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**Bogus Refugees? The Determinants  
of Asylum Migration to Western Europe<sup>1</sup>**

**FINAL VERSION**

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This article analyses the determinants of asylum migration to Western Europe. Potential asylum seekers balance the costs of staying versus the costs of migrating. Estimation results confirm that economic hardship and economic discrimination against ethnic minorities lead to higher flows of asylum seekers. However, political oppression, human rights abuse, violent conflict and state failure are also important determinants. Migration networks and geographical proximity are important facilitators of asylum flows as predicted by theory. Colonial experience, religious similarity and casual contact with the developed world (aid, trade and tourism) are not. Natural disasters and famines are also not statistically significant determinants. These events are typically short-term and unexpected, whereas asylum migration to Western Europe requires preparatory planning. If Western European countries want to tackle the root causes of asylum migration, then they need to undertake policy measures that promote economic development, democracy, respect for human rights and peaceful conflict resolution in countries of origin.

Asylum migration creates conflict within developed countries between natives and asylum seekers, and it creates conflict between neighboring developed countries with one trying to pass the burden of migration to the other. Yet, even though the international flow of people has been on the agenda of international affairs for many years (Teitelbaum 1984), it is still an under-researched area of international relations relative to the flow of, say, trade and finance. This article looks at an important aspect of this international flow of people and analyses the following question: What factors can explain asylum migration to Western European countries? We will analyze whether country-specific aggregate numbers of asylum seekers in Western Europe<sup>2</sup> can be explained by economic factors only, as the widespread perception of asylum seekers as ‘bogus refugees’ would suggest, or whether aspects of political oppression, human rights abuse and generalized violence in the countries of origin also play an important role.<sup>3</sup> This has important policy implications on what destination countries can do to tackle the root causes of asylum migration.

The question of what makes an asylum seeker a ‘genuine’ refugee is of course already highly contentious (Robinson and Segrott, 2002). A refugee in the legal sense is defined in Article 1 of the 1951 Convention relating to the Status of Refugees as a person who “owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of his nationality, and is unable to or, owing to such fear, is unwilling to avail himself of the protection of that country...”. Such refugees enjoy the right of *non-refoulement* – the right not to be returned to their country of origin. This definition does not directly cover threats to one’s personal integrity from other causes, e.g., people fleeing from war, political violence not specifically directed against them, natural disasters, famine and the like. As Roberts notes, developed countries have always been against extending the formal definition of refugees, “no doubt because of a refusal to accept the consequent duty to provide asylum”

(Roberts, 1998:381). Nevertheless, because it is difficult to justify denying protection for these other ‘genuine’ refugees altogether, many more asylum applicants are *de facto* accepted as refugees and granted *non-refoulement*. They are, however, not officially granted asylum and are often not provided with the same rights as given to those granted asylum (UNHCR, 2000).

Humanitarian concerns notwithstanding, all countries have used asylum policies partly to further their own interests. Politics and geography matter when it comes to asylum seekers. For instance, the institution of asylum was little contested for people fleeing in small numbers from Eastern European Communist countries. On the contrary, such asylum seekers served to “embarrass and discredit adversary nations” (Teitelbaum, 1984:430). Things changed in the 1970s and 1980s when asylum seekers were no longer the same as before: “they were increasingly third world in origin; they had less in common culturally with Europeans than previous asylum movements; and they arrived, often illegally, through the use of traffickers and/or false documentation” (Hansen and King, 2000:400). Giving asylum to these people carries much less geopolitical reward to developed countries than did the welcoming of asylum seekers fleeing Communism. And of course, numbers were also much higher than they used to be – see table 1.

< Table 1 about here >

All these factors led to a backlash and various attempts by Western European and other developed country governments to reduce the number of people lodging asylum applications. Such policy measures are often justified with recourse to the argument that “a rising number of applicants for asylum (...) are not in genuine need of protection” (European Council, 1992:1). When numbers of asylum seekers were at their maximum, calls for restricting the inflow even of ‘genuine’ refugees were not uncommon either. Western European countries have tried to restrict the increasing number of asylum seekers with the help of deterrence and

deflection measures such as lists of ‘safe’ third countries and ‘safe’ origin countries to which asylum seekers could be sent back to, visa restrictions, airline sanctions, and the like (Neumayer, 2004a). Little has been done to deal with the reasons why people seek asylum in the first place. Only very recently have Western European countries considered more seriously ways to reduce migration pressure by solving the causes of asylum migration rather than by merely keeping out unwanted asylum seekers from their borders (European Council, 1999 and 2002). To engage in such policies more effectively, one must first of all know what the major determinants of asylum migration are. This article will identify the major determinants and thus provide guidance on which policies are needed to address the root causes of asylum migration.

This article provides the first comprehensive quantitative analysis of the causes of asylum migration to Western Europe. Existing studies mainly address refugees crossing national boundaries and internally displaced persons (IDPs), the majority of which are located in developing countries.<sup>4</sup> A specific focus on asylum seeking in developed countries can be justified on a number of grounds. To start with, the rising number of migrants asking for asylum in developed countries, rather than the much higher number of refugees in developing countries, has caught the attention of the public, media and policy makers alike and has resulted in various defensive policy measures aimed at reducing these numbers. Quantitative studies of the causes of refugee and IDP flows in developing countries suggest that human rights abuses and generalized political violence are important causes for refugee flight, but are they also causes of asylum seeking in developed countries? Given that asylum seekers in developed countries make up less than 30 per cent of worldwide refugees and IDPs (UNHCR, 2002), and are typically excluded from many refugee studies<sup>5</sup>, it is unclear whether the same causes drive both phenomena. *A priori*, there might be good reasons to presume that

the causes will be different. Indeed, the popular perception is that asylum seekers are mainly economic migrants and therefore ‘bogus’ rather than ‘genuine’ refugees.

#### THEORETICAL CONSIDERATIONS: WHAT MAKES PEOPLE SEEK ASYLUM?

Much of the existing literature on the determinants of asylum seeking, or of migration more generally, distinguishes between factors pushing people out of their country of origin and factors pulling people towards the country of destination (see, for example, Schoorl, 2000). Following Moore and Shellman (2003), we will conceptualize the decision to lodge an application for asylum more directly as the consequence of utility-optimizing behavior. An individual weighs the costs of staying in his/her country of origin versus the costs of migrating to the country of destination.<sup>6</sup> If the costs of staying exceed the costs of migrating, then the individual, or in some cases the whole family, will decide to migrate and file an application for asylum. It is likely that this decision-making by asylum seekers is influenced by a complex range of mutually non-exclusive factors. Due to space limitations, we can only sketch these factors here.

Before looking at these factors, it is important that our conceptualization should not be misinterpreted. The decision to migrate might well be undertaken under time and other pressures, but even in these cases a decision to leave the country is in effect taken.<sup>7</sup> We therefore also draw on insights from the general literature on voluntary migration,<sup>8</sup> fully aware that sometimes asylum seekers will have fled their country under imminent threat to their own personal integrity or that of their family.

##### a. The Costs of Staying

As concerns socio-economic factors, the traditional neoclassical economic approach to migration emphasizes the importance of the relative difference in wage rates and rate of

return to human capital in the destination and countries of origin as decisive factors in the international migration decision (Bauer and Zimmermann, 1994). Poor living standards and employment opportunities in the country of origin make it more attractive to seek improvement of one's economic fortune abroad. They raise the benefits of migration and therefore the opportunity costs of staying behind. Human capital economic theory also predicts that people of working age are most likely to migrate as they have a higher chance to increase their living standards than others (Massey et al., 1993; Borjas, 1994). Importantly, migration that is mainly determined by an economic calculus might become channeled into asylum migration if other legal channels of migration become shut. This happened in the late 1960s and 1970s when legal economic migration and family reunification with existing migrants became severely restricted in many Western European countries.

Oppressive political conditions raise the costs of staying for all individuals, except those forming part of the oppressing political elite. Restrictions on the freedom to associate, to assemble, to voice dissident political opinions and to compete for political office can therefore be expected to be positively associated with asylum flows. The same holds true for any form of threat to the personal integrity of individuals. This threat could come from various sources. It could come from the government or government-controlled agencies in the form of human rights violations and the killing of political dissidents. A threat could also come from dissident groups, however, who use violence in their attempt to overthrow the existing political regime. In most cases, there will be a combination of threats from both government and dissident sides, most clearly visible in periods of civil war, often facilitated and spurred by foreign policies of external parties. The threat can also come from another country in the case of an inter-state war. Lastly, geography reminds us that threats to one's personal integrity can also come from the exposure of human beings to natural disasters such as earthquakes, floods, and the like. The same is true for famines, which are often a



consequence of the combination of adverse natural conditions with violent political conflict. Quite clearly, threats to one's personal integrity significantly raise the costs of staying. Also, threats to personal integrity can go hand-in-hand with damage to the economic opportunities of affected individuals, thus reinforcing the socio-economic factors influencing the decision-making.

#### b. The Costs of Migration

The costs of migration are normally high given that one leaves one's familiar surroundings and culture and then needs to adapt to new living conditions, possibly a new language and a different culture in the country of destination, where the existing population might view immigrants with suspicion and hostility. As *The Economist* (2002:6) has put it, "Leaving one's home to settle in a foreign land requires courage or desperation". If only for this reason, most people stay put rather than leave their country of origin. In addition, there are also the direct costs of migration in the form of transportation and information costs. Since fewer people in very impoverished countries will have the resources available to finance their migration, it is widely suggested that the effect of the level of economic development on migration could be bell-shaped, often referred to as a 'migration hump' (see, for example, Vogler and Rotte 2000; Holzer, Schneider and Casey 2002; Boswell 2003). Great poverty might impede migration, and little poverty takes away the incentives for migration. A similar argument can be made with respect to the political regime in the source country. Democratic countries restrict the entry, but rarely the exit, of citizens, whereas harsh autocracies often impose limitations on leaving the country. The effect of autocracy on migration might therefore be bell-shaped as well. In harsh autocracies leaving the country is difficult, whereas full democracy takes away one incentive to leave.

More generally, factors that facilitate the transition from one country to another will lower the costs of migration and therefore be associated with higher asylum flows. For example, cultural and religious similarity helps to reduce the costs of adjusting to the new country of destination. Similarly, the systems approach suggests that existing links and personal contacts between destination countries and the country of origin might also facilitate migration as they make individuals more familiar with the other country. Higher inflows of aid, trade or tourism might enhance such contacts (Bilsborrow and Zlotnik, 1994). Individuals from countries of origin which were colonized by Western developed countries in the past might face lower costs of migration to these countries (Robinson and Segrott, 2002). This is because the former colonial power's language is often spoken in the former colony as well. In addition, there are often long-term residents from former colonies living in the destination country who can help in finding jobs and who can provide some cushioning of the cultural shock linked to migration to a foreign country.

Similarly, according to network theory, a higher number of past asylum seekers from a particular country of origin lowers the costs of migration for those left behind (Massey et al., 1993; Koser and Pinkerton, 2002; Robinson and Segrott, 2002). This is because positive examples have been set that migration can be done, and more or less dubious businesses will have evolved to help in getting visas or arranging for transportation (traffickers). In addition, already existing asylum seekers might help newcomers in finding their way in the country of destination and in the search for employment. Immigrants tend to cluster spatially in order to lower the costs of migration. Destination countries often try to prevent such clustering without much success.

Geographical proximity will also lower the costs of migration as boats or land transport can be used, whereas great geographical distance to the country of destination raises the costs of migration as air transport is required. Since most refugees do not have the means to

overcome great geographical distances, they become IDPs, or refugees in neighboring developing countries rather than asylum seekers in the developed world.

Finally, generous welfare provisions for asylum seekers lower the costs of migration (Robinson and Segrott, 2002). Conversely, deterring measures such as restrictions on welfare benefits and working rights, the risk of one's application becoming rejected due to low recognition rates, limited appeal opportunities and the threat of forced removal all raise the costs of migration. Developed countries have gone a long way over the last decade or so to raise these costs of migration. Ironically, this has meant that asylum seekers have resorted more to the help provided by traffickers (Koser, 2000), which is then regarded with great suspicion in the destination country (UNHCR, 2000). In addition, developed countries have also taken measures to prevent individuals from lodging asylum applications in the first place in the form of visa restrictions, sanctions against airlines bringing in passengers without valid visas, and the like (Böcker and Havinga, 1998; Havinga and Böcker, 1999; Schuster, 2000; Noll, 2000). They have not been worried by the fact that many of these restrictions indiscriminately raise the costs of migration for 'genuine' refugees and for those in search for improved economic living conditions, even though the measures are usually justified by the perceived need to deter only the latter (Steiner, 1999; Gibney, 2000).

#### A REVIEW OF QUANTITATIVE REFUGEE AND ASYLUM MIGRATION STUDIES

Given the political and social attention that the number of asylum seekers has attracted over the last decade or so, there is a surprising lack of quantitative analysis of the causes of these flows. There are more studies either looking at flows of refugees and IDPs in general, which mainly reside in countries in the developing world, or explicitly restricting the analysis to developing countries. We start with a review of these studies before turning to the fewer existing studies of asylum migration to developed countries.

Edmonston (1993) finds that threat of violence and, less clearly, low socioeconomic development explain the number of refugee emigrants per capita in 74 and 130 refugee-generating and receiving countries in 1986 and 1990, respectively. Apodaca (1998), in her analysis of the relationship between human rights violations and refugee migration in 20 selected developing countries over the period 1985 to 1994, similarly finds that such violations are strong predictors of consequent refugee flows. With the help of frequency tables, Gibney, Apodaca and McCann (1993) find that countries with gross human rights violations are those generating high numbers of both refugees and IDPs and that refugees tend to flee to countries with a better human rights record. Whilst providing interesting evidence, these studies have some limitations. One is that they are confined to a selection of countries, where refugee flows have actually taken place on a large scale. This can create sample selection bias. In addition, with the exception of Edmonston's study, they do not control for other determinants besides human rights violations, which could result in omitted variable bias.

Schmeidl (1997) provided one of the first multivariate quantitative analyses of the causes of refugees, which includes in principle all countries, not just those where people have been turned into refugees. Using ordinary least squares (OLS) in a panel covering the period 1971 to 1990, she finds that events of 'generalized violence' are the main causes of refugees. Genocides/politicides<sup>9</sup>, civil wars, particularly if coupled with external military intervention, and, once outliers are deleted, ethnic rebellion force people to migrate. The lagged stock of refugees, which captures the concept of a migration network, is also highly statistically significant. In contrast, she finds no evidence that the type of political regime, as measured by the extent of political freedom, matters. The same is true for economic hardship or poverty as proxied by per capita energy consumption as well as population pressure as proxied by population density. She also finds no robust evidence that external or interstate wars matter.

As an explanation for the striking difference between civil and interstate war, she suggests that “if we assume that refugees flee from where the shooting comes from, internal displacement should be more likely than external flight, since interstate wars are often most intense in border regions” (Schmeidl, 1997:304).

Many of Schmeidl’s results are confirmed by a similar study undertaken by Davenport, Moore and Poe (2003) of forced migration over the period 1964 to 1989. Unlike Schmeidl (1997), they include both refugees and IDPs. Given that the search is for the determinants of forced migration, it makes sense to include people who are forced to migrate, but stay within the borders of the country of origin. Contrary to Schmeidl (1997), who looked at refugee emigration, Davenport, Moore and Poe (2003) analyze net migration defined as refugees leaving the country plus IDPs minus refugees from other countries. As a methodological advancement, they use a fixed effects estimator, which ensures unbiasedness of the estimated coefficients, even if the explanatory variables are correlated with unobserved time-invariant, country-specific fixed effects.

Similar to Schmeidl (1997), Davenport, Moore and Poe (2003) find that measures of civil war, genocide/politicide and the lagged stock of refugees are highly significant predictors of refugee flows. In addition, they find that dissident violence short of outright civil war also represents a cause of forced migration. At the same time, they find interstate war to be highly insignificant. This is contrary to Schmeidl’s suggestion that interstate wars create IDPs rather than refugees, since the former are included in Davenport, Moore and Poe’s (2003) analysis. Using gross national product (GNP) per capita as the more direct and valid measure of poverty, they find it to be highly insignificant. Interestingly, autocratic regimes also do not create more or less refugees than democracies once other factors are controlled for, confirming the result by Schmeidl (1997), but changes in the regime of a country are associated with higher refugee flows.

Moore and Shellman (2003) extend the analysis of Davenport, Moore and Poe (2003) to the period 1964 to 1995. Like Davenport, Moore and Poe, they also find that both state-executed violence as well as violence ordained by dissident groups is the main cause of forced migration. The same is true for human rights abuses. Contrary to both Schmeidl (1997) and Davenport, Moore and Poe (2003), a higher average income level, as measured by GNP per capita, is associated with higher flows of refugees and IDPs. However, in comparing how a change from minimum to maximum value of independent variables changes the expected number of forced migrants, they find that GNP per capita is a substantively unimportant variable relative to the measures of violence and human rights abuse. To sum up, existing quantitative studies of the causes of flows of refugees and IDPs find that political violence and civil war are the main reasons why people flee. These findings are buttressed by more qualitative analyses – see, for example, Cohen and Deng (1998) and the references cited therein.

With respect to asylum migration, only a few quantitative studies exist. Vogler and Rotte (2000) extend earlier work by Rotte, Vogler and Zimmermann (1997) to asylum migration from 86 Asian and African countries to Germany over the period 1981 to 1995 using fixed effects estimation. They find the predicted bell-shaped relationship with income per capita and a negative effect of economic growth on asylum migration, measured as asylum seekers divided by the population of the country of origin. Human rights violations have a positive effect on migration. Political regime type (democracy versus autocracy) either does not matter or, somewhat unexpectedly, leads to more asylum migration from democracies. A positive effect is also found for the urbanization rate. Existing immigration groups attract greater asylum flows. German aid flows to source countries do not matter, whereas trade flow coefficients are significant, but with an unexpected negative sign.

Holzer, Schneider and Casey (2002) analyze the combined number of asylum seekers over the period 1990 to 1995 in Germany and Switzerland, using a negative binomial regression technique in a cross-sectional sample.<sup>10</sup> Referring to their general model, they find that poorer countries with higher infant mortality rates send more asylum seekers. Human rights violations exert a positive effect on asylum migration as do geographical closeness and existing migrant groups. A dummy for violent conflict as well as a variable measuring the number of war deaths turns out to be highly insignificant, however.

Summing up, in comparison to the studies looking at refugees and IDPs in developing countries, the studies addressing asylum migration to developed countries indicate that economic factors are more important determinants of migration. This is not surprising given that the developed destination countries are much richer than their developing country counterparts. Where included, the political regime and violent political conflict do not matter, but human rights violations do.

To our knowledge, there does not exist any quantitative study of the determinants of asylum migration to developed country destinations other than Germany and Switzerland. Our study aspires to fill this gap. In covering all Western European destination countries, we cover flows of asylum migration more comprehensively, also accounting for the fact that asylum seekers often substitute one destination country for another in reaction to deterrence measures. In addition, we test a more comprehensive range of potential determinants of asylum migration. In particular, we want to find out whether the political regime and the incidence of violent political conflict really are irrelevant for explaining flows of asylum seeking.

## RESEARCH METHODOLOGY

### a. The Dependent Variable

The dependent variable (*ASYLUM*) is the annual number of asylum seekers in Western European countries by country of origin over the period 1982 to 1999, as published by the United Nations High Commissioner for Refugees (UNHCR, 2001).<sup>11</sup> The data go back to 1980, but we lose the first two years since some of our independent variables are lagged. Western Europe refers to the 15 EU member countries plus Norway and Switzerland. Countries of origin are in principle all developing countries, that is all countries other than Western Europe, Northern America, Japan, Australia and New Zealand, which naturally are not countries of origin themselves. However, missing data on some of the explanatory variables leads to a sample of 127 developing countries, which together account for around 85 per cent of all asylum seekers in Western Europe.

The applications generally refer to the number of applicants or persons, rather than the number of applications or families, and exclude repeat or appeal applications. We focus on asylum application in Western European countries mainly for reasons of better data availability. The UNHCR does not provide information on asylum applications by country of origin in the United States before 1987; in Canada before 1989; and in Australia, New Zealand and Japan before 1996. Data from European countries other than the Western European ones are similarly sparse. Given that Western Europe received some 12 million asylum applications amounting to about 72 per cent of all applications lodged in developed countries over the period 1980 to 1999 (see table 1 above), our dependent variable captures the main flows of asylum seeking. Only those persons who have officially filed a formal request for asylum are included. Other refugees who, for whatever reason, are either unwilling or unable to file an asylum request, and illegal immigrants are not included.<sup>12</sup> Practically no statistical information exists for these other refugees and illegal immigrants.



## b. The Independent Variables

We need to ensure that our empirical model captures the complexity of likely causes of asylum migration. Faced with the paucity of data on unemployment rates and real wages, we resort to taking the GDP per capita in purchasing power parity and constant US\$ of 1997 (*GDP*) as our variable representing the economic incentive for migration. The data are taken from World Bank (2001) as the primary source and from WHO (2000) as supplementary source. In accordance with our theoretical considerations, we pre-tested for a non-linear effect of economic development on migration flows. However, we found no evidence for such an effect and therefore excluded the squared term from the main estimations reported below. We also include the average annual growth rate over the last three years (*GROWTH*) as another measure of economic hardship since average living standards typically deteriorate in times of economic crisis, independently of the income level. In addition, we included an index of economic discrimination against ethnic minorities (*ECONDISCRIMINATION*) from the Minorities at Risk dataset, which codes the severity of discrimination on a 0 to 4 scale (CIDCM, 2002). This index was multiplied by the population share of the minority discriminated against. In the case of several minorities, the sum of all population weighted discrimination indices was taken. To capture the effect that people in their working age are more likely to migrate, we include the share of 15- to 64-year-olds among the total population in the country of origin (*%POP15-64*) (World Bank, 2001).

To measure political oppression, we constructed an autocracy variable as the unweighted sum of the political rights and civil liberties index (*AUTOCRACY*) published by Freedom House (2002). In this source, political rights refer to, for example, the freedom to organize in political parties or groupings, the existence of party competition, and an effective opposition, as well as the existence and fairness of elections including the possibility of taking power via

those elections. Civil liberties refer to, for example, the freedom of the media, the right to open and free discussion, the freedom of assembly, the freedom of religious expression, the protection from political terror and the prevalence of the rule of law. The two indices are based on surveys among experts assessing the extent to which a country effectively respects political rights and civil liberties, both measured on a 1 (best) to 7 (worst) scale. In accordance with our theoretical considerations, we pre-tested for a non-linear effect of autocracy on asylum migration. There is some weak evidence for such an effect in the results reported below.

Using Freedom House data over a period of time is not unproblematic since the scale, with which countries are judged, changes slightly over time and it is not designed as a series. The Polity data for measuring democracy do not suffer from this problem, but since they are available for fewer countries than Freedom House data, they are used here only in sensitivity analysis (*POLITY*) (Gurr and Jagers, 2000).

As a measure of human rights violations (*RIGHTSVIOLATION*), we use the two Purdue Political Terror Scales (PTS) in accordance with many studies of refugee flows in the developing world (Davenport, Moore and Poe 2003; Moore and Shellman, 2003). One of the two PTS is based upon a codification of country information from Amnesty International's annual human rights reports to a scale from 1 (best) to 5 (worst). Analogously, the other scale is based upon information from the US Department of State's Country Reports on Human Rights Practices. The simple average of the two scales was used for the present study. If one index was unavailable for a particular year, the other one available was substituted for the aggregate index (data from Gibney, 2002).

Following Moore and Shellman's (2003) study, in order to measure threats to personal security from violent dissident political activity, we take the sum of guerrilla and riot events from Arthur Banks' Cross-National Time-Series Data Archive (*DISSIDENTVIOLENCE*).

The major disadvantage of the Banks' violent events count data is that they do not measure the intensity of violence other than by the number of violent events occurring. However, we have no other measure available. Another disadvantage is that the Archive is commercially marketed and not freely accessible. Its data were collected as part of the US State Failure Task Force Project and have been published by King and Zeng (2001), but only up to 1995. We therefore include this variable only in additional model estimations to avoid the loss of four years of observations.

Threats to personal integrity stemming from events of civil and ethnic wars as well as the collapse of state authority (*DOMWAR/STATEFAIL*) are measured by the maximum of magnitude scores, each on a zero to four scale, as coded for such events by the US State Failure Task Force Project. For civil and ethnic wars, the magnitude refers to the portion of a country affected by fighting, whereas for state failure the magnitude refers to the extent of failure of state authority (Marshall, Gurr and Harff, 2002). In addition, we use a magnitude score measuring the annual number of deaths from genocide and politicide (*GEN/POLITICIDE*) from the same source.<sup>13</sup> Genocide and politicide are defined as the calculated physical destruction of a communal or political group in whole or part.

With respect to interstate war, we wondered whether the fact that existing refugee studies find this variable to be insignificant might be due to the high threshold of 1000 battle deaths used for coding a conflict as interstate war in the commonly used Correlates of War data set (Singer, 2003). We therefore constructed a variable measuring the extent of external armed conflict (*EXTERNALWAR*) based on data from the Uppsala Conflict Data Project (Gleditsch et al., 2002). The variable is coded as zero if there was no armed conflict on the territory of a country. It is coded as one if there was a minor armed conflict, defined as any type of armed conflict resulting in more than 25 but less than 1000 casualties in any one year. The variable was coded as two if the conflict was of intermediate nature, defined as at least 25 but less

than 1000 casualties in any one year in addition to an accumulated total of at least 1000 deaths. Three is the code for large conflicts, which require more than 1000 battle deaths in a single year to qualify. Note that the reference point for coding is whether the conflict takes place on the territory of a country. A conflict is not coded for a country participating in a conflict outside its own territory as this cannot be expected to create refugees in this country.

To measure the threat to people's personal integrity coming from natural disasters, we constructed a variable counting the total aggregate number of deaths from droughts, earthquakes, epidemics, extreme temperatures, insect infestations, floods, earth slides, volcano eruptions, sea waves and surges, wild fires and wind storms (*NATURALDISASTER*) (CRED, 2002). To test for the effect of famines and food insecurity on asylum migration, we take net per capita food production (*FOOD*), indexed with base years 1989 to 1991, as our proxy variable (FAO, 2003).

To see whether cultural similarity is a facilitating factor lowering the costs of migration, we included the percentage of Christians in the country of origin (*%CHRIST*) (La Porta et al., 2001). Aid and trade in per cent of GDP (*AID* and *TRADE*) as well as the number of tourist arrivals (*TOURISTS*) in the country of origin are taken to test for whether the extent of casual contact with the outside world has a significant impact upon flows of asylum seeking (World Bank, 2001 and WTO, 2002). We interpolate these data for missing years to avoid further reductions in sample size.

To test for the colonial link effect, we included the number of years between 1900 and 1960 a country has been a former colony of any European destination country (*COLONY*) (Alesina and Dollar, 2000). Another important facilitating factor is geographical proximity. The closer a country of origin is to Western Europe, the easier it is to reach these countries and file an asylum application. We capture this by the minimum air distance between the

capital city of the country of origin and the capital city of the closest Western European country (*DISTANCE*) (Bennett and Stam, 2001).

The presence of so-called migration networks is commonly regarded as an important facilitator (Böcker, 1998). Unfortunately, we were not able to find reliable data on the size of communities from origin countries in Western European destination countries. We therefore take the moving sum of asylum applicants from the prior five to two years as our proxy of migration networks (*ASYLUMSTOCK*).<sup>14</sup>

Other potentially important deterrents, which we could not take into account due to lack of data, include visa requirements, asylum procedures and recognition rates, regulations with regard to welfare benefits and working rights of asylum seekers, forced removal, repatriation rates, etc. In as much as they apply to asylum seekers from all countries similarly, these effects will, however, be covered by the use of year-specific time dummies (see next section below).

Finally, we include population size (*POPULATION*) as a control variable since countries of origin with a greater population size might also send more asylum seekers to EU countries, all other things equal. Also, people living in cities are likely to be better informed about migration possibilities and are more footloose. We therefore include the urbanization rate (*%URBAN*). Data for both variables are taken from World Bank (2001).

We log those explanatory variables which are strictly positive and for which an elasticity interpretation of their coefficients makes sense in the estimations in which the dependent variable is also logged: namely the asylum stock, population, income and minimum distance variables.<sup>15</sup> Table 2 presents some summary information on all variables. Variance inflation factors were computed to check for multicollinearity. The factors for all individual variables are below 5 with the mean value below 2. There is therefore no reason to be concerned about multicollinearity.

< Table 2 about here >

### c. Estimation Technique

We estimate the following model

$$y_{it} = \alpha + \beta_1 \sum_{k=2}^5 y_{i(t-k)} + \beta_2 x_{it} + \sum_{j=1}^{T-1} \gamma_j D_j + \varepsilon_{it}, \text{ where } \varepsilon_{it} = u_i + v_{it}. \quad (1)$$

The subscript  $i$  represents each country of origin in year  $t$ , and  $y$  is the number of people filing for asylum. The second term on the right-hand side is the ASYLUMSTOCK variable, on which more will be said below. The vector  $x$  contains the other explanatory variables. The  $(T-1)$  year-specific dummy variables  $D$  capture general developments such as lower transportation costs and tighter communication links, which facilitate the search for asylum for individuals in all countries of origin (UNHCR, 2000). Similarly, they control for a potential increase in asylum migration following restrictions on legal economic migration and family reunification. They also capture policy measures to reduce the number of asylum seekers, such as visa restrictions, sanctions for carriers, the benefits for and general accommodation conditions of asylum seekers, and the like, to the extent that these policy measures apply to all countries of origin equally. Their inclusion is important as these policy measures are difficult, if not impossible, to quantify. The  $u_i$  represent individual unobserved or latent country effects. These capture time-invariant characteristics of countries of origin that are either not measurable or not captured by our explanatory variables. The  $v_{it}$  is a stochastic error term.

We first estimate (1) with fixed effects (FE). We employ standard errors that are fully robust and adjusted for the clustering of observations, i.e. observations are merely assumed to be independent across countries, but not necessarily within countries. The FE estimator

subtracts from the equation to be estimated the over time average of the equation for each country. Because of this so-called within transformation, the individual country effects  $u_i$  are wiped out, and the coefficients are estimated based on the time variation within each cross-sectional unit only. Any correlation of the fixed effects with the explanatory variables is therefore rendered unproblematic. Unfortunately, by definition the FE estimator cannot estimate time-invariant explanatory variables. We therefore also estimate (1) with a population-averaged generalized estimating equation (GEE) estimator with an assumed Gaussian distribution of the dependent variable. The GEE estimator is asymptotically equivalent to a random-effects estimator, but additionally allows standard errors to be adjusted for clustering. For both estimators, the dependent variable is logged in order to render its distribution less skewed, after adding one to make such logging possible for zero values.<sup>16</sup>

The second term on the right-hand side variable, *ASYLUMSTOCK*, is similar to a lagged dependent variable. However, we take the sum of the past five to two-year dependent variable rather than the simple one-year lag of the dependent variable for two reasons. One is to average out coincidental temporary ups and downs, and the other is to capture the more long-term presence of groups of asylum seekers from specific countries of origin. Hence, whilst the dependent variable is a flow, *ASYLUMSTOCK* is a stock variable as its name suggests. Second, the value of the immediately preceding year is left out to mitigate correlation of the variable with the error term. The reason is that correlation of one of the regressors with the error term leads to bias in OLS estimation results. To avoid this bias, one would need to employ a dynamic Generalized Method of Moments (GMM) estimator. However, this estimator requires the use of instrumental variables in the form of lags. Such a procedure always leads to a loss of efficiency in estimation. The researcher is therefore faced with a trade-off between a bias in FE estimation and loss of efficiency in 2SLS or GMM estimation.

We decided to live with the fact that our estimations are potentially slightly biased, and we mitigate the problem by excluding the immediately preceding value from *ASYLUMSTOCK*. Also, the bias becomes smaller with rising T, and the time dimension of our panel is higher than in many other panels where T can be as small as two or three.

## RESULTS

Column I of table 3 reports FE estimation results for the base model. Column II reports GEE estimation results, where we can now also add the time-invariant distance, colonial experience and religious similarity variables. In column III we add the dissident violent event count variable, which is unavailable after 1995 and therefore reduces the sample size considerably. In column IV we further add the aid, trade and tourism variables, which have lower availability and reduce the sample size considerably. Column V reports results from the Negative Binomial Regression Model with the same independent variables as in column II.

< Table 3 about here >

Starting with column I, the lagged sum of asylum flows is highly significant, supporting the hypothesis of migration networks. All three economic variables are statistically significant with the expected sign: higher income and economic growth lower asylum migration, whereas greater economic discrimination against ethnic minorities raises asylum migration. The share of people in their working age is insignificant, however. With respect to political variables, autocracy has the expected bell-shaped impact as greater autocracy first increases and then lowers asylum migration. Not all threats to personal integrity are statistically significant. Threats that stem from human rights violations and civil and ethnic wars, or the collapse of state authority, are positively associated with asylum flows. In contrast, neither genocide/politicide nor external armed conflict are statistically significant. The same is true for threats to personal integrity stemming from natural disasters and food



shortages. None of our two control variables – population size and urbanization rate – are statistically significant.

Results from GEE estimation for the economic and threat to personal security variables are very similar to those from FE estimation. The only difference is that the external conflict variable becomes marginally significant at the .1 level with the expected positive sign. Both population size and the share of people in their working age now become significant with the expected positive sign. One explanation for this change is the small variation of these variables over time, which results in large standard errors in FE estimation results due to inefficient within-time estimation. However, the urbanization rate, which also varies little over time, remains insignificant as before. As concerns our newly added time-invariant variables, distance is a statistically significant deterrent. Neither religious similarity nor former colonial experience appear to matter, however. Results are hardly affected if *DISSIDENTVIOLENCE* is added in column III. Events of dissident violence are positively associated with asylum seeking as expected. If anything, former colonies send fewer asylum seekers to Western Europe.

The aid, trade and tourism arrival variables are added to GEE estimation in column IV. Neither aid nor trade are significant, and if anything, a higher inflow of tourists is associated with smaller numbers of asylum seekers. Results for the other variables are very similar in terms of sign and statistical significance of coefficients. The main difference is that there is no longer a non-linear effect of autocracy. The squared term was insignificant, and the reported results therefore refer to the model with the linear term only.

#### SENSITIVITY ANALYSIS

In sensitivity analysis, we tested the effect of outliers on our estimation results. Due to space constraints, we merely describe, but no longer report, the detailed results here. To start with,

we took all countries from the former Yugoslavia out of the sample. This is due to the extraordinarily high influx of people from these countries fleeing to Western Europe in the early to mid-1990s. Our results are hardly affected by their exclusion. This could at least partly be due to the fact that Western European governments faced with a large-scale influx of asylum seekers from these countries took them out of the normal system based on individual decision of asylum claims and provided them with temporary group protection (UNHCR, 2000:158). As a more general treatment of outliers, we exclude observations that have both high residuals and a high leverage (Belsley, Kuh and Welsch, 1980). The criterion is to exclude an observation if its so-called DFITS is greater than twice the square root of  $(k/n)$ , where  $k$  is the number of independent variables and  $n$  the number of observations. DFITS is defined as the square root of  $(h_i/(1-h_i))$ , where  $h_i$  is an observation's leverage, multiplied by its studentized residual. Applying this criterion leads to the exclusion of 106 observations. Results are not much affected, however.

Given low life expectancy in developing countries, one might wonder whether the population share of people aged 15 to 44 is more relevant than the share of people aged 15 to 64 used in the estimations above. However, this alternative measure of demographic composition in origin countries is insignificant throughout. Does economic inequality in sending countries matter? If we include the Gini coefficient in the estimations, then the number of observations drops dramatically and the coefficient itself is statistically insignificant. This could be due to the poor quality of cross-national data on income inequality, however.

Instead of the food supply variable, we tested the daily calorie intake as a different proxy for famine and hunger, without affecting the statistical insignificance of this variable. Instead of the continuous variable counting the number of deaths from natural disasters, we created a dummy variable capturing disasters with a threshold of 1000 deaths. Again, the variable

remained insignificant. When we replaced the *AUTOCRACY* variable from Freedom House with the *POLITY* measure, which has poorer data availability but is more consistent in its definition across time as discussed above, then the non-linear effect is no longer apparent, and greater autocracy linearly raises the number of people seeking asylum in Western Europe.

## DISCUSSION

Our results suggest a complex mix of determinants of asylum migration. There is clear evidence that economic factors matter. The estimated elasticity of average per capita income is almost unitary in column I of table 3, suggesting that a 1 per cent increase in income is associated with a 1 per cent decrease in the number of asylum seekers. A one percentage point lower economic growth rate raises the number of asylum seekers by about 0.02 per cent. Whilst this is small, economic growth also has an indirect effect via raising the level of income. A one per cent increase in the number of existing asylum seekers in the recent past raises the number of asylum seekers by a relatively small 0.09 per cent. A one per cent increase in the distance to Western Europe lowers the number of asylum seekers by 1.33 per cent (column II of table 3). More populous countries send more asylum seekers, but not proportional to their population size as the estimated elasticity is substantially below unity. The coefficients of the other variables are more difficult to interpret. Variables are measured in different units and have different distributions, which is why the estimated coefficients cannot be compared directly with each other. Taking a one standard deviation increase in a variable to represent a ‘substantial’ increase, table 4 shows the percentage increase in asylum seekers following a substantial increase in an explanatory variable.<sup>17</sup> It clearly shows that the impact of changes in the economic variables and in existing asylum networks is substantively important. However, the substantive importance of human rights violations, dissident

violence, ethnic/civil war and state failure as well as external conflict is not negligible either. Note that due to the non-linear effect of *AUTOCRACY*, the estimated percentage increase following a one standard deviation increase in this variable depends of course on the initial value of the variable. An increase from one standard deviation below the mean towards the mean increases the number of asylum seekers by more than 133 per cent. The turning point after which a further increase in autocracy leads to a reduction in the number of asylum seekers can be estimated as  $(-\delta/2\phi)$ , where  $\delta$  is the coefficient of the autocracy variable and  $\phi$  the coefficient of the squared term. The estimated turning point for the Freedom House index, which runs from 2 to 14, is about 13.1 in column I, 13.5 in column II and 11.8 in column III. In other words, only in the most restrictive autocracies can the limitations typically imposed on emigration in such regimes be expected to outweigh the incentive to migrate away from political repression.

< Table 4 about here >

What accounts for the fact that the genocide/politicide, famine and natural disaster variables all turn out to be insignificant? One explanation is that people fleeing from these events are likely to remain in neighboring developing countries and/or become IDPs within their own country, which is why studies looking at refugee and IDP flows in developing countries find them to be statistically significant, particularly the genocide/politicide variable. Another explanation could be that these tend to be short-term and one-off events. In contrast, poverty, economic discrimination against ethnic minorities, human rights violations, autocratic regime and even civil/ethnic warfare are more persistent events. Given that migration to Western Europe probably requires some planning and preparation, we are not surprised to find that factors to which people are exposed to more persistently over time are more significant determinants of asylum migration to Western Europe than are short-term and one-off events. This might even explain the fact that we find only some evidence that external

armed conflict matters. Such conflicts are not only very infrequent compared to ethnic/civil war and state failure, but they also tend to have a short duration (Slantchev, 2003).

The insignificance of colonial ties is a rather striking result. These ties influence the specific country in which asylum seekers coming to Western Europe will settle (Böcker, 1998; Neumayer 2004a), but former European colonies do not send more asylum seekers into Western Europe as a whole than non-colonies. That religious ties are insignificant confirms studies examining the specific destination choice within the EU (Böcker, 1998; Neumayer 2004a). The same is true for any potential contact established by aid, trade or flows of tourism. These are likely to be far too casual to have a significant impact upon asylum migration. Like other studies, we find that migration networks and geographical distance are highly significant determinants of asylum migration.

## CONCLUSIONS

Are asylum seekers in Western Europe economic migrants or ‘genuine’ refugees? As our analysis is at the aggregate level, we can say nothing definite about individuals. What we can say is that economic conditions in countries of origin are statistically significant and substantively important determinants of aggregate numbers of asylum seekers coming to Western Europe. This implies that policies aimed at improving economic conditions in these countries, such as generous development assistance and the opening of protected European markets to imports from developing countries, can lower the migration pressure from these countries. The pressure on Western Europe will remain as long as income levels are so widely different. Indeed, the divergence in income levels means that the pressure is bound to increase further (Cole and Neumayer, 2003). We find no evidence for a bell-shaped effect of income levels in origin countries on asylum flows, the so-called migration hump, and therefore reject the suggestion that “poverty reduction is not in itself a migration-reducing

strategy” (Nyberg-Sørensen, Van Hear and Engberg-Pedersen, 2002:35) or is so only in the long-run (Rotte, Vogler and Zimmermann, 1997).

At the same time, our results clearly demonstrate the importance of the political regime in origin countries and of threats to the personal integrity of individuals from human rights abuse, dissident political violence, civil/ethnic warfare and state failure as well as possibly external conflict. This result suggests that some of the drivers of forced migration in the developing world as identified by the studies of, for example, Schmeidl (1997), Davenport, Moore and Poe (2003), as well as Moore and Shellman (2003) are also major determinants of asylum migration to developed countries. It also suggests that the few existing studies of asylum migration to single European countries such as Vogler and Rotte (2000), Rotte, Vogler and Zimmermann (1997) as well as Holzer, Schneider and Casey (2002) might underestimate or not fully capture the effect of violent political conflict in origin countries on asylum migration. In comparison, this study includes a more comprehensive set of variables covering various aspects of political violence. With respect to regime type, our results contradict the findings of Vogler and Rotte (2000), Rotte, Vogler and Zimmermann (1997) and some of the studies of refugee flows in the developing world. The lack of democracy increases asylum migration in our estimations, but often in a non-linear way, which is not allowed for in these studies and which might partly explain the difference in results. With respect to the asylum migration studies, another reason could be that our research design includes all developing countries of origin, not just those from Africa and Asia. Also, we analyze asylum migration to Western Europe rather than one single destination country. However, the latter is not decisive since in non-reported sensitivity analysis we restricted the estimations to asylum migration to Germany (rather than Western Europe), which confirmed our results.

More importantly, our results put the perception that aggregate numbers of asylum seekers coming to Western Europe are merely determined by economic conditions in the countries of origin into great doubt. The spread of democracy around the world can be expected to lower the number of people seeking asylum, but no such positive worldwide trend is apparent in terms of violent political conflict and human rights violations. Again, Western Europe can contribute to mitigating asylum migration pressure if its policies help to solve the fundamental causes of conflict and human rights abuse. If it fails to prevent these events from occurring, then it will have to face the migration pressure. The conflicts in the former Yugoslavia, with its hundreds of thousands of people fleeing to Western Europe, represent a stark warning. It is only recently that the EU has recognized the need for a “comprehensive approach to migration addressing political, human rights and development issues in countries and regions of origin and transit. This requires combating poverty, improving living conditions and job opportunities, preventing conflicts and consolidating democratic states and ensuring respect for human rights...” (European Council, 1999: para.11).<sup>18</sup> It has yet to prove that this commitment is real and not merely something reserved to non-binding declarations of good will (Boswell, 2003).

Of course, economic factors cannot be cleanly separated from others. For example, persistent episodes of conflict and violence can increase economic hardship in countries of origin. Also, those fleeing from persecution and violence might also seek better economic conditions in the country of destination. Lower travel costs have made it easier for people to flee to Western developed countries instead of seeking refuge in neighboring, equally poor developing countries. Theory predicts that even those fleeing from persecution will naturally prefer to migrate to developed countries if given a choice. The UNHCR argues that “many people leave their home countries for a combination of political, economic and other reasons.

This mixture of motives is one factor creating a perception of widespread abuse of asylum systems, which is often manipulated by politicians and the media” (UNHCR, 2000:155).

One of the problems is that some of the non-economic determinants of asylum migration such as dissident violence, ethnic/civil war, state failure and repressive political conditions are often not recognized as valid grounds for granting full asylum status in many Western European countries. For example, Germany tends to refuse asylum to those applicants persecuted by non-governmental agents, but might provide them with *de facto* protection (UNHCR, 2000: 163). Many more do not recognize generalized threats, for which it is difficult to prove that they have been directed specifically against an individual. A Joint Position Paper of the Council of the European Union states that “reference to a civil war or internal or generalized armed conflict and the dangers which it entails is not in itself sufficient to warrant the grant of refugee status. Fear of persecution must in all cases (...) be individual in nature” (European Council, 1996:para. 6). Asylum seekers falling into this category have typically not been granted full asylum recognition, but have still been allowed to remain in the country on humanitarian grounds. The resulting low recognition rates for full asylum status in turn is likely to foster the public perception of large-scale abuse of seemingly generous asylum provisions by ‘bogus’ asylum seekers. There is therefore a case for broadening the definitional scope for the grounds establishing valid claims for asylum to include these other threats to personal integrity.



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## NOTES

<sup>1</sup> *Author's note:* Thanks to three anonymous reviewers for helpful comments. The data in STATA8 format together with a do-file reproducing the results are available at ISQ's website. Financial assistance from the Leverhulme Trust is gratefully acknowledged.

<sup>2</sup> We focus on Western Europe rather than other developed countries due to better data availability.

<sup>3</sup> Looking at recognition rates on asylum applications is no alternative to such analysis. Decreasing recognition rates could be the consequence of more restrictive recognition rules particularly with respect to the treatment of asylum applicants that are refugees in the wider sense, but that do not fulfil the restrictive legal definition of the 1951 Convention. That such rates often vary substantially across destination countries (Neumayer, 2004b), and in federal jurisdictions like Switzerland even within one country, suggests that it would be erroneous to simply look at these (Holzer, Schneider and Widmer, 2000a).

<sup>4</sup> See, for example, Schmeidl (1997), Davenport, Moore and Poe (2003), Moore and Shellman (2003).

<sup>5</sup> For example, Schmeidl (1997), Gibney, Apodaca and McCann (1996), Apodaca (1998).

<sup>6</sup> Theorists of voluntary migration typically model migration within a benefit-cost framework. The two frameworks are fully compatible since the benefits of migration are nothing else but the opportunity costs of staying.

<sup>7</sup> Things are different where people are actively forced out of their country against their will, i.e. in spite of their decision to stay, but these are likely to cover a small minority of cases only.

<sup>8</sup> As reviewed in, e.g., Massey et al. (1993) and Borjas (1994).

<sup>9</sup> These refer to the calculated physical destruction of a communal or political group in whole or part (Harff and Gurr, 1988).

<sup>10</sup> An earlier paper by Holzer, Schneider and Widmer (2000b) uses time-series analysis to show that legislative deterrence measures reduced the inflow of asylum seekers to Switzerland over the period 1986 to 1995, but were unsuccessful in the face of very strong push factors in nearby regions, for example, the civil war in the former Yugoslavian republics.

<sup>11</sup> Figures below five are not available and were coded as zero in our sample.

<sup>12</sup> For example, before 1991, it was not possible for persons from non-European countries to apply for asylum in Italy.

<sup>13</sup> We add 0.5 to the original score to distinguish the absence of such events from the presence of such events with an annual number of deaths of less than 300.

<sup>14</sup> At the start of the panel, this variable goes back fewer years to avoid a five year loss of observations.

<sup>15</sup> The results of our analysis would not be dramatically different if these variables were not logged.

<sup>16</sup> Such a procedure can be problematic, as shown by King (1989), who suggests using special regression techniques for count data, that is for discrete, strictly positive data with typically a substantial share of values of zero. In sensitivity analysis, we used a population-averaged GEE estimator with a negative binomial distribution of the dependent variable. Results are broadly in line with those reported below, suggesting that the estimators used do not unduly bias the results.

<sup>17</sup> We list only variables with statistically significant coefficients in column III of table 3, to which results refer.

<sup>18</sup> Similarly, European Council (2002).



Table 1. Number of asylum applications in developed countries (in thousands)

	1975-79	1980-84	1985-89	1990-94	1995-99	1980-99
Total	233.6	793.8	1495.6	3373.3	2751.7	8414.55
Western Europe, of which	215.2	570.6	1105.7	2586.0	1783.9	6301.59
France	40.4	106.3	178.6	184.5	112.2	581.86
Germany	121.7	249.6	455.2	1337.1	542.4	2584.51
United Kingdom	3.3	17.4	28.5	150.8	223.2	420.13
Northern America	18.1	201.1	368.9	673.6	773.2	2017.08

Source: UNHCR, *Asylum Applications in Industrialized Countries: 1980-1999* (Geneva: United Nations High Commissioner for Refugees, 2001).

Table 2. Summary descriptive variable information

Variable	Obs	Mean	Std. Dev.	Min	Max
ln ASYLUM	2046	4.51	3.25	0	12.30
ASYLUM	2046	2427.59	9169.76	0	219741
ln ASYLUMSTOCK	2046	15.13	12.61	0	46.33
ln GDP	2046	7.91	0.91	6.08	10.42
GROWTH	2046	-0.07	5.50	-26.17	37.66
%POP15-64	2046	56.98	5.93	45.32	72.65
ECONDISCRIMINATION	2046	0.31	0.57	0	3.39
AUTOCRACY	2046	9.25	3.41	2	14
RIGHTSVIOLATION	2046	2.81	1.03	1	5
DISSIDENTVIOLENCE	1461	0.79	2.15	0	27
DOMWAR/STATEFAIL	2046	0.64	1.23	0	5
GEN/POLITICIDE	2046	0.15	0.73	0	5.5
EXTERNALWAR	2046	0.11	0.53	0	3
FOOD	2046	99.11	17.98	33	216.8
NATURALDISASTER	2046	370.50	4135.46	0	142169
ln POPULATION	2046	16.00	1.60	11.09	20.95
%URBAN	2046	44.91	22.72	4.1	100
ln DISTANCE	2046	7.90	0.79	5.72	9.29
%CHRIST	2046	37.77	38.22	0	99.1
COLONY	2046	28.90	27.70	0	60
AID	1836	8.57	13.97	0	210.49
TRADE	1874	70.17	46.52	1.41	406.75
TOURISTS	1832	1465.98	3318.21	0	27047

Table 3. Estimation results

	I	II	III	IV
Estimation technique	FE	GEE	GEE	GEE
Dependent variable	ln ASYLUM	ln ASYLUM	ln ASYLUM	ln ASYLUM
ln ASYLUMSTOCK	0.090 (11.78)***	0.106 (18.21)***	0.082 (11.84)***	0.093 (12.08)***
ln GDP	-1.021 (2.47)**	-0.923 (4.06)***	-0.858 (3.12)***	-0.668 (1.98)**
GROWTH	-0.023 (2.23)**	-0.025 (2.61)***	-0.023 (2.24)***	-0.026 (2.43)**
ECONDISCRIMINATION	0.383 (2.28)**	0.342 (2.77)***	0.401 (2.98)***	0.288 (1.79)*
%POP15-64	0.032 (0.82)	0.050 (2.17)**	0.053 (1.72)*	0.074 (2.33)**
AUTOCRACY	0.387 (2.55)**	0.350 (2.67)***	0.494 (3.11)***	0.137 (3.88)***
(AUTOCRACY) <sup>2</sup>	-0.015 (1.69)*	-0.013 (1.77)*	-0.021 (2.42)**	
RIGHTSVIOLATION	0.173 (2.49)**	0.174 (2.70)***	0.300 (4.73)***	0.293 (4.12)***
DISSIDENTVIOLENCE			0.049 (2.58)***	0.058 (2.83)***
DOMWAR/STATEFAIL	0.128 (2.52)**	0.124 (2.66)***	0.116 (2.21)**	0.114 (1.93)*
GEN/POLITICIDE	0.008 (0.16)	-0.003 (0.08)	-0.006 (0.12)	0.014 (0.21)
EXTERNALWAR	0.071 (0.99)	0.111 (1.65)*	0.204 (2.84)***	0.225 (1.78)*
FOOD	-0.001 (0.17)	-0.001 (0.25)	-0.001 (0.36)	-0.001 (0.26)
NATURALDISASTER	-0.000 (0.33)	-0.000 (0.37)	0.000 (0.31)	0.000 (0.43)
ln POPULATION	0.338 (0.35)	0.344 (5.03)***	0.388 (4.16)***	0.433 (3.96)***
%URBAN	0.008 (0.35)	0.008 (1.03)	0.006 (0.73)	0.002 (0.18)
ln DISTANCE		-1.332 (9.67)***	-1.603 (9.59)***	-1.582 (8.87)***
%CHRIST		-0.001 (0.30)	0.000 (0.09)	-0.001 (0.32)
COLONY		-0.005 (1.25)	-0.006 (1.67)*	-0.010 (1.88)*
AID				0.011 (1.52)
TRADE				-0.002 (0.99)
TOURISTS				-0.000 (2.11)**
Observations	2046	2046	1461	1156
Countries	127	127	122	110

*Notes:* Coefficients of year-specific dummy variables and constant not shown. Absolute t-values or z-values in parentheses. Standard errors robust towards arbitrary autocorrelation and heteroscedasticity. Observations assumed to be independent across countries, but not within countries (clustering). \* p<0.1; \*\* p<0.05; \*\*\* p<0.01.

Table 4. Estimated percentage increase in asylum seekers following a one standard deviation increase in an independent variable

Variable	% increase
ln ASYLUMSTOCK	103.39
ln GDP	-77.78
GROWTH	-11.88
ECONDISCRIMINATION	25.63
AUTOCRACY	133.25
(at one SD below the mean)	
RIGHTSVIOLATION	36.26
DISSIDENTVIOLENCE	11.13
DOMWAR/STATEFAIL	15.28
EXTERNALWAR	11.40
ln POPULATION	62.24
ln DISTANCE	-126.33