

# Do restrictive asylum and visa policies increase irregular migration into Europe?

**Mathias Czaika**

Department for International Development, International Migration Institute, University of Oxford, UK

**Mogens Hobolth**

Department for Political Science, University of Copenhagen, Denmark

## Abstract

This article investigates the extent to which restrictive asylum and visa policies trigger an unintended behavioural response of potential and rejected asylum seekers. Based on our analysis of bilateral asylum and visa policies on migrant flows to 29 European states in the 2000s, we find evidence of a significant *deflection into irregularity* at work. Our estimates suggest that a 10% increase in asylum rejections raises the number of irregular migrants by on average 2% to 4%, and similarly, a 10% increase in short-stay visa rejections leads to a 4% to 7% increase in irregular border entries. We identify significant nuances in the impact of restrictive asylum and visa policies on the number of apprehensions ‘at the border’ versus ‘on territory’.

## Keywords

Asylum, deflection, migration, policy effects, visa

## Introduction

Calls for more restrictive immigration policies are a major corollary of the current ‘European refugee crisis’. What seems like a new policy trend is in fact a continuation of a process going on for decades by which policy-makers in most industrialised countries increasingly seek to tighten asylum and visa regulations in an

---

### Corresponding author:

Mathias Czaika, Department for International Development, International Migration Institute, University of Oxford, 3 Mansfield Rd, Oxford OX13TB, UK.

Email: Mathias.Czaika@qeh.ox.ac.uk

attempt to reduce the inflow of asylum seekers and irregular migrants (Hatton, 2011). However, are restrictive immigration and border policies really effective in curbing ‘unwanted’ immigration? The migration scholarship is rather divided on this question. While some scholars (‘migration policy pessimists’) have detected a major immigration control crisis in which poor people migrate increasingly through channels such as asylum or irregular means of entry (Bhagwati, 2003; Castles, 2004; Cornelius et al., 2004; Düvell, 2005), others (‘migration policy optimists’) argue that by and large, immigration policies have been mostly effective. In fact, they even claim that migration policies have become increasingly sophisticated (Bonjour, 2011; Brochmann and Hammar, 1999; Geddes, 2003), and the capability of states to effectively implement and enforce entry and stay policies such as the detection of irregular migrants has significantly increased (Broeders and Engbersen, 2007). For instance, Carling (2002) argues that it has effectively become more difficult for poor people to migrate to Western countries due to restrictive visa policies and sophisticated border control systems. But, do restrictive policies really stop people from migrating?

A small but growing number of quantitative empirical studies support this view indicating that immigration restrictions do significantly affect immigration flows (Beine et al., 2011; Czaika and de Haas, 2015; Hatton, 2005; Mayda, 2010; Ortega and Peri, 2013). In the area of asylum, existing studies have found that policy changes reduce the number of new asylum claims although evidence varies on the actual magnitude of the effect (Finotelli and Sciortino, 2013; Hatton, 2004, 2009; Holzer, et al. 2000; Keogh, 2013; Neumayer, 2005; Thielemann, 2006; Toshkov, 2014). Hatton (2011: 75), for instance, concludes that for the period 2001 to 2006 policy changes towards more restrictive regulations account for about a third of the total decline of 330,000 in asylum applications to 19 major Western destination countries. Neumayer (2005), Thielemann (2006) and Keogh (2013) also identify an impact, but of a somewhat smaller magnitude.

While existing empirical research has produced nuanced and well-supported analysis of the impact of asylum policy, it is also clear that it has limitations. Of these, a potentially important challenge concerns the limited conceptualisation and empirical assessment of *deflection* effects. Although toughened asylum regimes might deter many (potential) arrivals altogether, it is very likely that this policy has the unintended effect of shifting asylum seekers into an irregular status (cf. Massey and Pren, 2012). This means, as access to refugee protection becomes more circumscribed, some potential or rejected asylum seekers may instead choose to go ‘underground’.

This article seeks to identify whether such a potential policy failure really exists by investigating the interplay between asylum and visa policy and the number of irregular migrants arriving and (over-)staying in European destination countries. We conceptualise deterrence and categorical deflection effects and assess their empirical validity. Key hypotheses are tested utilising a large-*N* dataset detailing shifts in asylum recognition and visa refusal practices as well as irregular migrant flows into 29 European states from more than 200 origin countries over the period

from 2008 to 2011. Our estimates suggest that a 10% increase in asylum rejections raises the number of irregular migrants by an average 2% to 4%, and similarly, a 10% increase in short-stay visa rejections leads to a 4% to 7% increase in irregular border entries. Overall, we identify significant nuances in the impact of restrictive asylum and visa policies on the number of apprehensions ‘at the border’ versus ‘on territory’.

## Conceptualising asylum and visa policy effects

Concerns about the arrival of asylum seekers have been at the forefront of public debates on migration policy for many years. In many cases, public debates have been intense, with new arrivals presented in terms of fears of a ‘flooding’ and ‘invasion’ (Huysmans, 2006; Massey and Pren, 2012). Several policy changes have been initiated over the years in an attempt to reduce inflows. In general, reforms have centred on extra-territorial and territorial measures (Gammeltoft-Hansen, 2011). The former comprises measures such as visa restrictions, carrier sanctions and safe-third country rules aiming to limit the ability of forced migrants to arrive in destination states and claim asylum. The latter includes reduced rights and benefits for those asylum seekers who do arrive and narrow interpretations of the conditions under which states must grant protection. Existing research (Hatton, 2004, 2009, 2011; Neumayer, 2004; Thielemann, 2006) concludes that this effort can claim some success in the sense that restrictive shifts in asylum policy have reduced the number of asylum applications. Underlying this argument is an understanding that an individual’s decision to flee is, at least to some extent, informed by an assessment of the risk and hardship involved in reaching the destination, the generosity of the host during the status determination procedure, and the chance of being granted a protection status. It is thus assumed that an individual has (some limited) information about policies, spread through different channels such as friends and family living abroad, the media or other intermediaries. Although immigration policies are seen as important, other factors – such as the level of political terror in the home country and employment options in the destination state – remain similarly relevant structural determinants of migration flows.

The policy objective to influence particular migration categories in a certain direction can have unintended effects on other migration flows. De Haas (2011) identifies four ‘substitution effects’ that can limit the effectiveness of immigration restrictions: (a) spatial substitution through the diversion of migration to other countries; (b) categorical substitution through a reorientation toward other legal or illegal channels of immigration; (c) inter-temporal substitution affecting the timing of migration, such as ‘now or never migration’ in the expectation of future tightening of policies; and (d) reverse flow substitution if immigration restrictions reduce not only inflows but also return migration, which can make the effects on net immigration rather ambiguous. The existence of such ‘policy externalities’ might counteract the intended effects to a large extent so that some policy measures

appear at least ineffective and sometimes even counterproductive for realising stated and unstated policy objectives (Czaika and de Haas, 2013).

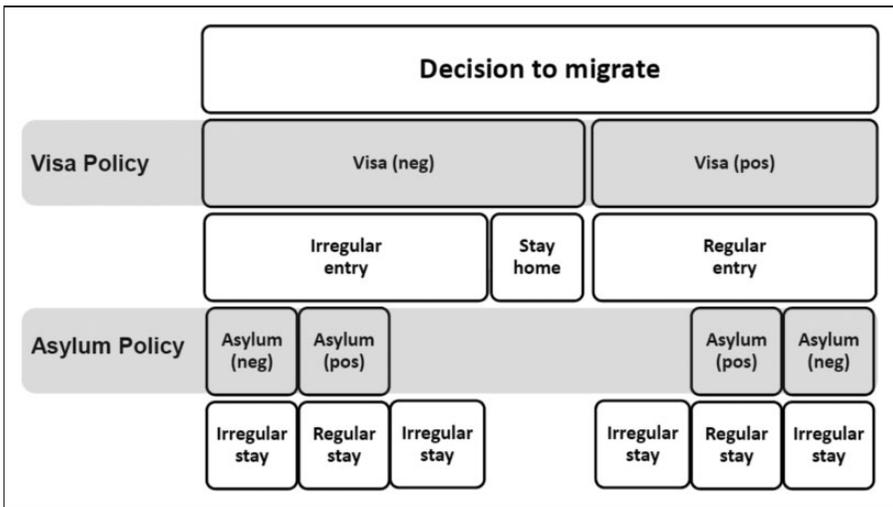
Spatial substitution has been the subject of some theorising and empirical analysis in the asylum literature (Barthel and Neumayer, 2015; Neumayer, 2004). Researchers have found evidence of spatial substitution especially for neighbouring countries. Categorical substitution effects in the area of forced migration, in contrast, have received much less if any attention in the literature. In this study, we focus on deflection into irregularity, i.e. the interplay between the asylum and irregular migration channel.<sup>1</sup>

The paradigmatic case of a deflection into irregularity is US–Mexican labour migration. In a comprehensive and detailed analysis, Massey and Pren (2012) document how illegal Mexican migration was to a large extent brought about by the dismantling of the ‘Bracero’ guest-worker programme in 1965 (see also Castles, 2004). Through this recruitment system, a large circular labour migration network had formed as Mexicans travelled back and forth in response to the seasonal demand of the Californian labour market. As this legal (albeit exploitative) programme was abruptly brought to an end, migration flows continued, albeit now with workers arriving and staying illegally. Over the years, negative externalities and unintended consequences multiplied as, for example, increased enforcement efforts became decoupled from trends in actual inflows and enhanced patrolling disrupted the seasonal cycle as those who now had managed to cross the border put even more effort into establishing their irregular and mostly permanent-like stay (Filindra, 2012).<sup>2</sup>

The US–Mexican case thus illustrates the importance of studying potential deflection dynamics in order to understand the impact of restrictive immigration policy more comprehensively. Especially, where cross-border migration flows are embedded into structural dynamics, such as the facilitating role of well-established migrant communities or the structural demand for cheap foreign workers in key labour market sectors, shifts in government policy might be unable to prevent access of migrants, and instead simply displace flows into other, mostly irregular entry channels and stay status. The dynamic seems likely to be especially strong when there are no obvious destination alternatives, as in the US–Mexican case. Hence, in other settings we would not necessarily expect a similarly strong categorical substitution effect as migrants have more ‘spatial options’.

By *deflection into irregularity* we understand, more specifically, the degree to which asylum and visa policy can influence the likelihood by which a person, who is seeking to escape the alleged fear of persecution or economic hardship, would: (a) travel legally to the destination country or turn to irregular entry strategies; (b) apply for asylum in the receiving country upon arrival or embark on an irregular stay; (c) comply with a deportation order or respond by going underground. Figure 1 displays a parsimonious (and not necessarily linear) choice set available to a potential migrant.<sup>3</sup>

The link between irregular and asylum migration is, arguably, well documented in connection with the decision about the exact immigration strategy. If entry visas



**Figure 1.** Migration decision-making process: asylum versus irregular entry and stay.

are required and scarce, asylum seekers seeking protection almost by definition have to turn to irregular travel and border-crossing means. Koser (2000) discusses this dynamic in considerable detail, drawing on qualitative interviews with Iranian asylum applicants in the Netherlands. He notes that of his 32 informants, 29 arrived via an irregular route – assisted by smugglers – and only 3 directly into the Netherlands on a visa. Two of those who arrived with a valid visa had obtained their permits as a result of previous travel to visit family residing in Europe. The third was able to obtain a visa as he had regularly travelled for business purposes to Turkey and, therefore, had a contact at the Dutch consulate in Turkey who was able to assist. The remaining 29 reported that they only turned to smugglers after their visa application was refused. This case underlines that visa availability influences the propensity for migrants to turn to irregular entry strategies. Although it is not clear to what extent the Iranian example can be generalised, it is evident that legal travel visas are hard to come by for potential asylum seekers (cf. Hobolth, 2012).

Koser (2000) highlights, however, that even if visa availability and irregular entry strategies are linked, the precise causal character of the relationship is open to debate and is therefore the focus of our empirical analysis. Forced migrants might need to turn to smugglers for other reasons, for example, to circumvent internal police and exit controls and to escape their home country in the first place. Thus, visa refusal is neither a necessary nor a sufficient reason for a person adopting an irregular migration strategy. Koser’s analysis also highlights that turning to irregular means entails travelling through transit states and there being held for shorter or longer periods without possession of proper documentation. Hence, the irregular entry strategy might entail illegal stay in other potential destination states en route.

Once a person has crossed the border (legally or illegally) and finds herself on the territory of the destination state, the link between asylum and irregular migration mainly arises in connection with two decisions: first, whether to apply for asylum or not, and second, whether to stay or return in case of a negative asylum decision (Figure 1). For example, the establishment of ‘manifestly unfounded’ procedures and mandatory internment in camps during status determination could push entrants into illegality. In these cases, applying for asylum would pose little chance of success and present considerable hardship. Some might instead choose to stay clandestine. Similarly, if economic destitution is a major concern then limited opportunities to work and minimal social benefits during the status determination procedure might reduce the incentive to apply for asylum. As rules are tightened, increasing psychological strain and exclusionary social effects of being in the asylum system might also be a considerable deterrent.

On the other hand, if someone has filed an asylum application which is then refused, staying irregularly might also be an option. This decision is linked to a wider set of asylum regulations and practices. For instance, rules could have been tightened so that asylum seekers are detained throughout the determination procedure, and hence are unable to circumvent an order to leave, or their forced deportation. The choice of entry and stay strategy is also influenced by concerns about how it might limit future migration possibilities. For instance, will an initial pursuit of an irregular stay and a potential detection and deportation make it more difficult or even impossible to re-enter later and apply for protection (cf. Koser, 2000)? While the restrictiveness of asylum rules is thus a key factor in deciding on the type of entry and return, a deflection into irregularity also involves considerations about the feasibility of establishing a clandestine stay. For instance, an already large and ‘established’ community of undocumented migrants or liberal policies providing access for irregular migrants to health care or educational services are likely to facilitate this stay option for newcomers. Conversely, highly regulated labour markets and intensified internal policing reduces the attractiveness of choosing an irregular status. All in all the two central hypotheses we investigate are:

*H1:* The more restrictive the territorial asylum policy of a destination state, the higher the number of migrants residing on its territory irregularly.

*H2:* The more restrictive the extra-territorial visa policy of a destination state, the higher the number of migrants entering the country irregularly.

Summing up, deterrence as well as deflection into irregularity are likely consequences of restrictive asylum and visa policies and procedures. Arguably, if the relatively well-established deterrence effect of reduced asylum inflows as a consequence of more restrictive asylum policy (see e.g. Hatton, 2011) would be counter-balanced by a simultaneous deflection into irregular migration, it would be an important caveat to the idea that restrictive immigration policy curb migration.

It would rather suggest the existence of an important policy failure in the area of asylum. Exploring its existence and assessing its magnitude therefore is the objective of the following analysis. Before outlining the empirical strategy, we briefly sketch the context of this study.

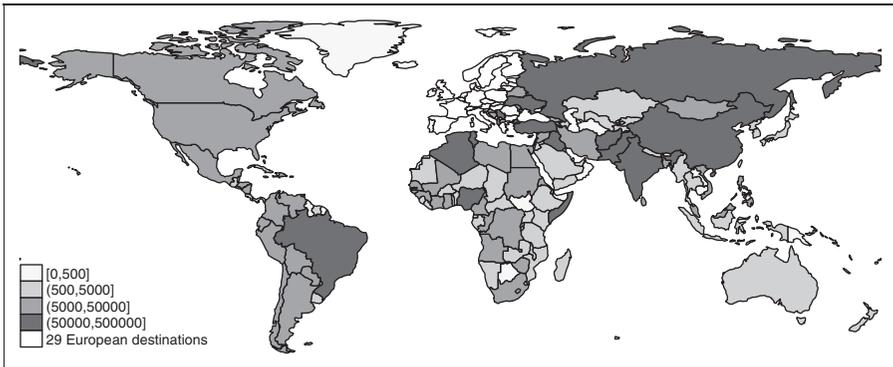
## Migration policies and irregular migration into Europe

Asylum and irregular migration have been high on the political agenda in Europe for many years. Spurred, in particular, by disputes over burden-sharing and concerns over ‘asylum-shopping’, considerable efforts have been invested in coordinating and harmonising policies (Geddes, 2003). A wide range of common (minimum) standards have thus been adopted, albeit the substantive importance and practical implementation of these remaining uncertain. Still, the shared governance setup is considerable and a high degree of interdependence forms an important backdrop to understanding and comparing asylum inflows to the European area. The ‘Schengen’ and ‘Dublin’ agreements, both dating back to the mid-1980s and 1990s, are of central importance to this study.

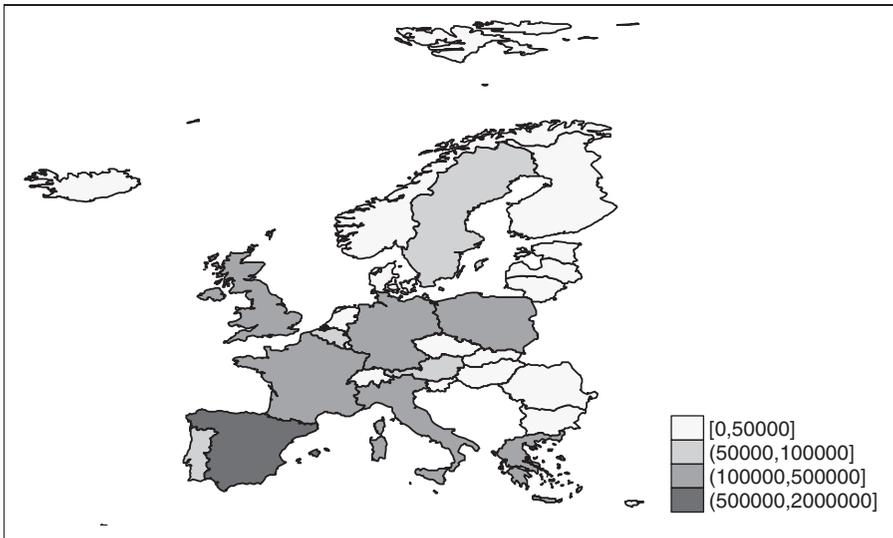
Schengen refers to a complex system of rules agreed upon in the wider context of the establishment of a Europe-wide border-free travel area. Under the Schengen heading member states cooperate both on customs and judicial matters as well as policing and migration control. Among the most harmonised policy areas is the issuing of short-stay visas for persons seeking to visit Europe for purposes of tourism, family visits or business. There is thus a common list of nationals who require a visa to visit Europe, as well as common rules and administrative cooperation on the issuing of permits. With these shared rules, the member states have little freedom to decide on visa requirements but retain somewhat more scope to pursue different implementation practices on the ground.

According to the Dublin rules, the first member state an asylum seeker enters is the one responsible for handling his/her application. Upon receiving an asylum application, a member state will thus seek to ascertain the applicant’s travel route. If the person is deemed to have arrived through another EU-state a Dublin transfer will be requested. The Dublin rules complicate the interpretation of European asylum statistics as inflow figures will also reflect this ‘flow-through’ between destination countries. In 2012, the number of Dublin transfers was at about 50,000 annually (Eurostat, 2014), which is a relatively moderate number compared to the total number of asylum seekers in Europe.

In the 2000s, numbers on the size of the two migration channels varied significantly. In 2011, the latest year of our observation period, annual asylum applications reached about 364,000 while apprehensions of irregular migrants were more than double at about 800,000 (Eurostat, 2012a; UNHCR, 2012). Numbers for the two migration categories have also evolved quite differently over the years. While the numbers of asylum applications have seen a steady increase, the apprehension statistics show a very marked decline in the same period, which is mainly due to a marked drop in numbers for Spain (see the Online Appendix).



**Figure 2.** Origins of apprehended irregular migrants in 29 European states, 2008–2011.  
 Source: Authors' own calculations based on Eurostat (2012a).



**Figure 3.** Allocation of apprehended irregular migrants in 29 European states, 2008–2011.  
 Source: Authors' own calculations based on Eurostat (2012a).

European asylum seekers originate across a large and heterogeneous set of origin countries. Many of the prime origins are those with severe conflict situations, but asylum seekers are also coming from a wider range of other Latin-American, African and, particularly, Asian countries (UNHCR, 2012). Asylum requests in Europe during the period 2008 to 2011 concentrated in the United Kingdom, France and Germany, although inflows to other in particular Northern and Southern European countries were also substantial, at least in relative terms.

Norway and Sweden in the North, and Italy and Greece in the South, account for the bulk of asylum flows into those parts of Europe (UNHCR, 2012).

Irregular migration into Europe shares some geographical similarities with asylum migration when it comes to the allocation of origin countries (Figure 2), but show significant differences in the cross-European allocation (Figure 3). Between 2008 and 2011, numbers on apprehensions of irregular migrants, which are our best proxy for the unknown true number of irregular migrants, were highest in Southern Europe, with volumes particularly outstanding for Spain and Greece. Western European countries *probably* hosted only about half the number of Southern Europe, followed by Eastern European and then the Nordic countries (see the Online Appendix).

In the following analysis, we further explore the drivers of this irregular migration pattern with the aim to quantify a potential unintended policy externality by estimating to what extent both restrictive asylum and visa policies may increase the number of irregular migration. We hypothesise that both types of policies significantly contribute to the willingness of rejected asylum seekers and visa applicants to bear the risk of irregular entry and/or stay as a consequence of a negative decision on their respective asylum and/or visa claims.

## Empirical strategy

### *Estimation model and data*

In order to study these categorical deflection effects of asylum and visa policies, we put together a large three-dimensional (origin, destination, year) cross-national comparative dataset detailing apprehensions of irregular migrants at the border and on territory for 29 European destination states in the period from 2008 to 2011 (Eurostat, 2012a). For each receiving country, we further collected unbalanced bilateral and origin-specific data for more than 200 sending states.

We operationalise asylum policy restrictiveness by using a destination country's nationality-specific (i.e. bilateral) number of asylum rejections as the measure of interest (UNHCR, 2012). For each European destination country  $j$ , the bilateral number of rejected asylum applications captured by the number of rejected asylum claims in first and appeal (e.g. judicial review) instances. These data are available from UNHCR's annual statistical yearbooks (2000–2012). Differences in bilateral asylum refusal from the same country of origin can thus be the consequence of different policies and/or the result of differences in the composition of the pool of asylum applicants. Bearing in mind the latter limitation, the measure should provide a good indicator of differences in asylum policy restrictiveness across European destination states.

We also capture migration policy restrictiveness by the number of nationality-specific visa refusals. This is to provide an alternative indicator that might better capture deflection dynamics at work prior to arrival in a receiving country's territory. There is reliable qualitative and quantitative evidence that visa restrictions are often used to constrain access to territory of potential asylum applicants

(e.g. Hobolth, 2012; Sherman, 1973; Watson, 2009). The toughness of short-stay visa policies and regulations affects the ability of asylum applicants to arrive legally on a destination country's territory in order to lodge an asylum application. The respective data come from the European Visa Database (Hobolth, 2014). We measure the restrictiveness of this dimension by using the number of refusals of applications for short-stay visas. This measure captures the scope and toughness of the criteria for issuing visas to a certain nationality, at least as interpreted by executives, and similar concerns apply for the assessment of asylum claims and reasons for rejection. That is, differences in bilateral visa and asylum refusals are assumed to be mainly due to the varying policy stances of receiving countries towards sending countries, but they can also reflect some variation in characteristics in the pool of visa applicants from the same origin country.<sup>4</sup> The reason why we choose absolute numbers of visa and asylum rejections as (quantitative) proxies for capturing policy restrictiveness is that we may simultaneously assess the 'likelihood' that a refused asylum or visa applicant turns-up later as an apprehended irregular migrant. In addition, we test a binary variable capturing bilateral visa requirements as an alternative measure of origin-specific policy restrictiveness which is set to one if a traveller of a certain nationality requires a visa for (short-term) entry.

Obviously, estimation of irregular migration is a challenging task (see, e.g. Kraler and Reichel, 2011), especially as our aim is to assess the (unknown) volume of irregular migrants for a comprehensive list of nationalities. In order to do so, we rely on statistics provided by Eurostat (2012a) on the number of persons refused entry at the border and those apprehended on territory without proper documentation or violating the terms of their permit (e.g. by overstaying a visa or working without permission). Eurostat sources the data from the member states using a set of standardized concepts and procedures. This dataset, available since 2008, is the only comparative dataset that allows an approximation of yearly irregular flows between practically all dyads of European receiving and third country sending states.

Data on apprehensions of irregular migrants have several limitations. First and foremost, numbers underestimate the actual entry of irregular migrants as their number depends on the amount, quality and effectiveness of government resources dedicated to policing and detecting irregular migrants. Differences in apprehension numbers between destination states might well come down to differences in policing capacity. One possible solution to this problem, pursued by Massey and Pren (2012) in their study on US–Mexican border crossings, is to adjust official figures by the number of border patrol guards and/or the size of border control budgets. In a European setting, however, such data are not available. Instead, we control for resources dedicated to the apprehension of irregular migrants by using the crude proxy of the relative size of police forces in the different countries (Eurostat, 2012b). This allows us, at least partially, to capture differences in policing levels between destination states which affect the likelihood of irregular migrants of being apprehended. But still, it is important to note that we cannot interpret the Eurostat

figures on entry refusals and on-territory detections as an estimate of the ‘true’ *absolute* number of irregular inflows as such. Rather, what we aim to arrive at is a measure that gets the relative ranking right. The assumption is thus that when controlled for differences in policing resources, the number of apprehended persons gives a valid approximation of bilateral irregular migration into European destination states. But even if numbers of apprehensions are systematically lower than ‘true’ numbers of irregular migrants – which is what we assume – this would not bias our estimates in any direction unless the likelihood for apprehensions vary significantly across destinations. We apply two strategies to capture this possibility: first, we include destination fixed effects to capture systematic (but unobservable) differences in levels of apprehensions, and second, we include the size of destination countries’ police forces as a proxy for the ‘detection capacity’.

The three-dimensional empirical model estimates separately the (logged) number of apprehended irregular migrants  $M_{ijt}^c$  from origin country  $i$  in European destination  $j$  in year  $t$  at location  $c = (\textit{at border}, \textit{on territory}, \textit{all})$ , which is regressed on a set of origin-specific  $X_{it}$ , destination-specific  $Y_{jt}$ , dyad-specific  $Z_{ijt}$  explanatory variables

$$\ln M_{ijt}^c = \beta_0 + \beta_1 X_{it} + \beta_2 Y_{jt} + \beta_3 Z_{ijt} + u_{ijt} \quad (1)$$

where  $E(u) = 0$  and  $\textit{cov}(X_{it}, u) = 0$ ,  $\textit{cov}(Y_{jt}, u) = 0$ , and  $\textit{cov}(Z_{ijt}, u) = 0$ , for an unbalanced dataset of 226 origin countries  $i$  and 29 destination countries  $j$ . Our asylum and visa policy variables  $P$  (with  $P \in Z$ ) are potentially endogenous either due to reverse causality or an omitted variable bias, in which in either case Ordinary Least Square or fixed effect estimation would produce inconsistent estimates. In order to address this potential endogeneity issue, we employ an instrumental variable approach which aims to correct for some unobserved heterogeneity across panels. The instrument we use is the share of Muslim population in origin countries, which is supposed to play an important (though implicit) role in bilateral asylum and visa policy making in the post-9/11 era in the context of Western security and terrorism concerns targeting predominantly Muslim countries. As second instrument, we employ the size of the informal sector in the origin country measured relative to a country’s gross domestic product (GDP) (Buehn and Schneider, 2012).<sup>5</sup> Due to a relatively higher proportion of zeros in our dependent variables on apprehensions (above 50%), and also as a robustness check of the GMM-IV estimates, we alternatively estimate equation (1) with a Pseudo-Poisson maximum likelihood (PPML) estimator. With zero-inflated data, the Gauss–Markov homoscedasticity assumption is violated, in which case, Santos Silva and Tenreiro (2006, 2011) propose the PPML estimator to avoid biased and inconsistent estimates.

Our main empirical aim is to estimate the effects of the three policy variables: (a) asylum rejections; (b) visa requirements; (c) visa refusals on the numbers of irregular migrants apprehended at the border and/or on territory. However, correlation between those policies and the number of apprehended migrants could be spurious if both outcomes are driven by, for instance, a general tightening

of immigration policy, which may involve an increase in the number of asylum and visa refusals on the one hand and also increases the frequency and comprehensiveness of police round-ups of illegal immigrants on the other. In order to avoid this omitted variable bias, we include a new measure (*immigration policy change*) capturing broader immigration policy restrictiveness operationalized by annual aggregate changes in *any* immigration policies towards more or less restrictiveness (de Haas et al., 2014).<sup>6</sup>

We also include a set of other destination, origin and bilateral control variables (cf. Beine et al., 2015). As proxies for migration costs, we include geographical *distance* between countries of origin and destination as well as a dummy for country pairs that share a *common border* (CEPII, 2012). Additionally, we assume that migration costs are more affordable if a significant community of migrants from the same origin country is already residing in a destination. This bilateral *migrant stock* variable is usually assumed to capture the role of migration networks in facilitating both legal or illegal entry and stay (Beine et al., 2011).

Factors that make destination countries more or less attractive for migrants are mainly related to economic opportunities, which we broadly capture by the income per capita measured by GDP per capita adjusted for differences in purchasing power (see e.g. Bertoli et al., 2013). In addition to economic factors, we try to capture non-economic migration determinants such as the quality of a destination country's political-institutional environment by good governance data from the World Governance Indicators (WGI) project (see Kaufmann et al., 2010). The WGI, available for over 200 countries and territories, measures annually six dimensions of governance: voice and accountability, political stability and absence of violence and/or terrorism, government effectiveness, regulatory quality, rule of law and control of corruption. Since we consider all six dimensions as equally relevant, we employ the equally weighted average score of all six indicators in our regressions.<sup>7</sup> Further on the destination side, we additionally include the number of police staff relative to population size as a control variable. This proxy may roughly capture the overall effort and effectiveness of receiving states in detecting but also deterring irregular entry and residence of migrants (Eurostat, 2012b). We further include a destination-specific estimate on the relative size of the informal sector (in relation to a country's GDP), which may proxy job opportunities specifically available for irregular migrants (Buehn and Schneider, 2012).

On the origin side, we use the total population size as a proxy for the overall emigration potential.<sup>8</sup> Economic hardship and lack of opportunities in the home country are well-established structural drivers and so-called root causes of low-skilled migration, which we crudely try to measure by a country's income per capita. Beyond economic drivers, we also control for political and governance factors in the sending context, captured by the above mentioned six dimensions of the WGI, which we expect to be highly relevant in explaining differences in forced emigration across origin countries. Finally, all other unobserved factors are captured by origin and destination country fixed effects.

## Results: Deflection into irregularity

Table 1 shows estimation results for the size of potential deflection effects of restrictive asylum and visa policy on irregular migration. Irregular entry and stay is proxied by the number of annual apprehensions at the border and on territory, respectively, which we estimate in addition to the total number of apprehensions. Respective results based on the PPML estimation technique are reported in the Online Appendix. Overall, the analysis provides supportive evidence of a deflection dynamic at play: *ceteris paribus*, a higher number of rejected asylum claims result in a higher number of apprehended irregular migrants. An increase in rejected asylum applicants by 10% turn – on average – into an approximately 3% to 4% increase in the total number of (apprehended) irregular migrants (Model 1, Table 1 and the Online Appendix, Table A2).

This deflection dynamic is mostly taking place on territory with a 10% increase in rejected asylum seekers resulting in a 2 (PPML) to 7% (IV) increase in on-territory apprehensions (Model 2). Respective estimations of border apprehensions (Model 3) show inconsistent results between the two estimation techniques: while the IV approach estimates a negative effect, the PPML regression estimates a positive effect. Based on the fact that the IV model has a relatively poor fit, we have more trust in the respective PPML estimate. These results support the hypothesis that a significant number of rejected asylum seekers seem to opt for the irregular stay option, which implies that asylum rejections are generally contributing to an increasing stock of irregular migrants on territory.

Additional to the effects of restrictive asylum policies, extra-territorial refusal of travel visa applications also seems to contribute to heightened numbers of (apprehended) irregular migrants. However, visa refusal seems mainly affecting irregular border crossings as apprehensions at entry increase significantly presumably as a consequence of tighter visa practices. An increase in visa refusals by 10% lead, *ceteris paribus*, to a 5% to 7% increase in apprehension at the border (Model 8). On-territory apprehensions (Model 9), however, remain largely unaffected so that overall apprehensions may only increase by about 1% as a consequence of a hypothetical increase in visa refusals by 10% (Model 7).

While visa refusal seems to increase the arrival of irregular migrants at the border, travel visas as a pre-requisite for legal entry has a relatively strong deterrence effect on irregular entries. This deterrence effect is very robust across estimation techniques for irregular border crossings, while similar effects on apprehensions on territory are largely absent. Thus, a generally restrictive visa *policy* in terms of a visa restriction for certain nationalities seems to deter irregular entries, whereas more restrictive visa *practices* measured by visa refusals – if a visa is required – seem to increase (attempts of) irregular entry. This implies that both restrictive asylum and visa practices may deflect some migrants into irregular channels and status. The main difference between the two policies though is that restrictive asylum policies (in terms of rejections) increase irregular stay while extra-territorial visa refusals – usually exercised by the diplomatic representation or consulate in the country of origin – result at least partly in a deflection of people into clandestine entry routes.

**Table 1.** GMM-IV regression: irregular migration and the effect of immigration policies.

DV: apprehensions (log)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Location	All		On territory	All	At border	On territory	All	At border	On territory
<i>Policy</i>									
Asylum reject (log, lag)	0.363+ (0.202)	-0.793** (0.274)	0.689** (0.220)						
Visa required (lag)				-0.197 (0.216)	-1.340** (0.176)	0.206 (0.224)			
Visa refusals (log, lag)							0.128 (0.214)	0.718** (0.183)	0.072 (0.235)
<i>Bilateral</i>									
Distance (log)	-0.565** (0.166)	-0.995** (0.226)	-0.310+ (0.179)	-0.912** (0.050)	-0.586** (0.044)	-0.823** (0.050)	-0.896** (0.187)	-0.014 (0.165)	-0.970** (0.203)
Neighbour	2.010** (0.267)	3.163** (0.299)	1.323** (0.334)	1.794** (0.213)	3.559** (0.243)	0.846** (0.266)	1.549** (0.178)	3.342** (0.261)	0.656** (0.224)
Migrant stock (log)	0.311** (0.057)	0.509** (0.077)	0.207** (0.061)	0.399** (0.010)	0.248** (0.008)	0.383** (0.010)	0.436** (0.069)	0.116* (0.059)	0.444** (0.076)
<i>Destination</i>									
Income p.c. (log)	-2.538** (0.936)	0.943 (1.070)	-2.968** (0.969)	-1.422* (0.703)	-0.298 (0.554)	-1.323+ (0.717)	-1.444 (1.307)	-0.222 (1.198)	-1.442 (1.369)
Governance	0.026 (0.078)	0.199+ (0.106)	-0.014 (0.081)	0.027 (0.066)	0.143* (0.055)	-0.019 (0.068)	0.158 (0.125)	0.236+ (0.127)	0.131 (0.135)
Informal sector (log)	-1.108 (1.381)	-0.401 (1.696)	-0.664 (1.449)	-1.242 (1.186)	-1.156 (0.959)	-0.627 (1.239)	-0.884 (1.927)	0.430 (1.662)	-0.483 (2.057)

(continued)

Table 1. Continued

DV: apprehensions (log)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Police forces (log)	-1.980 (1.315)	3.651* (1.555)	-3.033* (1.369)	-1.261 (0.954)	1.978* (0.771)	-2.030* (0.962)	-1.249 (1.705)	2.753+ (1.645)	-1.649 (1.842)
Immigration policy change	0.008 (0.014)	0.036* (0.017)	-0.004 (0.015)	0.008 (0.011)	0.019* (0.009)	0.004 (0.011)	0.005 (0.019)	0.020 (0.018)	-0.007 (0.021)
<i>Origin</i>									
Income p.c. (log)	0.022 (0.055)	-0.099 (0.073)	0.035 (0.060)	-0.079** (0.024)	-0.028 (0.019)	-0.094** (0.024)	-0.150** (0.043)	-0.136** (0.039)	-0.185** (0.047)
Governance	0.011 (0.023)	-0.089** (0.032)	0.039 (0.025)	-0.054** (0.009)	-0.071** (0.007)	-0.043** (0.009)	-0.052** (0.012)	-0.005 (0.012)	-0.058** (0.013)
Population size (log)	0.154** (0.031)	0.249** (0.041)	0.098** (0.034)	0.167** (0.013)	0.064** (0.011)	0.155** (0.013)	0.193* (0.081)	-0.091 (0.069)	0.218* (0.089)
Constant	14.785 (14.113)	9.158 (16.671)	12.093 (14.908)	9.485 (11.828)	16.807+ (9.607)	2.447 (12.283)	6.445 (19.653)	13.983 (18.050)	3.292 (20.942)
Observations	5563	5839	5617	8954	9296	9062	2910	2917	2913
R-squared	0.70	0.15	0.66	0.67	0.55	0.64	0.70	0.58	0.66
Visa regime	Required	Required	Required	All	All	All	Required	Required	Required
Origin FE	Yes	Yes	Yes	No	No	No	No	No	No
Destination FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

FE: Fixed Effects.

Note: Robust standard errors in parentheses: \*\* $p < 0.01$ , \* $p < 0.05$ , + $p < 0.1$ . Observation period: 2008–2011. Twenty-nine European destination countries, two hundred and twenty-six countries/territories of origin (unbalanced). Number of destinations is reduced due to limited availability of immigration policy change variable. Regressions without this variable and slightly larger  $N$  produces robust results which are available on request.

The control variables largely operate as expected. The size of migrant communities (migrant stocks) has a mostly positive impact on the volume of irregular migration inflows. Presence of a significant diaspora seems to be a key factor in directing irregular migrants who might find it easier to establish an irregular entry and/or stay strategy through the assistance and advice of compatriots. Interestingly, the diaspora seems slightly more effective and relevant in facilitating the irregular stay than the irregular entry of compatriots. Lack of economic opportunities in the origin country, generally assumed as a major factor for any economically motivated migration, seems to be a major driver also for irregular migration whereas differences in economic affluence in destination countries are not consistently associated with higher numbers of irregular migrants. Irregular immigration though is markedly higher between countries sharing a common border. This in combination with the consistently negative effect of geographical distance, migration costs seem to be a major structural deterrence factor for international irregular migration. The quality of governance structures shows relatively mixed results and do not consistently explain why people migrate and choose irregular migration routes.

Keeping in mind the multiple challenges involved in the operationalisation of asylum and visa policy, and the measurement of irregular migration flows, our results indicate that there is significant deflection dynamic at work. That is, existing research might have somewhat overstated the overall deterring impact of asylum and visa policy on de facto inflows as tightened asylum and visa practices may deflect arrivals into irregular entry routes and/or an irregular post-entry residence status.

Restrictive asylum and visa policies and practices may not only have implications on irregularly entering and staying migrants, but may also discourage potential asylum seekers from emigrating and/or claiming asylum in the first place, which as a consequence would not only reduce the number of asylum applicants, but also the number of rejected asylum seekers without subsidiary status who are trying to stay irregularly.

Given that for most non-Europeans legal entry into a European country is largely impossible without having received at least a travel visa, most asylum claims are likely filed *after* illegally entering a European country of destination or transit. Based on existing evidence about deterrence effects of restrictive asylum policy on asylum applications (e.g. Hatton, 2011; Toshkov, 2014), a visa requirement may additionally deter potential asylum seekers from migrating. But some of those who are – after all – applying for a subsequently rejected visa are deflected into irregular entry routes and access a European destination by illegal means before potentially claiming asylum or establishing irregular residence.

## Conclusion

This article has provided an analysis of the relationship between immigration policies and irregular migration. Existing research has shown that restrictive asylum policy has a considerable deterrence effect on asylum seeking, i.e. under *ceteris paribus* conditions, tightened asylum regulations and procedures reduce the

number of persons who apply for a protection status. This deterrence effect has largely been uncontested in broader debates about policy effectiveness. However, the extent to which this deterrence effect is counterbalanced by an unintended policy externality in terms of a displacement of potential and rejected protection seekers into irregularity has so far not been empirically assessed. Evidence presented in this study supports the hypothesis that restrictive asylum and visa policies may not only lower asylum numbers per se, but may also push migrants into irregular entry routes and/or an irregular residence status. This mechanism is suggested by some existing research on labour migration and irregular traffic across the US–Mexican border. Here, significant displacement effects of tightening legal entry routes have been identified (Cornelius, 2005; Cornelius and Salehyan, 2007; Massey and Pren, 2012). Also Koser (2000) in his study of Iranian asylum applicants to the Netherlands similarly found that many started out on their irregular journey to Europe after having had their travel visa application refused.

Our broader empirical analysis of immigration into 29 European countries supports the conclusion that a potentially intended deterrence of asylum seekers as a consequence of restrictive asylum and visa policies and practices is counterbalanced by an unintended displacement of potential and rejected asylum seekers into irregularity. This *deflection into irregularity* effect counteracts the deterrence effect which implies that a decline in asylum applications realised by implementing relatively restrictive immigration regulations and procedures ‘produces’ a subsequent increase in the number of irregular migrants as a consequence of those restrictive measures.

In general, visa requirements seem to be a very effective way to deter both asylum seekers and irregular migrants whereas restrictive visa and asylum practices leading to heightened refusal of visa and/or asylum applications may actually increase numbers of irregular entrants and stayers. Therefore, based on our analysis, we may cautiously reach the conclusion that the overall effect of restrictive asylum and visa policies on regular ‘unwanted’ immigration is not necessarily as successful as often praised and expected by policy-makers but rather counterbalanced by some more ‘invisible’ types of immigration which are harder to detect and measure. However, more empirical (qualitative and quantitative) evaluations are needed to substantiate the robustness of these results. Nevertheless, our finding of a sizable deflection into irregularity has considerable bearing on our understanding of asylum policy effects and effectiveness. While previous studies supported the idea that governments can claim some ‘success’ in reducing the number of asylum claims by implementing restrictive asylum and visa policies and practices, our results suggest that this conclusion is at least problematic since part of this deterrence is counterbalanced by a considerable unintended categorical deflection of migrants into irregular entry routes and residence status. This mechanism seems to be a major force in the current European refugee crisis which is to some extent the consequence of highly restrictive entry policies which generates a ‘market’ for an industry which facilitates irregular migration processes.

The growing global demand for protection and prosperity resulting in continuously rising migration volumes portray the efforts of European and other Western

governments to curtail unwanted asylum and irregular migration as seemingly unsuccessful. It is often ignored that the most important drivers of international migration processes are largely beyond immediate control of immigration states such as the structural demand for low-skilled workers, international wealth inequalities, or conflicts in origin countries, in combination with self-sustaining migrant network dynamics, which are major reasons for the deflection effects discussed in this article. We argue that migration policies which intend to work *against* these structural migration drivers are bound to fail, which is why effective migration policies are to be designed with a long-term perspective. Finally, we might assume that the categorical deflection dynamic discussed in this article is more relevant in the absence or limited availability of alternative destinations such as in the US–Mexico case, while in contexts where ‘destination substitutes’ are available such as in Europe, a spatial deflection dynamic of shifting unwanted migrants to other destinations might even be more relevant. An appropriate test of this spatial versus categorical deflection dynamic is left for future research.

### **Declaration of conflicting interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

### **Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### **Notes**

1. This is not to say that other forms of substitution are not relevant to study. Asylum-induced family migration is, for example, an interesting example of a combined categorical and temporal substitution dynamic. As the costs of travel increase, families might decide that only a single person will travel to the destination country and, once protection is granted, seek to reunite with partner and/or children via the family migration route. The same applies to potential spatial substitution effects: even if we would find no evidence of categorical substitution in our empirical analysis, this result should be interpreted carefully given the likely existence of spatial substitution dynamics. Conversely, if evidence is found in support of categorical deflection, this strongly supports the hypothesis in light of other substitution dynamics possibly also at work.
2. This interruption of migration circulation (‘reverse flow substitution’) as a consequence of tightened visa policy regime is also found in other contexts (Czaika and de Haas, 2015).
3. We assume that persons have uniform valuation and risk profiles. That is, we assume that given the same institutional, economic and policy environment, individuals seeking to achieve the same goal will act in a similar way. However, most decision-making processes are probably more complex than this figure may suggest. This is a simplifying model which conceptualizes the interrelatedness of territorial (asylum) and extra-territorial (visa) policies and respective migration options. Obviously, this model does not capture other potential scenarios such as multiple attempts (and failures) of entering the country, or voluntary/forced return.

4. An anonymous referee pointed to the fact that visa policies and practices often reflect a certain dyad-specific (bilateral) dynamics, both in terms of commonalities such as shared language, culture, currency, etc., and potential animosities including political and economic rivalry or membership in competing international alliances (see e.g. Avdan 2013; Neumayer 2006).
5. Since we estimate each of our models only with one policy variable at a time, we slightly over-identify our model by using both instruments simultaneously, which may increase the precision of the estimates.
6. The index is scaled between  $\pm 4$  (major policy change towards more/less restrictiveness) and  $\pm 1$  (fine-tuning policy change towards more/less immigration restrictiveness (see de Haas et al., 2014)). We have standardised this policy index by adjusting annual policy changes in years after 2007 (observation period) by the average policy change during 2000 and 2007. Although it may not perfectly capture absolute levels of restrictiveness across destination countries, it does generate a measure that allows for cross-country comparisons in immigration policy changes between 2008 and 2011.
7. We also considered indices from Freedom House (2012) on political rights and civil liberties, respectively, as alternative measures for the politico-institutional environment in the destination country, yet due to limited variation across our 29 destination countries, we decided to drop these indicators and to use only WGI.
8. Note that destination countries' population size is included in our measure of policing.

## References

- Avdan N (2013) Controlling access to territory: Economic interdependence, transnational terrorism, and visa policies. *Journal of Conflict Resolution* 58(4): 592–624.
- Barthel F and Neumayer E (2015) Spatial dependence in asylum migration. *Journal of Ethnic and Migration Studies* 41(7): 1131–1151.
- Beine M, Bertoli S and Fernandez-Huertas Moraga J (2015) A practitioners' guide to gravity models of international migration. *The World Economy*. Epub before print 9 March 2015. DOI: 10.1111/twec.12265.
- Beine M, Docquier F and Ozden C (2011) Diasporas. *Journal of Development Economics* 95(1): 30–41.
- Bertoli S, Fernandez-Huertas Moraga J and Ortega F (2013) Crossing the border: Self-selection, earnings and individual migration decisions. *Journal of Development Economics* 101(1): 75–91.
- Bhagwati J (2003) Borders beyond control. *Foreign Affairs* 82: 98–104. ((January/February).
- Bonjour S (2011) The power and morals of policy makers: Reassessing the control gap debate. *International Migration Review* 45(1): 89–122.
- Brochmann G and Hammar T (eds) (1999) *Mechanisms of Immigration Control*. Oxford/New York: Berg.
- Broeders D and Engbersen G (2007) The fight against illegal migration: Identification policies and immigrants' counterstrategies. *American Behavioral Scientist* 50(12): 1592–1609.
- Buehn A and Schneider F (2012) Shadow economies around the world: Novel insights, accepted knowledge, and new estimates. *International Tax and Public Finance* 19(1): 139–171.
- Carling J (2002) Migration in the age of involuntary immobility: Theoretical reflections and Cape Verdean experiences. *Journal of Ethnic and Migration Studies* 28(1): 5–42.

- Castles S (2004) Why migration policies fail. *Ethnic and Racial Studies* 27(2): 205–227.
- CEPII (2012) GeoDist database. Available at: <http://www.cepii.fr/CEPII/> (accessed May 2013).
- Cornelius WA (2005) Controlling ‘Unwanted’ immigration: Lessons from the United States, 1993–2004. *Journal of Ethnic and Migration Studies* 31(4): 775–794.
- Cornelius WA and Salehyan I (2007) Does border enforcement deter unauthorized immigration? The case of Mexican migration to the United States of America. *Regulation & Governance* 1: 139–153.
- Cornelius WA, Tsuda T, Martin PL, et al. (2004) *Controlling Immigration: A Global Perspective*. Stanford, CA: Stanford University Press.
- Czaika M and de Haas H (2013) The effectiveness of immigration policies. *Population and Development Review* 39: 487–508.
- Czaika M and de Haas H (2015) The effect of visas on migration processes. *International Migration Review* (forthcoming).
- de Haas H (2011) *The determinants of international migration*. DEMIG Working paper no. 2. Oxford: International Migration Institute. Available at: <http://www.ilo.org/dyn/migpractic/docs/225/Determinants.pdf> (accessed 5 February 2016).
- de Haas H, Natter K and Vezzoli S (2014) Growing restrictiveness or changing selection? *The nature and evolution of migration policies*. IMI working paper No. 96, International Migration Institute, Oxford.
- Düvell F (2005) *Illegal Immigration in Europe. Beyond Control?* Houndmills: Palgrave/Macmillan.
- Eurostat (2012a) *Eurostat Database: Third Country Nationals Refused Entry at the External Borders – Annual Data (rounded) (migr\_eirfs) & Third Country Nationals Found to be Illegally Present – Annual Data (rounded) (migr\_eipre)*. Brussels: Eurostat. Available at: <http://epp.eurostat.ec.europa.eu/> (accessed July 2013).
- Eurostat (2012b) *Eurostat Database: Police Officers (crim\_plce)*. Brussels: Eurostat. Available at: <http://appsso.eurostat.ec.europa.eu/> (accessed July 2013).
- Eurostat (2014) Incoming transfers by submitting country and type of ‘Dublin’ request. Total/total number of request. Available at: [http://ec.europa.eu/eurostat/statistics-explained/index.php/Main\\_Page](http://ec.europa.eu/eurostat/statistics-explained/index.php/Main_Page) (accessed July 2013).
- Filindra A (2012) The myth of self-deportation: How behavioral economics reveals the fallacies behind “Attrition through Enforcement”. Policy Report. Immigration Policy Center, American Immigration Council, Washington, DC.
- Finotelli C and Sciortino G (2013) Through the gates of the fortress: European visa policies and the limits of immigration control. *Perspectives on European Politics and Society* 14(1): 80–101.
- Freedom House (2012) *Freedom in the World 2011*. Washington, DC: Freedom House. Available at: <https://freedomhouse.org/report-types/freedom-world> (accessed July 2013).
- Gammeltoft-Hansen T (2011) *Access to Asylum: International Refugee Law and the Globalisation of Migration Control*. Cambridge, UK: Cambridge University Press.
- Geddes A (2003) *The Politics of Migration and Immigration in Europe*. London: Sage.
- Hatton T (2004) Seeking asylum in Europe. *Economic Policy* 19(38): 5–62.
- Hatton T (2005) European asylum policy. *National Institute Economic Review* 194(1): 106–119.
- Hatton T (2009) The rise and fall of asylum: What happened and why? *The Economic Journal* 119(535): 183–213.
- Hatton T (2011) *Seeking Asylum. Trends and Policies in the OECD*. London: Centre for Economic Policy Research (CEPR).

- Hobolth M (2012) *Border control cooperation in the European Union: The Schengen visa policy in practice*. PhD Thesis, London School of Economics, UK.
- Hobolth M (2014) Researching mobility barriers: The European visa database. *Journal of Ethnic and Migration Studies* 40(3): 424–435.
- Holzer T, Schneider G and Widmer T (2000) The impact of legislative deterrence measures on the number of asylum applications in Switzerland (1986–1995). *International Migration Review* 34: 1182–1216.
- Huysmans J (2006) *The Politics of Insecurity: Fear, Migration, and Asylum in the EU*. Abingdon/New York: Routledge.
- Kaufmann D, Kraay A and Mastruzzi M (2010) *The worldwide governance indicators: Methodology and analytical issues*. World Bank Policy Research Working Paper No. 5430. Washington, DC: World Bank.
- Keogh G (2013) Modelling asylum migration pull-force factors in the EU-15. *The Economic and Social Review* 44(3): 371–399.
- Koser K (2000) Asylum policies, trafficking and vulnerability. *International Migration* 38(3): 91–111. (Special Issue 2000/1).
- Kraler A and Reichel D (2011) Measuring irregular migration and population flows – What available data can tell. *International Migration* 49: 97–128.
- Massey D and Pren K (2012) Unintended consequences of US immigration policy: Explaining the post-1965 surge from Latin America. *Population and Development Review* 38(1): 1–29.
- Mayda AM (2010) International migration: A panel data analysis of the determinants of bilateral flows. *Journal of Population Economics* 23: 1249–1274.
- Neumayer E (2004) Asylum destination choice: What makes some west European countries more attractive than others? *European Union Politics* 5(2): 155–180.
- Neumayer E (2005) Bogus refugees? The determinants of asylum migration to western Europe. *International Studies Quarterly* 49: 389–409.
- Neumayer E (2006) Unequal access to foreign spaces: How states use visa restrictions to regulate mobility in a globalized world. *Transactions of the Institute of British Geographers* 31(1): 72–84.
- Ortega F and Peri G (2013) The effect of income and immigration policies on international migration. *Migration Studies* 1: 47–74.
- Santos Silva JMC and Teneyro S (2006) The log of gravity. *Review of Economics and Statistics* 88(4): 641–658.
- Santos Silva JMC and Teneyro S (2011) Further simulation evidence on the performance of the Poisson pseudo-maximum likelihood estimator. *Economics Letters* 112(2): 220–222.
- Sherman AJ (1973) *Island Refuge: Britain and Refugees from the Third Reich, 1933–1939*. Berkeley: University of California Press.
- Thielemann E (2006) The effectiveness of governments' attempts to control unwanted migration. In: Parsons C and Smeeding TM (eds) *Immigration and the Transformation of Europe*. Cambridge: Cambridge University Press, pp. 444–474.
- Toshkov D (2014) The dynamic relationship between asylum applications and recognition rates in Europe (1987–2010). *European Union Politics* 15(2): 192–214.
- UNHCR (2012) *UNHCR Statistical Online Population Database: Asylum Seekers*. Geneva: United Nations High Commissioner for Refugees. Available from: <http://www.unhcr.org/pages/4a013eb06.html> (accessed July 2013).
- Watson SD (2009) *The Securitization of Humanitarian Migration: Digging Moats and Sinking boats*. London/New York: Routledge.