Asylum Recognition Rates in Europe: Policies and Performance

By

Timothy J. Hatton

(University of Essex)

July 2022

ABSTRACT

A minority of applicants for asylum in Europe gain some form of recognition as refugees, and this has been a controversial issue. From the early 2000s, the EU introduced a series of directives to prevent a race to the bottom in asylum policies and to harmonise policy between destination countries, but the results have not been fully assessed. In this paper I examine the determinants of recognition rates for asylum applicants from 65 origin countries to 20 European destinations from 2003 to 2017. The outcomes of the EU directives have been mixed, but taken together they are associated with increased recognition rates. These made a modest contribution to the trend increase in recognition rates, most of which is due to increased political terror and human rights repression in origin countries. But differences between European countries remain large, even after accounting for origin-country composition and for differences in the adoption of EU directives. Some of this may be accounted for by differences in bureaucratic frameworks through which policy is administered.

Keywords: Refugees, Asylum, Recognition rates.
JEL codes: F51, J15, J61, K37

Author affiliation
Tim Hatton
Department of Economics, University of Essex
Colchester CO4 3SQ, UK
Email: hatton@essex.ac.uk

Acknowledgements: I am grateful to participants at a workshop on refugee migration at Queen Mary University London, March 2019 for their comments and to the editor and three anonymous referees for their guidance. Special thanks go to Lucas Guichard for permission to use data from his PhD thesis.

1. Introduction

In the last two decades Europe has witnessed the arrival of mounting numbers of people seeking refuge from persecution and applying for recognition as refugees. With the exception of the crisis years 2015-16, more than half of asylum claims lodged in Europe have been rejected. Individual countries have faced political pressures to reduce the inflows by imposing strict rules. Since the early 2000s the European Union has been developing a Common European Asylum System (CEAS), most prominently in the form of a series of directives, which were subsequently transposed into national legislation. The two most important directives relate to the criteria for granting refugee status and to the procedures used in assessing asylum claims. These aimed to protect the rights of refugees and also to harmonise policy across European countries in order to mitigate the so-called asylum lottery. In the presence of other influences on recognition rates, such as the increase in the spread and intensity of persecution in origin countries, it remains unclear how far these goals have been achieved.

I focus on the transposition and implementation at the national level of the Qualification Directive (2004) and the Procedures Directive (2005) and their recast versions of 2011 and 2013 respectively. These are examined using a panel of recognition rates for 20 European destination countries of applicants from 65 origin countries over the years relevant to the policy reforms, 2003 to 2017. Exploiting the differential timing of the implementation of these directives I find that recognition rates are negatively associated with implementation of the Qualification Directive, but positively associated with its recast version. In contrast, the associations are positive for the implementation of the Procedures Directive, but negative for its recast version. The same pattern emerges when using different methods of controlling for violence, persecution and human rights abuse in origin countries and when controlling for other policy-related variables in destination countries. These mixed results differ somewhat from those implied by the qualitative literature, but taken together, the net effect of the directives is positive.

Contrary to prevailing impressions, average recognition rates have been increasing, and not only in the migration crisis of 2015-16. The evidence suggests that this was mainly due to increased political terror and deteriorating civil rights in origin countries. But policy reforms introduced by the EU directives also contributed to the upward trend despite pressures to impose ever more restrictive policies. However, there remain large differences in recognition

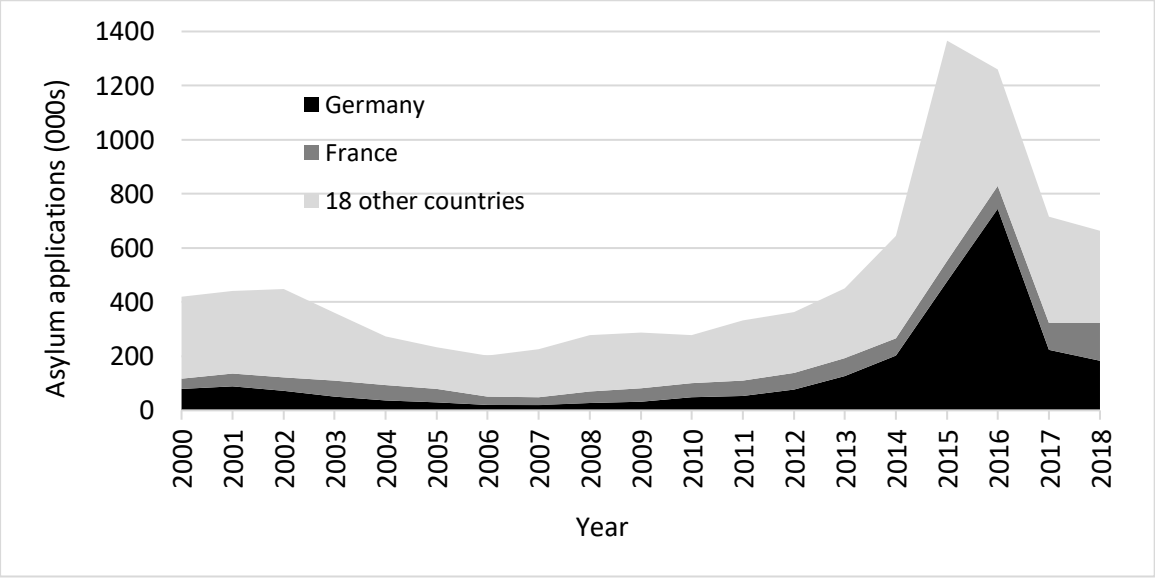
rates between destination countries. Even after accounting for differences in the implementation of directives and the origin-country composition of asylum applications, there has been little convergence. The evidence suggests that these persistent differences, sometimes characterised as an 'asylum lottery', are influenced in part by the diversity of administrative arrangements through which policy is delivered. This in turn supports the argument for a Europe-wide integrated asylum system.

The rest of the paper proceeds as follows. In the following sections I outline the trends in, and composition of, asylum applications and recognition rates and provide an outline of policy developments with a focus on EU directives. A summary of previous research findings is followed by a discussion of estimation and data issues. The next sections focus on conditions in origin countries, the influence of EU directives, contributions to trends over time and differences between destination countries. The results are summarised in a short conclusion.

2. Background

2.1 Asylum Trends

Figure 1: Asylum applications to European countries, 2000-2018

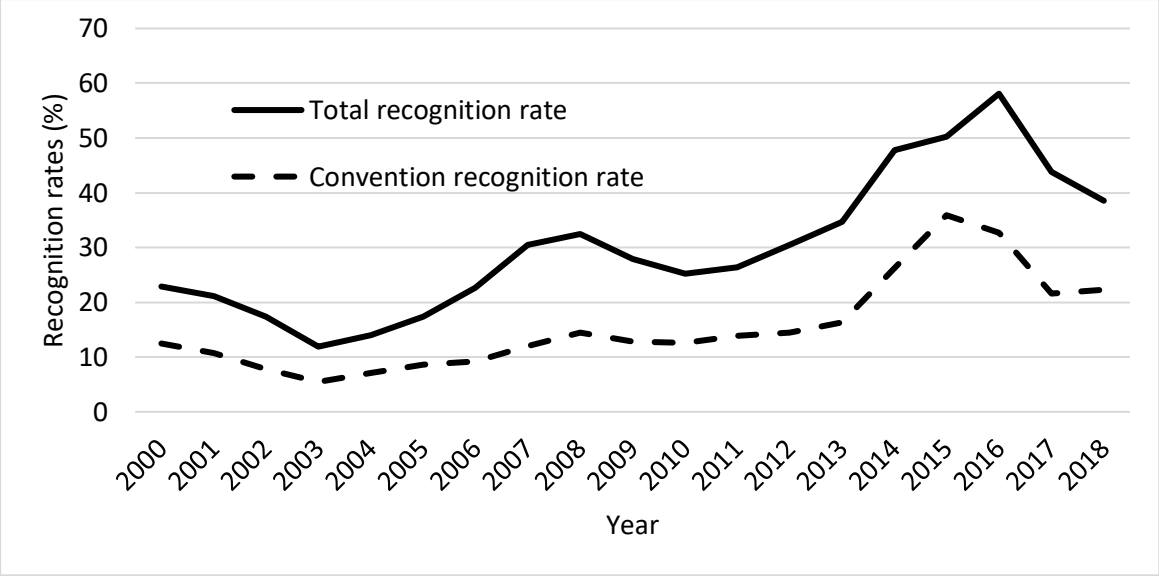


Sources: Eurostat database, 'Asylum and first-time asylum applicants'. The 20 destination countries are: Austria, Belgium, Czech Rep., Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and the UK.

Over the last two decades Europe has witnessed a sustained flow of applications for asylum. These applications were submitted in the destination country or at the border by individuals who arrived on their own initiative rather than through organised resettlement programmes.

Figure 1 shows the annual flow of asylum applications to 20 European countries that account for nearly 90 percent of all applications in Europe from 2000 to 2018. The number declined from over 400,000 per annum in the aftermath of the Kosovo crisis in the late 1990s to a little over 200,000 in the second half of the 2000s, partly as a result of tougher asylum policies in destination countries (Hatton, 2009). But from 2011 there was a steady rise in the numbers, which increased steeply to over 1.2 million in the migration crisis of 2015-16 before decreasing to around half a million.[1] Over the 19 years, Germany was the largest recipient, with 27.2 percent of all applications, followed by France (12.3%), the UK (9.0%), Sweden (8.0%) and Italy (7.7%). But applications per capita were highest in Sweden, followed by Austria, Luxembourg and Switzerland.

Figure 2: Asylum Recognition Rate for 20 European Countries, 2000-2018



Note: This is the overall recognition rate (not the average of country rates) for 20 countries: Austria, Belgium, Czech Rep., Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and the UK.
Sources: Eurostat database, 'First instance decisions on asylum applications by type of decision." Missing values for some of the earlier country/years are filled in from UNHCR *Statistical Yearbook* 2005, Tables C13 and C14 and UNHCR *Global Trends* 2006 to 2008.

Figure 2 shows, for the same 20 countries from 2000 to 2018, the percentage of decisions on asylum claims where the applicant was recognised as in need of some form of protection. The solid line is the total recognition rate, which includes all forms of recognition, while the dashed line includes only those that received full refugee status (recognition under the 1951

[1] For broader analysis of asylum trends and policies up to and including the crisis, see Dustmann et al. (2017) and Hatton (2017; 2020). The resulting political polarisation in Germany is studied by Tomberg et al. (2021).

Refugee Convention).[2] These are 'first instance' recognition rates, which exclude decisions resulting from appeals, administrative reviews or repeat applications.[3] Except for the crisis years 2015 and 2016, less than half of the decisions resulted in some form of recognition in the first instance.

A striking feature of the figure is the strong upward trend in both convention and total recognition rates from the early 2000s. The total recognition rate increased from 11.9 percent in 2003 to 38.5 percent in 2018, while the convention recognition rate increased from 5.5 to 22.3 percent over the same years. It seems likely that the spread of civil wars and the growing intensity of human rights abuse accounts for much of the upward trend. Although the crisis years stand out, recognition rates had been rising on trend even before the events that followed the 2011 Arab Spring, and they remained historically high even after the immediate crisis years. On the other hand, it is also possible that changes in the policies and procedures of individual governments, and above all of the EU's Common European Asylum System (CEAS), shifted decisions in favour of asylum applicants. Yet, so far there has been no assessment of the way in which these forces have played out.

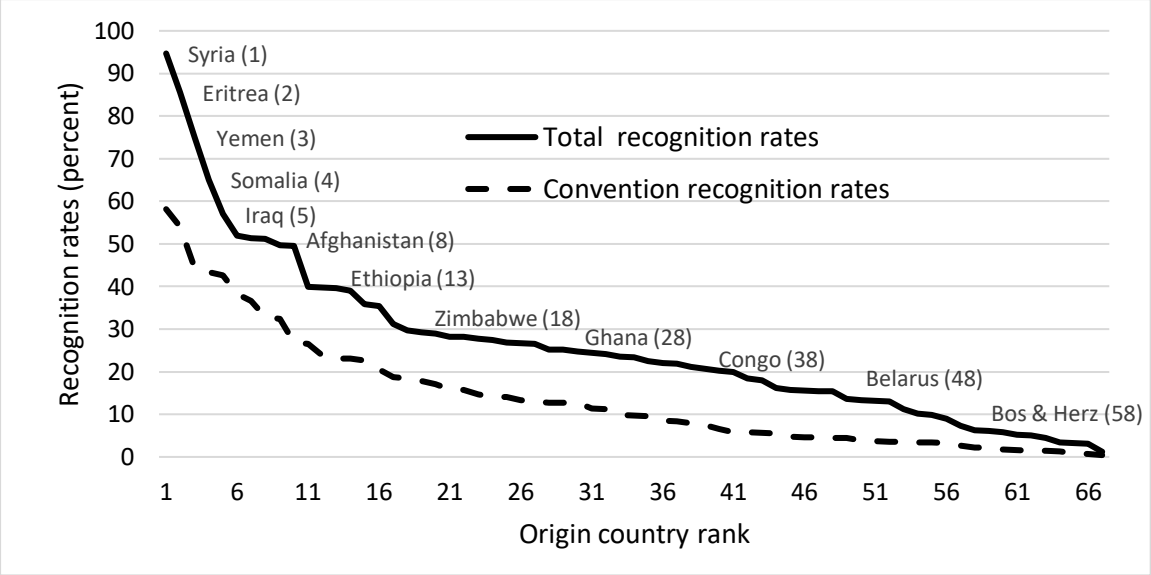
Recognition rates vary widely between origin countries, as might be expected due to different risks of persecution. Figure 3 shows overall recognition rates ranked for 67 origin countries over the 20 destinations during the years 2008 to 2018. Not surprisingly, the highest total recognition rates are for asylum applicants from Syria (94.7), Eritrea (85.6), Yemen (74.9), Somalia (65.0) and Iraq (57.0). While 10 origin countries have total recognition rates of over 40 percent, 13 have rates of less than 10 percent, even though at times they have been sources of persecution. The highest convention recognition rates are 58.1 percent for Eritreans and 54.0 percent for Syrians while 35 origin countries have rates of less than 10

[2] Convention refugees are those judged to have a "well-founded fear of persecution" and this normally confers permanent settlement and a route to citizenship. Those not qualifying for convention recognition may nevertheless be accorded subsidiary protection or humanitarian protection, either because they face forms of persecution not recognized by the Convention, because they are deemed to be vulnerable, or because return is not possible, for example because of civil war. ECRE (2017) provides details on how the rights conferred differ between convention status and subsidiary protection and how their application varies across European countries.

[3] Total recognition rates would be higher, on average by around 7 percentage points, if successful appeals and reviews were taken into account. This figure is calculated by dividing the total number of successful 'final decisions' recorded by Eurostat by the number of first instance decisions for the 20 countries over the years from 2008 to 2017.

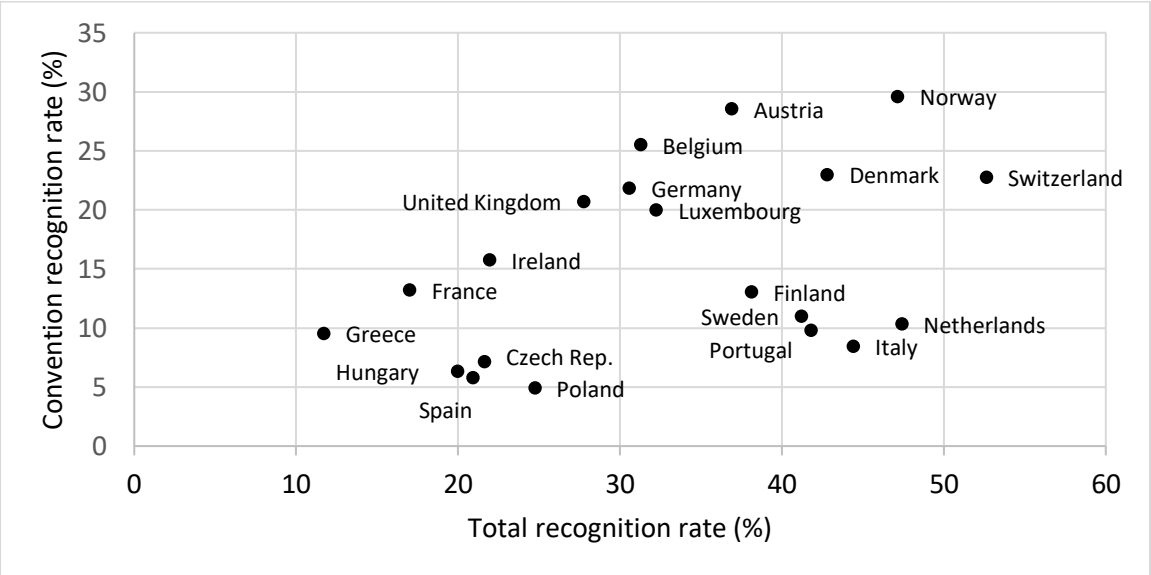
percent. Not surprisingly, there is a strong positive rank correlation (0.83) between total and convention recognition rates.

Figure 3: Recognition rates for 2008-2018 ranked by origin country



Notes: Recognition rates by origin country over the whole period 2008 to 2018 defined as number recognised/total decisions. Country ranking differs between total and convention recognition rates. The numbers in parentheses are the individual country ranking.
Source: Eurostat database, 'First instance decisions on asylum applications by type of decision."

Figure 4: Annual average recognition rates 2003-2018 by destination country



Notes: Average annual recognition rates defined as recognised/total decisions.
Sources: Eurostat database, 'First instance decisions on asylum applications by type of decision,' Missing values for some of the earlier country/years are filled in from UNHCR *Statistical Yearbook* 2005, Tables C13 and C14 and UNHCR *Global Trends* 2006 to 2008.

Another key feature of recognition rates is how widely they differ between different European countries. For the 20 destination countries over the years 2003 to 2018, Figure 4 shows the average annual convention recognition rates on the vertical axis and average annual total recognition rates on the horizontal axis. While seven of the countries have average total recognition rates of over 40 percent, another seven have rates of less than 25 percent. Convention recognition rates also vary widely, even though one might expect that there would be less room for discretion in applying the Convention definition, and much of this may be accounted for by origin country composition.

2.2 European Asylum Policy

From the 1980s, European countries individually introduced reforms that included tighter border controls, stricter reception conditions and above all tougher refugee status determination procedures (Hatton, 2004, 2009). The CEAS was initiated in 1999 with the objectives of harmonising policies across member states, fostering cooperation, and stemming what some feared might be a race to the bottom in restrictive policies.

The CEAS took the form of two rounds of directives, which provided common definitions and standards to be used in the status determination process. Two of the key directives were the Asylum Qualification Directive of 2004 and the Asylum Procedures Directive of 2005.[4] The Qualification Directive aimed to harmonise the criteria for granting asylum. Under the name of Subsidiary Protection, it strengthened protection for those who did not qualify under the Convention. In particular, it provided for protection from threat of violence arising from armed conflict. It also offered scope for adopting rules and definitions that were more restrictive than the pre-existing praxis for humanitarian protection. The Procedures Directive introduced minimum standards to be applied in the process of refugee status determination. It covered a range of procedural rules, including a personal interview, access to legal representation and translation, as well as regulating accelerated procedures and claims where applicants originated from a 'safe country of origin' or had travelled through a 'safe

[4] Other important provisions were the Reception Conditions Directive (2003) covering asylum seeker welfare conditions such as housing, education and health, a revised Dublin Regulation (2003) determining the state responsible for examining an asylum application, and the EURODAC Regulation (2003) establishing a database of applicants' fingerprints. The introduction of the Reception Conditions Directive has been used by Fasani et al. (2021) as an instrument for policy change in a study of the effect of changes in the waiting period for labour market access on subsequent refugee employment.

third country' where they could have applied for asylum. This was originally restricted to decisions on full refugee status but was subsequently applied more widely.

These directives aimed to harmonise asylum policies that had previously been under the independent jurisdiction of individual countries and to make them fairer and more efficient. As these were externally imposed, their provisions narrowed the scope for national governments to respond to local pressures or to engage in strategic interactions.[5] The directives were transposed into national legislation according to set deadlines, which were two years from the issue of the directive, and they were closely monitored by the European Commission with potential referral to the European Court of Justice for non-compliance.[6] In general, these directives were binding in the sense that they raised standards beyond the existing status quo (Zaun, 2016). But transposition often worked slowly through political systems and there were further lags before the legislation came into force. The implementation dates (listed in Appendix Table A2.4) range from 2004 to 2010 for the Qualification Directive and from 2006 to 2011 for the Procedures Directive. Within the EU, Denmark (not bound by the directives) did not opt in, and of the associated countries, Norway adopted parallel legislation while Switzerland did not.

The directives were seen by some observers as an effort to raise standards and avert a race to the bottom in asylum policies, and in that spirit they set minimum standards. But the guidelines did not cover every aspect of the process and, at the draft stage, the Procedures Directive was widely criticized by refugee advocates as being insufficiently ambitious and even inviting a lowering of standards.[7] These criticisms led to a second round of EU legislation which took the form of 'recast' directives. The recast Qualification Directive of 2011 aimed to provide more precise definitions of circumstances and situations under which protection should be provided. It also widened the definition of family members and increased the scope for protection against gender-based persecution and persecution by non-state actors (Peers

[5] Such interactions prior to the CEAS have been discussed by Noll (2000) and Hatton (2015). Görlach and Motz (2020) provide a model of strategic behaviour among European countries during the 2015-16 migration crisis.
[6] For example, in 2010 the European Commission initiated proceedings in the European Court of Justice against Ireland and Belgium for failing to comply fully with the Procedures Directive. For both countries the grounds included failure to meet requirements on the conduct of personal interviews and to provide guarantees for unaccompanied minors as well as a number of other shortcomings that differed between the countries.
[7] In its evaluation reports, the European Commission (2010a, b) noted flaws in the application of the directives and continuing variation in recognition rates between EU countries, commenting that the existing legislation had been insufficiently far-reaching.

2012). The recast Procedures Directive of 2013 aimed at providing common standards rather than minimum standards and a faster and more efficient procedure. It focused particularly on harmonising the procedures for dealing with 'abusive' claims and vulnerable applicants (Costello and Hancox, 2015). Specific provisions included the right to a personal interview, legal representation, limits on processing time and narrowing the criteria under which a claim can be determined as inadmissible.

Both recast directives have also been criticized as providing only modest improvements, at best, in the rights of asylum seekers (Chetail, 2016; Ippolito and Velluti, 2011; Peers, 2013). Despite these successive rounds of reform, the European Commission still expressed concerns that the asylum system is something of a lottery, contrary to its stated aim that "no matter where an applicant applies, the outcome will be similar."[8] The migration crisis of 2015-16 concentrated the minds of policymakers on a further round of reforms (Beirens, 2018). These include replacing the Qualification Directive and the Procedures Directive by a genuine common regulation setting uniform standards (European Parliament, 2018). These revisions, now incorporated into the 2020 Pact on Migration and Asylum, need to be underpinned by a better understanding of how recognition rates have changed and why they have differed.

3. Estimation and data

3.1 Analysing recognition rates

A number of previous studies have analysed recognition rates in Europe using panel data, and focusing on variables representing persecution in origin countries, economic incentives and destination-country asylum policies. For the pre-CEAS years 1980 to 1999, Neumayer (2005) found that, the most significant variables were those representing autocratic government, human rights violations, interstate wars and genocide/politicide. Subsequent studies also found strong associations with persecution and weak associations with income in origin countries (Avdan, 2014; Toshkov, 2014). These studies also included political variables that are assumed to underlie asylum policies and their implementation. Both Neumayer (2005) and Toshkov (2014) found little evidence that the share of votes for right wing populist parties affected recognition rates. In contrast, Burmann et al. (2018) found that the more left-wing the government the lower the recognition rate, but only in the wake of an election.

[8] https://ec.europa.eu/home-affairs/policies/migration-and-asylum/common-european-asylum-system_en.

In contrast to such indirect influences, few studies have examined the direct effect on recognition rates of changes in actual policies or in the underlying regulatory framework. While some studies have examined the effects of a policy shift in one country (e.g. Andersson and Jutvik 2019), there is little evidence on how externally-imposed EU directives have influenced recognition rates and their distribution across countries. One exception is Brekke (2017), who found some evidence that the two key EU directives, the Qualification Directive (2004) and the Procedures Directive (2005), led to some degree of convergence in recognition rates across the EU. Here I examine the effect of these directives and their recast versions on the level of recognition rates, exploiting differences in the timing of their introduction.

In decisions on asylum applications, much depends on the credibility of the applicant and on the available evidence of the threat of persecution. Thus within a given policy regime, there is scope for differing outcomes that depend not only on the intensity of persecution in the origin country but also on the way in which the status determination procedure is implemented.[9] Thus, even in the presence of externally-imposed directives there is scope for wide differences across destination countries, even after accounting for differences in the origin-country composition (Leerkes, 2015). Some of this diversity has been attributed to differences between countries of the administrative organisation within which policy is implemented. For example, Holzer et al. (2000) found that across Swiss cantons lower recognition rates were associated with more highly centralized administrative structures. Similarly, Sicakkan (2008) found that in the 1980s and 1990s, across countries, lower recognition rates were associated with more highly centralized administration, a single procedure for all statuses, less independent judicial involvement and lower participation by NGOs. But it is unclear how far these differences have persisted and they deserve further investigation.

[9] Micro-level studies find that the likelihood of gaining recognition is higher for those with more education or higher social status and access to social networks but lower for Muslims (Montgomery and Foldspang, 2005; Kosyakova and Brücker, 2020; Emeriau, 2020). There is also evidence of differential selection of asylum seekers into different destinations (Aksoy and Poutvaara, 2021), which are not captured in aggregate data but which may also affect recognition rates. Such differences in selection are partly determined by destination country recognition rates and also by features such as processing times and the risk of repatriation (Bertoli et al., 2020).

3.2 Empirical Framework

Recognition rates are estimated using a panel of origin-by-destination dyads over time. The empirical framework is motived by the model that is set out in Appendix 1. In this model recognition rates are determined jointly by the incentives faced by potential asylum applicants in the origin country and by policymakers at the destination. Potential asylum applicants balance the risk of persecution in the origin country against the risk of failing to gain some form of legal status at the destination. Destination country policymakers seek to limit the number of asylum applications but are constrained by legal obligations, in particular those imposed by EU directives.[10] The empirical version of this model is expressed as:

$$1)\ \left[\frac{r_{od}}{1-r_{o,d}}\right]_t = \lambda_1 S_{o,t} + \lambda_2 ln\,(Y_d/Y_o)_t + \lambda_3 Z_{o,d,t} + \lambda_4 V_{d,t} + \lambda_5 X_{d,t} + \mu_o + \delta_d + \theta_t + \varepsilon_{o,d}$$

The dependent variable is the odds ratio of the recognition rate in destination *d* for applicants for asylum from origin country *o* at time *t*. $S_{o,t}$ is a set of variables that represent the threat of persecution in the origin country at time *t*; the greater the threat of persecution, the higher the recognition rate, and so $\lambda_1 > 0$. The ratio of per capita income in destination and origin, $(Y_d/Y_o)_t$, would be negatively related to the recognition rate, $\lambda_2 < 0$, if a larger income gap draws more asylum applicants who are less likely to gain recognition. $Z_{o,d,t}$ reflects the costs of migration, specifically the relative cost of entering the destination country through other entry channels. $V_{d,t}$ represents the relevant EU directives as dummy variables that switch on when implemented in the destination country. $X_{d,t}$ includes other destination-level influences on the determination of asylum claims such as public attitudes and unemployment. Also included are fixed effects (in this case dummy variables) for each origin, destination and year: μ_o, δ_d and ϑ_t respectively. In the presence of fixed effects, the variation used in estimating the coefficients on the directives is the staggered timing between countries of the implementation of a given directive and within-country staggered implementation of different directives.

[10] In the model the volume of applications and the recognition rate are simultaneously determined and so the empirical version in equation (1) is a reduced form. However, the evidence suggests that the effect of recognition rates on applications is modest (Toshkov, 2014) and it has no effect on human trafficking (Hernandez and Rudolph, 2015).

This model is estimated for total recognition rates and for convention recognition rates, but this raises two issues. One is that estimating the odds ratio presents problems when some observations take the value of either one or zero. In the dataset described below, for the total recognition rate. 3.0 percent of the observations are one and 33.5 percent are zero; for the convention recognition rate the ones and zeros are 1.3 percent and 49.2 percent respectively. I therefore use the procedure suggested by Papke and Wooldridge (1996; 2008) for estimating proportions that include limit values, which can be executed in STATA's generalised linear model (see Baum, 2008). The estimation uses a logit functional form and assumes a binomial distribution, weighting by the total number of decisions over the period within each origin/destination dyad.

The second issue arises from acknowledging that asylum seekers have a choice of destinations, so when the focus is on destination country variables, the policies of other potential destinations must be taken into account. Multilateral resistance was originally estimated in the context of international trade (Anderson and Van Wincoop 2003). Applications to migration include Ortega and Peri (2013) and Bertoli and Fernández-Huertas Moraga (2013), and are usefully surveyed in Beine et al. (2016). Multilateral resistance of this type can be taken into account with origin-by-year dummies (thus μ_o becomes $\mu_{o,t}$) under the assumption that destinations are symmetric. This captures the alternatives faced by asylum seekers from a given country at a point in time but it also absorbs all time-varying origin variables.

3.3. Data

The model is estimated on data taken from the Eurostat online database for the 20 destination countries in Figure 4 for the years 2003 to 2017. Recognition rates are calculated for each origin/destination/year as the number recognized as a share of total decisions. The origin countries are limited to those where the total number of decisions over all the destinations is more than 5000 in 2000-14 (before the migrant crisis), which leaves 65 in total.[11] And to avoid too many cases where the recognition rate is calculated from very few observations, origin-destination dyads with less than 100 decisions and individual

[11] This figure is calculated from the UNHCR database. Three relevant countries that satisfy this criterion but had to be excluded because of lack of data on other variables are Cuba, Palestine and Somalia.

observations representing less than five decisions are dropped. This produces a total of 12,268 observations on recognition rates for 882 dyads between the 65 origin countries and 20 destinations. So the average number of destinations per origin is 13.6 and the average number of origins per destination is 44.1. The total number of observations and dyads by each origin and by each destination are listed in Appendix 2.

Several different variables are used to represent the underlying determinants of the probability of persecution in countries of origin. The Political Terror Scale is a measure of human rights abuse that runs from 1 (no terror) to 5 (extreme terror). The intensity of wars (mainly civil wars) is represented by the number of battle deaths per thousand population, from the Uppsala Conflict Data Program. Also included is the Freedom House index of civil liberties, which reflects more general limitations on freedom. This runs from 1 (completely free) to 7 (freedom severely restricted). Real GDP per capita in origin countries is from the Penn World Tables. In order to allow for the exceptional conditions of the war in Syria I also include a dummy variable for asylum applicants from Syria in 2014 to 2017. This marks the period from formation of the Islamic State and the declaration of the caliphate to its demise with the loss of Mosul and Raqqa.[12]

The key variables of interest are the EU directives and their recast versions. These are included as dummy variables, which switch on six months after they came into force in each country in order to allow for the lag between the initiation of asylum cases and their outcomes. Although EU deadlines for transposition into national legislation were fixed, in practice some countries transposed the legislation early while others missed the deadlines by several years (especially in the first round).[13] The dates when the directives entered into force in each country are listed in Appendix 2, Table A2.4. As the estimating equation (1) includes fixed year effects, the coefficients on these dummy variables are estimated from differences in timing. Although the directives were externally imposed, the timing of their implementation could be endogenous to prevailing recognition rates. However, research in political science

[12] In September 2013 Sweden was the first country to grant blanket recognition to asylum claimants from Syria, which conferred permanent residency and the right to family reunification. Germany also granted refugee status to almost all Syrian applicants as the number increased steeply in 2014. Other countries eased their policies as urged by the UNHCR and in the wake of the widely publicised death of three-year-old Alan Kurdi whose body was washed up on a Turkish beach in September 2015, which shifted the rhetoric from 'migrants' to 'refugees' (see Vis and Goriunova 2015).

[13] The dates when new rules came into force often lags behind the dates when the legislation was passed.

indicates that the key variables associated with non-compliance and late transposition are mainly political and administrative. These relate to the type of legislation required and its complexity, the number of veto players in the political process, and degrees of ministerial cooperation and bureaucratic efficiency (see Toshkov, 2010 and Angelova et al., 2013 for useful surveys). Some studies find that the 'goodness of fit' with existing policies, with government positions, and with wider cultural attitudes also matter.

Implementation dates of the Qualification Directive range from 2004 to 2010 while those of the Procedures Directive range from 2006 to 2011. Figure 5a plots the dates that these directives came into force (to the month) against the average total recognition rates in 2002-4. There is very little correlation between them: 0.17 for the Qualification Directive and -0.14 for the Procedures Directive. Timing could also be related to pressure of numbers on the country's asylum system and processing backlogs (Bertoli et al., 2020). But Figure 5b illustrates that there is also very little correlation between the introduction of the directives and the number of asylum applications per 1000 population from 2002 to 2004: -0.07 and 0.07 respectively. Figure 5c compares implementation dates with the proportion of respondents in the European Social Survey for 2002 who preferred decisions on immigration and refugee policy to be taken at the international or European level. Here the correlations are -0.38 with the Qualification Directive and -0.43 with the Procedures Directive. This suggests that the timing of implementation has more to do with general attitudes towards external influences over legislation than with the recognition rate or the volume of applications. Figure 5 includes only 18 countries, excluding Denmark and Switzerland. Denmark opted out of the CEAS, while the UK and Ireland opted into the original directives but not the recast directives. Of the two non-EU states, Norway adopted key elements of the directives while Switzerland did not.

Figure 5a: Directive implementation dates and total recognition rates

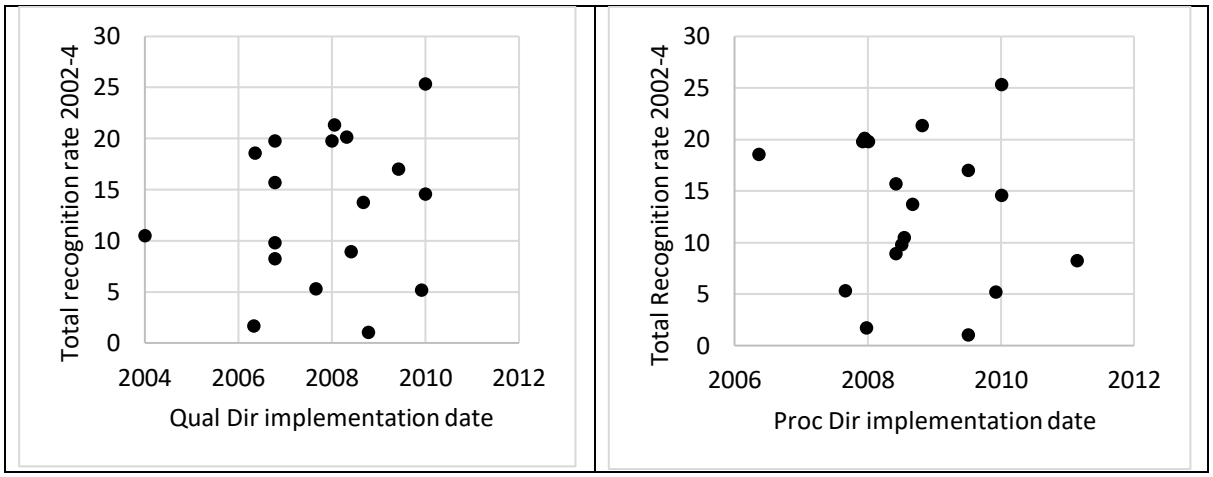


Figure 5b: Directive implementation dates and asylum applications

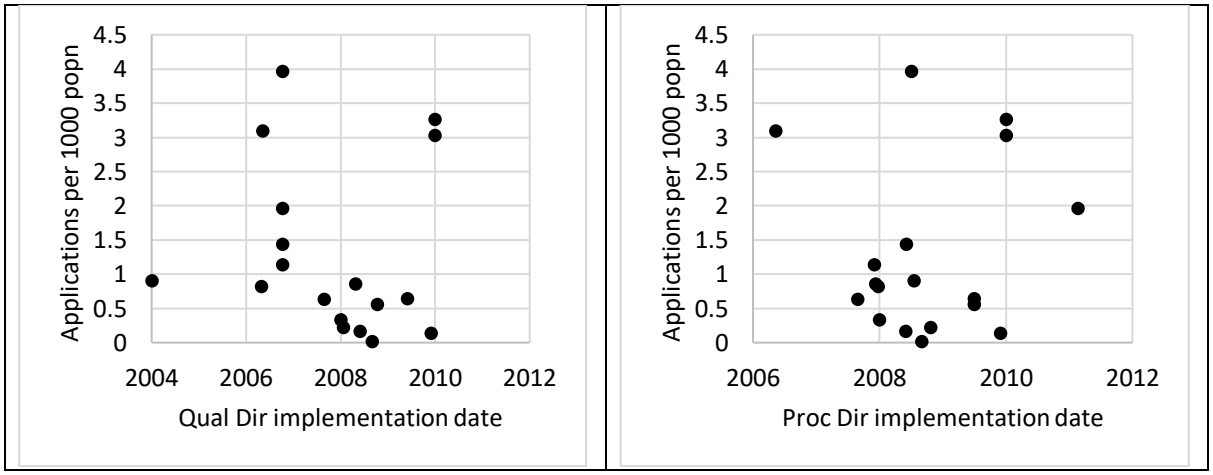
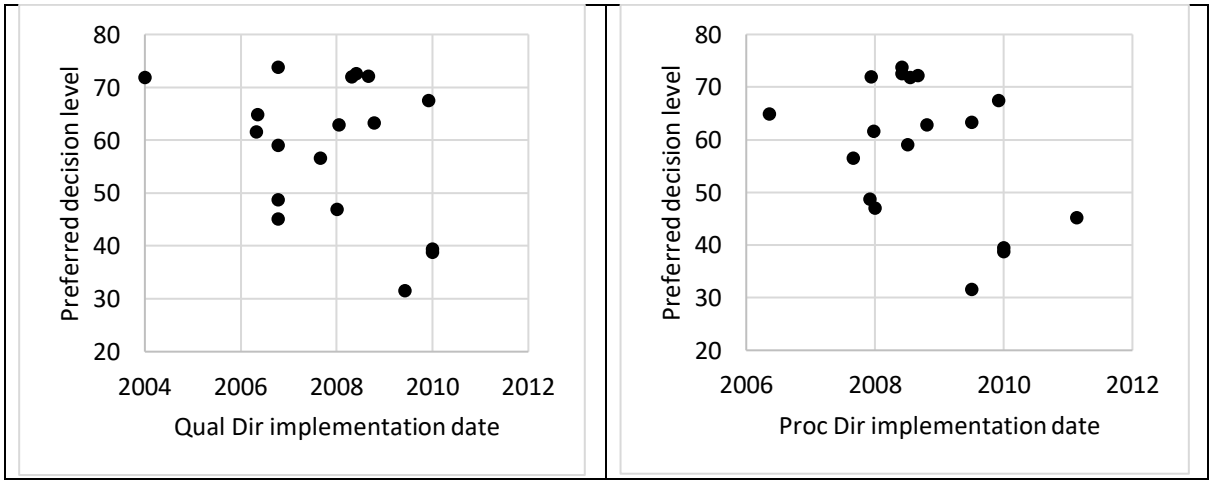


Figure 5c: Directive implementation dates and preferred decision level



Notes: Implementation is dated from when legislation embodying the directives came into force. Average applications per 1000 population for 2002-4 from Eurostat database. Preferred decision levels are the proportion of respondents in the European Social Survey of 2002 preferring decisions on immigration and asylum to be taken at the European or international level.

Three time-varying variables represent policy and enforcement at the national level. One is a measure of the designation of 'safe country of origin' status to some countries, applicants from which are assumed not to be at risk of persecution (from Guichard, 2020). Another is a measure of the restrictiveness of immigration policy derived from the Demig Policy database. More restrictive immigration policies could induce some with potentially weak claims to substitute into the asylum channel, likely reducing the recognition rate. A third is an index of public attitudes towards immigrants from poor countries, constructed from the European Social Survey, which may affect the implementation of policy (as distinct from its formal content). Finally, there are three dyad-level variables with no time variation, which are taken from the CEPII GeoDist database. Dummy variables for common language and post-1945 colonial relationships may represent the incentives for, and costs of, migration but could also reflect influences on the adjudication of asylum claims. The straight-line distance between capital cities represents the costs of migration, which could influence the selection of migrants according to the strength of their claims. The sources and construction of all these variables are detailed in Appendix 2, Table A2.1.

4. Factors influencing recognition rates

4.1 Origin-country developments

I turn first to origin country variables that reflect persecution, violence and human rights abuse. In order to assess the potential contribution of increases in the spread and intensity of persecution on the overall increase in recognition rates, Table 1 provides estimates of equation (1) for 65 origin countries and 20 destinations. They include dummy variables for origin-country, destination and year (cols (1) and (3)) or, alternatively, destination-by-year dummies (cols (2) and (4)), which absorb all destination influences. The coefficients are the marginal effects multiplied by 100, so that they can be read as percentage points of the recognition rate. As shown in Appendix Table A4.1, OLS gives similar coefficients for most of the variables. While we must be cautious in making causal inferences, the presence of origin and destination fixed effects provides some reassurance.

In columns (1) and (2) of Table 1 the total recognition rate is strongly linked to variables representing oppression and human rights abuse in origin countries, consistent with earlier studies (Neumayer, 2005; Avdan, 2014; Sicakkan, 2008). An increase of one point on the

political terror scale is associated with an increase in the total recognition rate of 4 percentage points. The number of battle deaths in wars in the origin country is strongly positive and it implies an increase in the recognition rate of about 0.9 percentage points for every combat death per thousand of the population. Restriction of civil liberties takes a positive coefficient and implies that one point on the scale is associated with an increase of 7 percentage points in the recognition rate. This is consistent with the idea that lack of civil liberties is closely associated with human rights abuse. Finally, the dummy for Syrian applicants is highly significant and indicates a massive increase in their recognition rates, of more than 30 percentage points from 2014 onwards.

Table 1: Estimation of recognition rates (marginal effects × 100)

	Total recognition rate		Convention recognition rate	
	(1)	(2)	(3)	(4)
Political terror scale	4.53**	4.00***	0.83	0.63
	(1.81)	(1.03)	(0.68)	(0.44)
Battle deaths per thousand	0.94***	0.94***	0.05	0.02
	(0.18)	(0.12)	(0.05)	(0.03)
Civil liberties index	6.75***	7.13***	3.16**	3.12**
	(1.83)	(1.79)	(1.29)	(1.08)
Dummy (=1) for Syrians, 2014-17	34.50***	33.66***	11.29**	10.38***
	(4.03)	(4.20)	(3.79)	(3.13)
Log GDP ratio per capita (destination to origin)	4.51	8.20***	1.35	2.32*
	(3.82)	(2.66)	(2.57)	(1.40)
Former colony (=1)	10.18**	10.41**	2.14	1.98
	(4.31)	(4.33)	(1.97)	(1.84)
Common language (=1)	-2.40	-2.30	3.64*	3.54*
	(3.22)	(3.23)	(2.08)	(1.98)
Log distance between capitals	5.38	5.35	3.62	3.65
	(3.48)	(3.54)	(2.99)	(2.76)
Origin dummies	Yes	Yes	Yes	Yes
Destination dummies	Yes	No	Yes	No
Year dummies	Yes	No	Yes	No
Destination × year dummies	No	Yes	No	Yes
Destination/origin dyads	822	822	822	822
Observations	12268	12268	12268	12268

Notes: Marginal effects in percentage points from glm estimates of the odds ratio of the recognition rate using the logit link function and binomial distribution, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *.

Destination to origin GDP per capita, entered as the log ratio, produces a positive coefficient, contrary to what might be expected from equation (1), but is only significant in the presence

of destination-by-year dummies.[14] This may reflect the fact that potential applicants from the poorest countries are constrained by poverty from leaving except under the most extreme persecution. It could be that migrants from poor backgrounds but with weaker claims are more likely to bypass the asylum system or alternatively that higher destination income per capita is linked with more pro-refugee asylum systems. A former colonial link gives a positive coefficient, which could reflect better prior knowledge among applicants from former colonies as a result of denser networks or that applicants from former colonies are more favoured in the status determination procedure. Sharing a common language with the destination is insignificant, perhaps due offsetting effects. While it might aid applicants in making a case for asylum, it could also attract applicants with weaker claims. The log of distance between capitals is also insignificant, providing no evidence that the costs and risks involved in travelling greater distances filters out those with the weakest claims.

Turning to the convention recognition rate in columns (3) and (4), both the political terror scale and battle deaths per thousand give much smaller coefficients. The insignificant coefficients on battle deaths reflects the fact that the escape from war is not *per se* a condition for recognition under the 1951 Refugee Convention. But restriction of civil liberties gives significant positive coefficients as might be expected. The dummy for Syrians is also positive and significant, reflecting the fact that the Syrian exodus generated a substantial deviation from pre-existing policy. A former colonial link and a common language both give positive coefficients but neither is significant, nor is the log of distance. Overall these results indicate that the criteria for convention recognition are more constrained than for recognition as a whole.

4.2 EU directives and asylum policy

The results of including dummy variables for EU directives are reported in Table 2. Columns (1) and (5) include all the origin-country and bilateral variables that appeared in Table 1, while all the other columns include the full set of origin-by-year dummies, which absorb all the time-varying origin variables. This also controls for changes in unobserved heterogeneity within origin countries (see Micevska 2021). And as noted earlier, it also helps to control for

[14] In the presence of destination-by-year dummies the over-time variation comes only from origin-country GDP per capita.

multilateral resistance. This could be particularly important where other destination countries were undertaking similar policy changes at around the same time.

For the total recognition rates, the marginal effects in columns (1) and (2) give mixed results. The Qualification Directive gives significant negative coefficients amounting to a 6-7 percentage point decline in the recognition rate. This suggests that transposition of this directive provided an opportunity to apply more restrictive rules, specifically for those not qualifying under the Convention. Thus, subsidiary protection displaced preexisting categories of protection based on humanitarian grounds, and reduced overall non-convention protection. In contrast, the Procedures Directive is associated with a larger, positive and more significant coefficient, which is surprising in the light of the criticisms made by NGOs noted above. This may reflect improved access to legal advice, translators etc., which better enabled applicants to make their case, especially where the criteria for protection are less clearly circumscribed. The recast directives take opposite signs to those on the original directives. The positive coefficient on the dummy for the recast Qualification Directive is consistent with further expanding the criteria for protection, while the negative coefficient for the recast Procedures Directive is consistent with the increased emphasis on dealing with abusive claims leading to the 'culture of disbelief' noted by some observers (Costello and Hancox, 2015).

For the convention recognition rate in columns (5) and (6) the coefficients on the Qualification Directive are insignificantly positive, and the recast version is associated with an increase in the recognition rate of around 5 percentage points. In contrast, the Procedures Directive has a strong positive coefficient which is outweighed by the negative coefficient on the recast version. It is worth noting also that when origin country variables (columns (1) and (5)) are replaced by origin-by-year dummies (columns (2) and (6)), in an otherwise unchanged specification the coefficients have the same signs and are broadly similar in magnitude and significance. This indicates that controlling for multilateral resistance has relatively modest effects.

Table 2: Recognition rates, directives and destination variables (marginal effects × 100)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Total recognition rate				Convention recognition rate			
Qualification Directive (=1)	-5.88***	-7.02***	-7.39***	-8.31***	0.69	0.19	0.07	-0.39
	(2.29)	(2.38)	(2.42)	(2.49)	(1.34)	(1.29)	(1.28)	(1.30)
Procedures Directive (=1)	13.73***	15.90***	15.32***	15.90***	3.63**	4.81***	4.39***	4.36***
	(3.40)	(2.72)	(2.73)	(3.02)	(1.74)	(1.53)	(1.55)	(1.57)
Recast Qualification Directive (=1)	5.09	8.42***	7.97***	4.85**	5.35**	4.61***	4.24**	3.73**
	(3.38)	(2.58)	(2.55)	(2.10)	(2.38)	(1.74)	(1.72)	(1.61)
Recast Procedures Directive (=1)	-7.30*	-8.00***	-7.95***	-7.28***	-8.37***	-6.03***	-5.86***	-5.35***
	(3.93)	(2.45)	(2.49)	(2.73)	(3.12)	(1.80)	(1.77)	(1.93)
Qualification Directive × Battle deaths (000s)			0.54***	0.48***			0.13	0.12
			(0.16)	(0.15)			(0.09)	(0.09)
Safe country of origin (=1)			5.22	4.82			2.11	2.02
			(6.62)	(7.03)			(3.56)	(3.65)
Safe country of origin in other destinations (number)			-2.98	-3.44			-3.00	-3.13
			(5.51)	(5.78)			(3.37)	(0.91)
Public attitudes against immigrants from poor countries				-0.31***				-0.14**
				(0.12)				(2.41)
Immigration policy index				-0.50**				-0.05
				(0.25)				(0.38)
Unemployment rate				0.02				0.15
				(0.34)				(1.03)
Origin dummies	Yes	No	No	No	Yes	No	No	No
Destination dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	No	No	No	Yes	No	No	No
Origin × year dummies	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Destination/origin dyads	822	822	822	822	822	822	822	822
Observations	12268	12268	12268	12268	12268	12268	12268	12268

Notes: Marginal effects in percentage points from glm estimates of the odds ratio of the recognition rate using the logit link function and binomial distribution, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *. Regressions in columns (1) and (5) include all origin-country and bilateral variables that appear in Table 1; the other columns absorb all time-varying origin effects with origin-by-year dummies.

It is possible that the coefficients on EU directives could be conflated with other policy and policy-related variables. Likely candidates are included in columns (3), (4), (5) and (6), where the specifications all include origin-by-year dummies. The original Qualification Directive encompassed the threat of violence arising from armed conflict as a qualification for subsidiary protection. This is represented by the interaction of the Qualification Directive dummy with the number of combat deaths in the origin country (in 000s). In addition, some European countries singled out safe countries of origin (SCO), in which no threat of persecution was assumed and so expedited procedures could be applied. These are represented by origin-destination dummies which switch on in the year following the introduction of the policy. Such policies adopted in other destinations could have deflected asylum applicants to the country, potentially affecting its recognition rates (Guichard 2020). This is captured by a dummy variable for the number of other countries having designated the origin as a safe country.

The coefficient on the interaction between the Qualification Directive and battle deaths in the origin country is positive and significant for the total recognition rate (columns (3) and (4)) but not for recognition under the convention (columns (7) and (8)). This is consistent with the inclusion of armed violence as a qualification for subsidiary protection (and not for convention recognition). The coefficient on designating an origin country as SCO is small and insignificant. On the one hand it may have discouraged those with weaker claims, which would increase the recognition rate, but on the other hand it may signal tougher policies towards applicants from that origin, which would reduce it. And while the larger negative coefficient on the number of other countries that adopted SCO suggests some deflection of those with weaker claims, it falls short of significance.

Columns (4) and (8) of Table 2 include three national-level variables, which could be correlated with the implementation of directives. One is the prevailing public attitude towards immigration in the destination country, which could condition the way in which policy is executed. This is constructed from the responses to a question in the European Social Survey (ESS) about allowing immigration from poor countries outside Europe. It is the percentage answering ‘a few’ or ‘none’ from possible responses: many/some/a few/none, and is lagged by one year. The second is an index of immigration policy to capture the possibility of entry through alternative immigration channels. Changes in the restrictiveness

of policy are constructed from the Demig Policy Database as explained in Appendix 2, where higher values represent more restrictive policy. Third, the destination country unemployment rate could be a background influence on the way policy is conducted although it could also influence the self-selection of asylum applicants.

For both the total recognition rate and the convention recognition rate, the coefficients on public attitudes take negative and significant coefficients, suggesting an association between tougher implementation of asylum policy and negative public sentiment towards immigrants. The negative coefficient on the immigration policy index supports the view that, as immigration policy becomes more restrictive, some migrants with relatively weak claims switch to the asylum channel, consistent with evidence on the determinants of asylum applications (Hatton, 2017, p. 462). However, the coefficient is only marginally significant for the total recognition rate (column (4)) and insignificant for the convention recognition rate (column (8)), suggesting that the employment channel is not seen as an alternative for those with stronger claims. Finally, there is little evidence that recognition rates are associated with the unemployment rate in the destination country.

These results could be sensitive to the method used and the selection of data. Appendix Table A4.2 indicates that OLS results (otherwise comparable with columns (1), (2), (5) and (6) of Table 2) diverge by enough to suggest that this would not be an appropriate simplification. Narrowing the criteria for inclusion in the dataset by increasing the minimum number of decisions per dyad or per observation has little effect on the results (Tables A4.3, A4.4 and A4.5). While opposite signs on the original and recast versions may raise concerns, excluding the recast versions from Table 2 makes little difference to the coefficients on the original directives (Table A4.6). Finally, the coefficients also could be sensitive to the inclusion of specific destination countries. When each country is dropped in turn, the signs of the coefficients on the original directives are largely unchanged but their magnitudes vary (Table A4.7). This could create a bias that depends on the correlation between the heterogeneity of effect sizes and their timing within the sample period (Goodman-Bacon, 2021) and this is discussed further in Appendix 4.

5. Trends and differences between countries

5.1 Trends over time

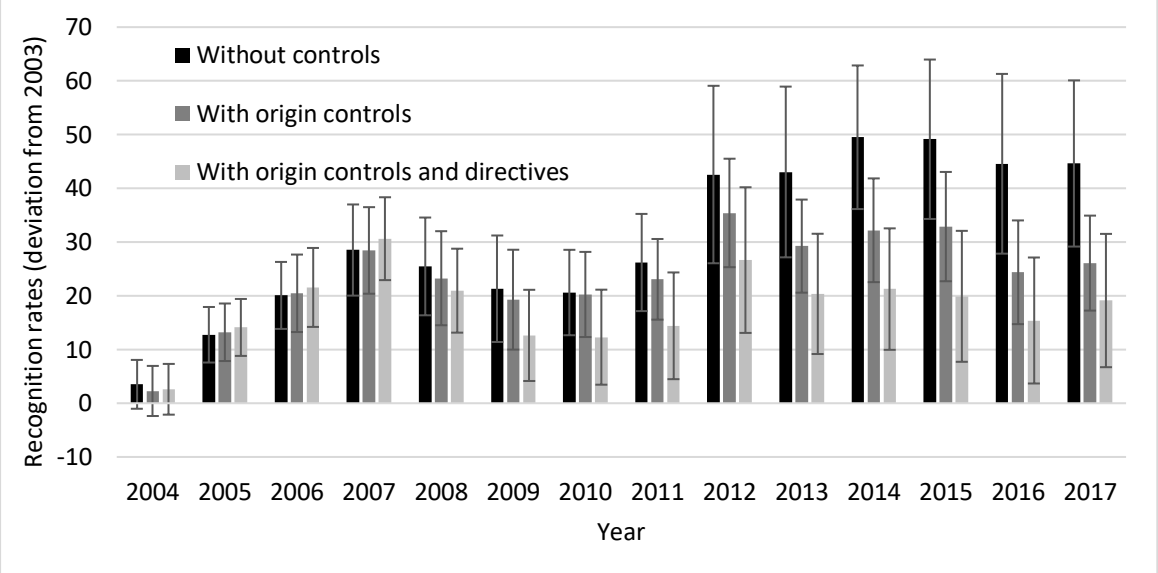
As observed in Figure 2 there is a strong upward trend in average recognition rates from the early 2000s, which coincides with increased EU policy activism and also with increases in the spread and intensity of persecution in origin countries. The charts for six individual destinations and the timing of the directives are presented in Appendix 2 Figure A2.1. In order to evaluate these contributions, it is useful to compare the evolution over time of average recognition rates with and without origin country controls. In Figure 6 the first bar (and associated confidence interval) for every year is the marginal year effect from regressions (not shown) which include only the three bilateral variables and dummies for origin, destination and year. The second bar shows the year effects from columns (1) and (3) of Table 1, when time varying measures of persecution are also included. And the third bar is from columns (1) and (5) of Table 2 where both origin variables and directives are included. The whiskers represent the 95% confidence intervals.

For the total recognition rate (Figure 6a) the height of bars without controls increases in the first three years and then more strongly from 2011. When origin country variables are netted out the pattern diverges slightly from 2007 and then the gap opens up more widely after 2010. By 2016 the year effect is reduced by more than half, indicating that a substantial part of the increase in total recognition rates was associated with the increased spread and intensity of persecution in origin countries following the 2011 Arab Spring. When the variables representing EU directives are also netted out there is further divergence, which emerges after 2008, although the confidence intervals overlap. By 2016 the height of bar is reduced by more than a third compared with the case with only origin-country controls. Although the contributions of different directives are mixed, overall they served to increase the average total recognition rate.

A similar pattern is observed in for the convention recognition rates in Figure 6b, but on a more modest scale. The gap between the year effects with and without origin country controls opens up after 2013, and by 2016 the year effect is reduced by a quarter. As with the total recognition rate, when the directives are accounted for, a gap opens up after 2007. And by 2016 the height of the bar is reduced by more than a third when compared with that including only origin-country controls. Perhaps it is not surprising that much of the rise in both convention and total recognition rates after 2010 is associated with the rise in conflict and human rights abuse. But, taken together, the CEAS directives also made a contribution to the

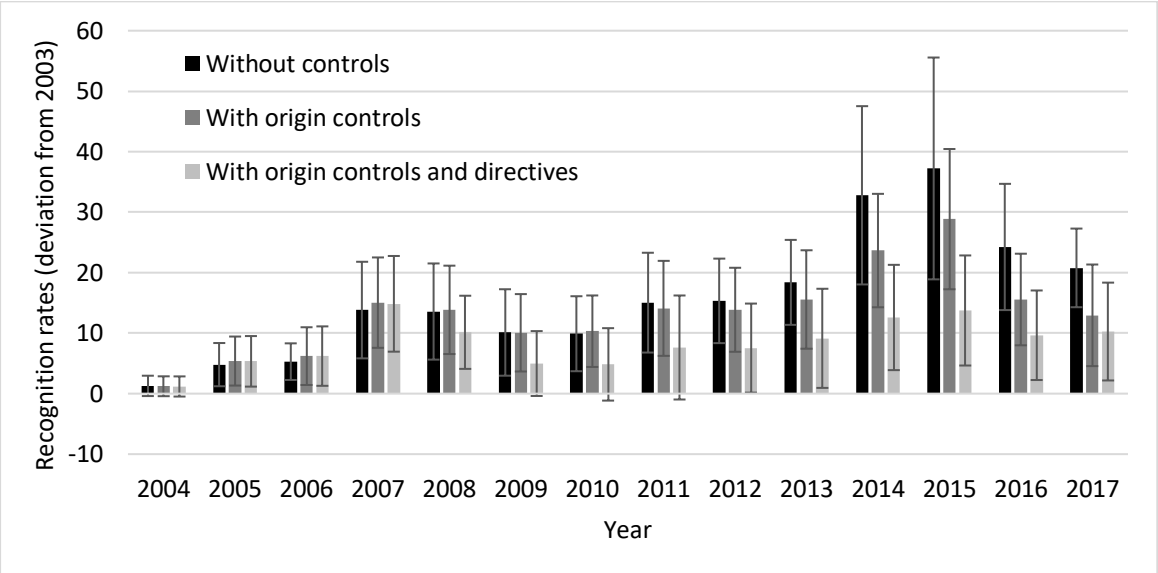
rise in recognition rates, which if added to the rise in persecution, can account for much of the upward trend since the mid-2000s.

Figure 6a: Estimated marginal year effects for the total recognition rate, 2003 = 0



Notes: Bars without controls are the estimated marginal effects of year dummies for the total recognition rate from regressions that include only bilateral variables and dummies for destination country, origin country and year. Bars with origin controls are the estimated marginal effects of year dummies for the total recognition rate from the regression in column (1) of Table 1. Bars with origin controls and directives are the estimated marginal effects of year dummies for the total recognition rate from the regression in column (1) of Table 2.

Figure 6b: Estimated marginal year effects for the convention recognition rate, 2003 = 0



Notes: Bars without controls are the estimated marginal effects of year dummies for the total recognition rate from regressions that include only bilateral variables and dummies for destination country, origin country and year. Bars with origin controls are the estimated marginal effects of year dummies for the total recognition rate from the regression in column (3) of Table 1. Bars with origin controls and directives are the estimated marginal effects of year dummies for the total recognition rate from the regression in column (5) of Table 2.

5.2 Differences between destination countries

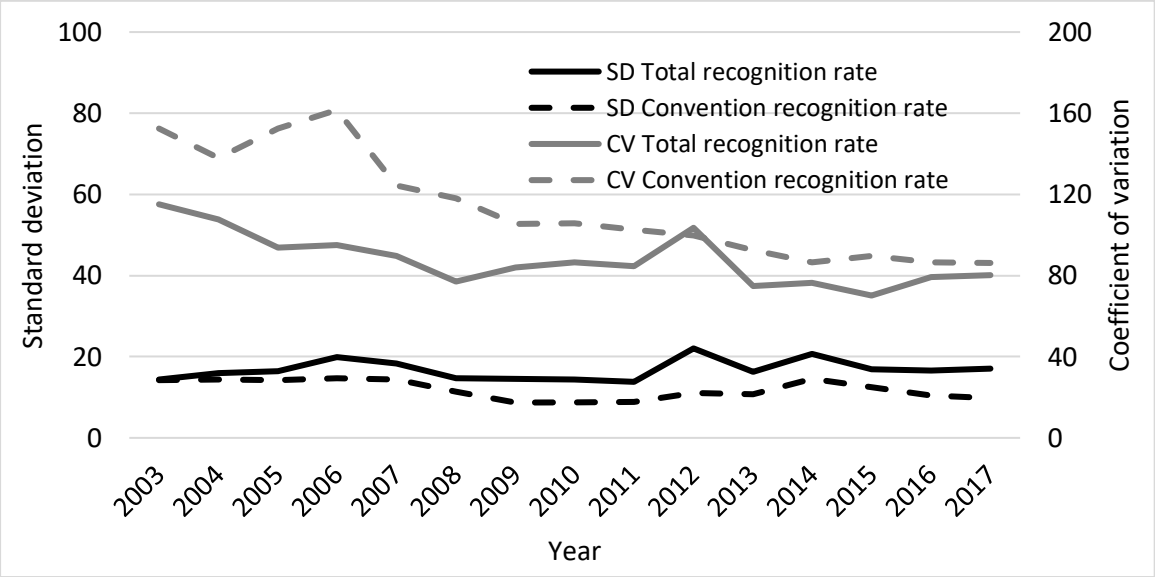
The wide variation in recognition rates across European countries has been an ongoing concern, both within the EU and among NGOs, and the EU's explicit aim has been to narrow these differences. However, comparison across destinations of overall recognition rates is affected by differences and changes over time in the origin-country composition. Figure 7 shows two measures of dispersion between 8 destinations for each year averaged over 16 origin countries. Narrowing the number of destinations and origins is necessary in order to ensure a positive number of decisions for each origin/destination dyad and year (a balanced panel) so that the trends are not influenced by year-to-year changes in the representation of origin or destination countries. The 8 EU countries are Austria, Belgium, France, Germany, Italy, Netherlands, Sweden and the UK, and the origin countries (listed in the note to the figure) are among those that have consistently produced applicants for asylum in most European countries.

As Figure 7 shows, there is essentially no trend in the standard deviation of total recognition rates and a slight reduction in that for convention recognition rates. But while the absolute measure of dispersion has changed only marginally, relative dispersion, as represented by the coefficient of variation, shows a strong downward trend. Among these destinations and origins (which do not include Syria) the average recognition rate approximately doubled so that the coefficient of variation fell by about half. So the fall in relative dispersion is almost entirely accounted for by the rise in the means of recognition rates. Asylum policies in general, and EU directives in particular, seem to have reduced relative dispersion only to the extent that they contributed to the increase in average recognition rates.

It is nevertheless possible that the key directives led to some convergence, even if this is not clearly visible in Figure 7. Here the focus is on the original versions of the Qualification Directive (2004) and the Procedures Directive (2005). It is possible that these had heterogeneous effects, not least because of differences across countries in preexisting national policies. If so then countries with relatively low recognition rates before the first round of directives should have experienced larger increases in their recognition rates. This is captured by the interaction between the dummy for the introduction of a directive and the preexisting recognition rate. The latter is reflected by the overall average recognition rate in 2002-4, the years immediately preceding the implementation of the first round of directives

(as illustrated in Figure 5). A significant negative coefficient on the interaction term would be evidence of convergence.

Figure 7: Standard deviation and coefficient of variation of recognition rates across 8 destination countries: averaged over 16 origin countries



Note: For each of 16 origin countries, the dispersion of total recognition rates across 8 destination countries is calculated for each year. The graphs are the averages over the 16 origins of each dispersion measure for each year. The 8 destinations are: Austria, Belgium, France, Germany, Italy, the Netherlands, Sweden and the UK. The 16 origin countries are: Afghanistan, Albania, Cameroon, Côte d'Ivoire, Eritrea, Georgia, Ghana, India, Iran, Iraq, Nigeria, Pakistan, Russia, Sudan, Turkey and Ukraine. The number of destinations and origins is restricted to these countries in order create a balanced panel and avoid missing cases and zero decisions for any destination/origin/year. The underlying data include all the available recognition rates, even where the number of decisions per destination/year is less than 100.

Columns (1) and (3) of Table 3 include only the original directives while columns (2) and (4) include additional controls. For the total recognition rate the coefficients on the interaction terms are negative but not significant at the conventional level, suggesting very weak convergence at best. For the convention recognition rate the policy dummies are interacted with the overall average convention recognition rate for 2002-4. The interactions give negative signs which are significant only for the Procedures Directive. This is consistent with the slight decline in dispersion of convention recognition rates observed in Figure 7 and it suggests a modest degree of harmonization in asylum procedures.

Table 3: Recognition rates and directives with interactions (marginal effects × 100)

	(1)	(2)	(3)	(4)
	Total recognition rate		Convention recognition rate	
Qualification Directive (=1)	4.36	1.08	-1.00	-3.26
	(7.11)	(6.89)	(2.78)	(2.88)
Procedures Directive (=1)	17.15***	17.09***	10.61***	12.76***
	(6.08)	(6.27)	(2.88)	(2.89)
Recast Qualification Directive (=1)		5.12**		6.37***
		(2.04)		(1.55)
Recast Procedures Directive (=1)		-7.34***		-6.42***
		(2.60)		(1.88)
Qualification Directive × Battle deaths (000s	0.55***	0.51***	0.15*	0.11
	(0.15)	(0.15)	(0.09)	(0.09)
Qualification Directive × recognition rate in 2002-04	-0.81*	-0.67	-0.37	-0.35
	(0.45)	(0.44)	(0.30)	(0.31)
Procedures Directive × recognition rate in 2002-04	-0.25	-0.18	-0.76***	-0.96***
	(0.38)	(0.41)	(0.25)	(0.25)
Public attitudes against immigrants from poor countries		-0.22*		-0.12**
		(0.13)		(0.06)
Immigration policy index		-0.06		0.27**
		(0.24)		(0.14)
Destination dummies	Yes	Yes	Yes	Yes
Origin × year dummies	Yes	Yes	Yes	Yes
Observations	12365	12365	12365	12365

Notes: Marginal effects in percentage points from glm estimates of the odds ratio of the recognition rate using the logit link function and binomial distribution, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *.

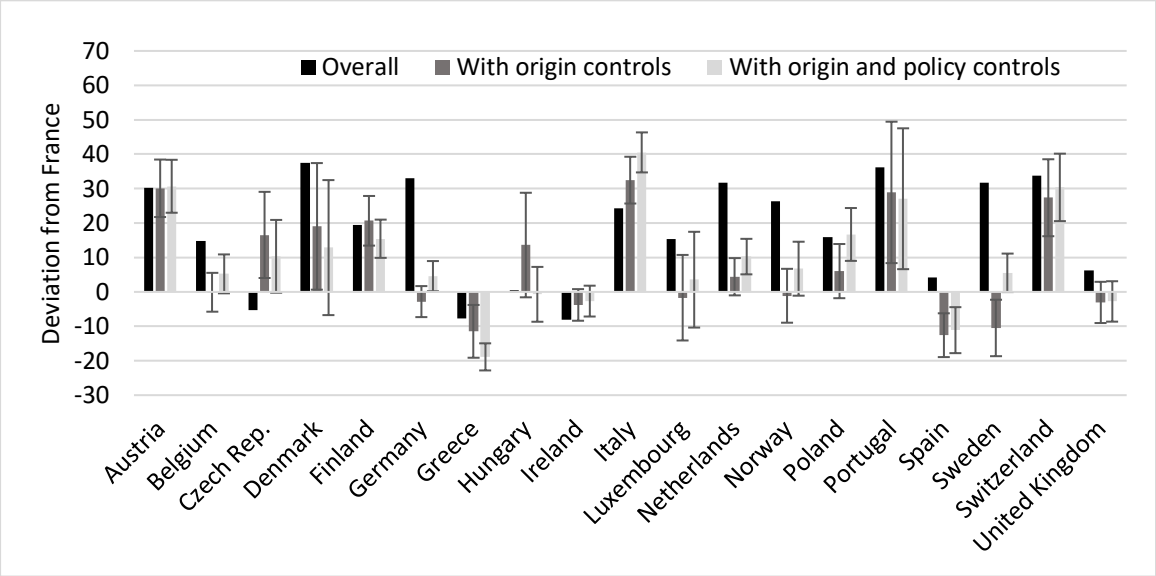
The measures of dispersion in Figure 7 cover a limited number of countries and take no account of variations in overall recognition rates that may be due to differences in origin-country composition (Leerkes 2015) or to differences in policies and the way in which they are applied. Average differences between destination countries are compared in Figure 8 for three different measures. These are constructed as deviations from France, which is taken as the base because it includes the largest number of origin countries (64) and total observations (949). The first bar for each country is the overall recognition rate obtained by taking, for each destination, the ratio of the number recognised to total decisions in the dataset used for estimation over the whole period from 2003 to 2017. This incorporates both differences in origin-country composition and differences in recognition rates for a given country (as deviations from France). The second bar is for destination recognition rates controlling for all origin country variables. This is derived from the estimated marginal country effects from

regressions (not shown) which include origin-by-year dummies and the three bilateral variables, colonial links, common language and distance. The third bar, which includes adjustment for origin-by-year and policy controls, is the marginal country effects derived from the regressions similar to those in columns (4) and (8) of Table 2 but excluding the insignificant SCO policies and the unemployment rate. The whiskers are the 95 percent confidence intervals.

For the overall total recognition rate in Figure 8a the height of the bars varies widely, as illustrated in Figure 4. The bars with origin controls also vary widely but there are large deviations between these and the overall recognition rates. Some countries with relatively high overall recognition rates (relative to France) look much tougher when adjusted for origin-country composition. These include Belgium, Germany, Luxembourg, the Netherlands, Norway and Sweden. But adjusting for origin-by-year effects does little to reduce the cross country dispersion: the standard deviation of the origin-adjusted recognition rates (including France = 0) is 14.7 compared with 15.7 for the overall rates. When controls for policy are also included, the bars differ only slightly from the rates adjusted for origin only and the standard deviation decreases very slightly to 14.6.

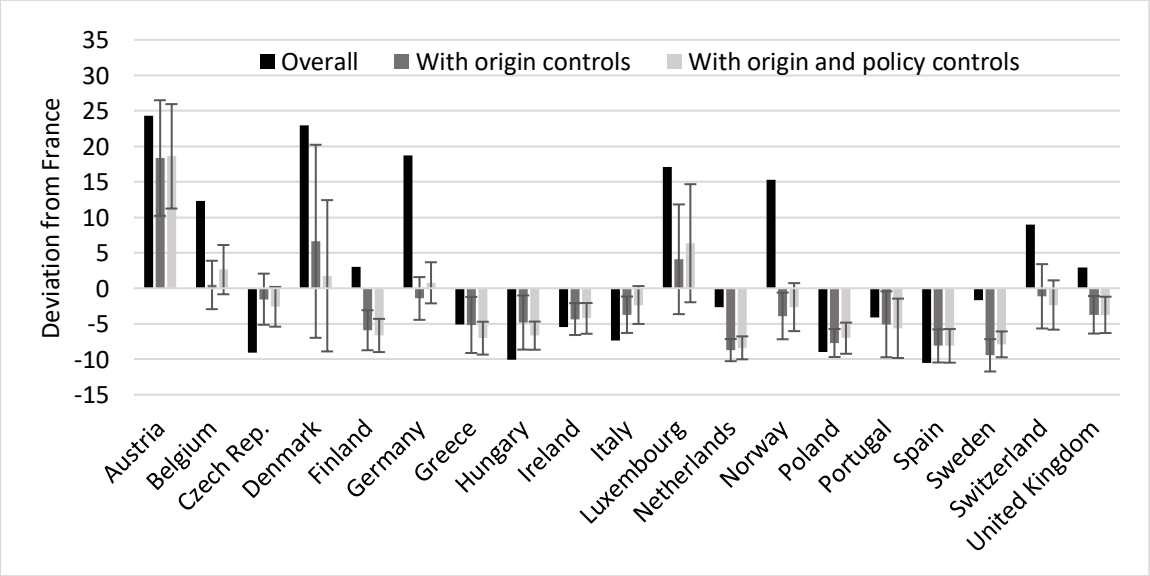
The convention recognition rates in Figure 8b follow a somewhat different pattern. High overall convention recognition rates (relative to France) in Denmark, Germany, Luxembourg, Norway and Switzerland are substantially reduced when controlling for origin composition. As a result, the standard deviation of origin-adjusted rates across countries (6.5) is much lower than for the overall rates (11.6). Recognition rates adjusted for origin and policy are similar to those adjusted for origin alone and the standard deviation is the same at 6.5. These results suggest, first, that the origin country composition of asylum applicants matters for recognition rates, although it reduces the dispersion only for convention recognition. Second, differences in policy-related variables do little to alter the origin-adjusted pattern of recognition rates across destination countries.

Figure 8a: Estimated marginal country effects for total recognition rates: overall, with controls for origin and for both origin and policy (as deviations from France)



Note: Overall bars are the total recognised divided by total decisions for each destination in the estimating dataset. Bars with origin controls are the estimated marginal effects of destination country dummies from a regression that includes only bilateral variables and origin-year dummies. Bars with origin and policy controls are marginal effects of destination dummies from a regression similar to column (4) of Table 2. The height of each bar is the percentage point deviation from France and the whiskers are the 95% confidence intervals.

Figure 8b: Estimated marginal country effects for convention recognition rates: overall, with controls for origin and for both origin and policy (as deviations from France)



Note: Overall bars are the convention recognised divided by total decisions for each destination in the estimating dataset. Bars with origin controls are the estimated marginal effects of destination country dummies from a regression that includes only bilateral variables and origin-year dummies. Bars with origin and policy controls are marginal effects of destination dummies from a regression similar to column (8) of Table 2. The height of each bar is the percentage point deviation from France and the whiskers are the 95% confidence intervals.

5.3 Exploring administrative structures

Because asylum policies are administered by national authorities the bureaucratic frameworks differ widely and this may contribute to the dispersion of recognition rates. A report by the European Council of Refugees and Exiles commented that:

> Asylum systems, comprising of rules, procedures, and the necessary administrative resources to put them to practice, very often shift from substantive protection enquiries to distribution-related ones; focus is placed on "where" rather than "who" gets protection. These questions hinge around concepts such as responsibility, safety and admissibility, which underlie Europe's asylum systems as an additional procedural layer, preceding the assessment of asylum seekers' international protection needs (ECRE, 2016, p. 6).

These differences are documented in the country reports of the Asylum Information Database (AIDA). Some key characteristics of administrative systems and practices used in 15 EU countries, for 2013 or the closest available year are listed in Appendix 3. One key element is whether there are border procedures, admissibility procedures or accelerated procedures, which are separate from the regular procedure for refugee status determination. These vary among the 15 countries: 11 have separate border procedures while four do not; nine have separate admissibility procedures while six do not; and 11 have separate accelerated procedures while four do not. Within these bureaucratic frameworks there are also procedural differences, such as whether there is a personal interview and whether or not the asylum applicant has the right to legal advice and representation. In some countries there are specific time limits for lodging an asylum application and there are differing provisions for the involvement of representatives of the UNHCR or other NGOs at the border or in detention centres.

The links between recognition rates and bureaucratic frameworks and procedures are examined for the 15 destination countries that are included in the AIDA country reports for the nearest year to 2013, which precedes the migration crisis, but by which time the key EU directives were largely in place. As this is a cross section for a single year over 15 destinations, only a limited number of variables can be included and the results cannot be interpreted as causal effects but only as suggestive associations. The regressions in Table 4 include only origin dummies, which absorb all origin-country effects, and variables representing administrative/procedural differences across the 15 destinations. Although these regressions are for the 2013 cross-section, similar results were found for 2012 and 2014.

Table 4: Recognition rates and asylum administration in 2013 (marginal effects × 100)

	(1)	(2)	(3)	(4)
	Total recognition rate		Convention recognition rate	
Separate border procedure (=1)	-22.30***	-18.05***	-5.13***	-3.00*
	(8.13)	(2.93)	(1.51)	(1.69)
Separate admissibility procedure (=1)	13.36	-7.07	8.09***	-2.82
	(8.44)	(11.34)	(2.48)	(5.12)
Separate accelerated procedure (=1)	-22.66***	-23.99***	7.59***	6.90***
	(6.83)	(4.18)	(1.12)	(1.89)
Time limit to lodge asylum claim (=1)	11.10**	13.22***	8.67***	7.45
	(4.64)	(5.14)	(1.74)	(4.72)
Legal advice and representation at first instance (=1)	-5.61		-4.27**	
	(7.42)		(2.12)	
Procedure to identify vulnerable groups (=1)	-7.21		-2.61	
	(6.05)		(2.39)	
Access to UNHCR or other NGO at border or in detention (=1)	10.76*		4.90*	
	(6.48)		(2.88)	
Safe country of origin used in practice (=1)		11.65		21.81***
		(8.84)		(4.99)
Safe third country used in practice (=1)		20.92**		9.91**
		(10.34)		(4.55)
Public attitudes against immigrants from poor countries		-0.56***		-0.02
		(0.10)		(0.07)
Origin dummies	Yes	Yes	Yes	Yes
Observations	684	684	684	684

Notes: Marginal effects in percentage points from glm estimates of the odds ratio of the recognition rate using the logit link function and binomial distribution, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *.

The first two regressions include four key elements of the bureaucratic framework and three aspects of procedure. In columns (1) and (2) the existence of a separate border procedure has a strong negative association with the total recognition rate. This may reflect an agency problem: as a separate authority the border police have less regard for the administrative burden imposed on those responsible for the status determination procedure. It suggests that a separate border agency imposes a weaker filter, which results in more cases that are likely to result in rejection proceeding to the full status determination procedure. In contrast, there is no significant association with having a separate admissibility procedure. The dummy variable for a separate accelerated procedure is negatively correlated with the total recognition rate. Accelerated procedures are associated with the designation of some claims as 'manifestly unfounded', based on a preliminary examination. As might be expected, a

separate initial examination invalidates many claims, which significantly reduces the total recognition rate. In addition, there is a positive association between the existence of a fixed time limit between arrival and application, which if exceeded, invalidates an asylum claim. A possible interpretation is that those arriving with the sole intention of gaining refugee protection apply immediately whereas those who delay might have arrived with other motives and, had they applied, would more likely be rejected.

The coefficients on three variables representing procedures in column (1) are weaker. The coefficients on legal advice and representation (available and free = 1) are negative but not significant. That may seem surprising but it may imply a that more legalistic process does not necessarily favour asylum seekers. Similarly, the coefficients on separate procedures for vulnerable groups (= 1) are also negative but not significant. On the other hand, access to advice from humanitarian NGOs at the initial stage of application (= 1) gives a weak positive coefficient. In column (2) the largely insignificant procedural variables are replaced with 'safe country' and public attitude variables, which reflect policy at the national level. Designating an origin country as a SCO has a weak positive association, consistent with the result in Table 3. But a policy of rejecting applicants who have travelled through a 'safe third country' (on the grounds that they could have applied for asylum there) is positively associated with the total recognition rate. This likely reflects the deterrent effect of such a policy, discouraging those with weaker claims from onward mobility. Finally, more negative public attitudes are also associated with lower total recognition rates in the cross section. Consistent with Table 2, this suggests that the implementation of status determination procedures may be influenced by the wider public sentiment towards immigrants from poor countries.

The coefficients for convention recognition in columns (3) and (4) typically give smaller coefficients. But in contrast to the total recognition rate, separate accelerated procedures are associated with higher convention recognition rates. This would be consistent with a greater presumption of validity for claims not diverted into the accelerated procedure and the designation of those subject to accelerated procedures as 'manifestly unfounded', which reduces the total recognition rate. Separate admissibility procedures become insignificant in the presence of safe country policies with which they are linked. It is worth stressing that these results are only correlations, but they look strong enough to suggest that differences in

national administrative structures may be an important ingredient of cross-country differences in recognition rates.

6. Conclusion

Whether asylum seekers are given some form of refugee status is a contentious political issue. While asylum policies are often seen as becoming ever more restrictive, there has been a strong upward trend in recognition rates from the mid-2000s, just as the EU was developing its common asylum policy. The EU directives sought to mitigate or reverse what might otherwise be a race to the bottom among individual countries seeking to deflect asylum applicants to their neighbours. The evidence presented here indicates that while much of the increase in recognition rates is due to an increase in the spread and intensity of persecution in a range of origin countries, taken together, the EU directives appear to have made a modest contribution to the upward trend.

The European asylum system has received sustained criticism for the lack of consistency across countries in the way that decisions on refugee status determination are made, resulting in what some describe as an 'asylum lottery'. Yet over the years when the directives were implemented there is almost no downward trend the standard deviation of recognition rates across countries. But there is strong decline in the coefficient of variation. Thus, the EU directives contributed to relative convergence only insofar as they accounted for the increase in average recognition rates. And while differences in the origin-country composition affect the ranking of recognition rates across destinations, wide differences remain even after controlling for composition and for differences in asylum policy.

While causal effects remain elusive, cross sectional associations also suggest that the persistent differences that create the asylum lottery are associated with the bureaucratic structures within which the status determination process works. In particular, having separate border procedures and accelerated processing procedures is linked with lower recognition rates.

In the aftermath of the migration crisis of 2015-16 the European Commission has negotiated a comprehensive set of reforms, covering all aspects of the CEAS, which are packaged in the Pact on Migration and Asylum of September 2020. Among these are the transformation of the Qualification and Procedures Directives into Regulations, which would mean shifting from

a set of goals, which each country implements in its own way, to directly binding and precisely specified laws, without the need for transposition into national legislation. When implemented, these are likely to leave far less room for discretion at the country level, which might lead to greater convergence in recognition rates, especially when combined with other reforms.

In November 2021 the European Asylum Support Office (EASO) was replaced by the EU Agency for Asylum (EUAA), with more far-reaching powers in order to the tackle asylum lottery.[15] It aims to bring greater uniformity in standards and decision-making by providing expert training using a common curriculum and by standardising information on countries of origin. Although it has powers to monitor the process and enforce recommendations for change, the administrative framework and the decision-making process remain in the hands of the individual country. While these measures go much further than in the past, it remains to be seen how far their objectives will be achieved.

[15] The front page of the new agency's website states that: "The ultimate aim of the EUAA's work is to reach a situation where the asylum practices in all EU+ Member States are harmonised in line with EU obligations, meaning that an application of an individual in any of the EU+ Member States will always receive the same result" (https://euaa.europa.eu/about-us/what-we-do).

References

Anderson, J. E. and Van Wincoop, E. (2003), "Gravity with Gravitas: A Solution to the Border Puzzle," *American Economic Review*, 93(1), pp. 170-192.

Andersson, H. and Jutvik, K. (2019), "Do Asylum-Seekers Respond to Policy Changes? Evidence from the Swedish-Syrian Case," at: https://preprints.apsanet.org/engage/apsa/article-details/5df213a3cc45bb0019b9d84a.

Aksoy, C. G. and Poutvaara, P. (2021), "Refugees' and Irregular Migrants' Self-selection into Europe," *Journal of Development Economics*, (152), Art 102681.

Avdan, N. (2014), "Do Asylum Recognition Rates in Europe Respond to Transnational Terrorism? The Migration-security Nexus Revisited," *European Union Politics*, 15(4), pp. 445–471.

Baum, C. F. (2008), "Stata Tip 63: Modeling Proportions," *Stata Journal,* 8 (2), pp. 299–303.

Beine, M., Bertoli, S. and Fernández-Huertas Moraga, J. (2016), "A Practitioners' Guide to Gravity Models of International Migration," *The World Economy*, 39, pp. 496–512.

Beirens, H, (2018), "Cracked Foundation, Uncertain Future: Structural Weaknesses in the Common European Asylum System," Brussels: Migration Policy Institute Europe.

Bertoli, S., Brücker, H. and Fernández-Huertas Moraga, J. (2020), "Do Processing Times Affect the Distribution of Asylum Seekers across Europe?" Bonn: IZA Discussion Paper 13018.

Bertoli, S. and Fernández-Huertas Moraga, J. (2013), "Multilateral Resistance to Migration," *Journal of Development Economics*, 102, pp. 79–100.

Bovens, L., Chatkupt, C and Smead, L. (2012), "Measuring Common Standards and Equal Responsibility-sharing in EU Asylum Outcome Data," *European Union Politics*, 31(1), pp. 70-93.

Burmann, M., Drometer, M. and Méango, R. (2017), "The Political Economy of European Asylum Policies," University of Munich: ifo Working Paper 245.

Brekke, S. A. (2017), "Establishing a Common European Asylum System: Tracing the Impact of EU Legislation on Asylum Outcomes," University of Oslo, ARENA Report No. 3/17.

Chetail, V. (2016), "The Common European Asylum System: Bric-à-Brac or System?" in V. Chetail, P. De Bruycker and F. Maiani, eds., *Reforming the Common European Asylum System: The New European Refugee Law,* Leiden: Brill Nijhoff.

Dustmann C., Fasani, F., Frattini, T., Minale, L. and Schönberg, U. (2017), "On the Economics and Politics of Refugee Migration," *Economic Policy*, 32 (91), pp. 499-550

Costello, C. and Hancox, E. (2015)," The Recast Asylum Procedures Directive 2013/32/EU: Caught between the Stereotypes of the Abusive Asylum Seeker and the Vulnerable Refugee," in V. Chetail, P. De Bruycker and F. Maiani (eds.), *Reforming the Common European Asylum System: The New European Refugee Law*, Martinus Nijhoff.

Cziaka, M. and Holboth, M. (2016), "Do Restrictive asylum and visa policies increase irregular migration into Europe?" *European Union Politics*, 17(3), pp. 345–365.

Emeriau, M. (2020), "Learning to be Unbiased: Evidence from the French Asylum Office," at: https://mathildeemeriau.com/files/learningtobeunbiased.pdf.

European Commission (2010a), "Report on the Application of Directive 2004/83/EC….," at: http://www.europarl.europa.eu/RegData/docs_autres_institutions/commission_europeenne/com/2010/0314/COM_COM(2010)0314_EN.pdf.

European Commission (2010b), "Report on the Application of Directive 2005/85/EC….," at: https://op.europa.eu/en/publication-detail/-/publication/028cc8e8-da78-425a-8742-2591f3770e34/language-en/format-PDF.

European Council on Refugees and Exiles [ECRE] (2008), "The Impact of the EU Qualification Directive on International Protection," at: https://www.ecre.org/wp-content/uploads/2016/07/ECRE-The-Impact-of-the-EU-Qualification-Directive-on-International-Protection_October-2008.pdf.

European Council on Refugees and Exiles [ECRE] (2016), "Admissibility, Responsibility and Safety in European Asylum Procedures," at: https://www.ecre.org/wp-content/uploads/2016/09/ECRE-AIDA-Admissibility-responsibility-and-safety-in-European-asylum-procedures.pdf.

European Council on Refugees and Exiles [ECRE] (2017), "Refugee Rights Subsiding? Europe's Two-tier Protection Regime and its Effect on the Rights of Beneficiaries'" at: http://www.asylumineurope.org/sites/default/files/shadow-reports/aida_refugee_rights_subsiding.pdf.

European Council on Refugees and Exiles [ECRE] (2018), "Asylum at the European Council 2018: Outsourcing or Reform?" at: https://reliefweb.int/sites/reliefweb.int/files/resources/Policy-Papers-04_0.pdf.

European Parliament, (2018)**, "**Migration and Asylum: a Challenge for Europe," at: http://www.europarl.europa.eu/RegData/etudes/PERI/2017/600414/IPOL_PERI(2017)600414_EN.pdf.

Fasani, F., Frattini, T. and Minale, L. (2021), "Lift the Ban? Initial Employment Restrictions and Refugee Labour Market Outcomes," *Journal of the European Economic Association*, 19 (5), pp. 2803–2854.

Goodman-Bacon, A. (2021), "Difference-in-Differences with Variation in Treatment Timing," *Journal of Econometrics*, 225, pp. 254-277.

Görlach, J-S. and Motz, N. (2021), "Spillovers and Strategic Interaction in Immigration Policies," *Journal of Economic Geography*, 21(2) pp. 287–315.

Guichard, L. (2020), "Three Essays in the Economics of Migration," PhD thesis submitted at the Université Clermont Auvergne.

Hatton, T. J. (2009), "The Rise and Fall of Asylum: What Happened and Why?" *Economic Journal*, 119 (535), pp. F183-F213.

Hatton, T. J (2015), "Asylum Policy in the EU: The Case for Deeper Integration, *CESifo Economic Studies*, 61 (3-4), pp. 605-637.

Hatton, T. J. (2017), "Refugees and Asylum Seekers, the Crisis in Europe and the Future of Policy," *Economic Policy*, 32 (91), pp. 447–496.

Hatton, T. J. (2020), "Asylum Migration to the Developed World: Persecution, Incentives, and Policy," *Journal of Economic Perspectives*, 34 (1), pp. 75-93.

Hernandez, D. and Rudolph, A. (2015), "Modern Day Slavery: What Drives Human Trafficking in Europe?" *European Journal of Political Economy*, 38, pp. 118–139.

Holzer, T., Schneider, G. and Widmer, T. (2000), "Discriminating Decentralization: Federalism and the Handling of Asylum Applications in Switzerland, 1988-1996," *Journal of Conflict Resolution*, 44 (2), pp. 250-276.

Ippolito, F. and Velluti, S. (2011), "The Recast Process of The EU Asylum System: A Balancing Act Between Efficiency and Fairness," *Refugee Survey Quarterly*, 30 (3), pp. 24-62.

Kosyakova, Y. and Brücker, H. (2020), "Seeking Asylum in Germany: Do Human and Social Capital Determine the Outcome of Asylum Procedures?" *European Sociological Review*, 36(5), pp. 663–683.

Leerkes, A. (2015), "How (Un)restrictive are We? 'Adjusted' and 'Expected' Asylum Recognition Rates in Europe," Netherlands Department of Justice, Working Paper 2015-10.

Micevska, M. (2021), "Revisiting Forced Migration: A Machine Learning Perspective," *European Journal of Political Economy*, 70, Art 102044

Montgomery, E. and Foldspang, A. (2020), "Predictors of the Authorities' Decision to Grant Asylum in Denmark," *Journal of Refugee Studies*, 18(4), pp. 454-467.

Noll, G. (2000), *Negotiating Asylum. The EU acquis, Extraterritorial Protection and the Common Market of Deflection*, The Hague: Martinus Nijhoff.

Neumayer, A. (2005), "Asylum Recognition Rates in Western Europe: Their Determinants, Variation, and Lack of Convergence," *Journal of Conflict Resolution*, 49(1), pp. 43-66.

Ortega, F. and Peri, G. (2013), "The Effect of Income and Immigration Policies on International Migration," *Migration Studies*, 1(1), pp. 47–74.

Papke, L. E. and Wooldridge, J. M. (1996), "Econometric Methods for Fractional Response Variables with an Application to 401(K) Plan Participation Rates," *Journal of Applied Econometrics,* 11 (6), pp. 619–632.

Papke, L. E. and Wooldridge, J. M. (2008), "Panel Data Methods for Fractional Response Variables with an Application to Test Pass Rates," *Journal of Econometrics*, 145 (1-2), pp. 121-133.

Peers, S. (2012), "Legislative Update 2011, EU Immigration and Asylum Law: The Recast Qualification Directive," *European Journal of Migration and Law,* 14 (2), pp. 199-221.

Peers, S. (2013), "The second phase of the Common European Asylum System: A brave new world – or lipstick on a pig?", at: http://www.statewatch.org/analyses/no-220-ceas-second-phase.pdf

Schittenhelm, K. (2018), "Implementing and Rethinking the European Union's Asylum Legislation: The Asylum Procedures Directive," *International Migration*, 57 (1), pp. 229-244.

Sicakkan, H. G. (2008), "Political Asylum and Sovereignty-Sharing in Europe" *Government and Opposition*, 43(2), pp. 206-229.

Tomberg, L., Smith Stegen, K. and Vance, C. (2021), ""The Mother of all Political Problems"? On Asylum Seekers and Elections," *European Journal of Political Economy*, 67, Art 101981.

Toshkov, D. (2010), "Taking Stock: A Review of Quantitative Studies of Transposition and Implementation of EU Law," Institute for European Integration Research, Working Paper 01/2010.

Toshkov, D. and De Haan, L. (2013), "The Europeanization of Asylum Policy: An Assessment of the EU Impact on Asylum Applications and Recognition Rates," *Journal of European Public Policy*, 20(5), pp. 661-68.

Toshkov, D. (2014), "The Dynamic Relationship between Asylum Applications and Recognition Rates in Europe (1987–2010)," *European Union Politics*, 15(2), pp. 192–214.

United Nations Commissioner for Refugees [UNHCR] (2010), "Improving Asylum Procedures: Comparative Analysis and Recommendations for Law and Practice – Key Findings and Recommendations," Geneva: UNHCR.

United Nations Commissioner for Refugees [UNHCR] (2013), "Beyond Proof: Credibility Assessment in EU Asylum Systems," Brussels: UNHCR.

United Nations Commissioner for Refugees [UNHCR] (2019), "Comments on the European Commission Proposal for an Asylum Procedures Regulation – COM (2016) 467," at: https://www.refworld.org/pdfid/5cb597a27.pdf.

Vink, M. and Meijerink, F. (2003), "Asylum Applications and Recognition Rates in EU Member States 1982–2001: A Quantitative Analysis," *Journal of Refugee Studies*, 16(3) pp. 297–315.

Vis, F. and Goriunova, O. (eds.) (2015), "The Iconic Image on Social Media: A Rapid Research Response to the Death of Aylan Kurdi," at: https://pure.royalholloway.ac.uk/portal/files/41164696/iconic_image_on_social_media.pdf

Zaun, N. (2016), "Why EU Asylum Standards Exceed the Lowest Common Denominator: The Role of Regulatory Expertise in EU Decision-making," *Journal of European Public Policy*, 23 (1), pp. 136–154.

Appendix 1: A Model of Recognition Rates

In this appendix I set out a model in which recognition rates are jointly determined by incentives and policy. Fleeing from a country where oppression and human rights abuse is pervasive may eliminate the risk of persecution, but there is also the risk of failing to gain some form of legal status in the destination country as well as the expected processing time and the probability of repatriation (Bertoli et al., 2020). Potential asylum applicants must balance these risks as well as taking into account other expected gains and costs of migration to a relatively peaceful and prosperous country. Here I set out a model of recognition rates that takes these elements into account.

The probability of migration for asylum depends on the difference in expected utility between staying in the origin country, *o*, and migration to the destination, *d*. This difference for individual *i* is:

$$1) \quad D_{i,d,o} = Eu(w_d) - Eu(w_o) + z_i$$

Where *w* is the individual's material welfare. z_i represents the cost of migration, which, for clandestine migration, includes payment to migrant smugglers and other travel and subsistence costs.[16] It also reflects the prospects of entry through alternative immigration channels; if migration for employment is possible then the relative cost of asylum migration is increased.

The decision to migrate from country *o* to claim asylum in *d* also depends on the attractiveness of applying for asylum in alternative destinations that are imperfect substitutes and for which the relative gain is summarized by q_i, which is increasing in their attractiveness. Alternatively, q_i could be interpreted as the alternative of migrating to *d* but not applying for asylum. Thus the individual will migrate for asylum to country *d* if $D_{i,d,o} > q_i$, or:

$$2) \quad P_{i,d,o} = Eu(w_d) - Eu(w_o) + z_i - q_i > 0$$

I assume that the individual's utility function is concave, so that individuals are risk averse.[17] Applying logarithmic utility, the probability of migration, $P_{i,d,o}$, can be written as:

$$3) \; P_{i,d,o} = E\ln(w_d) - E\ln(w_o) + z_i - q_i$$

Expanding $E\ln(w_d)$ in a Taylor series around Ew_d gives the first three terms as:

$$4) \quad E\ln(w_d) = \ln(Ew_d) + \frac{1}{(Ew_d)}E(w_d - Ew_d) - \frac{1}{2(Ew_d)^2}E(w_d - Ew_d)^2$$

As $E(w_d - Ew_d) = 0$, this can be written as:

$$5) \quad E\ln(w_d) = \ln(Ew_d) - \frac{var\,(w_d)}{2(Ew_d)^2}$$

And similarly for expected welfare in the origin country, $Eln(w_o)$.

[16] Friebel et al. (2018) show how disruption of migrant smuggling routes have large effects on the cost of transit and thus on the route taken.

[17] In a study of individual level data on migration within Nigeria, Ceriani and Verme (2018) find that those fleeing conflict are more risk averse than economic migrants.

Expected material welfare from staying in the origin country depends on the average living standards, $y_{o,}$ and the country-wide probability of safety (the complement of the probability of persecution), s_o, such that:

6) $E(w_o) = y_o s_o$

In the destination country, expected material welfare depends on average living standards, y_d, and the probability of gaining some form of recognition as a refugee, r_d:

7) $E(w_d) = y_d r_d$

I assume that the uncertainty involved in either remaining or leaving is attached to the probability of either being persecuted in the origin country or of failing to gain recognition at the destination, rather than being due to uncertainty about living standards. Thus the second term in (5) can be approximated to:

$$-\frac{1}{2}\frac{y_d^2 r_d(1-r_d)}{y_d^2 r_d^2} = -\frac{1}{2}\frac{(1-r_d)}{r_d} \approx \frac{1}{2}\ln(r_d)$$

Hence (5) can be rewritten as:

8) $E\ln(w_d) = \ln(y_d) + \frac{3}{2}\ln(r_d) \approx \ln(y_d) + \frac{3}{2}\frac{(1-r_d)}{r_d}$

And similarly for expected welfare in the origin country. Substituting these terms into equation (2) gives:

9) $P_{i,d,o} = \ln(y_d) + \frac{3}{2}\frac{(1-r_d)}{r_d} - \ln(y_0) - \frac{3}{2}\frac{(1-s_o)}{s_o} + z_i - q_i$

Migration is related to the incentive to migrate by:

9) $M_{i,d,o} = mP_{i,d,o}$

Aggregating across all potential migrants, *i*, we get asylum migration as:

10) $M_{d,o} = m\ln(y_d) + \frac{3m}{2}\frac{(1-r_d)}{r_d} - m\ln(y_0) - \frac{3}{2}\frac{m(1-s_o)}{s_o} + m(\bar{z} - \bar{q})$

Where $\bar{z}$ and $\bar{q}$ are the mean values of cost and the attractiveness of alternative destinations. Thus the migration rate is negatively related to the rejection rate in the destination and positively related to the probability of persecution at the origin.

In the destination country the government is obliged to evaluate claims for asylum against the relevant criteria for according some form of protection, and so the recognition rate depends on the underlying probability of persecution. But it also has some latitude in determining the recognition rate. In particular, policy is tougher the greater is the number asylum applicants. The recognition rate depends

also on shifts in policy and its implementation. Thus the government's policy reaction function can be written as:

$$11) \quad \frac{(1-r_d)}{r_d} = -\frac{(1-s_o)}{s_o} + \gamma M_{d,o} + v + x$$

Where rejection decreases with the risk of persecution and γ reflects the tightening of policy in the face of increasing applications, as found in previous studies (Vink and Meijerink, 2003; Neumayer, 2005; Toshkov 2014). *v* represents the formal policy setting, including EU directives and organizational arrangements in the destination country. *x* represents the way in which policy is implemented including possible biases arising from prevailing attitudes as well as cultural affinity with applicants from particular origins or backgrounds

Substituting for the asylum application rate $M_{d,o}$ gives:

$$12) \quad \frac{(1-r_d)}{r_d} = -\frac{(1+\varphi)}{(1-\varphi)}\frac{(1-s_o)}{s_o} + \frac{(m\gamma)\left(\ln\left(\frac{y_d}{y_o}\right) + \bar{z} - \bar{q}\right) + v + x}{(1-\varphi)}$$

Where $\varphi = 3\gamma m/2$. Thus the inverse of the odds ratio for recognition (the odds ratio for rejection) depends on probability of persecution and is related to preference for alternative destinations, asylum policies and the implementation of those policies. This model provides the basic structure for the estimating equation (1) in the text.

Additional references

Ceriani, L. and Verme, P. (2018), "Risk Preferences and the Decision to Flee Conflict," World Bank Policy Research Working Paper 8376.

Friebel, G., Manchin, M., Mendola, M and Prarolo, G. (2018), "International Migration Intentions and Illegal Costs: Evidence Using Africa-to-Europe Smuggling Routes," CEPR Discussion Paper 13326.

Appendix 2: Data Sources and Methods

Table A2.1: Data sources

Variable	Sources and notes
Dependent variable	
Asylum recognition rates	*Source*: Eurostat database at: https://ec.europa.eu/eurostat/databrowser/view/tps00192/default/table?lang=en. Missing values for 15 destination/years are added from the UNHCR at: https://www.unhcr.org/refugee-statistics/download/?url=8NgDbg. *Notes*: The data selected is for first instance decisions that are recognized under the Convention, given other recognized status or rejected. In order to avoid double counting, decisions on repeat or reopened applications, and those subject to administrative or judicial review are excluded. The recognition rate by origin/destination/year is the number recognized divided by the total number of decisions. Cases closed without decision are excluded from the denominator.
Bilateral variables	
Former colony, common language and distance	Source: From the CEPII database (GeoDist) at: http://www.cepii.fr/CEPII/en/publications/wp/abstract.asp?NoDoc=3877. *Notes*: Colonial relationships are those that existed sometime since 1945. Common language is where the two countries share a common official language. Distance is the great circle distance between capital cities.
Origin country variables	
Political terror scale	*Source*: From the website of Mark Gibney at: http://www.politicalterrorscale.org/. *Notes*: The variable used is that derived from the reports of US State Department.
Battle deaths	*Source*: UCDP Battle-related Deaths Dataset V1 2018, at: http://ucdp.uu.se/downloads/. *Note*: The figure used is either the 'best estimate' or the average of high and low figures.
Freedom House Index	*Source*: Index for (lack of) civil liberties from: http://www.freedomhouse.org/report-types/freedom-world# .
Real GDP per capita	*Source*: Penn World Tables Version 8.1 at: https://www.rug.nl/ggdc/productivity/pwt/. *Notes*: Real GDP in constant 2005 USD ($RGDP^e$). For Afghanistan, Eritrea, and Libya real GDP was calculated from index numbers provided by the IMF at: http://data.imf.org/regular.aspx?key=61545864. No alternative sources could be found for Somalia and Cuba.
Population	*Source*: UN World Population Prospects at: https://esa.un.org/unpd/wpp/Download/Standard/Population/.
Destination country variables	
Real GDP per capita and population	*Source*: OECD at: http://stats.oecd.org/. *Note*: GDP Expenditure at constant prices and PPPs, base year 2010.
EU directives	*Source*: Dummy variables constructed from information on the dates at which directives came into force in national legislation, which differ from the dates of transposition. These are from the websites of the European

	Migration network at: https://ec.europa.eu/home-affairs/networks/european-migration-network-emn/emn-publications/annual-reports-migration-and-asylum_en and from Asylum Information Database (AIDA) Country Reports at: http://www.asylumineurope.org/reports, supplemented by EU legislation at: https://eur-lex.europa.eu/legal-content/EN/NIM/?uri=CELEX:32004L0083&qid=1538135520159
Public opinion	*Source*: Biennial data on opinion from the European Social Survey at: https://www.europeansocialsurvey.org/data/ . *Notes*: Responses to questions on allowing immigrants from poor countries outside Europe. Responses are: many/some/a few/none; a few or none coded as anti-immigration. Linear interpolation between available years, except for the following extrapolations: Luxembourg 2006-2017= Belgium; Denmark 2016-2017 = Netherlands; Greece 2012-2017 = Hungary.
Immigration policy	*Source*: From Oxford International Migration Institute Demig Policy database at: https://www.imi.ox.ac.uk/data/demig-data/demig-policy-1 *Notes*: The index of immigration policy is constructed from data on policy changes where the weights given to different policy changes are: 'fine tuning' 0.25; 'minor' 0.5; 'mid-level' 0.75; 'major' 1. Values are positive if policy change is more restrictive and negative if less restrictive and these changes are cumulated over time. The data extends only to 2013 and it has been supplemented for later years from the commentary on policy in OECD *International Migration Outlook* at: https://www.oecd-ilibrary.org/.
Safe country of origin policy	*Source:* Kindly provided by Lucas Guichard from chapter 3 of his PhD thesis. *Notes*: For the destination country this is a dummy (=1) for the years in effect with a one-year lag; for other countries it is the number that have the policy in place.
Administrative structure/procedure	*Source*: Derived from Asylum Information database (AIDA) Country Reports at: http://www.asylumineurope.org/reports. *Notes*: Details in Appendix 3 below.

Table A2.2: Observations and dyads by destination country

Destination country	Observations	Dyads	Destination country	Observations	Dyads
Austria	751	52	Italy	742	53
Belgium	890	61	Luxembourg	118	13
Czech Rep.	329	24	Netherlands	883	61
Denmark	468	35	Norway	782	57
Finland	466	35	Poland	305	23
France	949	64	Portugal	90	10
Germany	930	63	Spain	633	46
Greece	587	45	Sweden	823	56
Hungary	332	28	Switzerland	857	60
Ireland	476	37	United Kingdom	857	59
			Total	12268	882

Source: See text.

Table A2.3: Observations and dyads by origin country

Origin country	Observations	Dyads	Origin country	Observations	Dyads
Afghanistan	277	19	Kyrgyzstan	143	10
Albania	231	16	Lebanon	185	13
Algeria	263	18	Liberia	169	12
Angola	192	14	Libya	181	14
Armenia	246	17	Mali	165	14
Azerbaijan	192	14	Mauritania	119	9
Bangladesh	246	17	Moldova	198	15
Belarus	219	16	Mongolia	172	12
Bosnia/Herzegovina	187	13	Morocco	225	16
Burkina Faso	112	8	Myanmar	123	9
Burundi	131	10	Nepal	166	13
Cameroon	220	15	Niger	110	9
Chad	96	7	Nigeria	289	20
China	259	18	Nth. Macedonia	180	13
Colombia	155	11	Pakistan	275	19
Comoros	20	2	Russian Federation	272	19
Congo	165	12	Rwanda	139	10
Cote d'Ivoire	198	14	Senegal	173	13
Dem. Rep. of Congo	247	17	Serbia and Kosovo	152	14
Egypt	229	17	Sierra Leone	187	13
Eritrea	232	17	Sri Lanka	218	15
Ethiopia	218	15	Sudan	219	15
Gambia	182	13	Syria	275	20
Georgia	265	18	Togo	138	10
Ghana	222	16	Tunisia	187	14
Guinea	219	16	Turkey	252	17
Guinea-Bissau	99	7	Uganda	192	14
Haiti	15	1	Ukraine	268	19
India	255	18	Uzbekistan	169	12
Iran	262	18	Viet Nam	170	12
Iraq	277	19	Yemen	136	12
Jamaica	35	3	Zimbabwe	107	8
Kazakhstan	148	11	Total	12268	882

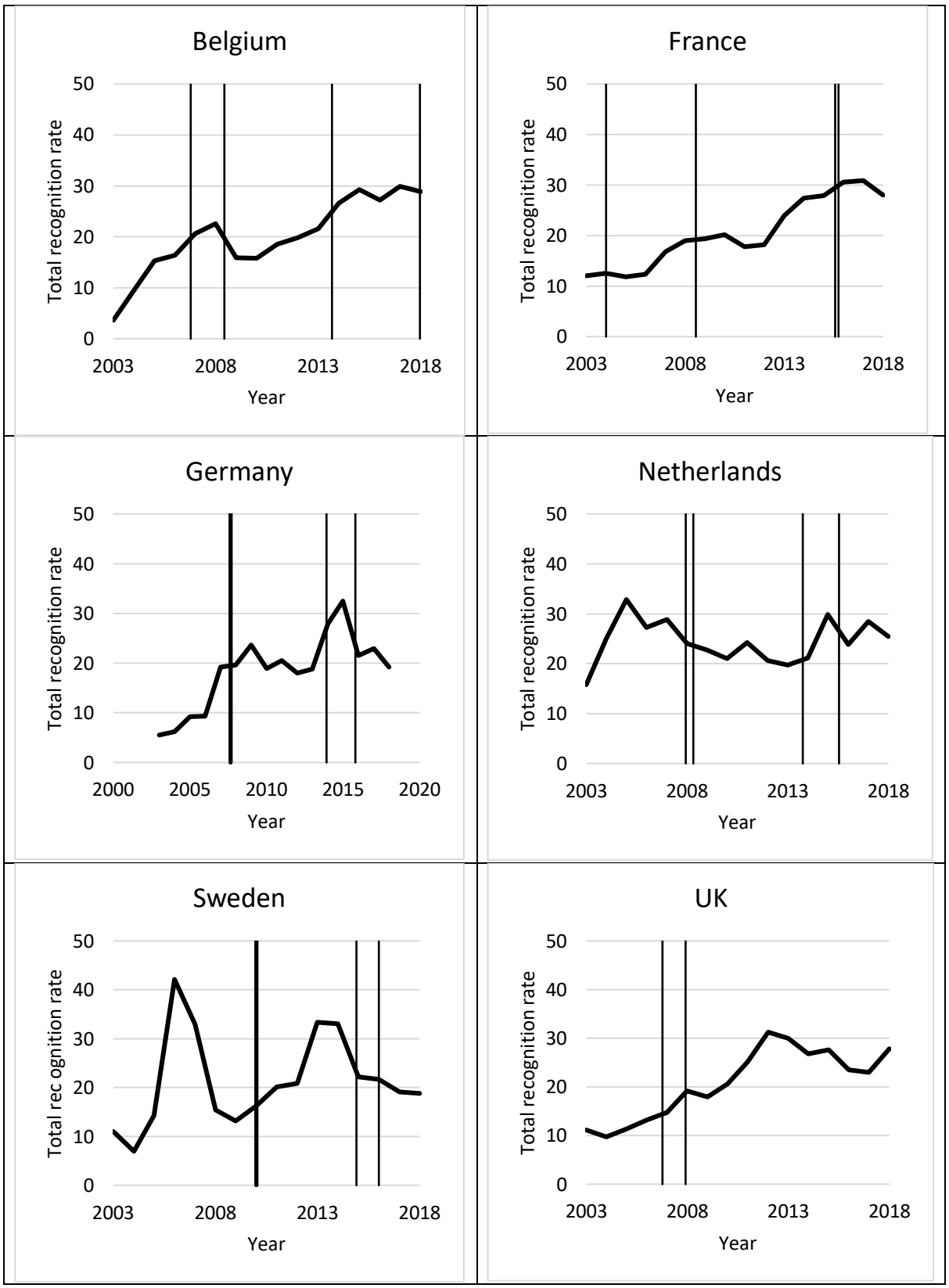
Source: See text.

Table A2.4: Dates when directives were implemented by country

Directive	Qualification Directive	Procedures Directive	Recast Qualification Directive	Recast Procedures Directive
Directive No.	2004/83/EC	2005/85/EC	2011/95/EU	2013/32/EU
Date of issue	29/4/2004	1/12/2005	13/12/2011	26/6/2013
Transposition deadline	10/10/2006	1/12/2007	21/12/2013	20/07/2015
Date in force	Date (d/m/y)	Date (d/m/y)	Date (d/m/y)	Date (d/m/y)
Austria	1/1/2006	1/07/2008	1/01/2014	20/07/2015
Belgium	10/10/2006	1/06/2008	1/09/2013	17/12/2017
Czech Republic	28/04/2006	21/12/2007	1/01/2014	18/12/2015
Denmark	n/a	n/a	n/a	n/a
Finland	1/06/2009	1/07/2009	1/07/2014	1/07/2015
France	1/01/2004	15/07/2008	29/09/2015	29/07/2015
Germany	27/08/2007	27/08/2007	1/12/2013	20/10/2015
Greece	10/10/2008	30/06/2009	21/10/2013	3/04/2016
Hungary	1/01/2008	1/01/2008	1/07/2014	15/09/2015
Ireland	9/10/2006	18/02/2011	n/a	n/a
Italy	19/01/2008	21/10/2008	21/02/2014	11/12/2015
Luxembourg	9/05/2006	9/05/2006	19/06/2013	18/12/2015
Netherlands	25/04/2008	9/12/2007	1/10/2013	20/07/2015
Norway	1/01/2010	1/01/2010	n/a	n/a
Poland	29/05/2008	29/05/2008	30/08/2014	15/11/2015
Portugal	30/08/2008	30/08/2008	5/05/2014	5/05/2014
Spain	30/11/2009	30/11/2009	n/a	n/a
Sweden	1/01/2010	1/01/2010	26/11/2014	1/01/2016
Switzerland	n/a	n/a	n/a	n/a
UK	9/10/2006	1/12/2007	n/a	n/a

Source: See Table A2.1

Figure A2.1: Implementation dates and total recognition rates by destination from a balanced panel of 16 origin countries



Note: The balanced panel of 16 origins is describe in the text. Vertical datelines (from Table A2.4 above) are in bold when two directives were implemented at the same time.

Appendix 3: Bureaucratic frameworks and practices in 15 destination countries, c.2013

	AUT	BEL	FRA	DEU	GRE	HUN	IRE	ITA
Separate procedures (in addition to regular and Dublin)								
Border procedure	Y	Y	Y	Y	Y	Y	Y	N
Admissibility procedure	Y	Y	N	Y	N	Y	N	N
Accelerated procedure	Y	Y	Y	Y	Y	N	Y	N
Specific time limit to lodge an application? (days)	N	Y(8)	Y(5)	N	N	N	Y(5)	Y
Regular procedure								
Free legal assistance at first instance?	D	Y	Y	N	D	Y	Y	D
Legal advice and representation at first instance?	N	Y	N	N	N	Y	N	N
Appeal Judicial or administrative?	J	J	J	J	A	J	J	J
Is appeal suspensive?	Y	Y	Y	Y	Y	Y	Y	Y
Free legal assistance at appeal?	Y	Y	Y	D	D	Y	Y	D
Free legal advice and representation at appeal?	N	Y	Y	Y	N	Y	Y	Y
Admissibility procedure								
Personal interview?	Y	Y	n/a	N	n/a	Y	n/a	n/a
Free legal assistance at first instance?	D	Y	n/a	N	n/a	D	n/a	n/a
Appeal suspensive?	N	N	n/a	N	n/a	Y	n/a	n/a
Free legal assistance at appeal?	D	Y	n/a	D	n/a	D	n/a	n/a
Border procedure								
Can border application be examined in substance?	Y	Y	N	Y	Y	Y	N	n/a
Personal interview?	Y	Y	Y	N	Y	Y	Y	n/a
Free legal assistance?	D	Y	N	Y	D	D	N	n/a
Is appeal suspensive?	Y	Y	Y	Y	N	Y	n/a	n/a
Accelerated procedure								
Personal interview?	Y	Y	N	n/a	N	n/a	N	n/a
Free legal assistance?	D	D	D	N	D	n/a	N	n/a
Appeal suspensive?	Y	Y	N	n/a	Y	n/a	Y	n/a
Other								
Access to UNHCR or other NGO at border?	Y	D	D	D	N	D	N	D
Access to UNHCR or other NGO in detention?	D	D	Y	D	D	Y	D	D
Procedure to identify vulnerable groups?	Y	Y	N	N	Y	N	Y	N
Medical reports used in assessing credibility?	Y	Y	D	Y	Y	Y	Y	Y
List of safe countries of origin?	Y	Y	Y	Y	N	N	Y	N
Safe country of origin used in practice?	Y	Y	Y	Y	N	Y	Y	N
Safe third country used in practice?	Y	Y	N	Y	N	Y	Y	N

Notes: Y = yes; N = no; D = in some cases; J = judicial procedure; A = administrative procedure; n/a = not applicable.

Source: Derived from Asylum Information database (AIDA) Country Reports at: http://www.asylumineurope.org/reports.

Appendix 3 continued: Bureaucratic frameworks and practices in 15 destination countries, c.2013

	NLD	POL	PRT	ESP	SWE	CHE	UK
Separate procedures (in addition to regular and Dublin)							
Border procedure	Y	N	Y	Y	N	Y	N
Admissibility procedure	N	Y	Y	Y	N	Y	Y
Accelerated procedure	N	Y	Y	N	Y	Y	Y
Specific time limit to lodge an application? (days)	N	N	N	Y(30)	N	N	N
Regular procedure							
Free legal assistance at first instance?	Y	D	Y	Y	Y	D	D
Legal advice and representation at first instance?	Y	N	Y	Y	Y	n/a	N
Appeal Judicial or administrative?	J	A	J	J/A	J	J	J
Is appeal suspensive?	Y	Y	Y	N	Y	Y	Y
Free legal assistance at appeal?	Y	D	Y	Y	Y	D	D
Free legal advice and representation at appeal?	Y	N	Y	Y	Y	n/a	Y
Admissibility procedure							
Personal interview?	n/a	N	Y	Y	n/a	Y	N
Free legal assistance at first instance?	n/a	D	Y	Y	n/a	n/a	D
Appeal suspensive?	n/a	Y	Y	Y/N(J/A)	n/a	Y	n/a
Free legal assistance at appeal?	n/a	D	Y	Y	n/a	n/a	D
Border procedure							
Can border application be examined in substance?	Y	n/a	Y	N	n/a	N	N
Personal interview?	Y	n/a	Y	Y	n/a	Y	N
Free legal assistance?	Y	n/a	Y	Y	n/a	D	N
Is appeal suspensive?	N	n/a	Y	N	n/a	Y	n/a
Accelerated procedure							
Personal interview?	n/a	N	Y	n/a	Y	N	Y
Free legal assistance?	n/a	D	Y	Y	Y	Y	Y
Appeal suspensive?	n/a	Y	Y	n/a	N	Y	Y
Other							
Access to UNHCR or other NGO at border?	Y	D	D	D	n/a	Y	N
Access to UNHCR or other NGO in detention?	D	D	Y	D	Y	D	D
Procedure to identify vulnerable groups?	Y	Y	Y	N	Y	N	N
Medical reports used in assessing credibility?	Y	N	Y	Y	Y	Y	Y
List of safe countries of origin?	N	N	y	N	N	Y	Y
Safe country of origin used in practice?	N	N	Y	N	N	Y	Y
Safe third country used in practice?	N	N	Y	N	N	Y	y

Notes: Y = yes; N = no; D = in some cases; J = judicial procedure; A = administrative procedure; n/a = not applicable.

Source: Derived from Asylum Information database (AIDA) Country Reports at: http://www.asylumineurope.org/reports.

Appendix 4: Supplementary results

Tables A4.1 and A4.2 report OLS regressions of otherwise identical specifications as Tables 1 and 2 above. In Table A4.1 the size and significance of the coefficients are generally similar to those in Table 1, although they do differ in a few respects, most notably the dummy variable for Syrians in 2014-17. In Table A4.2 the size and significance of the coefficients differ more substantially from those in Table 2, which suggests that OLS coefficients would not be a very satisfactory approximation.

Table A4.1: Estimation of recognition rates on origin-country variables using OLS

	Total recognition rate		Convention recognition rate	
	(1)	(2)	(3)	(4)
Political terror scale	4.80**	4.22***	1.53	1.40
	(1.97)	(1.20)	(0.94)	(0.88)
Battle deaths per thousand	0.84***	0.84***	0.21**	0.15**
	(0.08)	(0.06)	(0.10)	(0.08)
Civil liberties index	6.55***	6.90***	4.27**	4.81**
	(1.89)	(1.85)	(1.95)	(1.87)
Dummy (=1) for Syrians, 2014-17	14.81***	13.98***	20.21***	20.02***
	(2.21)	(2.34)	(5.83)	(4.50)
Log GDP ratio per capita (destination to origin)	4.27	6.52**	3.01	3.74
	(3.50)	(3.08)	(3.93)	(3.02)
Former colony (=1)	7.78***	7.80***	2.67	2.65
	(2.96)	(3.00)	(2.39)	(2.42)
Common language (=1)	-2.80	-2.78	3.33*	3.27
	(2.54)	(2.58)	(1.98)	(2.00)
Log distance between capitals	2.79	2.88	3.47	3.34
	(2.64)	(2.67)	(2.13)	(2.18)
Origin dummies	Yes	Yes	Yes	Yes
Destination dummies	Yes	No	Yes	No
Year dummies	Yes	No	Yes	No
Destination × year dummies	No	Yes	No	Yes
Destination/origin dyads	822	822	822	822
Observations	12268	12268	12268	12268
R-squared	0.709	0.773	0.581	0.660

Notes: OLS regressions comparable with those in Table 1, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *.

Table A4.2: Estimation of recognition rates on EU directives variables using OLS

	Total recognition rate		Convention recognition rate	
	(1)	(2)	(3)	(4)
Qualification Directive (=1)	-2.58	-3.73*	-0.20	-0.49
	(1.89)	(1.96)	(1.63)	(1.63)
Procedures Directive (=1)	9.40***	11.53***	3.20	4.76**
	(3.04)	(2.18)	(2.43)	(2.21)
Recast Qualification Directive (=1)	4.27	6.93***	8.41*	7.43**
	(3.49)	(2.05)	(4.70)	(3.33)
Recast Procedures Directive (=1)	-4.50	-5.75***	-12.58**	-9.08***
	(4.57)	(1.94)	(5.26)	(2.96)
Origin dummies	Yes	No	Yes	No
Destination dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	No	Yes	No
Origin × year dummies	No	Yes	No	Yes
Destination/origin dyads	822	822	822	822
Observations	12268	12268	12268	12268
R-squared	0.711	0.792	0.585	0.678

Notes: OLS regressions comparable with those in Table 2, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *. Regressions in (1), (3) and (5) include all the origin-country and bilateral variables that appear in Table 1; columns (2), (4) and (6) include all bilateral variables but absorb all origin effects with origin-by-year dummies.

Dyad weights are applied in all the estimates but the results could be sensitive to low-volume dyads. The following two tables replicate Tables 1 and 2 but raise the minimum threshold of cases per dyad over the 15 years for inclusion in the estimation from 100 to 300. This reduces the number of dyads from 822 to 685 and the total number of observations from 12,268 to 9971. The specifications are otherwise identical. The coefficients in Table A4.3 are very close to those reported in Table 1, while those in Table A4.4 differ little in size and significance from those in Table 2.

An alternative is to raise the minimum number of decisions represented by each observation from 5 to 10. On the original number of dyads, this reduces the number of observations from 12,268 to 11,077. Table A4.5 replicates Table 2 with this restriction. Again the coefficients and significance levels are close to those in Table 2.

Table A4.3: Estimation of recognition rates on origin-country variables with restricted dyads

	Total recognition rate		Convention recognition rate	
	(1)	(2)	(3)	(4)
Political terror scale	4.55**	4.02***	0.83	0.63
	(1.82)	(1.04)	(0.68)	(0.44)
Battle deaths per thousand	0.94***	0.95***	0.05	0.02
	(0.18)	(0.12)	(0.05)	(0.03)
Civil liberties index	6.75***	7.16***	3.17**	3.14***
	(1.84)	(1.80)	(1.31)	(1.09)
Dummy (=1) for Syrians, 2014-17	34.58***	33.67***	11.34***	10.44***
	(4.04)	(4.20)	(3.79)	(3.14)
Log GDP ratio per capita (destination to origin)	4.47	8.15***	1.33	2.29
	(3.86)	(2.70)	(2.59)	(1.42)
Former colony (=1)	10.14**	10.37**	2.10	1.94
	(4.33)	(4.35)	(1.98)	(1.85)
Common language (=1)	-2.30	-2.19	3.86*	3.76*
	(3.27)	(3.29)	(2.15)	(2.05)
Log distance between capitals	5.49	5.46	3.78	3.82
	(3.60)	(3.66)	(3.07)	(2.85)
Origin dummies	Yes	Yes	Yes	Yes
Destination dummies	Yes	No	Yes	No
Year dummies	Yes	No	Yes	No
Destination × year dummies	No	Yes	No	Yes
Destination/origin dyads	685	685	685	685
Observations	9971	9971	9971	9971

Notes: Marginal effects in percentage points from glm estimates of the odds ratio of the recognition rate using the logit link function and binomial distribution, with origin/destination dyad weights; standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *.

Table A4.4: Estimation of recognition rates on EU directives with restricted dyads

	Total recognition rate		Convention recognition rate	
	(1)	(2)	(3)	(4)
Qualification Directive (=1)	-5.85**	-6.98	0.69	0.18
	(2.30)	(2.41)	(1.34)	(1.30)
Procedures Directive (=1)	13.65***	15.84	3.55	4.76
	(3.43)	(2.76)	(1.75)	(1.55)
Recast Qualification Directive (=1)	5.11	8.47	5.37	4.62
	(3.41)	(2.60)	(2.39)	(1.75)
Recast Procedures Directive (=1)	-7.31*	-8.09	-8.43	-6.10
	(3.96)	(2.48)	(3.13)	(1.81)
Origin dummies	Yes	No	Yes	No
Destination dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	No	Yes	No
Origin × year dummies	No	Yes	No	Yes
Destination/origin dyads	685	685	685	685
Observations	9971	9971	9971	9971

Notes: Marginal effects in percentage points from glm estimates of the odds ratio of the recognition rate using the logit link function and binomial distribution, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *. Regressions in (1), (3) and (5) include all the origin-country and bilateral variables that appear in Table 1; columns (2), (4) and (6) include all bilateral variables but absorb all origin effects with origin-by-year dummies.

Table A4.5: Estimation of recognition rates on EU directives with restricted observations

	Total recognition rate		Convention recognition rate	
	(1)	(2)	(3)	(4)
Qualification Directive (=1)	-5.84**	-6.94***	0.72	0.28
	(2.30)	(2.40)	(1.34)	(1.30)
Procedures Directive (=1)	13.81**	15.89***	3.61**	4.76***
	(3.43)	(2.74)	(1.75)	(1.54)
Recast Qualification Directive (=1)	5.16	8.50***	5.47**	4.71***
	(3.41)	(2.60)	(2.40)	(1.75)
Recast Procedures Directive (=1)	-7.43*	-8.18***	-8.50***	-6.18***
	(3.97)	(2.48)	(3.14)	(1.81)
Origin dummies	Yes	No	Yes	No
Destination dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	No	Yes	No
Origin × year dummies	No	Yes	No	Yes
Destination/origin dyads	822	822	822	822
Observations	11077	11077	11077	11077

Notes: Marginal effects in percentage points from glm estimates of the odds ratio of the recognition rate using the logit link function and binomial distribution, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *. Regressions in columns (1), (3) and (5) include all the origin-country and bilateral variables that appear in Table 1; columns (2), (4) and (6) include the bilateral variables but absorb all time-varying origin effects with origin-by-year dummies.

The coefficients on the key directives could be sensitive to the inclusion of their recast versions, which are opposite in sign (Table 2). In Table A4.6, which excludes the recast versions, the coefficients are very close to those in Table 2. The coefficients also could be sensitive to the inclusion of specific destination countries. Table A4.7 presents the coefficients from re-estimating the regression in column (1) of Table 2, for the total recognition rate, with each country omitted in turn. While significance levels vary somewhat there are no changes in sign.

Table A4.6: Estimation of recognition rates on EU directives excluding recast directives

	Total recognition rate		Convention recognition rate	
	(1)	(2)	(3)	(4)
Qualification Directive (=1)	-5.26**	-6.00**	1.51	0.89
	(2.39)	(2.37)	(1.30)	(1.24)
Procedures Directive (=1)	13.31***	15.36***	3.08*	4.39***
	(3.31)	(2.65)	(1.72)	(1.49)
Origin dummies	Yes	No	Yes	No
Destination dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	No	Yes	No
Origin × year dummies	No	Yes	No	Yes
Destination/origin dyads	822	822	822	822
Observations	11077	11077	11077	11077

Notes: Marginal effects in percentage points from glm estimates of the odds ratio of the recognition rate using the logit link function and binomial distribution, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *. Regressions in columns (1), (3) and (5) include all the origin-country and bilateral variables that appear in Table 1; columns (2), (4) and (6) include the bilateral variables but absorb all time-varying origin effects with origin-by-year dummies.

Table A4.7: Estimation of recognition rates on EU directives excluding each country in turn

Country omitted	Obs.	Dyads	Qualification Directive	Procedures Directive	Recast Qual Directive	Recast Proc Directive
Austria	751	52	-5.69**	14.57***	4.92	-5.55
			(2.33)	(3.52)	(3.39)	(4.00)
Belgium	890	61	-7.14***	16.43***	5.75	-6.65
			(2.49)	(3.68)	(3.94)	(4.62)
Czech Rep	329	24	-7.23***	16.55***	5.86	-6.68
			(2.52)	(3.71)	(3.98)	(4.65)
Denmark	468	35	-7.08***	15.52***	4.85	-7.17
			(2.51)	(3.86)	(4.00)	(4.67)
Finland	466	35	-6.89***	15.37***	4.60	-6.01
			(2.53)	(3.88)	(4.02)	(4.66)
France	949	64	-13.84***	24.68***	9.36**	-14.89***
			(3.89)	(5.83)	(4.56)	(4.59)
Germany	930	63	-11.67***	18.86***	1.81	-11.03***
			(3.60)	(3.90)	(3.38)	(3.04)
Greece	587	45	-12.71***	20.28***	-1.84	-10.48***
			(3.97)	(4.37)	(3.38)	(3.18)
Hungary	332	28	-12.59***	20.18***	-1.57	-10.24***
			(3.99)	(4.37)	(3.43)	(3.20)
Ireland	476	37	-10.70***	17.84***	-1.04	-9.60***
			(4.17)	(4.69)	(3.51)	(3.14)
Italy	742	53	-6.30***	12.93***	5.61	-7.92*
			(2.38)	(3.33)	(3.76)	(4.22)
Luxembourg	118	13	-6.29***	12.88***	5.65	-7.95**
			(2.38)	(3.34)	(3.76)	(4.23)
Netherlands	883	61	-6.27**	13.11***	6.70*	-8.11*
			(2.54)	(3.41)	(3.89)	(4.52)
Norway	782	57	-5.60**	12.27***	5.93	-7.70*
			(2.58)	(3.39)	(3.83)	(4.52)
Poland	305	23	-4.59**	12.13***	6.10	-7.37
			(2.36)	(3.37)	(3.82)	(4.53)
Portugal	90	10	-4.60**	12.14***	6.10	-7.34
			(2.36)	(3.37)	(3.82)	(4.53)
Spain	633	46	-4.83**	12.25***	6.50*	-6.75
			(2.41)	(3.42)	(3.84)	(4.59)
Sweden	823	56	-4.02	9.30***	8.04**	-6.58
			(2.68)	(3.23)	(3.62)	(4.66)
Switzerland	857	60	-2.82	10.67***	7.97**	-3.19
			(2.40)	(3.42)	(3.72)	(4.52)
UK	857	59	-2.25	10.76***	6.83*	-4.23
			(2.78)	(3.28)	(4.10)	(5.62)

Notes: Marginal effects in percentage points from glm estimates of the odds ratio of the recognition rate using the logit link function and binomial distribution, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *.

Table A4.7 shows the coefficients on the dummy variables for the directives when one country is left out. The signs on the Qualification Directive and the Procedures Directive remain negative and positive respectively, but the magnitude of the coefficients varies. As Goodman-Bacon (2021) shows, in the context of two-way fixed effects, the estimated coefficient is a variance weighted average of all possible 2×2 treatment effects. One possible concern is systematic differences between early and late treatment effects. If the treatment effects are greater among early adopters, then the sample-weighted effect will be overestimated if the treatment is concentrated early in the sample period and underestimated if it is concentrated later. Scatterplots of left-out coefficients from Table A4.7 against dates of implementation are shown for the Qualification Directive and the Procedures Directive in Figure A4.1. These show little systematic variation; regressions of the left-out coefficient from Table A4.7 on the date of implementation produce insignificant coefficients.

Figure A4.1: Left-out coefficients by date of implementation

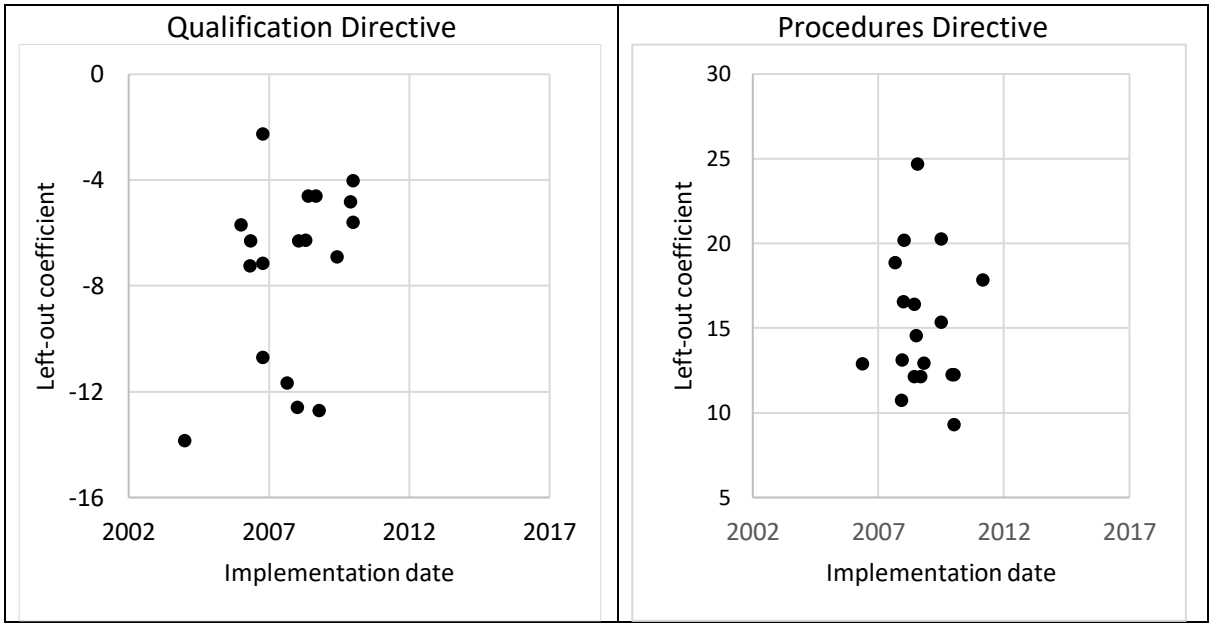


Table 4 examined the possibility that implementation of the original directives led to some convergence in recognition rates by including interactions between the original directives and the average recognition rate in 2002-4. However, those initial recognition rates reflect the composition of origin countries. Table A4.8 presents the results for 8 destination countries when the initial recognition rates are the unweighted average recognition rates for 16 origin countries that are included in Figure 7 for 2003-4. The coefficients on the interactions for this reduced sample still are all negative. But for the total recognition rate the interaction with the Qualification Directive loses significance while the interaction with the Procedures Directive increases in significance. For the convention recognition rate the interaction with the Procedures Directive remains negative and significant.

Table A4.8: Recognition rates and directives with interactions for 8 destinations (marginal effects × 100)

	(1)	(2)	(3)	(4)
	Total recognition rate		Convention recognition rate	
Qualification Directive (=1)	-6.79*	-9.27**	-1.24	-1.78
	(3.83)	(3.78)	(1.39)	(1.54)
Procedures Directive (=1)	21.84***	22.35***	9.18***	9.35***
	(3.80)	(3.94)	(1.62)	(1.61)
Recast Qualification Directive (=1)		7.03***		5.27***
		(2.08)		(1.53)
Recast Procedures Directive (=1)		-6.03**		-4.40**
		(2.63)		(1.87)
Qualification Directive × Battle deaths (000s	0.57***	0.48***	0.15*	0.12
	(0.16)	(0.16)	(0.09)	(0.09)
Qualification Directive × recognition rate in 2003-04	-0.14	-0.06	-0.14	-0.16*
	(0.20)	(0.19)	(0.09)	(0.09)
Procedures Directive × recognition rate in 2003-04	-0.58***	-0.55***	-0.46***	-0.45***
	(0.20)	(0.20)	(0.06)	(0.06)
Public attitudes against immigrants from poor countries		-0.25		-0.03
		(0.13)		(0.05)
Immigration policy index		-0.21		0.12
		(0.26)		(0.12)
Destination dummies	Yes	Yes	Yes	Yes
Origin × year dummies	Yes	Yes	Yes	Yes
Observations	6825	6825	6825	6825

Notes: Marginal effects in percentage points from glm estimates of the odds ratio of the recognition rate using the logit link function and binomial distribution, with origin/destination dyad weights. Standard errors in parentheses clustered by origin/destination dyad; significance levels: 1% ***, 5% **, 10% *.