) $\frac{dm_{ort}}{dX} = \frac{da_{or}}{dX} m_{ot} + a_{or} \frac{dm_{ot}}{dX},$

The first element of the aggregate on the right hand side is the change of the share, given the total outflow from origin country o, and the second element is the change in the total outflow, given the share ending up in r. Suppose first that dX>0 represent a tightening of the asylum policy – or a deterioration of the living conditions - in the receiving country. In that case we expect both the first and the second term in (10) to be negative or zero. The absolute value of the aggregated change; $\frac{dm_{ort}}{dX}$, should accordingly be greater than (or equal to) the partial change in the share; $\frac{da_{or}}{dV_{ot}} m_{ot}$.

Suppose instead that dX>0 represent an average tightening of the asylum policy – or a deterioration of the living conditions - in the other receiving countries that belong to the same cluster of destinations as r. In this case we expect the first term of (10) to be positive and the second to be either negative or zero. It follows that: $\frac{dm_{ort}}{dV_{ot}} \leq \frac{da_{or}}{dV_{ot}} m_{ot}$.

Thus, a more restrictive asylum policy in one destination country may have two opposite effects on the inflow to other receiving countries, which together constitute the deflection effect. First, a positive one, since the share of total asylum flows moving in direction of alternative destinations probably will increase, and second, a negative one, if the total outflow from the origin is affected.

When we estimate (8), including the fixed effects; d_t, d_o, d_{or}, the coefficient will reflect the aggregated change; $\frac{dm_{ort}}{dV_{ot}}$. In the specification where we replace the observed X_{ot} variables by origin–time fixed effects; d_{ot}, the estimated coefficients reflect the partial change; $\frac{da_{or}}{dV_{ot}} m_{ot}$.

3.4 Data and variables

The direct effect of change in asylum policy is assessed from the estimated coefficients of the asylum policy index (API_{rt-1}), or the sub- indexes measuring changes in the different aspects of the asylum policy ($APIA_{rt-1}$, $APIP_{rt-1}$, $APIW_{rt-1}$). The construction of these indexes has already been explained in subsection 2.2. To capture variation in the enforcement of the asylum policy, a variable that measure right wing parties (RW_{rt-1}) in percent of total cabinet posts in the destination country is added.[11] The argument is that the strictness in the way laws and regulations on this area are practiced, may be affected by the colour of the party in government. As indicator of economic development in the receiving countries we include their gross domestic products per capita, thousand (2000) dollars (GDP_{rt-1}).[12]

To approach the MRM- and AP- terms in (6) i.e., the construction of the sums WX_{ort-1}/ WX_{ot-1} in (8) and (9), we first of all make the assumption that all of our nine receiving NWE-countries belong to the same destination nest (D) for potential asylum seekers in all the source countries, o. This may be justified by the fact that – compared to most other countries in the world, also within the OECD - these countries are quite similar as regard many significant features; like geographical location, political system, welfare organisation and

[11] The source is Comparative Political Data Set 1960-2012: http://www.ipw.unibe.ch/content/team/klaus_armingeon/comparative_political_data_sets/index_ger.html

[12] The source of both origin and destination countries GDP is the World Bank

level of living. Even though, the native populations speak different languages as their mother tongue, they all are considered to be quite fluent in English as their second language.[13]

From the observation of asylum flows we know that, given the country of origin, asylum seekers submit their applications in a few main destinations countries. The best indicator regarding the probability that an application is filed in country h, in year t, is probably the share of applications from the home country of the applicant submitted during the previous years. However, these origin specific clusters of main destinations change slowly over time. To take into account such particular features of asylum patterns, we apply the following procedure to approximate the weights (γ_{ol}, γ_{oh}) in (6): Let $A_{olt(-4)}$ be the share of all asylum applications to NWE, from country o, posted in country l, during the four preceding years (t= -1 to -4). If $A_{olt(-4)} > \gamma * \frac{1}{9}$ => I_{o1t}=1, otherwise I_{olt}=0, $0 \leq \gamma \leq 1$. If I_{olt} = 1 country l is in the destination cluster of sending country o in year=t . When nothing else is stated γ=1/2 , i.e., the threshold for inclusion in the cluster of main destinations is that country l has received more than a half of the mean share of asylum seekers to the NWE countries during the last four years.

We then assume that the following terms capture *the influence of pull factors in other receiving countries*, on the dyadic asylum flow from country *o* to country *r:* $WX_{ort-1} = \sum_l \frac{pop_{\,lt}}{POP_t} I_{olt} X_{l(t-1)}$, *k≠r* ,and of pull factors *in all (relevant) receiving countries* on the total outflow from origin o: $WX_{ot-1} = \sum_h \frac{pop_{\,ht}}{POP_t} I_{oht} X_{h(t-1)}$, all h ∈ R . Where pop_{ht} and POP_t signify the size of the population in the receiving country k, and the aggregated population in all the nine NWE countries. If I_{oht}=0 destination h is, due to some unobserved characteristics, assumed to be an insignificant alternative in year t. Thus, changes the observed pull factors have no influence on the flows between o and r or the total outflow from o. In the opposite case, I_{oht}>0, the pull factors of the different alternative destination countries (h≠r) are assumed to influence this flow according to their relative population size. In this manner, the distribution of the asylum flows to the NWE countries, in the recent past, is used to indicate the origin specific significance of receiving countries, in the present. The relative population size of the receiving countries included in the cluster of main destinations, is then used to indicate the conditional probabilities of the significant alternatives.

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[13] In the sensitivity tests we also make some simple test of this assumption, by estimating (8) separately for subsets of receiving countries. This test is based on the prediction of the nested logit that changes in the attractiveness of an alternative destination h ≠r only affect the odds rate $\frac{p_{iort}}{p_{ioot}}$ if r and h belong to the same nest.

From the point of view of the applicants from origin country o in receiving country r, the interpretation of $WAPI_{ort-1}$is the expected cost of gaining access as a refugee to the close recipient substitutes of r. $WAPI_{ot-1}$ may, consistently, be interpreted as the expected cost of applicants from o of gaining access as a refugee to any relevant receiving countries in Western Europe.[14]

As indicator of economic development in the origin countries we include their gross domestic products per capita, measured in thousand (2000) dollars (GDP_{ot-1}). To assess the quality of the political- and humanitarian situation two index variables are used: First, *The terror scale (TS_{ot-1})*, which vary between 1 (lowest terror) to 5 (highest terror). This index captures direct threats to safety; the degree to which the population at the origin is exposed to power abuse from the authorities (or by their lack of protection against such abuse), through imprisonment, torture, political murders, acts of war and ethnic cleansing.[15] Second, *The civil liberties index* (CL_{ot-1}). CL_{ot-1} is graded between 1 (most free) and 7 (least free) and measure the prevalence of civilian liberties and political rights in the origin country; rule of law, freedom of speech and belief, organizational and associational rights.[16] These two indexes are chosen, partly because they complement each other, and partly because they are available, as yearly time series, from 1985, for nearly all the origin countries included in the analysis.

3.5 Identification Issues

All the independent time varying X variables, which are supposed to affect the attractiveness of the different alternatives, stay home or seeking asylum in one of the receiving countries, are included in equations (8) and (9) with a one year lag (or more). This is partly due to the fact that seeking asylum is a time-consuming activity, and partly due to the time it takes for relevant information to be transmitted between geographically and culturally distant areas. Thus, the crucial decisions taken in the initial phase of the asylum project are probably influenced more by the values of the independent variables in the year before their applications are registered in the receiving countries. The lags in the independent variables are also introduced to reduce simultaneity problems, particularly those linked to the mutually causal relationship between the tightness of asylum policy and the inflow of asylum seekers.

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[14] Where $WAPIA_{ort-1}$,$WAPIP_{ort-1,}$ $WAPIW_{ort-1}$ and WGDP $_{ort-1}$, $WAPIA_{ot-1}$,$WAPIP_{ot-1,}$ $WAPIW_{ot-1}$ and WGDP $_{ot-1}$ are the corresponding weighted values of the sub-indexes and GDP $_{ort-1}$.
[15] The source is US State department. Description available at: http://www.politicalterrorscale.org/about.php Amnesty produces a very similar index which is strongly correlated with the one we use, but available for fewer country- years.
[16] The source of this index is Freedom House. Description available at: https://www.freedomhouse.org/report-types/freedom-world#.VKpS4J3KymQ/ http://qog.pol.gu.se/data/datadownloads/qogbasicdata

As pointed out by Hatton (2004: 29), when analysing the effect of policy on asylum flows, it is important to recognise *"..that policy developments are linked to asylum flows as both cause and effect."* The main mechanism is that policy makers tend to tighten the asylum policy as a reaction to increased asylum pressure (Hatton 2004). However, due to a positive autocorrelation in the dyadic flows, the estimated effect of tighter policy in the preceding year (t-1) on the number of new applications (in year t) may be upward biased. To elaborate on this point, assume that the asylum inflow from country o, in year t, is negatively affected by the strictness of the asylum policy of country r in year t-1 and positively affected by the level of asylum inflow from o to r in the years preceding t-1. The bias in the estimated policy effect will emerge if a higher number of asylum seekers, in these years preceding t-1, also contribute to a tighter policy in the year t-1. To investigate the severity of this problem, some of the estimated specifications of (8) also include the average inflow of asylum seekers from the origin country to the receiving country during the years t = -2 to -4. This is a strategy similar to the one chosen by Neumayer (2005). He argues that the immediate preceding value of the lagged dependent variable should be left out in order to mitigate correlation with the error term. Even so, this procedure imposes problems related to including lagged dependent variables. However, the estimation of (8) without controlling for the preceding flows may result in an omitted variable problem. To look into the severity of both these problems, we follow the approach of Mayda (2010) and include an estimation of (8) using a dynamic Generalised Method of Moments (GMM). This method requires that endogenous and pre-determined variables are instrumented with their own lags and, accordingly, lead to a considerable loss of efficiency in the estimation. Thus, as in Mayda (2010), we have chosen to include this specification only as a robustness check.

4. Empirical Results

In this section we first present results from the analysis of dyadic asylum flows, and then the results from the analysis of total flows of asylum seekers out of the origin countries. In both cases we focus on the effects of policy changes in the receiving countries.

4.1 Policy Effects on Dyadic Flows

The overall asylum policy

Table 1 presents the results from the analysis of the relationship between changes in the aggregated policy index (API) and the dyadic asylum flows. Eight different model specifications of equation (8) are estimated. These models differ with regard to the fixed effects that are included and whether or not the average inflows of asylum seekers from previous years (t = -2 to -4) are accounted for. In all the models, we include the independent variables that vary with time and between receiving countries (i.e., the policy variables (API, WAPI) and the indicators of economic level of living (GDP, WGDP)).

Table 1. Asylum policy "tightness" and dyadic asylum flows, 1984-2010. Aggregated policy index (API). Dependent variable: log(dyadic asylum flows), OLS coefficients and robust standard errors in parenthesis [a]

	1	2	3	4	5	6	7	8
Earlier asylum inflow from		.644***		.471***		.653***		.380***
origin to destination		(.015)		(.013)		(.018)		(.021)
Receiving country variables:								
Right wing government	.003***	.001	.002**	.001	.002*	.000	.001	.000
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
API, aggregated	-.046***	-.066***	-.041***	-.059***	-.016	-.055***	-.015	-.036***
	(.016)	(.010)	(.015)	(.011)	(.013)	(.009)	(.014)	(.011)
GDP capita	.158***	.087***	.162***	.110***	.152***	.088***	.169***	.127***
	(.025)	(.015)	(.026)	(.016)	(.019)	(.013)	(.018)	(.014)
Cluster country variables:								
WAPI	.141***	.125***	.095**	.115***	.837***	.340***	.630***	.422***
	(.047)	(028)	(.046)	(.032)	(.071)	(.049)	(.069)	(.056)
WGDP	-.076***	-.041***	-.028**	-.027***	-.480***	-.139***	-.265***	-.134***
	(.015)	(.009)	(.014)	(.010)	(.032)	(.018)	(.030)	(.022)
Origin country variables:								
GDP per capita	-.284***	-.056**	-.260***	-.106***				
	(.041)	(.024)	.043	(.027)				
Log Population	-.151	.657**	.438	.732**				
	(.616)	(.314)	.626	(.385)				
Terror scale (TS:1-5)	.234***	.137***	.228***	.159***				
	(.036)	(.027)	.036	(.026)				
Index civil liberties	.325***	.181***	.317***	.223***				
(CL:1-7)	(.050)	(.029)	(.051)	(.033)				
Fixed effects:								
Receiving countries (9)	X	X	X	X	X	X	X	X
Origin countries (45)	X	X	X	X	X	X	X	X
Years (26)	X	X	X	X	X	X	X	X
Receiving x origin countries			X	X			X	X
Origin countries x years					X	X	X	X
R^2	.579	.764	.725	.792	.690	.804	.813	.836
N	7486	7486	7486	7486	7486	7486	7486	7486

[a] Standard errors are clustered within dyads. Level of significance: *≤ 10%, **≤ 5%, ***≤ 1%.

In Models 1 to 4, we also the include variables that vary with time and between origin countries, the indicators of the *Terror Scale* (TS) and the *Quality of Civil Liberties* (CL), as well as the indicator of economic standard of living in the source country (GDP) and a log of population size.

In Model 1 and Model 2, we include fixed effects for year, origin country, and receiving country. Thus, we control for underlying time invariant factors in the source and destination countries, which may be correlated with both the dependent and the key independent variables of our analysis. A generally high level of social welfare spending could, as an example, be a variable that affects both the strictness of the asylum policy and the attractiveness of a destination country to asylum seekers. Good historic relations between the populations of the origin countries and their neighbouring countries could affect both economic growth and the outflow of asylum seekers to Western European destinations. Through the inclusion of year dummies, we control for common time shocks (i.e., underlying factors which in each year may simultaneously affect the flows of asylum seekers to, as well as the policy development in, all the nine destination countries). Such factors may, among other things, be related to changes in international law conducted by the UN or EU. The only difference between Model 1 and Model 2 is that we include the average inflows from previous years in the latter.

The estimated coefficient of the policy index (API) is negative and clearly significant in both Model 1 and Model 2, indicating that the direct effect of a more restrictive policy on asylum flows is negative. The value of the API coefficient becomes more negative when we control for inflow of asylum seekers from the same origin in past (-2 to -4) years. This supports our hypothesis that, through a positive influence on both the strictness of policy and on subsequent flows, earlier asylum flows (the asylum stock) impose a positive bias in this direct policy effect if not accounted for in the analysis. The coefficient of earlier asylum flows is quite large, suggesting that they are subjected to a clear inertia.

The estimated coefficients of the WAPI variable are clearly positive and of approximately equal size in Model 1 and Model 2. This supports the hypothesis that a deflection effect is at work, which means that the flows of asylum seekers to one destination country increases when the policies in the close recipient substitutes become tighter.

The mean value of API is 3.8 (across t and r, see Table A1, Appendix). Thus, the estimated coefficient of API, in Model 2, suggests that if the index increases by 10% of its mean (one half unit), the average dyadic inflows decrease with approximately 2.5%. As the corresponding mean value of WAPI is 3.7, the estimated coefficient of this variable, in Model 2, implies that a 10% increase in this mean raises the asylum inflow to the receiving country by approximately 5%.

The estimated coefficient of GDP per capita at the receiving country is positive, while the coefficient of the corresponding variable in the origin country is negative, in both models. This confirms the results of earlier studies suggesting that asylum flows, like migration in general, are affected by economic pull and push factors (Rotte et al. 1997, Rotte and Vogler 2000, Hatton 2004, 2009, 2011, Neumayer 2004, Mayda 2010, Ortega and Peri 2013).

As the GDP values are measured in thousand dollars, the coefficient of Model 2 suggests that the average inflow increases by 8%, and decreases by almost 6%, if the GDP per capita in the receiving and source countries, respectively, rise by one thousand dollars. However, when expressed as elasticities, these results translate into a substantially weaker negative effect from GDP at origin than the corresponding positive effect of GDP in the receiving country: A 1% increase in the receiving countries GDP – from their 2010 mean level (see Table A1) – increases the average asylum inflow by 3%. A corresponding 1% increase at the origin countries GDP – from their 2010 mean level – decreases it by 0.2%.

The coefficient of the weighted value of GDP per capita in the destination clusters, WGDP, is negative and significant. This finding is consistent with the sign of the WAPI coefficients, i.e., a positive development (from the point of view of the asylum-immigrant) in both these pull factors within the close recipient substitutes reduces the inflow of asylum seekers to a country. Thus, this result suggests that the deflection effect also works through the economic pull factors.

The push factors at the origin countries, the *Terror Scale* (TS) and the *Quality of Civil Liberties* (CL), are both clearly significant and have the expected signs. The estimated effects of these push factors must also be considered to be relatively strong. According to Model 2, an increase in the TS of one mean standard deviation[17] raises the average dyadic flow by nearly 15%, while a corresponding increase in the CL index increases the average dyadic flow by approximately 27%.

In the next two specifications of the model, Model 3 and Model 4, we add dyad-specific fixed effects. Again, the only difference between the two models is that we include the average inflows from previous years in the latter model. This procedure ensures that the results are not affected by unobserved time invariant, origin–destination-specific features. One potential candidate in this respect is the aggregated stock of immigrants from the origin living in the destination when our analysis starts.

Comparing the R^2 from these two models with the former two, we may conclude that the dyadic fixed effects contribute considerably to the explanation of the total variation in the asylum flows. Still, comparing the pattern of the estimated policy coefficients, we may also conclude that they are not affected very much by their inclusion. The estimated direct effect

[17] The standard deviation of TS across years and source countries is 1.08 (Table A1).

of a tighter asylum policy (the API–coefficient) is almost exactly the same, while the deflection effects (the WAPI–coefficients) appear slightly weaker and a bit less precisely estimated.

In Model 5 and Model 6, we include fixed effects for origin by year, receiving country, origin country, and year. In Model 7 and Model 8, the dyad-specific fixed effects are included as well (receiving by origin countries). In Model 6 and Model 8, we control for previous asylum inflows.

In these last four models, the origin by year fixed effects absorbs all variation in the time varying origin specific variables. This also includes the yearly total outflows of asylum seekers from the source countries. Hence, according to the relationships explained in 3.3, the coefficients of the four first models pick up the aggregated change in the dyadic asylum flows, while these last four models only capture effects which emerge through the distribution of asylum seekers between receiving countries. More precisely, in the estimations of Model 1-Model 4 the coefficients reflect both the first and the second element on the right hand side of equation (10). In the estimations of Model 5 to Model 8 only the first element of equation (10) is captured by the coefficients. This may explain why the coefficients of API is somewhat reduced from the first four to the last four models, i.e., since a tightening of the asylum policy in the receiving country is expected to, if anything, have a negative effect on the inflow of asylum seekers both through the share arriving, and through the change in the total outflow. This may also explain why the absolute values of the WAPI and WGDP coefficients increase when the year by origin fixed effects are included. That is, since worse (better) conditions in the other main receiving (cluster) countries are expected to, if anything, have a negative (positive) influence on the total outflow of asylum seekers.

The much stronger positive effects of WAPI estimated in Model 5 to Model 8 than in Model 1 to Model 4 suggest that the strictness of asylum policy in receiving countries has an considerable influence on the total outflow from the origins. Compering the corresponding set of coefficients related to WGDP indicates that the same is trough with regard to the economic development in the destination cluster countries.

The sub-dimensions of asylum policy

In Table 2, we present the results for Model 4 and Model 8 from Table 1, except that the three sub-indexes, measuring changes in the different dimensions of the asylum policies, are included instead of the index that aggregate all three of them. The analysis is performed with all three sub-indexes in the same estimation and each included separately in different estimations. Only the coefficients of the policy variables are reported in the table. With regard to the direct policy effects, the estimated coefficients of the APIP (processing of applications) and APIW (welfare of applicants) variables are always negative.

Table 2. Asylum policy tightness and dyadic asylum flows, 1985-2010. Sub- policy indexes (APIA,APIP,APIW). Dependent variable: log(dyadic asylum flows), OLS coefficients and robust standard errors in parenthesis [a]

Model	4				8			
Receiving country variables:								
APIA	.019	-.017			.055	.050		
	(.039)	(.039)			(.036)	(.036)		
APIP	-.057***		-.087***		-.040**		-.054***	
	(.021)		(.019)		(.020)		(.018)	
APIW	-093***			-.115***	-.078***			-.082***
	(.023)			(.023)	(.024)			(.022)
Cluster country variables [b]								
WAPIA	.246	.483***			.618***	1.637***		
	(.161)	(.125)			(.242)	(.202)		
WAPIP	-.025		.217***		.745***		1.017***	
	(.114)		(0.76)		(.176)		(.119)	
WAPIW	.178**			.216***	-.018			.505***
	(.092)			(.064)	(.138)			(.119)
R^2	.792	.789	.790	.792	.837	.832	.836	833
N	7486				7486			

[a] Standard errors in parenthesis are clustered within dyads. Level of significance: *≤ 10 , **≤ 5, ***≤ 1 , percent.

The coefficients of the APIA (access to apply) turn out to be small and insignificant. These results may indicate that the access dimension has a weaker direct effect than the other two policy dimensions on the inflow of asylum seekers. However, we cannot rule out that endogeneity plays a role, i.e., that the simultaneous determination of policy and asylum flows induces an upward bias in the estimates of these direct effects. If politicians primary restore to the access type of policy measures when their countries are exposed to sudden strong increases in the asylum inflows, i.e., try to build “fences” and close the boarder, such a bias may be particularly strong with regard to the access index.

Looking at the weighted indexes, reflecting reforms in the different dimensions of the asylum policy in other relevant destinations, we find that their coefficients are all positively estimated, when included separately. When included simultaneously the pattern becomes messier. WAPIA and WAPIP turn out insignificant in Model 4. The same is true with regard to WAPIW in Model 8, where the coefficients of WAPIA and WAPIP are both strongly positive. According to the discursion in section 3.3 this pattern of estimated coefficients could indicate that a tightening of the policies that determines access to apply (WAPIA) in the host country and the outcome of the application process (WAPIP) both have a relatively strong negative influence on the total outflow from the origin countries. However, we find that the size of all three coefficients increase strongly when they enter separately in the analysis. This suggests that multicollinearity between the three indexes is an issue, making it difficult to identify their separate influences on the dyadic asylum flows.[18]

4.2 Sensitivity Analyses - The Effect of Policy on Dyadic Flows

In Table 3, we present the results from the sensitivity analyses, performed on Model 4 and Model 8, in Table 1. In the first two columns, the coefficients are estimated excluding Bosnia-Herzegovina and Serbia as origin countries. The purpose of this is to test whether the results are driven by the huge asylum flows out of these countries in the early 1990s. Comparing the results in Table 1 and Table 3, we can clearly conclude that this is not the case.

In the next two columns, the estimations are performed excluding the obvious largest recipient country during the entire period we study: Germany. This reduces the number of observations by nearly 1000. As can be seen, the coefficients of the weighted policy index (WAPI) and the weighted GDP variable (WGDP) become less precise and not significant in Model 4. Compared to the corresponding coefficients of Table 1, we may conclude that the estimates of Model 8 are not affected by the exclusion of Germany.

The coefficients in Column 5 and Column 6 are obtained, including all observations with a missing value on asylum flows. These two models are estimated using Tobit maximum likelihood estimation procedure. The coefficients indicating direct effects of asylum policy and reforms (API) and of economic growth (GDP) in the destination country do not change considerably compared to the corresponding results in Table 1. The coefficients indicating the deflection effects (WAPI, WGDP) are, however, only significantly different from zero when estimated by Model 8.

In the next four columns, the models are estimated separately for an early period (1985-1998) and a late period (1999-2010). The results from both sub-periods clearly point in the same direction. The coefficient for the direct policy index (API) variable is negative in all specifications, albeit not significant in the early period, using Model 8. The coefficients of the weighted policy index (WAPI) are consistently positive, and are only insignificant in the early period, using the Model 4 specification.

[18] The correlations between the direct sub-policies are: APIP-APIW 0.57; APIP-APIA 0.33; APIW-APIA 0.47.

Finally, in the last column, we present the results of using Arellano and Bond's GMM estimator to shed light on the endogeneity problem related to the measure of earlier asylum flows.[19] We only present results for the key variables. Model 4 and Model 8 turned out to be a too demanding specification for the GMM procedure, therefore estimates come from estimating Model 1 in Table 1. The lagged value of the dependent variable is included as an explanatory variable and is treated as an endogenous variable with two lags. The direct policy index is treated as a predetermined variable. The coefficient of asylum flows shows clear inertia, with a value of 0.72 for the lagged variable (not presented). The results still suggest a negative and significant direct policy effect, even though the size of the effect is somewhat reduced compared to Model 1 in Table 1. The effect of the weighted policy index, WAPI, is still positive and significant but, as for the direct effect, the size of the effect is somewhat reduced.

In Appendix B, Table B1, we present the results from estimate Model 4 from Table 1 with different thresholds for including receiving countries in the destination cluster of asylum seekers from particular origins (values of γ, see subsection 3.4). The results from these exercises substantiate the hypothesis of origin-specific receiving clusters, which is a central assumption in the analysis performed in this paper.

To summarise the sensitivity analysis, we conclude that, taken together, the different checks support the conclusions from the main analysis presented in Table 1. However, this conclusion seems to be stronger with regard to Model 8 than Model 4.

[19] The GMM coefficients come from using the Xtabond2 command in Stata.

Table 3. Asylum policy tightness and dyadic asylum flows - sensitivity checks. Sub- aggregated policy indexes (API). Dependent variable: log(dyadic asylum flows) [a]

Model [b]	4	8	4	8	4	8	4	4	8	8	1
Receiving country variables	Excluding Bosnia and Serbia		Excluding Germany		Including missing flows –Tobit		1985-1998	1999-2010	1985-1998	1999-2010	GMM
API	-.057***	-.0344***	-.062***	-.052***	-.055***	-.0300**	-.065*	-.0485***	-.005	-.035***	-.044*
	(.011)	(.011)	(.011)	(.011)	(.013)	(.012)	(.036)	(.014)	(.034)	(.013)	(.012)
GDP capita	.101***	.126***	.080***	.097***	.095***	.101***	.090***	.110***	.073***	.119***	.047***
	(.017)	(.014)	(.018)	(.015)	(.018)	(.014)	(.032)	(.040)	(.027)	(.034)	(.011)
Cluster country variables											
WAPI	.113***	-.425***	.0622*	.304***	-.002	.391***	.095	.134***	.462***	.378***	.045*
	(.032)	(.056)	(.035)	(.071)	(.037)	(.060)	(.079)	(.040)	(.090)	(.083)	(.024)
WGDP	-.026***	-.133***	-.014	-.136***	.002	-.119***	-.042**	-.034***	-.173**	-.130***	.-012*
	(.010)	(.024)	(.011)	(.011)	(.012)	(.024)	(.016)	(.014)	(.033)	(.030)	(.007)
R^2-adj/Pseudo R^2	0.791	0.836	0.768	0.812	0.323	0.394 [c]	0.782	0.867	0.840	0.881	
N	7330	7330	6481	6481	9576	9576 [d]	2981	4505	2981	4505	7305

[a] Standard errors in parenthesis are clustered within dyads. Level of significance: *≤ 10 , **≤ 5, ***≤ 1.
[b] The models are described in Table 1.
[c] Pseudo R^2, [d] share of censored 13%.

4.3 Effects of Policy on Total Outflows

Table 4 presents the results from analysing the determinants of total asylum outflows from the origin countries, estimating variants of equation (8). As explained in section 2.1, we in this analysis include the missing values as zero flows; therefore all models are estimated with a Tobit maximum likelihood procedure. In Model 1, the policy changes in potential receiving countries are measured by the weighted sum of the aggregated index in the destination clusters belonging to the different origin countries (WAPI). In Model 2, the policy changes of the receiving countries are measured by the asylum policy sub-indexes: WAPIA (access to apply), WAPIP (processing of applications) and WAPIW (welfare of applicants).

With the exception of these differences, the two models in Table 4 include the same set of explanatory variables. To control for origin-specific constant features, we include country fixed effects and, to control for common time shocks, we include year dummies. Thus, the effects we estimate are identified by variations within the origin countries, over time.

By including the *Terror Scale* (TS) and the *Quality of Civil Liberties* (CL) - indexes, we estimate the effect of such "legitimised" refugee generating push factors on the volume of asylum outflows. The estimated coefficients of these variables both have the expected signs, in all three models, but only the ones related to the TS are significant. The values of the TS coefficients indicate that the factors summarised in this index explain a considerable part of the variation in the total asylum flows from the source countries. The mean value of the TS, over all source countries and all years, is 3.23 with a corresponding standard deviation equal to 1.08 (Table A1). Thus, the coefficients of the TS variables, in Model 1 and Model 3, predict that a one standard deviation increase in the TS raises the outflow from the origins by approximately 40%. These results, i.e., a strong impact on total outflows of TS (reflecting direct threats to safety) and a relatively weak influence of CL (indicating the quality of civil liberties), are in accordance with the findings of Hatton (2009).

However, the economic push factors also have a considerable influence. The estimated coefficient of the home country GDP per capita predicts that a one thousand dollar increase in GDP decreases the asylum outflow by almost 50%. As the average GDP per capita in the source countries has increased by an average of approximately 3500, from 1985 to 2010, this seems to be a strong impact. However, in this regard, the variation between the origin countries is considerable. Expressed as an elasticity, a 1% increase from the overall mean value (Table A1) of the source countries GDP per capita decreases outflow by approximately 2%.

Our measure of economic pull (i.e., the weighted average GDP per capita in the destination cluster countries) also has the expected direction of impact on asylum outflows. The estimated coefficient of this variable predicts that a one thousand dollar increase in this variable increases the asylum outflow by around 20%. As elasticity; a 1% increases in the overall average increases the outflow by approximately 6%.

In Model 1, the WAPI coefficient is clearly negative. It predicts that a one point increase in this policy index lowers the asylum outflow by approximately 60%.[20] As the average value of this variable increased by approximately seven points during the period we studied, this must be considered a very strong response.

Table 4. Asylum policy tightness and total asylum outflows, dependent variable: log(total yearly asylum outflow to OECD), Tobit coefficients

	Model 1		Model 2	
	Coef.	Std. (robust)	Coef.	Std. (robust)
Cluster country variables:				
WRW	-.003	(.024)	-.0107	(.024)
WAPI	-.835***	(.231)		
WAPIA			-.741	(1.032)
WAPIP			-1.781**	(.750)
WAPW			-.180	(.502)
WGDP	.206***	(.073)	.259***	(.090)
Origin country variables:				
GDP	-.492***	(.177)	-.524***	(.180)
Log Population	2.72	(2.60)	2.41	(2.54)
TS (1-5)	.384**	(.177)	.409**	(.173)
CL (1-7)	.237	(.200)	.224	(.200)
Pseudo R^2	0.228		0.233	
N	1025		1025	

[a] Fixed effects for year and origin country are included in all models. Standard errors in parenthesis are clustered within origins. Level of significance: *≤ 10 , **≤ 5, ***≤ 1 , percent. Share left-censored: 8%.

In Model 2, all the coefficients related to the three sub-policy indexes have the expected negative signs. The values of those related to access to apply (WAPIA) and the processing of applications (WAPIP) are of a considerable size. However, the WAPIP coefficient is clearly the largest and the only one that is significant. This result is consistent with the pattern of influence we detected for the sub-indexes with regard to their influence on the dyadic flows (Table 2). Or more precisely, it is consistent with the structure of change in the value of the

[20] The estimated coefficient is -0.835.This represents a per cent reduction of 57 per cent ($(e^{-0.835}-1)*100$).

coefficients when we include the year by origin fixed effects, and consequently; control for the total outflow of asylum seekers from the source countries.

Therefore, according to this analysis, the most efficient way to prevent asylum seekers from applying for protection in an OECD country is to make the rules related to the processing of applications more restrictive.

In Table A2, we present the results from sensitivity checks performed on Model 1 in Table 4. As in the analysis of dyadic flows, we first exclude the outflows from Bosnia and Serbia to examine whether these huge and sudden flows are driving the results. The coefficients that are presented in the first column of the table show that this is not the case. In the last two columns of Table A2, the model is estimated for two separate time periods: 1984-1999 and 2000-2010. As can be seen, this exercise indicates that the relationships, deduced more precisely from the pooled regression presented in Table 4, are present in both periods.

All in all, our results confirm the findings in earlier studies, i.e., that the outflow of asylum seekers is determined by a mixture of push factors related to traumatic and dangerous political conditions and push factors related to a low standard of living. In addition, we show that the volume of the asylum outflow reacts to changes in political and economic variables in the potential receiving countries.

5. Conclusion

The analyses in this article indicate that a tougher asylum policy in one receiving country reduces the number of new asylum seekers, both by deflecting the flow to other destinations and by reducing the registered outflow of applicants from the countries of origin. The deflection effect spurs tension and conflict between receiving countries and, at the same time, creates a strong urge for cooperation about an international coordination of the asylum policy.

With a main focus on asylum policy, we analyse the effects of push and pull factors on the direction and level of asylum flows. We add to the literature in four main ways: First, we construct and use new and detailed indexes describing changes in the asylum policies of nine major receiving countries in the northern part of Western Europe (the NWE countries) from 1980 to 2010. In this matter, we follow Hatton (2004, 2009) in dividing the asylum policy changes into three categories based on the kind of policy area affected: the access to apply, the processing of applications and the welfare of applicants. From these sub-dimensions, an aggregated index is constructed that measures the changes in the overall asylum policy. By providing data about asylum policy in nine destination countries that spans thirty years we lay a solid foundation for further research on these mechanisms.

Second, we present new evidence on the deflection phenomena and, third, we analyse the policy effect on the total level of asylum seekers. These two last issues are investigated by exploring the facts that asylum applicants tend to end up in a few major, origin specific, countries of destinations. By studying the correlation between policy changes in these origin specific destination clusters, on the on side, and the inflow of asylum seekers to other receiving countries, as well as the total outflow from the origins in question, on the other side, we deduce the deflection effect and the policy effect on total outflow.

Fourth, by using the asylum policy index and controlling for the deflection effect, we shed new light on the direct effect of policy change, i.e., the effect on the asylum flows to the country that implements the changes.

Finally, we would like to emphasise the following point: Asylum flows and forced migration flows are clearly overlapping but not identical phenomena. In this article we have based our analyses on UNHCRs numbers of registered asylum seekers. People may of course flee conflict or persecution without being registered as asylum seekers in OECD countries. If registered asylum flows are reduced by tougher asylum policy in the destination countries this does not necessarily mean that refugee or forced migration flows are reduced accordingly. When the common causes of these flows are not removed a decrease in registered asylum outflows to more affluent countries may result in a higher number of people living as refugees within their home country as internally displaced persons or in refugee camps across the border. How asylum policy in destination countries affects refugee flows is an interesting topic for future research.

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Appendix A

Table A1. Mean values and standard deviations, 1985-2010.

	Mean	Standard Deviation
Log (dyadic asylum flows)	4.60	2.07
Log (earlier dyadic asylum flows t=-2 to t=-4)/3	4.72	2.08
Percentage of right wing government in cabinet (RW)	31.11	32.36
API	3.76	2.89
APIA	1.77	1.50
APIP	1.58	1.88
APIW	0.99	1.44
WAPI	3.76	2.89
WAPIA	1.32	0.90
WAPIP	1.41	1.14
WAPIW	1.03	0.93
GDP per capita destination	31205	6116
WGDP per capita cluster countries	14765	8656
GDP per capita origin countries	3851	3985
Log (population origin countries)	9.83	1.47
Terror scale (TS, 1-5)	3.23	1.08
Civil liberties (CL,1-7)	4.73	1.54

Table A2. Asylum policy "tightness" and total asylum outflow - sensitivity checks. Dependent variable: log(total yearly asylum outflow to OECD), Tobit coefficients.

	Excluding Bosnia Serbia		1985-1998		2000-2010	
	Coef.	Std. (robust)	Coef.	Std. (robust)	Coef.	Std. (robust)
WRW	-.004	(.024)	-.033	(.022)	-.052	(.043)
WAPI	-.857***	(.234)	-.628**	(.380)	-.238*	(.132)
WGDP	.222***	(.079)	.168*	(.092)	.097**	(.045)
Origin country variables						
GDP	-.497***	(.178)	-.038	(.033)	-.279	(.192)
Log Population	2.735	(2.629)	2.145	(3.277)	-1.229	(2.929)
TS (1-5)	.383**	(.179)	.488***	(.171)	.440*	(.226)
CL (1-7)	.231	(.202)	-.004	(.197)	.186	(.124)
R^2	.227		.330		.351	
N	1007		496		529	

[a] Fixed effects for year and origin country are included in all models. Standard errors in parenthesis are clustered within origins. Level of significance: *≤ 10%, **≤ 5%, ***≤ 1%. The model specification is as in Model 1, Table 4.

Figure A1. Asylum inflow/population size.

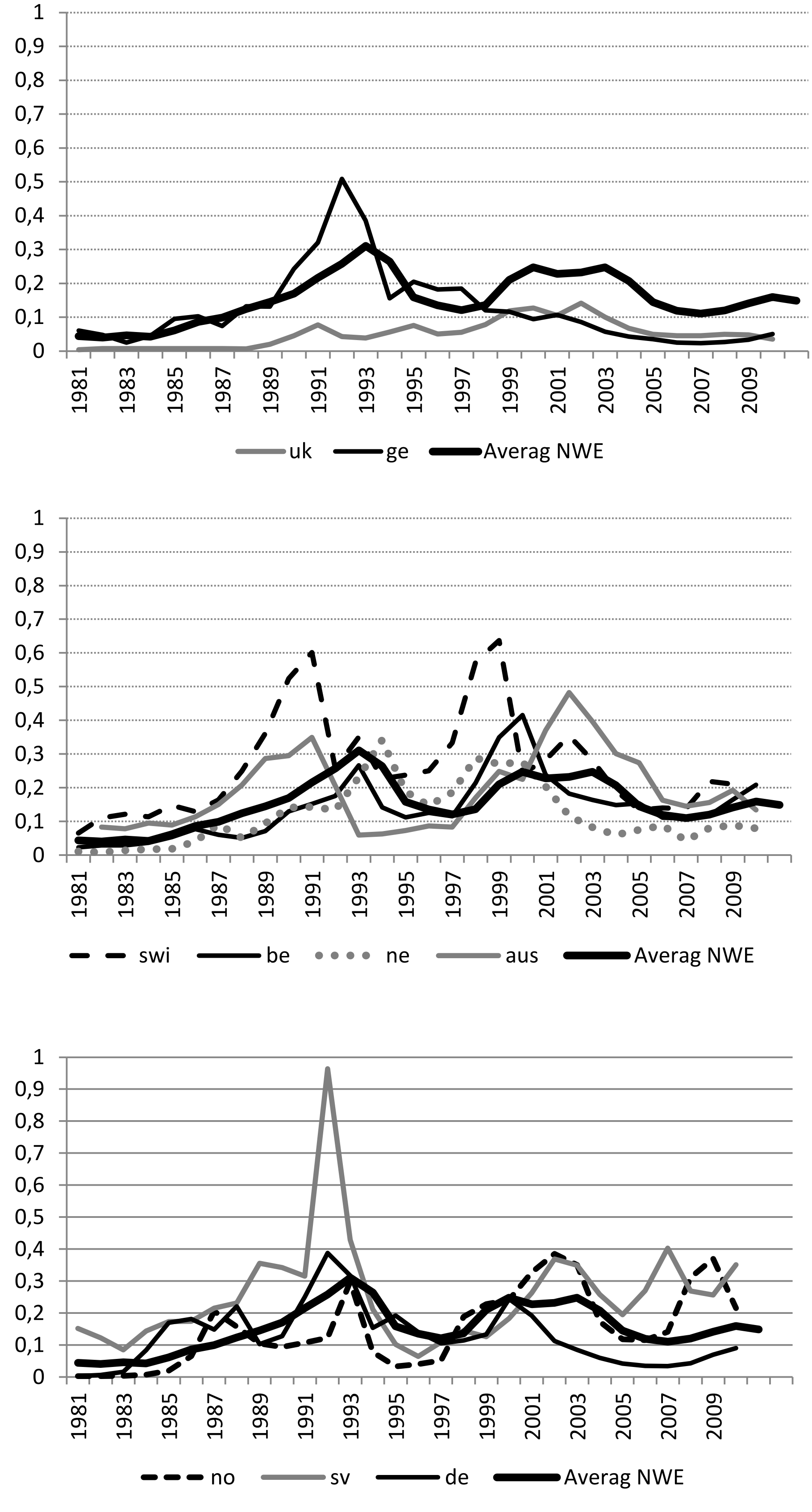
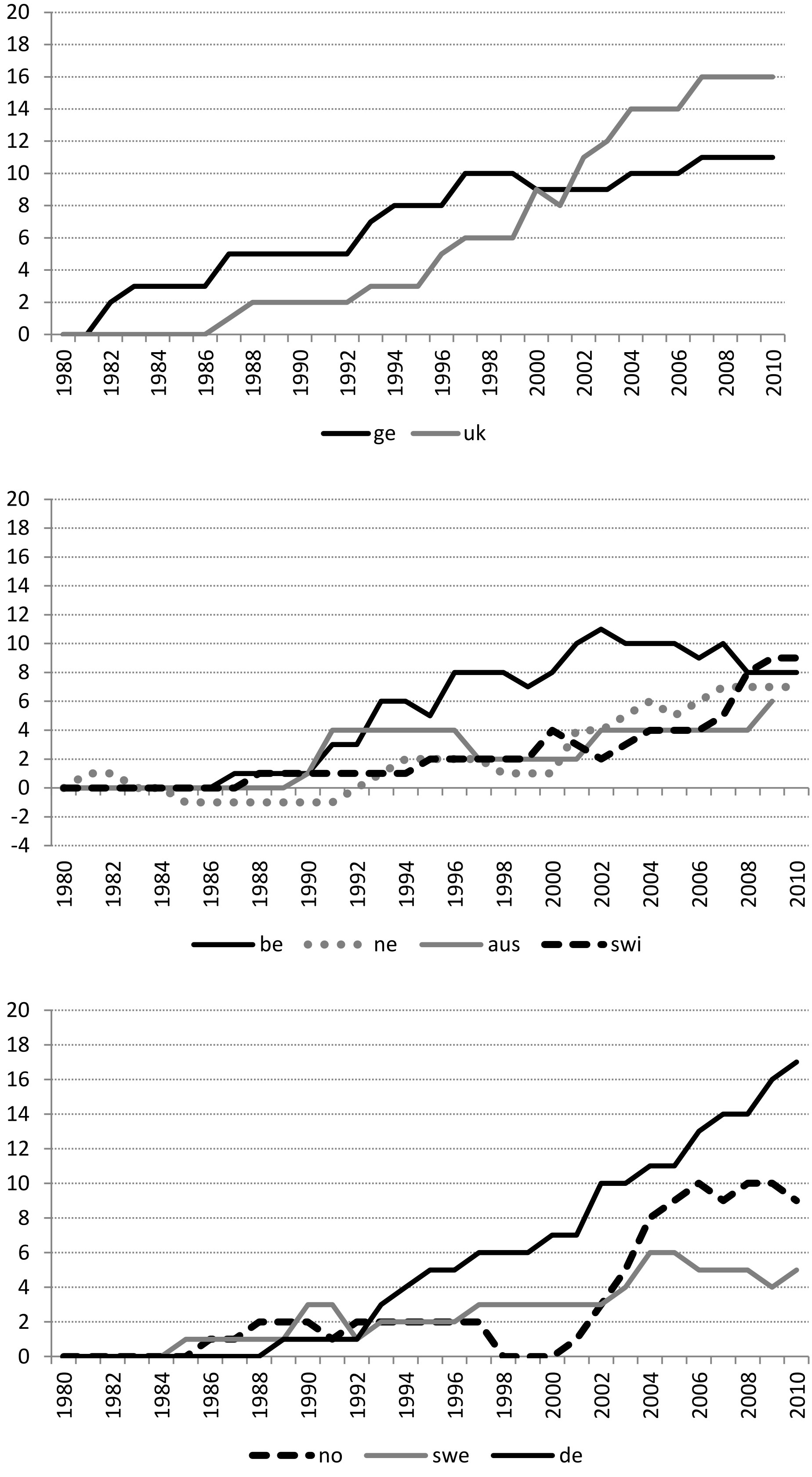


Figure A2. Asylum Policy Index (API) - changes over time in the NWE countries.



Appendix B. Investigating the Hypothesis about Origin-Specific Destination Clusters

In the analysis presented in the main text, the criteria for the inclusion of a receiving country k in the destination cluster of asylum seekers from origin country o is the following: During the last four years (t= -1 to -4), country k received at least half (γ=1/2) of the mean share of applicants to the nine NWE countries. When this is the case I_{okt}=1, when this is not the case I_{okt}=0 (see section 3.3 for a more detailed description of the criteria and the construction of the cluster country variables). In Table B1, we show the results for the independent variables in focus when the threshold is raised (γ=1) and when the threshold is lowered (γ=1/3, γ=0). As can be seen, the results are only marginally affected by the choice between the three higher limits. If all the nine countries, however, are included in the destination cluster (γ=0), the estimated coefficients of the weighted cluster variables, WAPI and WGDP, keep the same signs, but are no longer significantly different from zero. To include all of the receiving counties in calculations of the weighted pull variables of the recipient alternatives is the strategy chosen by Hatton (2004) in his analysis of asylum migration to the EU countries 1981-1999. As with our results, he finds a positive, but insignificant, effect of tighter asylum policy in the other EU countries.

In the last column of Table B1, the cluster variables are calculated for the receiving countries that are not in the destination cluster of the origin countries (i.e., I_{okt}=0, given γ=1/2). As expected, the values of the WAPI and WGDP coefficients then become close to zero and so insignificant.

Table B1. Asylum policy "tightness" and dyadic asylum flows - sensitivity checks. OLS coefficient from estimating Model 4 (Table 1) using different thresholds (γ) for including receiving county, o, among cluster destinations of sending country, k (I_{okt}=1)

Receiving Country Variables	$\gamma = 1$	$\gamma = 1/2$	$\gamma = 1/3$	$\gamma = 0$	I_{okt}=0 *
API, aggregated	-.057***	-.059***	-.054***	-.039***	-.061***
	(.010)	(.011)	(.010)	(.013)	(.010)
GDP capita	.110***	.110***	.110***	.110***	.110***
	(.017)	(.016)	(.017)	(.017)	(.017)
Other cluster country variables					
WAPI, aggregated	.077***	.115***	.098***	.143	-.034
	(.030)	(.032)	(.033)	(.100)	(.035)
WGDP	-.023***	-.027***	-.028***	-.111	0.007
	(.009)	(.010)	(.010)	(.10)	(.020)
Share of yearly flows to cluster countries	19	25	35	100	75

*and γ=1/2