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# Trends in African Migration to Europe: Drivers Beyond Economic Motivations

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**Abstract** The current migration and refugee crisis in Europe requires an understanding of the different migration drivers beyond the well-known economic determinants. In this paper, we view migration from a broader human security perspective and analyze the determinants of regular and asylum seeker migration flows from Africa to Europe for the period 1990–2014. Our results show that, in addition to economic determinants, a combination of push and pull factors influences migration decisions of individuals. In particular, rising political persecution, human rights violations, ethnic tensions, political instability and civil conflicts in African source countries are all significantly associated with increased migration flows into European destination countries. Therefore, our results underscore the need for the EU and European countries to collaborate with the source countries, not only in terms of supporting economic development in the source countries, but also in promoting human security: human rights, democracy, peace and social stability.

Keywords: international migration, asylum seeker, refugee crisis, human security, Poisson Pseudo-Maximum Likelihood

JEL classification: F22; O15

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# 1 Introduction

Migration and the refugee crisis are high on the policy agendas of European countries, from economic, security and social standpoints. In the current wave of migration, Europe is witnessing a mixed-migration phenomenon where a large number of economic migrants are joining asylum seekers in their journey to reach the European continent (Bertoli et al., 2013; Park, 2015). Each year hundreds of thousands of immigrants flow into Europe mainly from Africa, the Middle East, and South Asia.<sup>1</sup> With such a large number of migration inflows, European countries are said to have reached a breaking point in their ability to meet the European Union (EU) standards for receiving immigrants and facilitating asylum applications (Banulescu-Bogdan and Fratzke, 2015). Furthermore, the present-day migrant influx has imposed internal “political fatigue”, with nationalist parties gaining momentum in many EU member states and with security tensions rising due to terrorist-linked incidents in some countries (Park, 2015). On the other hand, thousands of people perish every year while attempting to cross the Mediterranean Sea (Telschow, 2014). These events have created mounting pressure on European governments, at least by groups supporting human rights, to work and spend more on rescue missions to enable acceptance of a more substantial number of immigrants. Therefore, migration is now a prominent feature in the economic, social, and political landscape of European countries (Kerr and Kerr, 2011).

In response to these tense situations, European governments are actively working to cut the flows of migrants and asylum seekers across the Mediterranean sea in partnership with African governments (García Andrade and Martín, 2015). Important initiatives in this regard include the “EU-Africa Declaration on Migration and Mobility” of 2014 in which European and African governments pledge to combat human trafficking, facilitate the return and the readmission of migrants whose asylum applications have been refused.<sup>2</sup> This declaration also emphasizes the importance of addressing the root causes of irregular migration, such as providing employment opportunities for the youth at regional level. In the same year, the so-called “Khartoum Process” and “Rabat Process” specially focus on preventing and fighting migrant smuggling and human trafficking in the Horn of Africa and Central, Western and Northern Africa, respectively. Furthermore, November 2015, the Valletta Summit, which gathers the largest number of African and European heads of states and governments and concluded with

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<sup>1</sup>According to the United Nations High Commissioner for Refugees United Nations (2015b), more than 1,015,078 migrants and refugees arrived in Europe by crossing the Mediterranean sea in the year 2015 and 362,753 in the year 2016. Retrieved from: <http://data2.unhcr.org/en/situations/mediterranean>.

<sup>2</sup>[https://au.int/sites/default/files/pages/32899-file-5.\\_the\\_eu\\_africa\\_declaration\\_on\\_migration\\_and\\_mobilty\\_2014.pdf](https://au.int/sites/default/files/pages/32899-file-5._the_eu_africa_declaration_on_migration_and_mobilty_2014.pdf)

the EU setting up an Emergency Trust Fund to promote development in Africa, in return for African countries to help European countries in the crisis.<sup>3</sup> Finally, June 2016, the EU establishes a wide-ranging Migration Partnership Framework (MPF), which aims to coordinate collaborations with African and other third country governments (European Commission, 2016).

These intensified cooperations of the EU with African governments, including those that are authoritarian and which are accused of severe human rights violations and political persecution, has caused significant controversy. For instance, critics argue that by basing development aid and foreign relations on countries agreement to cooperate with EU migration control objectives, the EU is making a significant policy change away from putting human rights as a central point of EU foreign policy (Castillejo, 2017; Human Rights Watch, 2018; Oette and Babiker, 2017).<sup>4</sup>

A number of factors might be behind the EU's apparent policy shift away from its long-held policy of defending human rights in Africa towards stronger border control and quicker returns of "illegal" migrants. Obviously, one of the reasons is that the large number of migrant flows might have forced the EU to prioritize the short-term objective of reducing the number of immigrants above its principle of defending human rights. Moreover, it seems that the EU considers that economic factors, rather than human rights violations, ethnic tensions, and civil conflicts, are key reasons for the African migration flows to Europe. Indeed, for instance, the "Migration Compact"—an important contribution to the MPF document by the Italian government—explicitly states that while migrant flows through the Eastern Mediterranean route include both refugees and economic migrants, "flows through the Central/Western Mediterranean route are composed mainly by economic migrants" (Italian Government, 2016, p.1).

Despite the seemingly divergent views held by European governments and groups supporting human rights on the role of human security factors in the recent migration flows from Africa to Europe, there is surprisingly little empirical evidence to substantiate either of these stances. While a few extant studies have examined determinants of African migration flows, they have however either focused exclusively on intra-African migration flows or studied international migration from Africa together with intra-African flows. For instance, investigating trends of migration flows in sub-Saharan African (SSA) countries for the period 1965–2005, Naudé (2010) finds that armed conflict and lack of job opportunities are the most important determinants. However, he employs net migration flows data, which are obtained as the difference between emigration and immigration per 1,000 inhabitants. Consequently, Naudé (2010) does not

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<sup>3</sup><http://www.consilium.europa.eu/en/meetings/international-summit/2015/11/11-12/>

<sup>4</sup>Human Rights Watch (2018) further argues that this shift of policy could bolster the very security forces that violate human rights and eventually fail to address the human rights abuses, which the Human Rights Watch believes are often the causes of forced migration.

examine determinants of bilateral migration flows from a given sending African country to specific host countries. Moreover, the net migration data include intra-African migration, which is the most prevalent form of African migration (Lucas, 2015). As a result, it is unclear to what extent his findings could be used to explain trends in migration flows from Africa to Europe. Similarly, Ruysen and Rayp (2014) examine intra-regional migration in SSA during the period 1980–2000. However, they do not consider migration flows from Africa to Europe. Lucas (2015) provides an extensive literature survey and empirical study on the causes, patterns and consequences of migration in Africa. In particular, by estimating a gravity model of African migration flows to 220 states and territories worldwide (including African states), he finds that violent conflicts, but not the level of democratization, are important drivers of African migration flows.

The present study aims to fill the aforementioned gap in the literature by providing a thorough empirical examination of the role played by human security factors in explaining trends in African migration to Europe during the period 1990–2014. We consider the most basic level of human security, i.e., it includes freedom from fear (threats to the safety of people), freedom from want (threats to basic needs), and freedom to live in dignity (threats to human rights and by extension access to services and opportunities) (see, for instance, Anand, 1994; Gómez and Gasper, 2013). We thus consider potential factors that provoke migration and displacement, including wars, civil conflict, economic deprivation, violation of human rights and oppressive regimes (Erdemir et al., 2008; Shrestha, 2017).<sup>5</sup>

For our empirical investigation, we construct a new panel dataset on bilateral migration flows for a large number of destination (21 European) and source (51 African) countries for the period 1990–2014. While the choice of the period 1990–2014 is dictated by data availability, it is however the most relevant period for the current migration crises in Europe, since European countries have experienced a dramatic increase in the flow of African migrants in this period and African migrants have started to become a visible part of the migrant stock in Europe.

Besides the trends in the regular migration flows from Africa to Europe, this paper studies the bilateral migration trends by additionally considering the flow of asylum seekers. It is noteworthy that this approach is typically important in the study of non-economic determinants of migration and for dealing with the African forced-migration trends that occur in the absence of human security. In this regard, the existing empirical literature on bilateral migration largely

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<sup>5</sup>Considering the Central American chilled migration trends, Clemens (2017) show the causal relationship between violence and international emigration. Accordingly, connecting to migration experience and the presence of social networks, violence can cause waves of migration that snowball over time, continuing to rise even when violence levels do not (Clemens, 2017).

focuses on the regular migration trends, either the flow of labor migrants or migrant stocks, by excluding refugees and asylum seekers (e.g., Ortega and Peri, 2009; Mayda, 2010; Fitzgerald et al., 2014). However, given that the rising number of asylum seekers is at the heart of the recent refugee crisis in Europe, it is important to examine to what extent human security factors drive the flow of African asylum seekers to Europe.

To examine the determinants of bilateral migration flows from Africa to Europe, we estimate a gravity model that is similar to the model of Ortega and Peri (2013). Since the seminal work of Tinbergen (1962), the ordinary least squares (OLS) estimator has been widely used to estimate various versions of the gravity model, both in the trade literature and in migration studies. A well-known drawback of the OLS approach, however, is related to the fact that migration flows between pairs of countries may be zero in a substantial percentage of observations, and omitting those zero observations biases the regression results (Yotov et al., 2016). We address this methodological challenge in estimating gravity models by using the Poisson Pseudo-Maximum Likelihood (PPML) estimator, which is particularly suitable in regressions where the dependent variable has a significant proportion of zeroes (Beine and Parsons, 2015).

Our results show that broader human security factors are significant determinants of the “South-North” migration flows. In accordance with the existing literature, income gaps between African and European countries remain a strong determinant of migration flows. However, income gaps are not the only important reason for the rise in the migrant flows to Europe: broader human security factors in Africa are equally important determinants of both regular and asylum seeker migration trends. Indeed, we find that poverty, violent civil conflicts, political persecution, human rights abuses and ethnic tensions have a substantial influence on migration across our entire set of specifications. Similar results are also obtained when we consider the flow of asylum seekers as an alternative dependent variable. Our results are robust to using alternative model specifications, to excluding North African countries, and to employing OLS instead of the PPML estimator.

The rest of the paper is organized as follows. Section 2 introduces the empirical specification of our model. Section 3 describes our data in detail. Section 4 provides the results and Section 5 concludes. Finally, the Appendices present supplementary material.

## 2 Empirical Model Specification and Conceptual Foundations

### 2.1 Empirical Model Specification

Since the seminal work of Tinbergen (1962), the gravity model of trade has been widely used to study the effects of trade policies on dyadic trade flows (see A for a review of theoretical foundations). This model specifies international trade as a positive function of the attractive “mass” of two economies and a negative function of the distance between them. The migration literature has vastly implemented the gravity model (e.g., Lewer and Van den Berg, 2008; Mayda, 2010; Beine and Parsons, 2015; and Figueiredo et al., 2016). Beine et al. (2016) summarize this strand of literature and provide a practical guide on the empirical implementation of the gravity model in migration studies.

The current paper closely follows the gravity model developed in Ortega and Peri (2013). Accordingly, taking as a starting point the random utility maximization (RUM) theoretical models developed by Beine et al. (2011), Grogger and Hanson (2011) and Ortega and Peri (2013), in which income maximization problems or wage differentials are a driving force to make a migration decision, we emphasize the broader human security conditions. Specifically, we analyze a number of political and socio-cultural factors that may influence the individual’s decision to move from his/her current location. Furthermore, similar to Ortega and Peri (2013) and Beine et al. (2016), our empirical model specification considers multiple destinations.

Formally, out of the set of  $N$  global countries, the individual  $i$  from his/her source country  $s \in S = s_1, s_2, \dots, s_n$ , where  $S \subseteq N$ , makes a decision of whether to stay in his/her source country  $s$  or to migrate to the destination country  $d \in D = d_1, d_2, \dots, d_n$ , where  $D \subseteq N$ . It is noteworthy that, as indicated in, among others, Kennan and Walker (2013), individuals are assumed to have rational expectations. Thus, they make an informed decision to migrate in seeking their maximum utility.<sup>6</sup> Therefore, following Ortega and Peri (2013), we assume the following utility function:

$$V_{sdt} = \alpha_s + \alpha_d + \alpha_{dt} + \beta_1 W_{sdt} + \beta_2 F_{sdt} + \beta_3 X_{sdt} + \theta Z_{sdt}, \quad (1)$$

where,  $V_{sdt}$  represents the utility in country  $d$  for individuals from country  $s$  and it captures not only the average earnings, but also the average security of individual  $i$  by leaving for destination country  $d$ . Moreover,  $\alpha_s$  and  $\alpha_d$  are time-invariant source-specific push factors fixed effects and time-invariant destination-specific pull factors fixed effects, respectively. In addition,  $\alpha_{dt}$  denotes destination-country fixed effects and it varies over time and across countries. Hence,

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<sup>6</sup>For the sake of further discussion, A presents the theoretical background of the migration model.

the fixed effects capture the role of amenities, destination-specific cost heterogeneity as well as variables that may change through time (essentially immigration policy, culture and attitudes towards immigrant community) and affect the choices made by the immigrants. Although our primary focus is on human security factors at the source, in some specifications we also consider particular pulling factors.

In (1) a vector  $W_{sdt}$  represents the value of expected earnings in the source country  $s$  and the destination country  $d$  in year  $t$ . In this case, the income differential is measured using per capita GDP of countries  $s$  and  $d$ . The vector  $F_{sdt}$  represents levels of freedom (free from all forms of violence or political persecution) in the source country  $s$  and the destination country  $d$  that vary over time  $t$ . To estimate the effect of freedom on migration decision, we consider a number of proxy variables, which include political stability (internal and external conflicts), institutional quality (government stability, law and order, control of corruption and bureaucratic quality), ethnic and religious tensions (fractionalization and polarization), democracy, autocracy, political rights and civil liberties of the source countries. In particular, we follow Baudassé et al. (2018) to frame the role of political institutions on migration flows using the exit and voice dichotomy of Hirschman (1970). Accordingly, if people have the freedom to express their dissatisfaction through the existing institutional frameworks, they choose the voice option and prefer to stay at home. Whereas, violations of basic rights due to poor quality of institutions leads them to choose the exit option and leave their country. The vector  $X_{sdt}$  represents other control variables, notably, the socioeconomic factors such as urbanization and socioeconomic conditions. The vector  $Z_{sdt}$  stands for country-pair overall migration costs that affect migration decisions. These factors include time-varying factors, such as migrant networks, and time-invariant variables such as geographic distance, common language, common legislation and colonial legacy.

Considering separability in migration costs and including an error term in (1), we estimate the following estimable model of the flow of regular immigrants ( $M_{tsd}$ ) from the source country  $s$  to the destination country  $d$  at time  $t$ :

$$\ln(M_{tsd}) = \beta_1 \ln(W_{sdt-1}) + \beta_2 F_{sdt-1} + \beta_3 X_{sdt-1} + \theta Z_{sdt} + \alpha_s + \alpha_d + \alpha_{dt} + \epsilon_{sdt}. \quad (2)$$

Equation (2) could be estimated using OLS.

However, migration between pairs of countries may be zero in a substantial percentage of observations, and omitting those zero observations biases the regression results. In particular, due to the fact that (2) is a pseudo-gravity model in a double log form, a large number of observations could be dropped because of the zero values in the dependent variables  $M_{tsd}$ . Hence, standard regression methods, such as the OLS, require omitting observations with zero values,

which leads to inconsistent estimates of the coefficients due to selection bias. Furthermore, a second source of bias is related to the fact that if the variance of  $\epsilon_{sdt}$  depends on one or more of the determinants of  $M_{tsd}$ , then the expected value of  $\epsilon_{sdt}$  will also depend on some of the regressors in the presence of zeroes (Silva and Tenreyro, 2006).

These methodological challenges in estimating gravity models can be addressed using the Poisson Pseudo-Maximum Likelihood (PPML) estimator (Beine and Parsons, 2015; Silva and Tenreyro, 2006). Using PPML, we estimate the exponential of the gravity model as

$$M_{tsd} = \exp[\beta_1 \ln(W_{sdt-1}) + \beta_2 F_{sdt-1} + \beta_3 X_{sdt-1} + \theta Z_{sdt} + \alpha_s + \alpha_d + \alpha_{dt}] u_{sdt}, \quad (3)$$

where  $u_{sdt} = \exp(\epsilon_{sdt})$  is a multiplicative error term.

In addition to the regular migration flows ( $M_{tsd}$ ), we also estimate a gravity model for the flow of asylum seekers ( $AS_{tsd}$ ) from the source country  $s$  to the destination country  $d$  in year  $t$ .

## 2.2 Conceptual Foundations

A growing body of theoretical and empirical literature on international migration has documented that individuals have complex and often overlapping motivations for leaving their places of origin, including income (Naudé, 2010; Dutta and Roy, 2011; Clemens et al., 2014; Docquier et al., 2018), political instability (Clemens, 2017; Docquier et al., 2018; Naudé, 2010; Shrestha, 2017), migrant networks (Beine and Parsons, 2015), institutions (Baudassé et al., 2018) and climate change (Beine et al., 2015). In the following, we discuss the conceptual foundations for the set of human security variables that we consider in the current study by categorizing them as economic factors, civil conflicts, ethnic tensions, and institutional quality of source countries.

*Economic factors:* A large body of literature documents that a significant difference in the average income in terms of average GDP per capita (GDPPC) between the origin and destination countries is a principal determinant of international migration. In other words, relatively lower main income at the source countries in comparison with per capita income at the destination countries motivates potential immigrants to decide to migrate. In our context, hence, the actual economic deprivation and abject poverty of most African countries will likely have an enormous push effect on the migrants and refugees of Africa. On the other hand, economic development and relatively high personal incomes in Europe attract immigrants.

*Civil conflicts:* There are enough evidences that show that individuals will have a greater incentive to migrate when there are civil conflicts than when there are no conflicts in their home countries (see for instance, Ibáñez and Vélez 2008; Schmeidl 2001; Weiner 1992). In the absence of safety and security the expected returns of labour, development projects, and

investments is significantly decreased. Since civil conflicts directly affect both the security and livelihood of individuals' people are likely to be forced to migrate in seeking for an alternative survival strategy. Controlling for economic and other determinants, on the average one may, therefore, expect to see a higher number of migrants from source countries devastated by civil conflicts. The African political condition, in general, is characterized by historical injustices and oppressive governance structures (Ongâayo, 2008). Since their independence, many states have witnessed civil wars, large-scale mass killings of civilians, and other forms of direct political violence for decades (Dunn, 2009). United Nations Conference on Trade And Development (2018) illustrated that in the African context, severe conflicts often lead to a significantly increased flow of internally displaced people or refugees, if they flee across borders. Moreover, conflicts can also be a driver of economic migration. Hence, conflict is one of the human security indicators that are explored in this paper.

*Institutions:* Weak performance of institutions in the source countries may be a sufficient motive for emigrating in search of institutions which perform better (Baudassé et al., 2018). Very often totalitarian regimes are a push factor of migration. The lack of democracy, political rights, and civil liberties, and endemic corruption act as push factors for migrants seeking greater freedoms (Solimano, 2010). In line with the Hirschman (1970) “exit and voice” dichotomy, individuals may decide to migrate when institutions are not satisfactory and fundamental human rights are violated.

Mostly in countries where there are autocratic political systems and state sponsored persecution, harassment, discrimination and torture people who disagree with the policy or ideology of the government, and/or have minority religious beliefs or ethnic backgrounds (Solimano, 2010) are pushed toward migration. In non-democratic countries, even when individuals are not physically persecuted restraints of fundamental freedoms may ultimately motivate them to leave their country of origin. In sum, if the political environment is hostile, then the tendency is that the economic outcome is most likely to be poor. Therefore, such situations trigger migration for political and economic reasons. Relating to this Solimano (2005) argue that in non-democratic cases “individuals that are unsatisfied or disconnect with the current political and economic conditions may choose to exit their home countries”. Hence, we assume that better institutional quality reduces migration flow while poor institutional performances motivate individuals to leave their home countries and relocate to more democratic and safer countries where they can pursue better freedom, protection, education, and careers. Accordingly, Lucas (2015); Naudé (2010); Ruyssen and Rayp (2014), among others, show that the African migration flow—at least the intra-African migration—is profoundly influenced by the political

set-up of the continent. Furthermore, due to the overly repressive character of the regimes, the majority of African countries have been receiving the lowest rankings on political rights and civil liberties for decades.<sup>7</sup> These preceding events have made Africans vulnerable to displacement, including migration within and emigration from the continent.

*Ethnicity:* Ruble (1989) ethnic identity “developed, displayed, manipulated or ignored in accordance with the demands of a particular situation”. In this context, it is noteworthy to consider that social identity serves as a structural foundation for potential group formation and social conflicts. When conflict arises, ethnic identities may result in suboptimal behavior (Constant and Zimmermann, 2011). Existing literature has argued that ethnic tensions raises the likelihood of waging civil conflicts and engenders a kind of “structural violence”. Ethnic heterogeneity increases the probability of civil conflicts and civil wars (see, for instance, Esteban et al., 2012; Giménez-Gómez and Zergawu, 2018; Reynal-Querol and Montalvo, 2005). Fearon and Laitin (2003) further stipulate that between 1945 and 1999, about 51% of major civil wars originated by way of ethnic conflicts. Moreover, where there are ethnic tensions women, children, and other vulnerable social groups are exposed to various forms of sexual, physical, and non-physical violence in their relation to ethnic-national identities (Korac, 1998). Hence, we assume that civil conflict and structural violence such as molestation, marginalization, ethnic tension, segregation, and the development of an underclass along the line of ethnic identities significantly increases the flow of international migration.

It is noteworthy that ethnic heterogeneity is measured by ethnic polarization and ethnic fractionalization. Ethnic polarization measures the existence of deep cleavages in society within a given country based on perceived distances between inter-ethnic groups as well as group size of each ethnicity. Ethnic fractionalization, on the other hand, measures the likelihood that two randomly chosen people will be a part of different ethnic groups in a given country. Bang and Mitra (2013) show that ethnic-related conflicts increase the fraction of skilled labor migration.

In this context, the contemporary African political set-up is profoundly influenced by ethnic identity. The inter-ethnic relationships in Africa, especially in the political arena, are associated with competition, exclusiveness, the prevalence of genocidal violence and conflicts among ethnic groups (Berman, 1998 and Daley, 2006). On top of the political violence and instabilities, human and democratic rights violations are prevalent across the African continent (Mutua, 2009).

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<sup>7</sup>See <https://freedomhouse.org/regions/sub-saharan-africa>.

### 3 Data

We construct a new panel dataset with information on migration flows and asylum seeking as well as on several macroeconomic, political and institutional factors covering 21 European countries of destination and 51 African countries of origin from 1990 to 2014 (see the list of countries in Tables B.1 and B.2 of B). While the choice of the post-Cold-War period is dictated by data availability it has two main merits. First, it is the most relevant period with respect to the current migration crises in Europe. In the trends of international migration towards Western Europe since the Second World War, there are three distinct periods: (1) the labor migration from the 1950s till the beginning of the 1970s; (2) the family migration in the mid-1970s, and (3) the ‘third wave’ of the international movement that emerged in the post-Cold War era (Geddes and Scholten, 2016). It is noteworthy that there has been a marked surge in the number of immigrants, specially asylum seekers, to Europe since the early 1990s. Second, this period also allows us to consider some of the former Eastern European countries, where data are typically available after 1990.

In the following two sub-sections, we describe in detail the dependent and explanatory variables that we use in the current study. Specifically, we first present the sources and the construction of migration data, both regular flows and asylum seekers, which are our alternative dependent variables. Subsequently, we discuss the explanatory variables, which include several economic and political determinants of international migration (Table 1 reports summary statistics for these variables).

Table 1: Summary statistics

Variables	N	mean	sd	min	max
Bilateral migration flow	26,775	260.5	1,815	0	84,978
Bilateral asylum seekers	26,775	74.7	369.6	0	15,819
GDP per capita destination (in thousand)	26,723	31,624	21,429	1,445	116,664
GDP per capita source (in thousand)	26,670	1,624	2,709	64.81	23,348
Urban population at source (in thousand)	26,712	606,591	956,926	34,481	83,300
Political stability at source	26,775	50.4	5.88	42	61
Network (stock migration in thousand)	26,775	7,212	309	27	183
Common language	26,775	0.133	0.339	0	1
Colonial ties	26,775	0.0523	0.223	0	1
Distance	26,250	5,699	2,076	716.6	16,632
Common legislation	26,775	0.284	0.451	0	1
Ethnic fractionalization at source	24,150	0.615	0.267	0.05	0.959
Ethnic polarization at source	24,150	0.527	0.209	0.014	0.897
Civil conflict at source	26,712	.210	.407	0	1
Political regime characteristics at source	26,775	0.231	5.456	-9	10
Political rights at source	26,775	0.392	0.488	0	1
Civil liberates at source	26,775	0.471	0.499	0	1
Government stability at source	19,425	2.756	1.867	0	1
Socio-economic conditions at source	19,425	3.982	1.649	0	8
Corruption at source	19,425	2.406	0.962	0	5
Law and order at source	19,425	3.089	1.182	0	6
Democratic accountability at source	19,425	3.021	1.286	0	6
Bureaucracy quality at source	19,425	1.379	0.892	0	4
Investment portfolio at source	19,425	7.16	1.46	4	9
External conflict at source	19,425	10.24	0.862	0	12
Religious tension	19,425	1.8	1.452	9	12

Notes: N, mean, sd, min and max represent number of observations, mean, standard deviation, minimum and maximum, respectively.

### 3.1 Migration flows and asylum seeking

The main dependent variable in (2) is the annual migration inflows from the source country  $s$  to the destination country  $d$ , in a given year  $t$   $M_{tsd}$ . These migration data measure the yearly inflow of foreign-born population by nationality into the hosting countries. Note that the inflow migration data exclude temporary visitors with a tourist visa or people who travel for reasons of study, medical and business purposes.<sup>8</sup>

To construct the migration inflow series, we use two complementary data sources, which help

<sup>8</sup>In practice, national definitions of migration vary. The United Nations (1998) defines a person who changes his or her place of usual residence for at least one year as a long-term migrant, while a person who changes his or her place of usual residence for more than three months but less than one year is considered to be a short-term migrant.

us to cover the entire sample period. The first source is the 2015 update of the international migration flows data of the International Migration Report (IMR) of the United Nations (United Nations, 2015a). This database contains time series data on the flows of international migrants as recorded by 45 destination countries.<sup>9</sup>

This database considers legal migration only and presents both inflows and outflows according to the place of birth, citizenship, place of previous or next residence, both for foreigners and nationals, as reported by each country’s national agencies in charge of collecting migration data. For most African source countries, the database covers the period from the early 1990s until 2013, despite missing data for some bilateral countries. The second source of data is the OECD “International Migration Database” (IMD), which comprises migration inflows data starting from the mid-1990s up to 2014.<sup>10</sup> Similar to the IMR, IMD contains time-series data on the inflows of foreign populations into 35 OECD countries for which data are available. However, IMD has a broader coverage than IMR.

In order to merge these two databases, it is critical to ensure that the two databases have uniform definitions of migration. The majority of the destination countries report migration data that are collected from a population register or are based on the number of residence permits issued. We observe that in most cases these databases embrace overlapping figures when data are available. Hence, our final migration inflow series is constructed mainly by using IMD, which has a broader coverage of countries and periods. The IMR data are used to fill missing values. In rare cases, we fill missing data using simple averages between data of the previous year and the following year.<sup>11</sup>

The African migration trend map in Fig. 1 in C shows the trend in migration flows from Africa to Europe. In general, there has been a significant rise in the number of Africans migrating to the selected European destination countries. Closer observations of the data reveal that African immigrants are highly concentrated in a few Western European countries. In particular, the maps display that the major destinations of African migrants over the years are France, Italy, Spain and the United Kingdom, although a considerable number of Africans have also migrated into Belgium, Germany, and Sweden. A large number of African immigrants in France and the United Kingdom may be partly linked to the fact that about 65 percent of the contemporary

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<sup>9</sup>See a list of countries and the data at <http://www.un.org/en/development/desa/population/migration/data/empirical2/migrationflows.shtml>.

<sup>10</sup>The data are available at <https://stats.oecd.org/Index.aspx?DataSetCode=MIG>.

<sup>11</sup>About 5% of the migration flows data have been filled by interpolating observations to fill in missing values in intermediate years. Results obtained by re-estimating our baseline results by dropping these missing values leaves our main findings qualitatively unaffected, with little changes in the magnitudes of the estimated coefficients. These results are available upon request.

African nations are former colonies of these two countries. It is well-established in the literature that colonial ties increase migration flows by creating, for example, common official languages, cultural attachments, social networks and business relations (Fawcett, 1989). Southern European countries, such as Italy and Spain, did not have many African colonies, and hence have weaker colonial ties with African countries. African migrants inflows into these Mediterranean countries might have been induced by their strong economic performance since the 1980s, as well as their growing economic integration with other European countries (Bonifazi et al., 2009 and Ortega and Peri, 2013). However, this might also reflect the fact that many immigrants use Southern European countries as a transition point to move to other Western European countries. Moreover, as Fig. 1 shows, the North African countries Algeria, Egypt, Morocco and Tunisia have been sending a consistently high number of migrants to Europe in the two and a half decades under study. This might be related to the fact that geographical proximity as well as the presence of a large diaspora attract immigrants due to lower migration costs.

As an alternative dependent variable, we use data on yearly inflows of asylum seekers into the European hosting countries by African countries of origin from 1990 to 2014. Utilizing the asylum seeking data helps to address two crucial issues. First, the widely-applied migration inflow data comprise the regular inflow of immigrants into the hosting countries only. As a result, the database omits the significant number of asylum seekers, which are the primary source of the refugee crisis in Europe.<sup>12</sup> Second, we check the robustness of our results on the political determinants of extra-continental migration by using the asylum seeking data.

According to the 1986 definition of the United Nations High Commissioner for Refugees (UNHCR), an asylum seeker is a person who has sought protection as a refugee, but whose claim for refugee status has not yet been assessed.<sup>13</sup> Data on the inflow of asylum seekers come from the IMD database, which in turn is based on data provided by the UNHCR. The UNHCR regularly produces complete statistics on refugees and asylum seekers in OECD countries and worldwide.<sup>14</sup> In rare cases, we also use the original UNHCR database to complement missing

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<sup>12</sup>Some authors believe that the tightness of immigration laws of European countries for African citizens exposes the majority of African immigrants to smuggling and human trafficking in the process of entering Europe, critically risking their lives (Castles, 2004; De Haas, 2007; De Haas, 2011).

<sup>13</sup><http://www.unhcr.org/excom/exconc/3ae68c43c0/detention-refugees-asylum-seekers.html>

<sup>14</sup>These figures are most often derived from administrative sources, but differences are dependant on the nature of the data provided. In some countries, asylum seekers are enumerated when the application is accepted. Consequently, they are shown in the statistics at that time rather than at the date when they arrived in the country. Acceptance of the application means that the administrative authorities will review the applicant's claims and grant them certain rights during this review procedure. In other countries, the data do not include the applicant's family members, who are admitted under different provisions (e.g., France), while other countries count the entire family (e.g., Switzerland).

data.<sup>15</sup>

Fig. 2 in C exhibits the inflow of African asylum seekers into the European destination countries. The maps display an upward trend in the flow of asylum seekers from Africa into many European countries: France, Germany, Italy, Sweden, Switzerland and the United Kingdom. In particular, the annual inflow of African asylum seekers has markedly risen in Germany since 2010. Additionally, Italy is a significant entry point for African refugees. Despite being stricken by the Euro-zone crisis (Mody and Sandri, 2012), tens of thousands of asylum seeker migrants continue to board overcrowded and unsafe boats heading to Italy, putting their lives in grave danger.

### 3.2 Economic and political determinants of migration

To substantiate the effects of the broad human security factors of international migration, we consider several economic, political and social determinants of migration as explanatory variables, as aforementioned in Subsection 2.2.

*Economic factors:* To capture the impact of economic drivers in the Africa to Europe migration flows, we use the logarithm of GDPPC in the source and the destination countries.<sup>16</sup> Our primary source of the GDPPC data is the “National Accounts Main Aggregates Database” of the Economic Statistics Branch of the United Nations Statistics Division.<sup>17</sup>

*Political factors:* To investigate the effects of political factors on migration flows from Africa to Europe, we employ several political indices. We measure political instability by means of the civil conflict incidence, which is an indicator variable that takes a value of 1 if there is a new or existing conflict in year  $t$ , and 0 otherwise. We obtain the data on conflict incidence from the Armed Conflict Database of the Uppsala Conflict Data Program (UCDP) and the Peace Research Institute of Oslo (PRIO).<sup>18</sup> This database codes armed conflicts at a low threshold of 25 battle-related deaths per year in conflicts where there is the use of armed force between two parties, of which at least one is the government (Pettersson and Wallenstein, 2015).

Additionally, while the index of ethnic fractionalization measures the probability that two randomly selected individuals in a country will belong to different ethnic groups, the ethnic polarization indexes measure the normalized distance of a particular distribution of ethnic groups from a bimodal distribution. Data for both ethnic fractionalization and polarization indices are

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<sup>15</sup>Downloadable at [www.unhcr.org/figures-at-a-glance.html](http://www.unhcr.org/figures-at-a-glance.html).

<sup>16</sup>Adjusted by Purchasing Power Parity, PPP (at constant 2005 prices in US Dollars).

<sup>17</sup>See at <https://unstats.un.org/unsd/snaama/introduction.asp>.

<sup>18</sup>The data are available at: [www.pcr.uu.se/data/](http://www.pcr.uu.se/data/)

obtained from Reynal-Querol and Montalvo (2005). Following Esteban et al. (2012), we use time-invariant versions of these variables, since short-run changes are likely to be correlated with the incidence of conflict.

To assess how the characteristics of the political regimes affect the bilateral migration flows, we use indicators for democratic and autocratic patterns of authority. In the Polity IV database, the polity series contains coded annual information on the level of democracy and autocracy, both ranging from 0 (low) to 10 (high) (Marshall et al., 2012).<sup>19</sup> Following Esteban et al. (2012) and Giménez-Gómez and Zergawu (2018), we transform these indices into time-invariant dummy variables as short-run changes in these measures are likely to be correlated with the incidence of conflicts. Specifically, a country receives a time-invariant 1 (considered democratic) if it has received a democracy score higher than or equal to 4 for 40% of the years and 0 otherwise. The autocracy dummy is also computed in the same manner.

Furthermore, we test the effect on bilateral migration of civil liberty and political rights variables, which are measured on a scale from 1 to 7 (where 1 represents the highest levels of liberties and political rights and 7 indicates the lowest level). For ease of interpretation, we converted these indicators to time-varying dummy variables. Specifically, a country is considered to have a favorable rating for civil liberty or political rights in a specific year (dummy variable takes on 1) if it receives a rating less than or equal to 4, and 0 otherwise. The data source for these variables is Freedom House (2016).<sup>20</sup>

To examine the effects of overall political stability of the countries on bilateral migration flows, we use the political risk index from the International Country Risk Guide (ICRG) dataset. The Political Risk rating includes 12 weighted variables covering both political and social attributes. The risk components include government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucracy quality. In the dataset, the minimum number of points that can be assigned to each component is zero, while the maximum depends on the indexed weight that component is given in the overall political risk assessment (Howell, 2011).

Finally, we also consider proxies for migration costs using geographical and cultural distances. In the analysis of costs of international migration, Beine and Parsons (2015) note that migrant

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<sup>19</sup>The Polity IV data are based on evaluations of the competitiveness of elections, openness of the state, the nature of political participation, and the extent of checks on executive authority (Marshall et al., 2012).

<sup>20</sup>See <https://freedomhouse.org/report-types/freedom-world>.

networks play a fundamental role in determining migration flows from two channels. In terms of the *assimilation channel*, networks affect private costs and benefits of migration, and from the point of view of the *policy channel*, they lower legal entry barriers through family reunification programs (Beine and Parsons, 2015). Hence, we estimate both migration flows and asylum seeking trends by controlling for migrant networks using bilateral migration stocks. Our migrant network or diaspora variable, which is again taken from the IMD database, is defined as the bilateral migrant stock in the beginning of the year to which a flow corresponds. Additionally, we use bilateral geographical distances between the two capital cities (in kilometers) and dummy variables for the common language, common legal origin, and colonial ties (if a source country is a former colony of a destination). These variables are widely used in the migration literature as important determinants of migration decision (see, for instance, Taylor, 1994; Leblang et al., 2009; Kim and Cohen, 2010; Mayda, 2010; Ortega and Peri, 2013; Ruysen and Rayp, 2014; Beine et al., 2015; and Docquier et al., 2018).

## 4 Results

In this section, we discuss the empirical results on the determinants of migration flows from Africa to Europe using data on both regular and asylum seeker migration flows.

First, we discuss determinants of the regular migration flows from African countries to Europe as specified in (3). Subsequently, we re-estimate (3) using the flows of asylum seekers as an alternative dependent variable.

### 4.1 Baseline Results

In (3) our dependent variable is annual migration flows between bilateral countries. Our main hypothesis, in this case, is that human security conditions significantly influence the international migration flows in different ways. Specifically, GDP per capita at the source and the destination countries are expected to have opposite effects on migration flows. While higher income per capita at the source country is expected to show a negative effect on migration flows, income per capita at the destination country is expected to display a positive impact. Improvements in democratization and human rights protections (both political and civil rights) at the source country are expected to reduce the outflow of migrants, whereas civil wars, institutional autocracy and ethnic tensions are expected to increase the rate of migration outflow. Concerning variables such as proxy that measure migration costs, geographical distance is expected to have a negative effect while social networks (proxied by migrant stocks) are expected to increase migration flows by reducing psychological costs, facilitating integration into the host society and

increasing the possibility of obtaining a job. Having a colonial tie or cultural attachments (common official language and a common source of legislation) is also expected to reduce migration costs and, hence, increase migration flows.

Table 2 presents the baseline results on the determinants of the regular migration flows from Africa to Europe. We consider the economic and political indicators of human security together with indicators for the cost of migration that are discussed in Section 3 as explanatory variables. In all the specifications, source-country fixed effects ( $\alpha_s$ ) are included. Additionally, we add destination-country fixed effects ( $\alpha_d$ ) in Columns 1 and 2, year fixed effects ( $\alpha_t$ ) in Column 2, and time-variant fixed effects of the destination country ( $\alpha_{dt}$ ) in Columns 3–8.

Generally, the coefficients for all explanatory variables are statistically significant and carry the expected signs in most of the specifications. Higher per capita income at the destination countries and civil conflicts, state autocracy and ethnic tension at the source countries lead to higher migration flows, as expected. The control variables such as migrant networks, shared legal roots, common official language and colonial legacy positively impact on migration flows. Conversely, higher GDP per capita, democracy, political rights, civil liberties and the landlockedness of the source country decrease migration flows. Moreover, the larger the distance between the source and the destination countries, the lower is the bilateral migration flows.

To put results into the context of the estimated elasticities, we analyze the variables across specific models. In Table 2, while Column 1 controls for fixed effects of source countries ( $\alpha_s$ ) and destination countries ( $\alpha_d$ ) only, Column 2 includes time effects ( $\alpha_t$ ) as well. The results show that a 10 percent increase in the average income earned per person at the destination countries leads to an increase of about 8.9 and 17.1 percent, respectively, in annual bilateral migration flows. Whereas, from the same Columns, a 10 percent increase in per capita income at the source countries is associated with a 3.9 and 2.1 percent decrease in dyadic migration flows (from source to destination countries), respectively. The results for the per capita income are consistent with much of the literature (e.g., Bertoli et al., 2013; Ortega and Peri, 2013). Hence, these results suggest that higher average income levels at the destination countries have strong pulling power on the migration flows compared to the potential reduction effects of income growth at the source countries. A possible explanation could be that the income levels at the source countries are substantially lower in absolute terms than at the destination countries. With respect to economic development in the source countries, the literature depicts controversial results between income at the origin countries and emigration. Clemens et al. (2014) summarize that across the literature cross-sectional studies generally find either a positive or inverted-U relationship between income and emigration from low-income countries, while time-series studies

do not find a consistent relationship between income and emigration.<sup>21</sup> In accordance with the policy makers' conventional wisdom (Clemens et al., 2014), our findings confirm that an increase in average income per capita in the origin countries is negatively correlated with migration flows, which coincide with several studies that use time-series macro studies and control for country fixed effects (see, for instance, Carlos, 2002; Hatton and Williamson, 2003; Clark et al., 2004; Clark et al., 2007; Bertoli et al., 2013; and, Ortega and Peri, 2013).

Since our main emphasis is on the human security factors at the source countries, we use appropriate fixed effects (i.e., time-invariant source-countries ( $\alpha_s$ ) and time-variant destination-countries ( $\alpha_{dt}$ )), as provided by Column 3. Specifically, the results show that an increase in per capita income at the source countries leads also to a decrease in migration flows in this specification. Concerning political determinants of migration, most of the variables exert statistically significant results with the expected signs. In particular, the incidences of violent civil conflicts at the source countries are a significant pushing factor, which is in accordance with Naudé (2010), who finds that violent civil conflicts are important drivers of net migration from sub-Saharan Africa.

An increase in the government's autocracy in the source countries, which is an indicator of the presence of political persecution or human rights violations, leads to an increase in international migration flows. Democratization processes at the source countries, on the contrary, have a strong reducing effect on bilateral migration flows. Specifically, the size of the impact of the democratization dummy variable is particularly large: using coefficients from the standardized variables, it is apparent that democratization has the largest impact of all the determinants of bilateral migration flows. Furthermore, measures of political and civil rights at the source countries, which proxy political freedom, often carry the expected negative signs, although estimated coefficients are rarely statistically significant. The results on the crucial roles of political institutions (democracy, autocracy, political rights and civil liberties) on the flow of African migration to Europe are consistent with most of the literature on international migration and institutions (Baudassé et al., 2018).<sup>22</sup>

The other important non-economic determinants of migration flows are ethnic polarization and fractionalization, which measure the level of ethnic diversity and tensions at the source

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<sup>21</sup>For studies related to cross-sectional analysis, see, for instance, Belloc (2015); Czaika (2012); Dao et al. (2018); Hatton and Williamson (2005).

<sup>22</sup>Baudassé et al. (2018) provides an in-depth review of the literature on international migration and institutions and discusses the effect of institutions on migration flows using the exit and voice dichotomy of Hirschman (1970). Accordingly, if people have the freedom to express their dissatisfaction through the existing institutional frameworks, they choose the voice option and prefer to stay at home. Whereas, violations of basic rights due to poor quality of institutions lead them to choose the exit option and leave their country.

Table 2: Determinants of African migration flows to Europe

Dependant Variable								
Migration flows (in level)								
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Estimation method	PPML	PPML	PPML	PPML	PPML	PPML	PPML	PPML
Log GDP per capita destination $_{t-1}$	0.889*** [0.156]	1.707*** [0.352]						
Log GDP per capita source $_{t-1}$	-0.394*** [0.0655]	-0.214*** [0.0586]	-0.140*** [0.0510]	-0.140*** [0.0510]	-0.136*** [0.0520]	-0.122* [0.0635]	-0.106* [0.0560]	-0.206* [0.116]
Civil conflict source $_{t-1}$	0.238*** [0.0422]	0.290*** [0.0356]	0.288*** [0.0397]	0.288*** [0.0397]	0.291*** [0.0423]	0.241*** [0.0482]	0.322*** [0.0517]	0.305*** [0.0831]
Autocracy source $_{t-1}$	0.0396 [0.0633]	0.140*** [0.0487]	0.0630* [0.0349]	0.0630* [0.0349]	0.0628* [0.0348]	0.115** [0.0491]	0.0943 [0.0703]	0.0273 [0.0732]
Democracy source $_{t-1}$	-3.198*** [0.243]	-2.860*** [0.253]	-2.278*** [0.131]	-0.838*** [0.179]	-1.108* [0.663]	-1.598*** [0.221]	-1.979*** [0.382]	-2.006*** [0.470]
Political rights source $_{t-1}$	-0.0390 [0.0895]	-0.111* [0.0649]	-0.0967 [0.0785]	-0.0967 [0.0785]	-0.0944 [0.0756]	-0.391*** [0.0993]	-0.292*** [0.0996]	-0.139 [0.121]
Civil liberties source $_{t-1}$	-0.105 [0.0730]	-0.0765* [0.0458]	-0.0610 [0.0401]	-0.0610 [0.0401]	-0.0626 [0.0403]	-0.0220 [0.0687]	0.000576 [0.0540]	0.0147 [0.0920]
Ethnic polarization source	3.229*** [0.203]	2.869*** [0.276]	2.391*** [0.230]		6.085*** [0.897]	1.366*** [0.364]	2.421*** [0.791]	2.404*** [0.748]
Ethnic fractionalization source				3.363*** [0.224]				
Log urban population source $_{t-1}$					-0.0704 [0.210]			
Landlocked source					0.631*** [0.220]			
Network $_{t-1}$	0.0479*** [0.00811]	0.0411*** [0.00859]	0.0725*** [0.0124]	0.0725*** [0.0124]	0.0726*** [0.0127]	0.128*** [0.0181]	0.0946*** [0.00985]	0.0697* [0.0365]
Log distance	-0.634*** [0.0549]	-0.620*** [0.0534]	-0.625*** [0.0569]	-0.625*** [0.0569]	-0.625*** [0.0568]	-0.751*** [0.0770]	-0.316*** [0.0548]	-0.755*** [0.171]
Common legislation	0.902*** [0.0651]	0.910*** [0.0672]	0.855*** [0.0668]	0.855*** [0.0668]	0.854*** [0.0663]	1.184*** [0.114]	0.924*** [0.0817]	0.614*** [0.179]
Common language	0.697*** [0.0501]	0.730*** [0.0519]	0.512*** [0.0613]	0.512*** [0.0613]	0.513*** [0.0599]	0.983*** [0.0478]	0.837*** [0.0579]	0.663*** [0.133]
Colonial ties	1.099*** [0.0432]	1.115*** [0.0481]	1.045*** [0.0504]	1.045*** [0.0504]	1.044*** [0.0526]	0.575*** [0.0672]	0.620*** [0.0640]	0.952*** [0.139]
Constant	2.852** [1.183]	-4.746* [2.626]	3.617*** [0.510]	2.277*** [0.727]	8.738*** [2.688]	9.791*** [0.722]	0.0558 [0.868]	-12.49*** [0.845]
Observations	22,635	22,635	20,790	20,790	20,790	18,630	18,858	3,555
R-squared	0.709	0.755	0.846	0.846	0.846	0.913	0.902	0.864
Fixed Effects								
<i>Destination</i> ( $\alpha_d$ )	Yes	Yes	No	No	No	No	No	No
<i>Source</i> ( $\alpha_s$ )	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Destination – year</i> ( $\alpha_{dt}$ )	No	No	Yes	Yes	Yes	Yes	Yes	Yes
<i>Year</i> ( $\alpha_t$ )	No	Yes	No	No	No	No	No	No
Sample	All	All	All	All	All	non-(UK + France)	SSA	5 years

Notes: results are obtained by using the Poisson Pseudo-Maximum Likelihood (PPML) estimation method. The estimation period is 1990-2014. Column 8 uses only years 1990, 1995, 2000, 2005 and 2010. Column 6 omits France and the United Kingdom; and Column 7 considers the sub-Saharan Africa sub-sample. Standard errors in parenthesis are heteroskedasticity robust and clustered by year. Significance at the 1%, 5% and 10% level is indicated by \*\*\*, \*\*, and \*, respectively.

countries. In this regard, increases in these social heterogeneity factors are found to strongly increase migration outflows.

The remaining variables, which mainly proxy migration costs, are also significant and carry the expected signs. Specifically, migrant networks have a strong positive impact on bilateral migration flows. Moreover, those African countries that are farther away from Europe have fewer migrants heading to Europe due to distance-related costs. On the contrary, variables of colonial ties, common legal roots, common official language, and other cultural attachments increase migration flows.

The rest of the columns of Table 2 contain robustness check results. In Column 4, we employ ethnic fractionalization instead of ethnic polarization, and find a qualitatively similar pushing effect of ethnic tensions on migration flows. In Column 5 we add urban population and landlockedness of the source countries to investigate their potential effects on migration flows. The results show that having a large urban population has a negative but statistically insignificant effect on bilateral migration flows. The negative sign is consistent with the fact that large urban population represents socio-economic improvements. However, the landlockedness of the source countries decreases migration flows, as expected. The effects of the rest of the explanatory variables remain qualitatively unaffected. In Column 6 we estimate determinants of bilateral migration flows omitting the two main former colonial powers in Africa (the United Kingdom, and France). Once more, results on the main and control variables remain robust and highly significant. Historically, due to geographical proximity, Europe is the main destination for North African migrants (Zlotnik, 1991; Flahaux and De Haas, 2016). However, in the last two decades, there has been a surge in the number of migrants from sub-Saharan Africa towards Europe. Accordingly, in Column 7 we estimate a sub-sample of sub-Saharan African migration trends by omitting the five North African countries from the full sample. The results show that the baseline estimation is still robust despite the fact that the number of observations are reduced by 9%. Finally, Column 8 presents estimation results of a sub-sample where five-years period are considered (1990-94, 1995-99, 2000-2004, 2005-2009 and 2010-2014). These results show that while an increase in income per capita at the source is still a relevant factor for reducing international migration flows, violent civil conflicts and ethnic tensions at the source are also important pushing factors for African migrants. Notwithstanding, improvements of political rights at the source substantially decrease the rate of bilateral migration flows in the five-year intervals. These results confirm the robustness of our baseline findings.

In summary, our baseline results reveal that human security determinants are important factors in shaping the South-North migration trends in the past few decades. The estimation

results suggest that African migration patterns towards Europe are significantly influenced by economic, political, social and cultural conditions. In particular, African extra-continental migrations are caused by poverty, civil wars, ethnic tensions, and civil and political rights violations. The results also indicate that improvements in per capita income and political conditions at the source countries are negatively related to the rate of migration flows. Furthermore, social, cultural, geopolitical and historical ties with European countries have a significant impact in influencing the trend in African migration towards Europe.

## 4.2 Determinants of the flows of African asylum seekers to Europe

Each year thousands of migrants from Africa enter Europe after braving the perils of crossing the Mediterranean Sea using inadequate transport conditions. Although several factors could be listed as reasons, the EU's tightened entry policies for African migrants, on the one hand, and lack of financial means and appropriate travel documents by the migrants, on the other hand, are thought to have forced African immigrants to choose the irregular pathways (Hansen and Jonsson, 2011; Flahaux and De Haas, 2016). To examine the extent to which human security factors determine the flow of African asylum seekers to Europe, we re-estimate (3) using data on the flow of asylum seekers.

The estimation results of the determinants of the flows of asylum seekers from Africa to Europe are reported in Table 3. While we still use the specifications used in Table 2, the dependent variable here is the number of annual asylum seekers, which represents the flows of asylum seekers. The results obtained by using asylum seeker data are qualitatively similar to the baseline results using regular migration flow data. Specifically, an increase in the GDP per capita of the destination countries is associated with an increase in the number of asylum seekers. As in Table 2, throughout the specifications, an increase in the GDP per capita of the source countries leads to a decrease in the number of asylum seekers. Moreover, political turmoil, fear of being persecuted for reasons of ethnicity or political opinion are found to drive African migrants to demand a refugee status in Europe. As expected, the source countries' democratization leads to a decrease in bilateral flows of asylum seekers. Throughout the specifications, the institutional quality variable has a statistically significant impact with the expected sign. Furthermore, migration cost and culture-related control variables remain statistically significant with the expected signs. Unlike in Table 2, however, a large urban population has a significantly negative effect on bilateral flows of asylum seekers. It likely reflects the negative effect of socio-economic improvements associated with urbanization in reducing the flows of asylum seekers from Africa to Europe.

Table 3: Determinants of the flows of African asylum seekers to Europe

Asylum seekers (in level)								
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Estimation method	PPML	PPML	PPML	PPML	PPML	PPML	PPML	PPML
Log GDP per capita destination $_{t-1}$	0.286 [0.191]	1.003*** [0.321]						
Log GDP per capita source $_{t-1}$	-0.229*** [0.0764]	-0.173*** [0.0640]	-0.177*** [0.0652]	-0.177*** [0.0652]	-0.140** [0.0664]	-0.230*** [0.0752]	-0.179*** [0.0677]	-0.509*** [0.0990]
Civil conflict source $_{t-1}$	0.351*** [0.0724]	0.400*** [0.0550]	0.393*** [0.0594]	0.393*** [0.0594]	0.403*** [0.0586]	0.497*** [0.0508]	0.406*** [0.0608]	0.470*** [0.132]
Autocracy source $_{t-1}$	-0.410*** [0.126]	-0.161 [0.149]	-0.111 [0.150]	-0.111 [0.150]	-0.108 [0.148]	-0.0702 [0.163]	-0.0879 [0.165]	-0.147 [0.217]
Democracy source $_{t-1}$	-3.821*** [0.407]	-3.060*** [0.236]	-3.761*** [0.330]	-1.209*** [0.186]	-6.897*** [0.777]	-2.281*** [0.303]	-3.595*** [0.246]	-2.348*** [0.513]
Political rights source $_{t-1}$	-0.0456 [0.105]	-0.196* [0.109]	-0.172 [0.108]	-0.172 [0.108]	-0.178 [0.108]	-0.129 [0.123]	-0.195* [0.107]	-0.151 [0.175]
Civil liberties source $_{t-1}$	-0.461*** [0.0883]	-0.357*** [0.0712]	-0.347*** [0.0775]	-0.347*** [0.0775]	-0.337*** [0.0785]	-0.359*** [0.0904]	-0.343*** [0.0710]	-0.322* [0.174]
Ethnic polarization source	3.887*** [0.501]	3.945*** [0.450]	3.725*** [0.471]		7.453*** [1.263]	2.929*** [0.517]	3.996*** [0.676]	4.101*** [1.083]
Ethnic fractionalization source				5.667*** [0.484]				
Network $_{t-1}$	0.0332*** [0.00441]	0.0238*** [0.00369]	0.0613*** [0.00736]	0.0613*** [0.00736]	0.0622*** [0.00776]	0.0985*** [0.00443]	0.0762*** [0.00752]	0.0539*** [0.0153]
Log urban population source $_{t-1}$					-0.937*** [0.215]			
Landlocked source					-0.498* [0.299]			
Log Distance	-0.411** [0.179]	-0.412** [0.181]	-0.397** [0.172]	-0.397** [0.172]	-0.390** [0.172]	-0.562** [0.243]	0.0378 [0.226]	-0.451 [0.388]
Common legislation	0.337*** [0.0381]	0.352*** [0.0367]	0.311*** [0.0531]	0.311*** [0.0531]	0.311*** [0.0526]	0.167** [0.0762]	0.401*** [0.0602]	0.369*** [0.112]
Common language	0.714*** [0.0770]	0.743*** [0.0715]	0.591*** [0.0679]	0.591*** [0.0679]	0.584*** [0.0663]	0.890*** [0.0637]	0.608*** [0.0696]	0.710*** [0.138]
colonial	0.240*** [0.0816]	0.277*** [0.0803]	0.134 [0.0936]	0.134 [0.0936]	0.138 [0.0932]	-0.0928 [0.174]	-0.0429 [0.0961]	0.183 [0.211]
Colonial ties	5.249*** [1.979]	-0.884 [2.419]	7.097*** [1.333]	4.665*** [1.569]	19.51*** [2.994]	3.650* [1.934]	2.346 [1.827]	6.027* [3.282]
Observations	22,635	22,635	21,105	21,105	21,105	18,945	19,698	3,555
R-squared	0.283	0.315	0.468	0.468	0.467	0.565	0.500	0.586
Fixed Effects								
<i>Destination</i> ( $\alpha_d$ )	Yes	Yes	No	No	No	No	No	No
<i>Source</i> ( $\alpha_s$ )	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Destination - year</i> ( $\alpha_{dt}$ )	No	No	Yes	Yes	Yes	Yes	Yes	Yes
<i>Year</i> ( $\alpha_t$ )	No	Yes	No	No	No	No	No	No
Sample	All	All	All	All	All	non-(UK + France)	SSA	5 years

Notes: The estimation period is 1990-2014. Column 5 includes the post-1995 sub-sample. Column 7 uses only years 1990, 1995, 2000, 2005 and 2010. Column 5 omits France and the United Kingdom; and Column 6 considers Sub-Saharan Africa sub-sample. Standard errors in parenthesis are heteroskedasticity robust and clustered by year. Significance at the 1%, 5% and 10% level is indicated by \*\*\*, \*\*, and \*, respectively.

### 4.3 The role of political determinants on migration flows

As shown by Tables 2 and 3, African migration to Europe is not only driven by economic factors, but also by non-economic motivations such as civil conflicts, human rights violations and political stability. In the following, we emphasize the role of political factors in extra-continental migration flows. In doing so, Table 4 reports the results from regressions that include broader determinants of international (regular and asylum seeker) migration flows between Africa and Europe.<sup>23</sup> Specifically, we consider measures of political instability and specific measures of political risks at the source countries, in addition to the aforementioned political and distributional indexes in Tables 2 and 3. In order to facilitate the comparison, Column 1 of Table 4 replicates Column 3 of the baseline specification in Tables 2. Column 2 of Table 4 estimates the impacts of political variables focusing on political stability and institutions as the key determinants of international migration. It is noteworthy that in this specification economic determinants are omitted and the coefficients remain with the expected sign, except for institutionalized democracy. Once more, civil conflict, institutionalized autocracy, and ethnic polarization are positively correlated with migration flows. In Column 3 we consider alternative and disaggregated measures of both economic and political institutions, which are taken from the International Country Risk Guide (Howell, 2011). The set of indexes that we use in this analysis include socioeconomic conditions, investment profile, democratic accountability, government stability, control of corruption, law and order, bureaucratic quality, external conflict and religious tension of the source countries. With the exception of external conflict and religious tension, the rest of the institutional quality indicators are supposed to have a decreasing effect on the migration outflows.

In a similar way to increases in GDP per capita, improvements in socioeconomic conditions at the source countries have a negative impact on migration flows. The result implies that better economic institutions at the origin have a reducing effect on migration outflows. Among the measures of the quality of political institutions, democratic accountability significantly determines migration outflows. This result is consistent with the effect of the institutionalized democracy indicator that is used in our baseline results (see Column 1). Although some of the variables carry the expected signs, across specifications, the impacts of most of the remaining economic and political institutions variables are not statistically significant.<sup>24</sup> Column 3 combines variables used in Column 1 and 2, but the democracy variable of Column 1 is omitted

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<sup>23</sup>We extend the previous regression model in (3) by adding vectors of political stability in aggregated and disaggregated forms.

<sup>24</sup>The estimates for those political institutional variables remain insignificant even if we include each of the institutional variables separately with the control variables. These results are available upon request.

to avoid redundancy with democratic accountability. The results remain generally similar to those of Columns 1 and 2.

The results in Columns 4 – 6 of Table 4 are obtained from the same specifications as results in Columns 1 – 3, but using the flow of asylum seekers instead of regular migration flows as the dependent variable. The results on the impact of political determinants on regular migration flows remain valid for the flow of asylum seekers.

#### 4.4 Robustness checks

Given that our estimation model is a pseudo-gravity model, we use the PPML estimator from Tables 2, 3 and 4, which flexibly accounts for a significant proportion of zero observations in the dependent variables. In this section, we check for the robustness of the benchmark results by performing OLS estimation on (2) using the positive migration flows only, as in Ortega and Peri (2013). These results are documented in Tables D.1 and D.2 of D. For each specification both the source-country fixed effects ( $\alpha_s$ ) and time-destination fixed effects ( $\alpha_{dt}$ ) are included.

Tables D.1 and D.2 report, respectively, the estimation results obtained when zero bilateral regular and asylum seeker migration flows are omitted. In both cases, GDP per capita at the source and the destination countries, civil conflict, institutional autocracy and ethnic distributional indexes, political stability (both at the source and the destination countries), socioeconomic conditions, law and order, bureaucracy quality as well as the control variables display effects that are qualitatively similar to our baseline results in Tables 2 and 3. Furthermore, in the linear estimation, the civil liberty parameter of the source country significantly affects migration flows.

Another robustness check involves using the PPML estimator as in Tables 2 and 3, but re-estimating the models by gradually increasing the number of political determinants of migration. This is meant to check if our main estimation results are affected by the fairly large number of explanatory variables we considered. Respective results are documented in Tables E.1 and E.2. In general, the results show a remarkable degree of robustness to progressively including political drivers of migration. For instance, GDP per capita of the source country has a significantly negative impact on migration flows from Africa to Europe although the respective coefficient decreases in absolute terms from -0.185 in the most parsimonious specification to -1.40 in the most comprehensive model in Table E.1. Similarly, the incidence of civil conflicts has a robust positive effect on migration flows, and the magnitude of its impact remains largely unaffected by the inclusion of additional explanatory variables. The same can be said of the effects of democracy score, distance, common legislation, common language, colonial ties, and migrant

Table 4: Political factors as determinants of migration flows

Estimation method	(1)	(2)	(3)	(4)	(5)	(6)
Dependant Variables (in level)	PPML	PPML	PPML	PPML	PPML	PPML
	M. Flows	M. Flows	M. Flows	A.Seekers	A.Seekers	A.Seekers
Log GDP per capita						
source <sub>t-1</sub>	-0.140*** [0.0510]			-0.177*** [0.0652]		
Civil conflict source <sub>t-1</sub>	0.288*** [0.0397]		0.280*** [0.0386]	0.393*** [0.0594]		0.272*** [0.0696]
Autocracy source <sub>t-1</sub>	0.0630* [0.0349]		0.0731** [0.0345]	-0.113 [0.150]		-0.234 [0.166]
Democracy source <sub>t-1</sub>	-2.278*** [0.131]			-3.700*** [0.334]		
Political rights source <sub>t-1</sub>	-0.0967 [0.0785]		-0.154** [0.0688]	-0.175 [0.108]		-0.203*** [0.0784]
Civil liberties source <sub>t-1</sub>	-0.0610 [0.0401]		0.00905 [0.0491]	-0.348*** [0.0773]		-0.199** [0.0825]
Ethnic polarization source	2.391*** [0.230]		0.723*** [0.247]	3.882*** [0.464]		5.096*** [0.408]
Socioeconomic conditions source <sub>t-1</sub>		-0.0398* [0.0209]	-0.0442** [0.0183]		0.0477 [0.0427]	0.0294 [0.0419]
Investment profile source <sub>t-1</sub>		0.0135 [0.0110]	0.0102 [0.0117]		-0.0501** [0.0241]	-0.0460** [0.0233]
Democratic accountability <sub>t-1</sub>		-0.0654*** [0.0151]	-0.0737*** [0.0130]		-0.103*** [0.0298]	-0.0630** [0.0287]
Government stability <sub>t-1</sub>		0.0211 [0.0232]	0.0331 [0.0264]		-0.0627 [0.0480]	-0.0588 [0.0505]
Control of corruption <sub>t-1</sub>		0.0126 [0.0230]	0.00195 [0.0276]		0.0423 [0.0711]	0.0611 [0.0715]
Law and order source <sub>t-1</sub>		-0.0290 [0.0537]	-0.0414 [0.0459]		-0.0808 [0.0755]	-0.0631 [0.0611]
Bureaucracy quality source <sub>t-1</sub>		-0.0442 [0.0499]	-0.0326 [0.0531]		-0.0608 [0.0627]	-0.00706 [0.0686]
External conflict <sub>t-1</sub>		-0.0310 [0.0217]	-0.0127 [0.0188]		-0.0868** [0.0352]	-0.0623* [0.0325]
Religious tension <sub>t-1</sub>		0.0383 [0.0272]	0.0301 [0.0255]		-0.0640* [0.0364]	-0.0804** [0.0378]
Network <sub>t-1</sub>	0.0725*** [0.0124]	0.0702*** [0.0122]	0.0679*** [0.0120]	0.0619*** [0.00723]	0.0626*** [0.00736]	0.0620*** [0.00725]
Log Distance	-0.625*** [0.0569]	-0.542*** [0.0529]	-0.494*** [0.0516]	-0.390** [0.171]	-0.271 [0.174]	-0.316* [0.177]
Common legislation	0.855*** [0.0668]	0.985*** [0.0693]	1.150*** [0.0622]	0.336*** [0.0534]	0.207*** [0.0506]	0.239*** [0.0515]
Common language	0.512*** [0.0613]	0.276*** [0.0480]	0.266*** [0.0472]	0.636*** [0.0740]	0.615*** [0.0740]	0.595*** [0.0762]
Colonial ties	1.045*** [0.0504]	1.073*** [0.0715]	1.234*** [0.0675]	0.408*** [0.0582]	0.207 [0.133]	0.230* [0.124]
Constant	3.617*** [0.510]	9.408*** [0.620]	8.847*** [0.662]	6.946*** [1.321]	8.448*** [1.381]	5.874*** [1.508]
Observations	20,790	16,704	15,708	21,105	16,884	15,946
R-squared	0.846	0.845	0.856	0.470	0.486	0.489
Fixed Effects						
<i>Destination</i> ( $\alpha_d$ )	Yes	Yes	Yes	Yes	Yes	Yes
<i>Destination - year</i> ( $\alpha_{dt}$ )	Yes	Yes	Yes	Yes	Yes	Yes
Sample	All	All	All	All	All	All

Notes: Note: Standard errors in parenthesis are heteroskedasticity robust and clustered by year. Significance at the 1%, 5% and 10% level is indicated by \*\*\*, \*\*, and \*, respectively.

networks. The only exception is the measure of civil liberties at the source country, which always carry a negative coefficient, but becomes statistically significant in only one of the specifications in Table E.1. Still the indicator for civil liberties in African countries has a significantly negative effect on the flow of asylum seekers as documented in Table E.2.

## 5 Conclusions

The current migration and refugee crisis in Europe requires an understanding of the different migration drivers beyond the well-known economic determinants. While a few extant studies have examined determinants of African migration flows, they have however either focused exclusively on intra-African migration flows or studied international migration from Africa together with intra-African flows. The present paper aims at filling this gap in the literature by providing a thorough empirical examination of the role played by human security factors in explaining trends in African migration to Europe during the period 1990–2014. To estimate the pseudo-gravity model of bilateral migration flows, we employ the Poisson Pseudo-Maximum Likelihood (PPML) estimator, which is particularly suitable in regressions where the dependent variable has a significant proportion of zero values (Beine and Parsons, 2015). This paper contributes to the literature on the determinants of international migration flows in two ways.

First, as aforementioned, we empirically analyze the specific Africa to Europe trends of migration flows. From the perspective of European destination countries, African migration flows show a dramatic rise and curbing this flow is among the top policy issues. From the view of African source countries, Europe continues to be an important destination for extra-continental African migrants, thanks to the historical and geopolitical ties between the two continents. Hence, this emphasis helps us to highlight essential determinants of migration flows from Africa to Europe.

Second, although the importance of non-economic factors such as civil wars and conflicts in international migration is well-documented in the literature (Docquier et al., 2018; Naudé, 2010), the present paper additionally highlights the roles of institutions and social heterogeneity indicators such as ethnic polarization and religious tension in the decisions of individuals to emigrate. Extra-continental migration is not only costly but it is also risky. Hence, despite abject poverty, wars, civil conflicts, severe political persecution, and human rights abuses, the majority of the world population stay at home or move mainly to neighboring countries in their search for safety and protection. Our analysis underscores that, in addition to the obvious economic determinants and violent conflicts, a combination of several push and pull factors including political conditions (ongoing violence and instability, low institutional quality) and

pre-existing socio-cultural structures influence the migration choice of individuals.

We find several notable results. First, most of the human security indicators significantly determine annual migration flows from Africa into European countries. Per capita income growth at a given European destination is associated with an increase in immigrant flows while per capita income growth at a given source country is negatively related with emigration from Africa. Rising political persecution, human right violations, political instability and civil conflicts in source countries are also associated with increased migration flows into European destination countries. Second, in conjunction with the regular trends of migration flows, asylum seekers from Africa also have a combination of political and economic motivations to claim refugee status. Hence, categorizing African immigrants as the ‘bogus asylum seeker’ in general terms would be highly misleading and could result in misguided migration policies. Third, cultural and migration cost-related factors, such as migrant networks, colonial ties, common languages, physical distance and living in a land-locked country have shown significant effects on the trends in African migration to Europe.

The aforementioned findings have significant policy implications for managing the recent migration and refugee crisis in Europe. The African migration flows to Europe are complex and driven by mixed pushing and pulling factors. The central point of this discussion is acknowledging the heterogeneity of the flows, since a valid response will need to be grounded in a sound understanding of fundamental causes of the flows. Further, the African migrants’ motives, patterns and trends should be seen from the broader human security point of view. Overlooking the political factors, which significantly influence international migration, and attempting to address only the economic causes through investing in Africa, may have counterproductive consequences. Therefore, the collaboration among the African source countries and all the European countries and institutions should be based not only on the economic development in the source countries, but also on the promotion of human security: peace, human rights, democracy, and social stability.

Finally, it is noteworthy that, although our main result—that broader human security factors drive international migration—is based on data on trends in African migration to Europe in the post-Cold War period, it appears to be generalizable to the rest of the world for three main reasons. First, there are already studies on other parts of the world that have found violent conflicts as a significant driver of emigration (Clemens, 2017; Shrestha, 2017). Second, the frequency and severity of violent conflicts and human rights abuses in some parts of the world, especially the Middle East, are as high as, if not higher than, in Africa. This also makes human security factors potentially important drivers of emigration from other conflict-ridden regions,

such as the Middle East. Third, although the post-Cold War period is a period when Africa has witnessed some of the most violent conflicts in the world (e.g., Rwanda, Congo, Liberia), this is at the same time a period during which several African countries experienced peaceful transfers of power (e.g., Liberia, Ghana, Nigeria, Tanzania). Hence, our results may be also applied to politically stable emerging economies in Asia and Latin America.

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# Appendices

## A Migration Model theoretical background

As aforementioned, economic deprivation, political persecution, poor governance, ethnic tension, structural violence and conflicts in the source countries are considered as the main factors of migration decision-making. Additionally, economic, social and political enabling environments in host countries are taken as pull factors. In this sense, De Haas (2011) strongly argues that “ on the macro-level, migration processes are driven by a multitude of economic and non-economic factors and, on the micro-level, migrants are motivated by a combination of multiple, interconnected but analytically distinct social, cultural, economic and political factors.” Therefore, migration decisions should be viewed as a process of location choices (staying at home or moving to an optimal destination) in which individuals form expectations about where they will have better opportunities and protections, in order to maximize their utility.

Accordingly, taking as a starting point the random utility maximization (RUM) theoretical models developed by Beine et al. (2011), Grogger and Hanson (2011) and Ortega and Peri (2013), in which income maximization problems or wage differentials are a driving force to make a migration decision, we emphasize the broader human security conditions. Specifically, we analyze a more substantial number of political and socio-cultural factors that may influence the individual’s decision to move from his/her current location. Furthermore, instead of considering a unique destination, our model considers multiple destinations.

Formally, out of the set of  $N$  global countries, the individual  $i$  from his source country  $s \in S = s_1, s_2, \dots, s_n$ , where  $S \subseteq N$ , makes a decision of whether to stay in  $s$  or to migrate to the destination country  $d \in D = d_1, d_2, \dots, d_n$ , where  $D \subseteq N$ . It is noteworthy note that as indicated in Kennan and Walker (2013) among others, individuals are assumed to have rational expectations. Thus, they make an informed decision to migrate in seeking their maximum utility. Therefore, following Ortega and Peri (2013), we formulate a utility function  $u$  of the individual  $i$  by staying in the source-country  $s$  or by migrating into the destination country  $d$  that are given by (4) and (5), respectively,

$$u_{ssi} = \gamma_{ss} + \pi_{ss} + \nu_{ssi}, \quad (4)$$

$$u_{sdi} = \gamma_{sd} + \pi_{sd} + \nu_{sdi}. \quad (5)$$

The terms  $\gamma_{ss}(\gamma_{sd})$  and  $\pi_{ss}(\pi_{sd})$  are country-of-source (country-of-destination) specific variables, which capture the average earnings and security of individual  $i$  by staying in home country  $s$  (leaving for destination country  $d$ ), respectively. Furthermore, the individual-specific terms  $\nu_{ssi}$  and  $\nu_{sdi}$  denote unobserved components of an individual's utility in each source and destination country, respectively. These random variables  $\nu_{ssi}$  and  $\nu_{sdi}$  are assumed to be identically and independently distributed as type-I extreme values across locations and periods.

Migration costs also determine the magnitude of utility for a migrating individual. Let  $C_{sdi}$  denote the total cost of migration from country  $s$  to country  $d$  for individual  $i$ . These relocation costs are also influenced by specific features between the source and host countries such as culture, language, geographic distance, and the attractiveness or accessibility and entry policies of host-countries (Ortega and Peri, 2009; Beine et al., 2016 and Bertoli and Moraga, 2015).<sup>25</sup>

Therefore, each individual acts to maximize the expected present value of the realized payoffs, net of moving costs. For this minimization, we consider that

$$\gamma_{sd} = h_1(W_{di}) - C_{sdi}$$

and

$$\pi_{sd} = h_2(F_{di}) - C_{sdi},$$

where  $W_{di}$  is the present value of expected earnings in the form of wage, and  $F_{di}$  is the level of freedom that an individual  $i$  enjoys by staying in the destination country  $d$ . Note that the probability of an individual immigrant settling in the destination country with the expected human security gains depends on the socio-economic and political stability of the destination country.<sup>26</sup> Thus, to capture this situation, we introduce a binary function  $\lambda(\varpi, f)$ , where  $\varpi$  is employment probability, and  $f$  denotes the chances of individual  $i$  being protected by moving to country  $d$ . Accordingly,  $\lambda(\varpi, f) = 0$ , if the individual migrant is not employed or does not get

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<sup>25</sup>Besides, Grogger and Hanson (2011) designate two components of migration costs: a fixed monetary cost of moving from country  $s$  to  $d$ ,  $k_{sd}$ , and a cost that varies as per the individual's character,  $l_{sd}^j$ , where  $(j)$  denotes individual's skills, such that  $C_{sdi} = k_{sd} + l_{sd}^j$ . Moreover, the migration costs also have various time and destination dimensions, which could be time-invariant (such as geographic and cultural distance) or time-varying and destination-specific (such as migration policies and the benevolence of the welfare state) (Beine and Parsons, 2015).

<sup>26</sup>Extensive hostility, abuse of and violence against migrants has become much more visible worldwide in recent years (Taran, 2001). Current human rights reports show that racist and xenophobic speech and violence, harassment, threats and killings targeting asylum seekers and migrants are increasing across the European Union. These crimes against migrants are committed organized way by state authorities, private companies or individuals or vigilante groups.

the expected protection and security; and,  $\lambda(\varpi, f) = 1$ , if the migrant individual gets employed and enjoys legal and political protections in the hosting country. Henceforth, the utility function following Ortega and Peri (2013) is formally represented as

$$u_{sdi} = \lambda(\varpi, f)(h_1(W_{di}) + h_2(F_{di})) + \nu_{sdi}$$

It is noteworthy that a fairly general stochastic specification is considered in the above equations. The rationale behind this assumption is that there would be expected differences between prospective migrants and non-migrants. However, in many aspects, it is difficult to measure these differences since prospective migrants may differ in their talents, attitudes toward risk, financial liquidity and insurance, human rights abuses, psychological costs of living abroad, etc. (Kennan and Walker, 2013, Ortega and Peri, 2013). Note that  $\nu_{ssi} = \epsilon_{ssi}$  is a stochastic term for the stay-at-home utility function. However, for each  $d \in D_s$ , the term  $\nu_{sdi}$  comprises two uncorrelated error terms:  $\nu_{sdi} = \zeta + \epsilon_{sdi}$ , where  $\zeta$  is drawn from a probability distribution with mean zero. These individual random effects are correlated, i.e., utility of migrants in a given destination country can interact. The random variables  $\epsilon_{ssi}$  and  $\epsilon_{sdi}$  are all identically and independently distributed as type-I extreme value. Using the nested logit model approach of McFadden (1978), which allows for more general substitution patterns, it is possible to get a closed-form solution for choice probabilities of staying in the source country ( $P_s$ ) or migrating to the destination ( $P_d$ ).

The probability of an individual staying in the source country  $s$  is given by

$$P_s = \frac{e^{\gamma_{ss} + \pi_{ss}}}{e^{\gamma_{ss} + \pi_{ss}} + \left( \sum_{q \in D} e^{\frac{\gamma_{sq} + \pi_{sq}}{T}} \right)^T} \quad (6)$$

where  $T$  is a discordance parameter and controls for the degree of correlation across the stochastic terms in the equations. As Ortega and Peri (2013) argue, the setting  $T = 1$  coincides with zero correlation, which obtains an expression for the log odds ratio of the logit model. Assuming that there will be a non-negative correlation in the error terms in our destination equations, then  $T$  will take a value  $0 < T < 1$ .

The probability of an individual migrating from the source country  $s$  to the destination country  $d$  is given by

$$P_d = \frac{\left( \sum_{q \in D} e^{\frac{\gamma_{sq} + \pi_{sq}}{T}} \right)^T}{e^{\gamma_{ss} + \pi_{ss}} + \left( \sum_{q \in D} e^{\frac{\gamma_{sq} + \pi_{sq}}{T}} \right)^T} \frac{e^{\frac{\gamma_{sd} + \pi_{sd}}{T}}}{\sum_{q \in D} e^{\frac{\gamma_{sq} + \pi_{sq}}{T}}} \quad (7)$$

Accordingly, the odds ratios between staying in a home country and migrating into a destination country ( $\ln \frac{P_d}{P_s}$ ) is obtained as

$$\ln \frac{P_d}{P_s} = \frac{\gamma_{sd} + \pi_{sd}}{T} - (\gamma_{ss} + \pi_{ss}) - (1 - T) \left( \ln \sum_{q \in D} e^{\frac{\gamma_{sq} + \pi_{sq}}{T}} \right) \quad (8)$$

The migrants' decision to move to two different destination countries depends on the relative attractiveness of the destinations. Hence, the proportion of migrants going to  $d_1$  or  $d_2$  is given by the logit model odds ratio in

$$\ln \frac{P_{d1}}{P_{d2}} = \ln \frac{\gamma_{sd1} + \pi_{sd1}}{\gamma_{sd2} + \pi_{sd2}} \quad (9)$$

The proportion of people who chooses to migrate into destination country  $d$  as compared to the total number of potential migrants from the source country  $s$  is denoted by  $P_d = (n_{sd} / \sum_{q=1}^D n_{sq})$ , where  $n_{sq}$  is the number of individuals born in country  $s$  who decided to live in country  $q$ . Following this logic, we can rewrite (8) as

$$\ln(n_{sd}) = \ln(n_{ss}) + \frac{\gamma_{sd} + \pi_{sd}}{T} - (\gamma_{ss} + \pi_{ss}) - (1 - T) \left( \ln \sum_{q \in D} e^{\frac{\gamma_{sq} + \pi_{sq}}{T}} \right) \quad (10)$$

It is noteworthy that in the above equation, all quantities in the right-hand-side, except  $\gamma_{sd} + \pi_{sd}$ , are constant across destinations and vary by the source country only. By considering variations over time, individual migrants may be exposed to different levels of economic benefits and social, legal and political protections in different destination countries. Furthermore, to deal with a time-specific migration choice decision (as a consequence of the relative attractiveness of the destination countries and the proportion of migration flows towards these nations, Ortega and Peri, 2013), the previous equation can be rewritten as

$$\ln(n_{sdt}) = \ln(n_{sst}) + \frac{\gamma_{sdt} + \pi_{sdt}}{T} - (\gamma_{sst} + \pi_{sst}) - (1 - T) \left( \ln \sum_{q \in D} e^{\frac{\gamma_{sqt} + \pi_{sqt}}{T}} \right) \quad (11)$$

In a similar way, the share of people who choose to stay in the home country, provided the pushing factors, is denoted by  $P_s = n_{ss} / \sum_{q=1}^D n_{sq}$ . Then, the probability of individuals staying in the source country over multiple periods, given the pushing factors from the home country and the potential probability to migrate into  $d$ , is given by

$$\ln(n_{sst}) = \ln(n_{sdt}) + \gamma_{sst} + \pi_{sst} - \left( \frac{\gamma_{sst} + \pi_{sst}}{T} \right) - (1 - T) \left( \ln \sum_{q \in D} e^{\frac{\gamma_{sqt} + \pi_{sqt}}{T}} \right) \quad (12)$$

Therefore, our empirical specification, which is specified in section two of this chapter is obtained from (11) and (12) is formally given as

$$\ln(n_{sdt}) = \beta_{0_{sdt}} + \beta_1 \gamma_{sdt} + \beta_2 \pi_{sdt} + \epsilon_{sdt}, \quad (13)$$

where  $\beta_{0_{sdt}}$  stands for source-by-year and destination-by-year fixed effects, which vary over time and by countries of source and destination. The term  $\epsilon_{sdt}$  is an error term capturing various unobserved factors of the approximate probabilities in the estimation sample. The empirical specification in (13) is similar to a pseudo-gravity model of international migration, which considers the logarithm of bilateral migration flows as a function of country fixed effects with respect to source and destination countries and general migration costs (see, for example, Beine et al., 2016; Bertoli and Moraga, 2013; Mayda, 2010; McKenzie et al., 2014; Ortega and Peri, 2013).

## B List of countries in the sample

Table B.1: List of African countries of sources of migrants and asylum seekers

Code	country	code	country	code	country	code	country
1	Algeria	16	Egypt	31	Mali	46	Tunisia
2	Angola	17	Equatorial Guinea	32	Mozambique	47	Tanzania
3	Burundi	18	Eritrea	33	Mauritania	48	South Africa
4	Benin	19	Ethiopia	34	Mauritius	49	Uganda
5	Burkina Faso	20	Gabon	35	Malawi	50	Zambia
6	Botswana	21	Ghana	36	Namibia	51	Zimbabwe
7	Chad	22	Guinea	37	Niger		
8	Central AR	23	Gambia	38	Nigeria		
9	Côte d'Ivoire	24	Guinea-Bissau	39	Rwanda		
10	Cameroon	25	Kenya	40	Sudan		
11	Congo, DR	26	Liberia	41	Senegal		
12	Congo	27	Libya	42	Sierra Leone		
13	Comoros	28	Lesotho	43	Somalia		
14	Cape Verde	29	Morocco	44	Seychelles		
15	Djibouti	30	Madagascar	45	Togo		

Table B.2: List of European countries of destinations for African migrants

Code	country	code	country	code	country
1	Austria	8	Greece	15	Norway
2	Belgium	9	Hungary	16	Poland
3	Czech Republic	10	Iceland	17	Portugal
4	Denmark	11	Ireland	18	Spain
5	Finland	12	Italy	19	Sweden
6	France	13	Luxembourg	20	Switzerland
7	Germany	14	Netherlands	21	United Kingdom

## C Trends in African migration flows

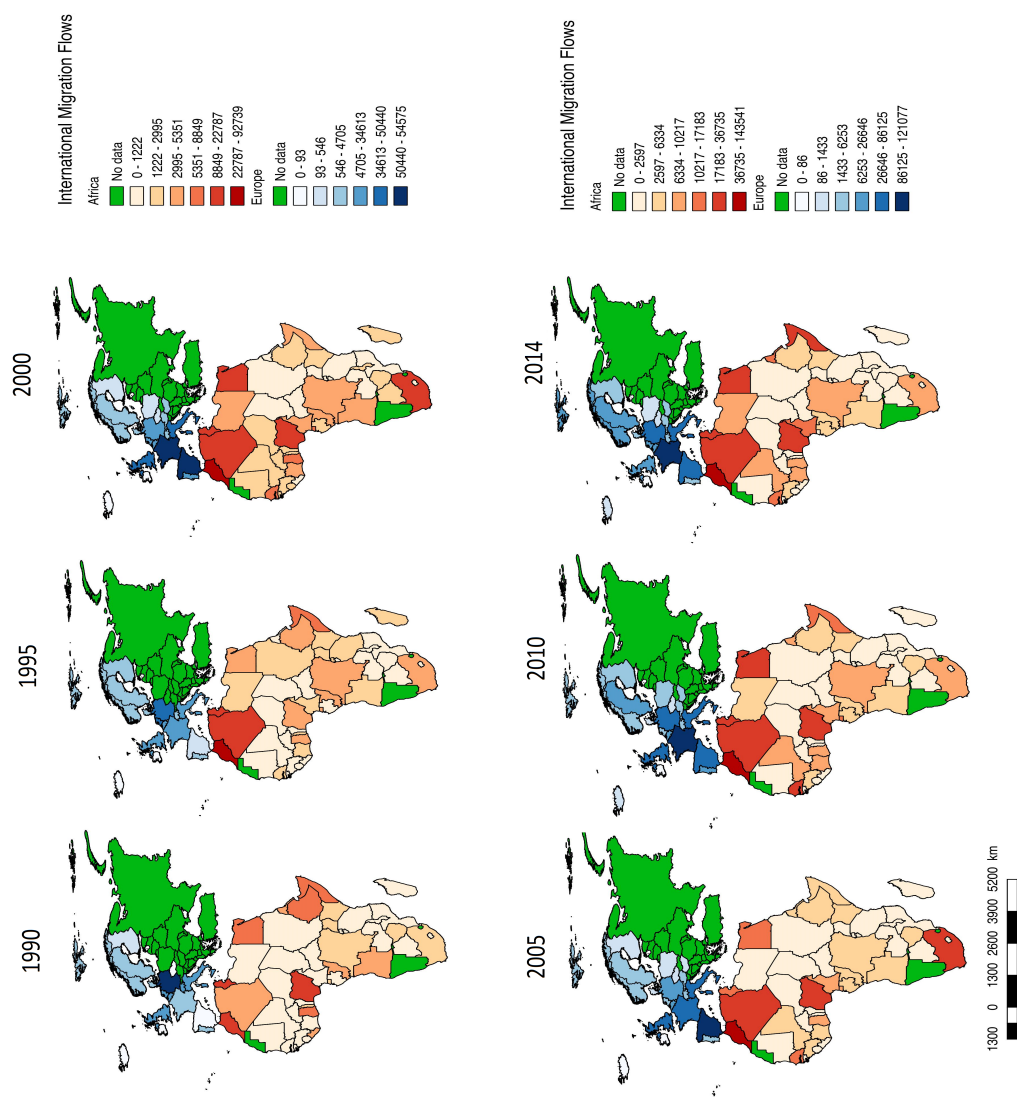


Figure 1: Absolute number of African regular migration flows towards Europe in 1990, 1995, 2000, 2005, 2010, 2014. Note that there are two distinct scales for the colors: one scale for the upper three maps and another scale for the lower three maps. Source: Authors' calculations based on data described in the text.

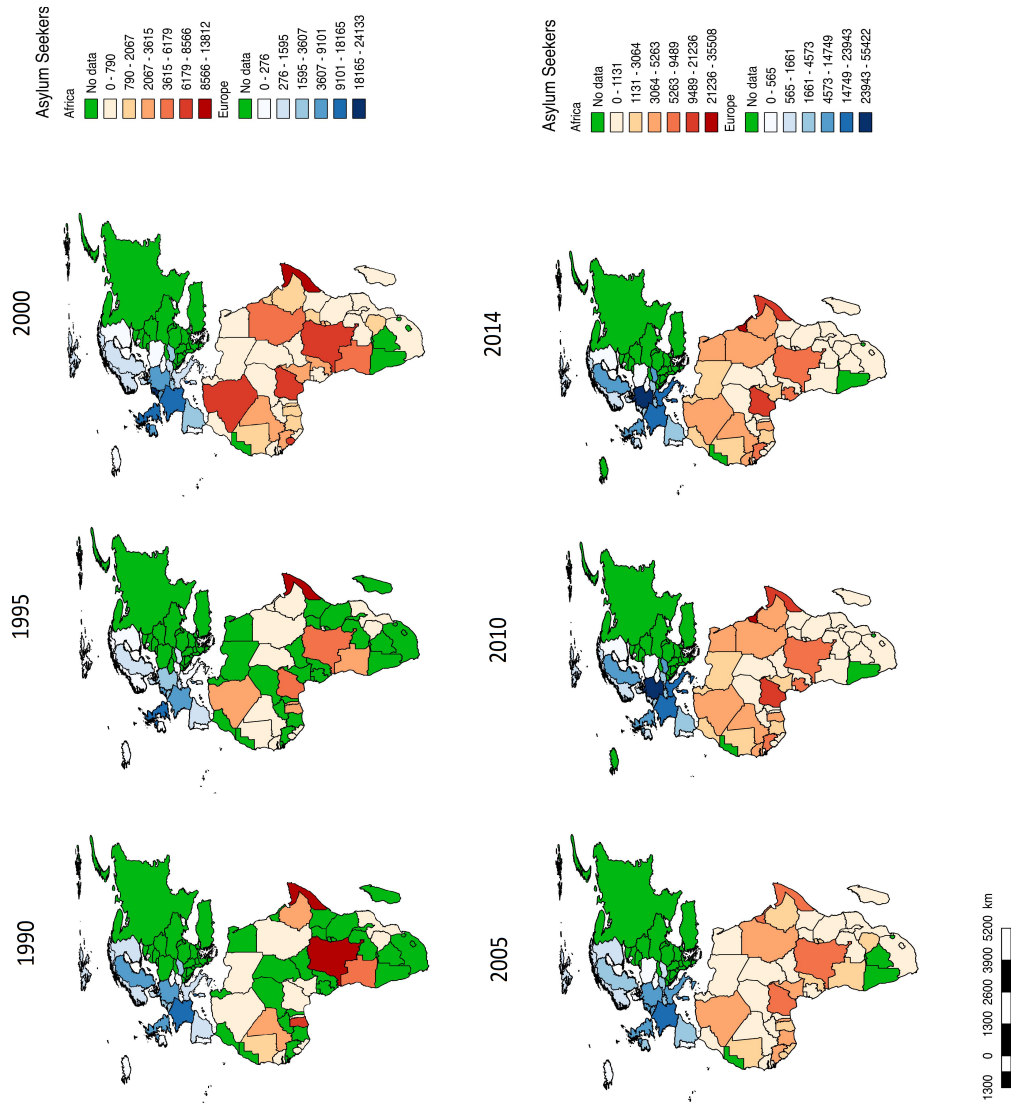


Figure 2: Absolute number of African asylum seekers in Europe in 1990, 1995, 2000, 2005, 2010, 2014. Note that there are two distinct scales for the colors: one scale for the upper three maps and another scale for the lower three maps. Source: Authors' calculations based on data described in the text.

## D OLS estimation of determinants of migration flows

Table D.1: Determinant of bilateral migration flows: OLS estimation

Dependant Variable Log(1+Migration flows)	(1)	(2)	(3)	(4)	(5)	(6)
Specification						
Estimation method	OLS	OLS	OLS	OLS	OLS	OLS
Log GDP per capita destination <sub>t-1</sub>	0.394*** [0.0771]					
Log GDP per capita source <sub>t-1</sub>	-0.0892** [0.0352]	-0.137*** [0.0319]				-0.138*** [0.0320]
Civil conflict source <sub>t-1</sub>	0.185*** [0.0336]	0.181*** [0.0306]	0.193*** [0.0307]	0.193*** [0.0307]	0.174*** [0.0377]	0.182*** [0.0307]
Autocracy source <sub>t-1</sub>	-0.00534 [0.0350]	0.00496 [0.0326]	0.00900 [0.0326]	0.00900 [0.0326]	-0.0249 [0.0353]	0.00572 [0.0327]
Democracy source <sub>t-1</sub>	-0.507*** [0.0775]	-0.505*** [0.0737]	-0.426*** [0.0722]	-0.471*** [0.0781]	-0.442*** [0.0830]	0.317*** [0.0732]
Political rights source <sub>t-1</sub>	-0.00598 [0.0322]	-0.0114 [0.0294]	-0.0258 [0.0291]	-0.0258 [0.0291]	-0.0535* [0.0317]	-0.0112 [0.0295]
Civil liberties source <sub>t-1</sub>	-0.0616** [0.0298]	-0.0522* [0.0276]	-0.0492* [0.0276]	-0.0492* [0.0276]	-0.0465 [0.0293]	-0.0532* [0.0277]
Ethnic polarization source	-2.810*** [0.647]	-2.787*** [0.591]	-1.734*** [0.549]		-1.868*** [0.618]	6.147*** [0.669]
Bureaucracy quality source <sub>t-1</sub>				0.806*** [0.255]		
Government stability source <sub>t-1</sub>					0.000851 [0.0120]	
Socioeconomic conditions source <sub>t-1</sub>					-0.0479*** [0.0111]	
Control of corruption <sub>t-1</sub>					0.0595*** [0.0157]	
Law and order source <sub>t-1</sub>					-0.0733*** [0.0190]	
Ethnic fractionalization source					-0.0147 [0.0209]	
Log urban population source <sub>t-1</sub>						0.0337 [0.0813]
Landlocked source						-1.113*** [0.110]
Network <sub>t-1</sub>	0.0725*** [0.00208]	0.123*** [0.00280]	0.123*** [0.00279]	0.123*** [0.00279]	0.113*** [0.00319]	0.123*** [0.00280]
Log Distance	-0.617*** [0.0601]	-0.547*** [0.0549]	-0.547*** [0.0550]	-0.547*** [0.0550]	-0.481*** [0.0524]	-0.547*** [0.0550]
Common legislation	0.785*** [0.0420]	0.685*** [0.0408]	0.693*** [0.0400]	0.693*** [0.0400]	0.711*** [0.0429]	0.691*** [0.0400]
Common language	0.546*** [0.0396]	0.465*** [0.0381]	0.475*** [0.0370]	0.475*** [0.0370]	0.522*** [0.0381]	0.474*** [0.0370]
Colonial ties	0.873*** [0.0677]	0.630*** [0.0924]	0.720*** [0.0648]	0.720*** [0.0648]	1.192*** [0.0777]	0.722*** [0.0648]
Constant	7.323*** [0.962]	9.787*** [0.681]	8.185*** [0.585]	6.544*** [0.537]	7.978*** [0.600]	4.156*** [1.095]
Observations	14,125	14,125	14,125	14,125	11,107	14,125
R-squared	0.795	0.830	0.830	0.830	0.843	0.830
Fixed Effects						
<i>Destination</i> ( $\alpha_d$ )	Yes	No	No	No	No	No
<i>Sours</i> ( $\alpha_s$ )	Yes	Yes	Yes	Yes	Yes	Yes
<i>Destination - year</i> ( $\alpha_{dt}$ )	No	Yes	Yes	Yes	Yes	
Year	Yes	No	No	No	No	No
Sample	All	All	All	All	All	All

Notes: results are obtained by using the OLS estimation method. Standard errors in parenthesis are heteroskedasticity robust and clustered by year. Significance at the 1%, 5% and 10% level is indicated by \*\*\*, \*\*, and \*, respectively.

Table D.2: Determinant of asylum seeker migration flows: OLS estimation

Log(1+Asylum seekers) Specification Estimation method	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) (OLS)
Log GDP per capita destination <sub>t-1</sub>	0.427*** [0.100]					
Log GDP per capita source <sub>t-1</sub>	-0.359*** [0.0441]	-0.379*** [0.0393]				-0.333*** [0.0392]
Civil conflict source <sub>t-1</sub>	0.363*** [0.0390]	0.372*** [0.0362]	0.405*** [0.0362]	0.405*** [0.0362]	0.360*** [0.0437]	0.362*** [0.0359]
Autocracy source <sub>t-1</sub>	-0.0590 [0.0476]	-0.0427 [0.0429]	-0.0141 [0.0432]	-0.0141 [0.0432]	-0.110** [0.0471]	-0.0651 [0.0421]
Democracy source <sub>t-1</sub>	-2.442*** [0.0972]	-2.428*** [0.0997]	-2.251*** [0.0975]	-2.488*** [0.104]	-2.144*** [0.115]	-0.685*** [0.113]
Political rights source <sub>t-1</sub>	-0.0154 [0.0412]	-0.00464 [0.0385]	-0.0309 [0.0384]	-0.0309 [0.0384]	-0.0903** [0.0412]	-0.00541 [0.0384]
Civil liberties source <sub>t-1</sub>	-0.0870** [0.0372]	-0.0965*** [0.0347]	-0.0712** [0.0347]	-0.0712** [0.0347]	-0.0216 [0.0379]	-0.0869** [0.0347]
Ethnic polarization source	-12.88*** [0.924]	-12.46*** [0.875]	-9.234*** [0.824]		-9.971*** [0.890]	6.579*** [1.002]
Ethnic fractionalization source				4.293*** [0.383]		
Government stability source <sub>t-1</sub>					0.00187 [0.0175]	
Socioeconomic conditions source <sub>t-1</sub>					-0.0644*** [0.0134]	
Control of corruption <sub>t-1</sub>					0.00134 [0.0208]	
Law and order source <sub>t-1</sub>					-0.205*** [0.0246]	
Bureaucracy quality source <sub>t-1</sub>					-0.107*** [0.0295]	
Log urban population source <sub>t-1</sub>						-1.112*** [0.126]
Landlocked source						-2.736*** [0.170]
Network <sub>t-1</sub>	0.0301*** [0.00215]	0.0543*** [0.00255]	0.0537*** [0.00256]	0.0537*** [0.00256]	0.0505*** [0.00275]	0.0539*** [0.00253]
Log Distance	-0.0206 [0.0591]	0.00678 [0.0536]	0.00957 [0.0537]	0.00957 [0.0537]	-0.0346 [0.0560]	0.00423 [0.0539]
Common legislation	0.302*** [0.0413]	0.273*** [0.0375]	0.272*** [0.0375]	0.272*** [0.0375]	0.172*** [0.0398]	0.278*** [0.0373]
Common language	0.551*** [0.0425]	0.502*** [0.0412]	0.501*** [0.0412]	0.501*** [0.0412]	0.652*** [0.0466]	0.496*** [0.0408]
Colonial ties	0.477*** [0.0617]	0.349*** [0.0582]	0.354*** [0.0581]	0.354*** [0.0581]	0.363*** [0.0676]	0.353*** [0.0577]
Constant	10.27*** [1.238]	12.69*** [0.844]	8.052*** [0.687]	-0.686 [0.561]	9.807*** [0.743]	18.84*** [1.627]
Observations	12,141	12,141	12,141	12,141	10,167	12,141
R-squared	0.645	0.708	0.706	0.706	0.729	0.710
Fixed Effects						
<i>Destination</i> ( $\alpha_d$ )	Yes	No	No	No	No	No
<i>Sours</i> ( $\alpha_s$ )	Yes	Yes	Yes	Yes	Yes	Yes
<i>Destination - year</i> ( $\alpha_{dt}$ )	No	Yes	Yes	Yes	Yes	Yes
Year	Yes	No	No	No	No	No
Sample	All	All	All	All	All	

Notes: results are obtained by using the OLS estimation method. Standard errors in parenthesis are heteroskedasticity robust and clustered by year. Significance at the 1%, 5% and 10% level is indicated by \*\*\*, \*\*, and \*, respectively.

## E Robustness checks by progressively adding political determinants of migration

Table E.1: Determinants of African migration to Europe: progressively adding political determinants of migration

Migration flows (in level)									
Estimation method	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	PPML	PPML	PPML	PPML	PPML	PPML	PPML	PPML	PPML
Log GDP per capita source $t-1$	-0.185*** [0.0399]	-0.179*** [0.0432]	-0.181*** [0.0455]	-0.181*** [0.0455]	-0.175*** [0.0472]	-0.181*** [0.0482]	-0.140*** [0.0509]	-0.140*** [0.0509]	-0.140*** [0.0509]
Civil conflict source $t-1$		0.257*** [0.0375]	0.255*** [0.0376]	0.255*** [0.0376]	0.255*** [0.0356]	0.255*** [0.0336]	0.288*** [0.0397]	0.288*** [0.0397]	0.288*** [0.0397]
Autocracy source $t-1$			0.0843** [0.0348]	0.0843** [0.0348]	0.0763** [0.0358]	0.0726** [0.0362]	0.0632* [0.0348]	0.0632* [0.0348]	0.0632* [0.0348]
Democracy source $t-1$				-3.292*** [0.131]	-3.191*** [0.145]	-3.136*** [0.144]	-2.245*** [0.135]	-0.844*** [0.179]	-0.219 [0.186]
Political rights Source $t-1$					-0.113 [0.0877]	-0.0821 [0.0854]	-0.0970 [0.0787]	-0.0970 [0.0787]	-0.0970 [0.0787]
Civil liberties source $t-1$						-0.0786** [0.0396]	-0.0610 [0.0400]	-0.0610 [0.0400]	-0.0610 [0.0400]
Ethnic polarization source							2.470*** [0.223]		1.887*** [0.284]
Ethnic fractionalization source								3.354*** [0.224]	-0.731** [0.305]
Log distance	-0.716*** [0.0539]	-0.710*** [0.0537]	-0.708*** [0.0535]	-0.708*** [0.0535]	-0.704*** [0.0530]	-0.705*** [0.0529]	-0.629*** [0.0565]	-0.629*** [0.0565]	-0.629*** [0.0565]
Common legislation	0.821*** [0.0625]	0.825*** [0.0622]	0.824*** [0.0618]	0.824*** [0.0618]	0.816*** [0.0598]	0.816*** [0.0596]	0.856*** [0.0668]	0.856*** [0.0668]	0.856*** [0.0668]
Common language	0.302*** [0.0567]	0.301*** [0.0556]	0.303*** [0.0554]	0.303*** [0.0554]	0.305*** [0.0551]	0.304*** [0.0553]	0.521*** [0.0617]	0.521*** [0.0617]	0.521*** [0.0617]
Colonial ties	1.037*** [0.0539]	1.032*** [0.0536]	1.028*** [0.0538]	1.028*** [0.0538]	1.022*** [0.0554]	1.024*** [0.0549]	1.129*** [0.0546]	1.129*** [0.0546]	1.129*** [0.0546]
Network $t-1$	0.0719*** [0.0122]	0.0716*** [0.0121]	0.0718*** [0.0122]	0.0718*** [0.0122]	0.0727*** [0.0123]	0.0727*** [0.0123]	0.0726*** [0.0124]	0.0726*** [0.0124]	0.0726*** [0.0124]
Constant	7.095*** [0.553]	12.18*** [0.618]	12.20*** [0.620]	12.20*** [0.620]	12.11*** [0.630]	12.18*** [0.638]	9.766*** [0.594]	2.323*** [0.722]	4.532*** [0.647]
Observations	23,180	23,165	23,165	23,165	23,165	23,165	20,790	20,790	20,790
R-squared	0.826	0.826	0.827	0.827	0.829	0.829	0.846	0.846	0.846
Destination	No	No	No	No	No	No	No	No	No
Sours	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Destination-year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	No	No	No	No	No	No	No	No	No
Sample	All	All	All	All	All	All	All	All	All

Notes: Standard errors in parenthesis are heteroskedasticity robust and clustered by year. Significance at the 1%, 5% and 10% level is indicated by \*\*\*, \*\*, and \*, respectively.

Table E.2: Determinants of the of African asylum seekers to Europe: progressively adding political determinants of migration

Asylum seekers (in level)									
Estimation method	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	PPML	PPML	PPML	PPML	PPML	PPML	PPML	PPML	PPML
Log GDP per capita									
source <sub>t-1</sub>	-0.273*** [0.0631]	-0.229*** [0.0651]	-0.231*** [0.0666]	-0.231*** [0.0666]	-0.203*** [0.0650]	-0.202*** [0.0700]	-0.177*** [0.0652]	-0.177*** [0.0652]	-0.177*** [0.0652]
Civil conflict source <sub>t-1</sub>		0.359*** [0.0713]	0.361*** [0.0748]	0.361*** [0.0748]	0.353*** [0.0736]	0.330*** [0.0667]	0.393*** [0.0594]	0.393*** [0.0594]	0.393*** [0.0594]
Autocracy source <sub>t-1</sub>			0.0469 [0.127]	0.0469 [0.127]	-0.0206 [0.148]	-0.0671 [0.152]	-0.113 [0.150]	-0.113 [0.150]	-0.113 [0.150]
Democracy source <sub>t-1</sub>				-2.076*** [0.216]	-5.483*** [0.241]	-1.973*** [0.222]	-3.700*** [0.334]	-1.206*** [0.186]	-1.891*** [0.192]
Political rights source <sub>t-1</sub>					-0.321*** [0.122]	-0.151 [0.115]	-0.175 [0.108]	-0.175 [0.108]	-0.175 [0.108]
Civil liberties source <sub>t-1</sub>						-0.421*** [0.0698]	-0.348*** [0.0773]	-0.348*** [0.0773]	-0.348*** [0.0773]
Ethnic polarization source							3.882*** [0.464]		-2.255*** [0.422]
Ethnic fractionalization source								5.676*** [0.487]	3.317*** [0.330]
Log distance	-0.374** [0.165]	-0.364** [0.168]	-0.363** [0.170]	-0.363** [0.170]	-0.355** [0.169]	-0.349** [0.168]	-0.390** [0.171]	-0.390** [0.171]	-0.390** [0.171]
Common legislation	0.218*** [0.0565]	0.223*** [0.0558]	0.222*** [0.0569]	0.222*** [0.0569]	0.213*** [0.0560]	0.209*** [0.0558]	0.336*** [0.0534]	0.336*** [0.0534]	0.336*** [0.0534]
Common language	0.642*** [0.0669]	0.647*** [0.0670]	0.648*** [0.0686]	0.648*** [0.0686]	0.649*** [0.0693]	0.642*** [0.0701]	0.636*** [0.0740]	0.636*** [0.0740]	0.636*** [0.0740]
Colonial ties	0.374*** [0.0564]	0.381*** [0.0551]	0.377*** [0.0573]	0.377*** [0.0573]	0.381*** [0.0576]	0.385*** [0.0561]	0.408*** [0.0582]	0.408*** [0.0582]	0.408*** [0.0582]
Network <sub>t-1</sub>	0.0634*** [0.00760]	0.0626*** [0.00752]	0.0628*** [0.00762]	0.0628*** [0.00762]	0.0639*** [0.00765]	0.0644*** [0.00752]	0.0619*** [0.00723]	0.0619*** [0.00723]	0.0619*** [0.00723]
Constant	10.09*** [1.466]	9.635*** [1.476]	9.617*** [1.486]	9.617*** [1.486]	9.346*** [1.530]	9.388*** [1.387]	6.946*** [1.321]	4.597*** [1.573]	7.786*** [1.459]
Observations	23,380	23,365	23,365	23,365	23,365	23,365	21,105	21,105	21,105
R-squared	0.440	0.450	0.451	0.451	0.456	0.459	0.470	0.470	0.470
Destination	No	No	No	No	No	No	No	No	No
Sours	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Destination-year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	No	No	No	No	No	No	No	No	No
Sample	All	All	All	All	All	All	All	All	All

Notes: Standard errors in parenthesis are heteroskedasticity robust and clustered by year. Significance at the 1%, 5% and 10% level is indicated by \*\*\*, \*\*, and \*, respectively.