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# Natives' Attitudes and Immigration Flows to Europe

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# Natives' Attitudes and Immigration Flows to Europe

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## Abstract

This paper examines the effects of natives' anti-immigration attitudes on migration flows to EU countries. We use panel data for migration to the EU between 1995-2018. We address the potential endogeneity between public attitudes and migration flows using instrumental variable techniques. We also control for the dependence between the attractiveness of alternative EU destinations. Our findings suggest that there is a negative causal relationship between anti-immigration attitudes and migration inflows to the EU; i.e. natives' hostility drives away immigration. Although the impact of anti-immigration attitudes is larger for non-EU immigration compared to that of intra-EU migration, the elasticity of public attitudes with respect to immigration is higher than that for the elasticity of economic drivers for EU migrants.

**JEL classification: J61, F22**.
**Keywords:** EU migration, public attitudes, migration drivers

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# 1   Introduction

Over the last two decades, there has been a growing opposition to immigration in many European countries. Indeed, many natives believe that migration levels are too high and that the presence of migrants may be harmful for their countries' economies and societies. For example, a survey by PEW Research Centre in 2018 shows that half the people in the surveyed European countries believe that fewer or no migrants should be allowed in their countries.[1] This opinion is shared by over three quarters of respondents in the most common transit countries for refugees and is also widespread in the most popular European destinations. Anti-immigration attitudes exist not only in Europe, but globally in many other host countries. This has led to many studies investigating the determinants of public attitudes towards migration, however very little is known about the impact of anti-immigration attitudes on migration inflows. In particular, the question of whether natives' hostility discourages migration remains understudied. This paper aims at filling this gap by studying the effects of anti-immigration attitudes on migration inflows in Europe. As such this paper, which is part of the QuantMig project (deliverable 3.3), contributes to our broader understanding of the drivers of migration in the destination countries. It extends Mooyaart and de Valk (2021) which examines intra-EU migration by focusing on the role of public attitudes in intra-EU migration. It also links to Aslany et al. (2021) which studies the determinants of migrants' aspirations as it investigates the role of anti-immigration attitudes on the propensity to emigrate (emigration rate).

Previous studies have examined the determinants of international migration and in particular the role played by income differentials and the cost of migration, see for example, Grogger and Hanson (2011). A number of papers have focused on the impact of migration policies on immigration flows, e.g. Mayda (2010); Ortega and Peri (2013), yet the effects of public attitudes on immigration have not been studied. One exception is Gorinas and Pytliková (2017) who examine the impact of hostility and discrimination on immigration in OECD countries, finding a negative correlation, though they do not control for the potential endogeneity between migration inflows and anti-immigration attitudes. One of the main contributions of our analysis is that we account for the potential reverse causality between anti-immigration attitudes and migration inflows in the EU as well as for the possible dependence among destinations. We also disentangle the role played by migration policy from that of public attitudes as we distinguish between intra-EU migration and non-EU to EU immigration.

We use OECD data on bilateral migration flows for 21 EU destinations between 1995-2018 and 193 origin countries. To measure anti-immigration attitudes we use Eurobarometer data and build an index based on the percentage of natives who consider migration one of the main issues for their country. We build on the recent literature on the determinants of international migration using gravity models, and control for GDP per capita and unemployment rate at destination, as well as for country pair characteristics such as common language, colonial ties, distance and contiguity when estimating the impact of attitudes on immigration. Moreover we control for the potential attractiveness of alternative destinations,

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[1]PEW   (2018):   https://www.pewresearch.org/fact-tank/2018/12/10/many-worldwide-oppose-more-migration-both-into-and-out-of-their-countries/

which has been known as the multilateral resistance to migration, see Bertoli and Fernández-Huertas Moraga (2013). For this purpose, we adopt a similar strategy as in Ortega and Peri (2013) and include origin - time fixed effects. We also deal with the bias that may occur due to the presence of zeroes in bilateral migration, and use Pseudo Poisson Maximum Likelihood PPML estimation, see Silva and Tenreyro (2006).

In order to establish a causal link between negative attitudes and migration inflows we adopt an instrumental variable approach to deal with endogeneity issues. We use a measure of natives' cultural conformity, namely the percentage of nationals who conform to the country's main religion as an instrumental variable for attitudes towards migrants. Evidence suggests that religion is correlated with immigration attitudes when they are both linked to national identities. Storm (2018) finds that when there is one major religion as opposed to several or none, this can become a signal of belonging and identity, and used to distance the majority from minority groups; i.e. the majority religion captures cultural conformity. We interact this measure with the share of low educated natives since there is strong evidence showing the association between low education and anti-immigration attitudes (see e.g. Margaryan et al. (2021) and Mayda (2006)). We use instrumentation with PPML and Generalised Method of Moments (GMM) to address the endogeneity between natives' attitudes and migration. Finally, we also study the impact of attitudes on migration stocks as well to capture the overall impact on immigration and out-migration. We check the robustness of our results using different estimations and specifications.

Our findings show that natives' anti-immigration attitudes negatively affect migration flows to the EU. This negative relationship exists even when we distinguish between EU and non-EU immigration to EU destinations. Interestingly, we also find similar results when we use migration stocks as dependent variable, and not just flows. In terms of impact, a 10 percent increase in anti-immigration attitudes leads to 0.4 percent fall in immigration flows to the EU. The impact of a one percent rise in anti-immigration attitudes on bilateral migration flows is equivalent to half that of a similar increase in unemployment rate in destination. We also find that the impact of anti-immigration attitudes is larger for non-EU immigration compared to that of intra-EU migration. Yet, the elasticity of public attitudes with respect to immigration is higher than for the elasticity of economic drivers for EU migrants. Thus, the results show that public hostility towards migration affects migration flows and stocks. Hence, non-economic factors such as public attitudes are important determinant of international migration.

The rest of the paper is organised as follows. In Section 2 we review the literature on the determinants of international migration and public attitudes on migration. Section 3 describes the data while we set out our empirical strategy in Section 4. The findings are discussed in section 5, while Section 6 provides various robustness checks. We conclude in Section 7.

# 2  Previous Literature

This paper is related to two main strands of the economics literature on international migration. The first one is a growing literature that studies the determinants of international

migration and uses the gravity model to estimate the effects of different factors, as it is commonly done in the international trade literature (Anderson, 2011). Within this strand, the main focus has been on quantifying the impact of income differentials as well as the costs of migration captured by distance, colonial ties, common language and contiguity (see, for example, Grogger and Hanson (2011) and Belot and Hatton (2012)). Several papers within this literature have studied the impact of migration policies finding that less restrictive policies are another important determinant in attracting migration flows (Mayda, 2006; Ortega and Peri, 2013) and can affect the skills selectivity and therefore composition of migrants (Razin and Wahba, 2015). Others, as for instance Czaika and Parsons (2017), have particularly focused on the role of different types of policies in attracting or deterring the flow of highly educated migrants. Several other studies have investigated the role of social networks in attracting migration inflows, generally finding a positive relationship (see for example Beine et al. (2011)).

The second strand of the literature is related to public attitudes and migration. There is a large body of literature that investigates the determinants of public attitudes towards immigration. One of the issues is that, as several surveys show, natives tend to overestimate the size of immigration in their country.[2] Similarly, when it comes to concerns about immigration those are more strongly correlated with misperceptions of negative impacts rather than actual effects due to immigration (Alesina et al., 2018). A number of papers have investigated the drivers of public anti-immigration attitudes. Some have focused on the economic factors and the threat of labour market competition between natives and immigrants fueling opposition to immigration, see e.g. Scheve and Slaughter (2001), and Facchini and Mayda (2009). Others have highlighted the role played by non-economic factors as well. Mayda (2006) finds that both economic and non-economic factors are important in determining anti-immigration attitudes, although when controlling for the latter the impact of the former remains unchanged. Dustmann and Preston (2007) find that racial and cultural concerns concur with concerns about welfare and labour market in shaping negative attitudes towards migrants, confirming the role of non-economic factors. On the other hand, Card et al. (2012) show that concerns about changes in local amenities, such as the composition of the neighbourhood and workplace, are more important in explaining variation in natives' attitudes toward immigration than concerns about economic factors, for instance on wages and taxes.

Despite the large literature on the determinants of attitudes towards immigration, there are scarcely any studies looking at the impacts of public attitudes on immigration. The only exception is Gorinas and Pytliková (2017) who study the effects of native hostile attitudes on immigration in OECD. Although their study is the closest to ours, we depart from them in a number of crucial aspects. The first one is the way we measure anti-immigration attitudes. In Gorinas and Pytliková (2017) anti-immigration attitudes are proxied by two questions taken from the Integrated Value Survey (IVS) aimed at measuring labour discrimination and the willingness of natives to live close to a migrant. Although those aspects are very important to measure negative attitudes, the IVS is not available every year and therefore is not possible to entirely account for the time variability of attitudes. For our empirical

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[2]See for example the data from the Council of the European Union: https://www.consilium.europa.eu/en/infographics/migration-eurobarometer-2018/

analysis we choose to rely on a different data source, the Eurobarometer, which is available every year. Also, to better account for the time variability of anti-immigration attitudes, we build our measure based on the question for which we have the greatest number of available years, and define our anti-immigration measure as the percentage of natives who deemed immigration one of the most important concerns in their country. Secondly, although Gorinas and Pytliková (2017) explore several main mechanisms through which public attitudes may affect migration, and find a negative relationship between the two, their analysis does not fully account for the endogeneity between attitudes and immigration, an issue that we aim to tackle in this paper. Therefore, our paper contributes to the literature not only by examining the relationship between public attitudes and immigration in the EU, but also we address the reverse causality between public attitudes and immigration flows.

# 3   Data

## 3.1   International Migration Data

We use panel data on international migration where the unit of observation is the pair (bilateral) migration flow, and restrict our focus to EU destinations. We rely on the OECD International Migration Database,[3] which provides information on the yearly migration inflows to OECD countries by immigrants' nationality from 1995 to 2018.[4] We restrict the sample of possible destination countries to the 21 EU countries present in the data. We limit our analysis to the origin-destination pairs for which we have observations in all the years in which the destination is present in the sample, see Bertoli and Fernández-Huertas Moraga (2013). The final sample consists of 21 destination countries observed for a time span between 8 and 23 years, and up to 193 countries of origin.

## 3.2   Attitudes Data

To measure natives' attitudes towards immigration in the EU, we use the Eurobarometer, which is a series of surveys that the European Commission carries out every autumn and spring to monitor the public opinion in the European Union member countries. The survey is available from 1971 to 2019. For the purpose of our analysis, we use the waves from 1994 to 2017. The countries' coverage varies through the years: for the year 1994 we have information on Belgium, Denmark, France, Germany, Greece, Italy, Luxembourg, Netherlands, Portugal, Spain, and United Kingdom; from 1997 Austria, Finland, and Sweden enter the survey; from 2006 Czech Republic, Estonia, Hungary, Latvia, and Poland; and from 2008 we have information on all the destination countries in our sample.
To build our attitudes measure we choose the question for which we have the greatest number

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[3]We use OECD rather than Eurostat data as the former are available from 1995, while the latter only from 1998. Moreover, OECD data provide bilateral data for Germany and Poland, while it is not the case for Eurostat data. See Mooyaart et al. (2021) for more information on the coverage of Eurostat data.

[4]As for the majority of destinations we only have information until 2018, we analyse the period 1995-2018. Data are not available for Bulgaria, Cyprus, Croatia, Ireland, Lithuania, Malta, and Romania. The database doesn't have information on all destinations starting from 1995. The number of possible countries of origin varies depending on the considered destination.

of available years, which is *"What do you think are the two most important issues facing our country at the moment?"*.[5] For each destination country we compute the percentage of people who answered *"Immigration"* to the above described question and, as we are interested in European natives' attitudes, we construct the measure considering only the answers of natives (based on country of birth). The result is a variable spanning from 0 to 100 where high values denote more concerns about immigration; i.e. more negative/anti-immigration attitudes.

Table 1 presents basic statistics for the main variables we include in the model. These are averages for the country pairs over the considered period, and the unit of observation is the dyad (country pairs). The upper panel presents the statistics for the total sample (all migration inflows to the EU), the middle one for the sample restricted to intra-EU migration (EU origin), and the bottom one for non-EU to EU migration (non-EU origin). *Attitudes* range from 0.28 to 68.7, showing the wide disparity between EU countries over time. Figure 1 ranks the destination countries in our sample based on their *Attitudes* score averaged over 1994-2017. We can notice that the country with the average worst attitudes towards migration over the whole period (1994-2017) is the United Kingdom, where immigration was one of the key factors in the decision of leaving the European Union (Portes, 2021; Di Iasio and Wahba, 2021), followed by Denmark and Belgium. Germany, which is the country that experienced the largest inflows of refugees in the last years, ranks fourth. The most welcoming countries are Slovakia, Slovenia, and Latvia. Indeed, we also observe the negative correlation when *Attitudes* and migration inflows, see A.1, which we will investigate in the next section controlling for other factors.

Figure 2 compares the *Attitudes* trend among some of the most important European destinations (Germany, Sweden, United Kingdom, and France) and transit countries (Italy and Spain) between 1994-2017. Although the variable presents a lot of variability across years and among countries, we can notice a general pattern: anti-immigration attitudes reached a peak in 2001, coinciding with the Twin Towers attack, and then relaxed between the year 2002 and the start of the refugees' crisis. In Figure 3 we focus on the comparison of the *Attitudes* trend between the United Kingdom and Germany between 2001-2017, when we have yearly information for our attitudes measure for both countries. We notice that the trends are different between the two countries. In particular, it suggests that, except for the year 2001 and the period going from 2014 to 2017, the United Kingdom presents in general worse attitudes than Germany. During the pre-Brexit period the score reached a peak and people became in general more tolerant just after the referendum. On the other hand, Germany shows better attitudes from 2002, but has a surge in negative attitudes between 2014 and 2015, which coincide with the years of the refugees' crisis.

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[5]The only exceptions are the years 1995, 1998, 1999 and 2000 for which we do not have data. For the year 2000 we computed an average score based on three questions: *Legally established immigrants should be sent back to their country of origin: Agree/Disagree; Immigrants enrich the cultural life of our country: Agree/Disagree; Immigrants threaten our way of life: Agree/Disagree.* However, excluding the year 2000, all our results hold. The composite index ranges between 0 and 1 and is computed by summing the answers (each answer denoting a negative attitude towards immigration is coded as 1, 0 otherwise) and dividing the total by the number of questions answered. Then, we compute the country average.

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The way natives perceive immigration not only varies among countries, but also across years within the same country. Figure 3 focuses on the example of the United Kingdom and Germany, where the anti-immigration score ranges between a minimum value of 9.41 and a maximum of 50.62 for the former, and shows an even greater variability for the latter, where the score ranges between a minimum of 3.94 and a maximum 74.18. We can observe this variability not only for the countries that present the highest average scores, but also for the most welcoming ones: for instance, the score for Slovakia ranges between a minimum of 0.37 and a maximum of 13.19, and for Slovenia between 0.37 and 16.83.

Our choice of measure of attitudes is dictated by data availability: we use the question with the most comprehensive coverage of EU destinations over time. In fact, studies use different questions/measures based on various questions and surveys. For example, Card et al. (2012) use a battery of questions included in European Social Survey (ESS) in 2002 for that purpose, where each 4 questions reflect an aspect such as preference for immigration, economic concerns about immigration and cultural concerns. However these questions were only collected once in 2002, and hence would not be appropriate for our analysis. Others choose one or two particular questions with longer time span, such as Gorinas and Pytliková (2017) who rely on the International Value Survey and use a labour discrimination question, namely: "When jobs are scarce, employers should give priority to [nation] people over immigrants?" and a second question capturing cultural preferences asking "On this list are various groups of people. Could you sort out any that you would not like to have as neighbors?". Our chosen measure of attitudes could be seen as a measure of salience of immigration. Indeed, Hatton (2021) argue that preferences and salience are two different dimensions of attitudes, and depend on different determinants. However, there is evidence supporting the link between salience of immigration and negative anti-immigration attitudes, see Talo (2017) and Alesina et al. (2018). Furthermore, Dennison and Geddes (2019) find that the salience of immigration is the most important predictor of voting for anti-immigration parties. In other words, salience of immigration is a good proxy for anti-immigration attitudes.

To check whether our *Attitudes* measure indeed captures negative/anti-immigration attitudes we intend it do, we compare it to another question in the Eurobarometer that explicitly asks about whether "Immigrants contribute a lot to our country?". This question is not available for the whole period considered, so we only use it as a robustness in section 6, and find similar results supporting our argument that our *Attitudes* measure captures anti-immigration attitudes. We also compare our *Attitudes* measure to a few questions in EES 2002 which included a specialised module to capture attitudes. It is worth noting that different questions produce a slightly different ranking of countries even based on respondents from the same survey, country and year. Nonetheless, Figure 1 shows that overall our *Attitudes* measure is in line with the other measures of attitudes based on the EES. Thus, we conclude that our measure is suitable for capturing negative attitudes.

**Table 1:** Descriptive statistics of main variables, averaged for the considered period

| Total sample (N=15,053) | | | | |
|---|---|---|---|---|
| Variable | Mean | Std. Dev. | Min | Max |
| Bilateral migration flows | 2477.324 | 10147.46 | 0 | 309699 |
| GDP per capita (log), dest | 10.384 | 0.264 | 9.539 | 11.633 |
| Unemployment rate, dest | 9.858 | 4.884 | 1.805 | 26.094 |
| Contiguity Dummy | 0.057 | 0.232 | 0 | 1 |
| Distance (log) | 8.198 | 1.025 | 4.087 | 9.882 |
| Common language Dummy | 0.093 | 0.290 | 0 | 1 |
| Colonial ties Dummy | 0.088 | 0.283 | 0 | 1 |
| Networks (log) | 4.716 | 2.920 | 0 | 12.511 |
| Attitudes (%) | 14.582 | 14.346 | 0.280 | 68.694 |
| EU (N=3,037) | | | | |
| Variable | Mean | Std. Dev. | Min | Max |
| Bilateral migration flows | 4846.118 | 17837.01 | 0 | 271443 |
| GDP per capita (log), dest | 10.375 | 0.343 | 9.539 | 11.633 |
| Unemployment rate, dest | 9.298 | 4.689 | 1.805 | 26.094 |
| Contiguity Dummy | 0.226 | 0.418 | 0 | 1 |
| Distance (log) | 6.828 | 0.799 | 4.088 | 8.105 |
| Common language Dummy | 0.072 | 0.258 | 0 | 1 |
| Colonial ties Dummy | 0.035 | 0.183 | 0 | 1 |
| Networks (log) | 6.026 | 2.511 | 0 | 12.511 |
| Attitudes (%) | 12.866 | 13.347 | 0.280 | 68.694 |
| Non-EU (N=12,016) | | | | |
| Variable | Mean | Std. Dev. | Min | Max |
| Bilateral migration flows | 1878.002 | 6838.831 | 0 | 309699 |
| GDP per capita (log), dest | 10.386 | 0.240 | 9.539 | 11.633 |
| Unemployment rate, dest | 9.999 | 4.922 | 1.805 | 26.094 |
| Contiguity Dummy | 0.014 | 0.118 | 0 | 1 |
| Distance (log) | 8.545 | 0.748 | 4.087 | 9.882 |
| Common language Dummy | 0.098 | 0.297 | 0 | 1 |
| Colonial ties Dummy | 0.101 | 0.302 | 0 | 1 |
| Networks (log) | 4.384 | 2.923 | 0 | 11.396 |
| Attitudes (%) | 15.016 | 14.556 | 0.280 | 68.694 |

**Source:** Authors' calculations based on OECD International Migration Database 1995-2018, World Bank data, CEPII *Gravity* database, and Eurobarometer.

**Figure 1:** EU destination countries ranked by negative attitudes towards migration, average for 1994-2017
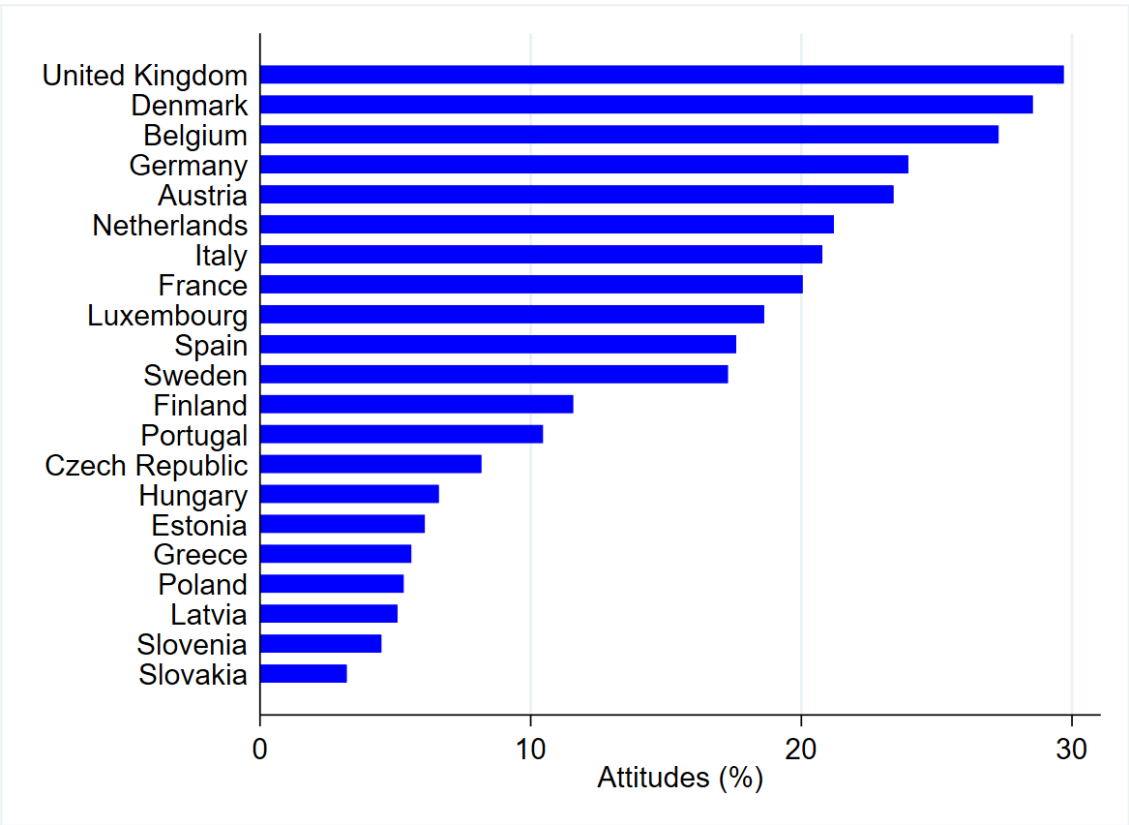


**Source:** Authors' calculations based on Eurobarometer, years 1994 - 2017.

**Figure 2:** Attitudes trends, comparison between selected countries, 1994-2017
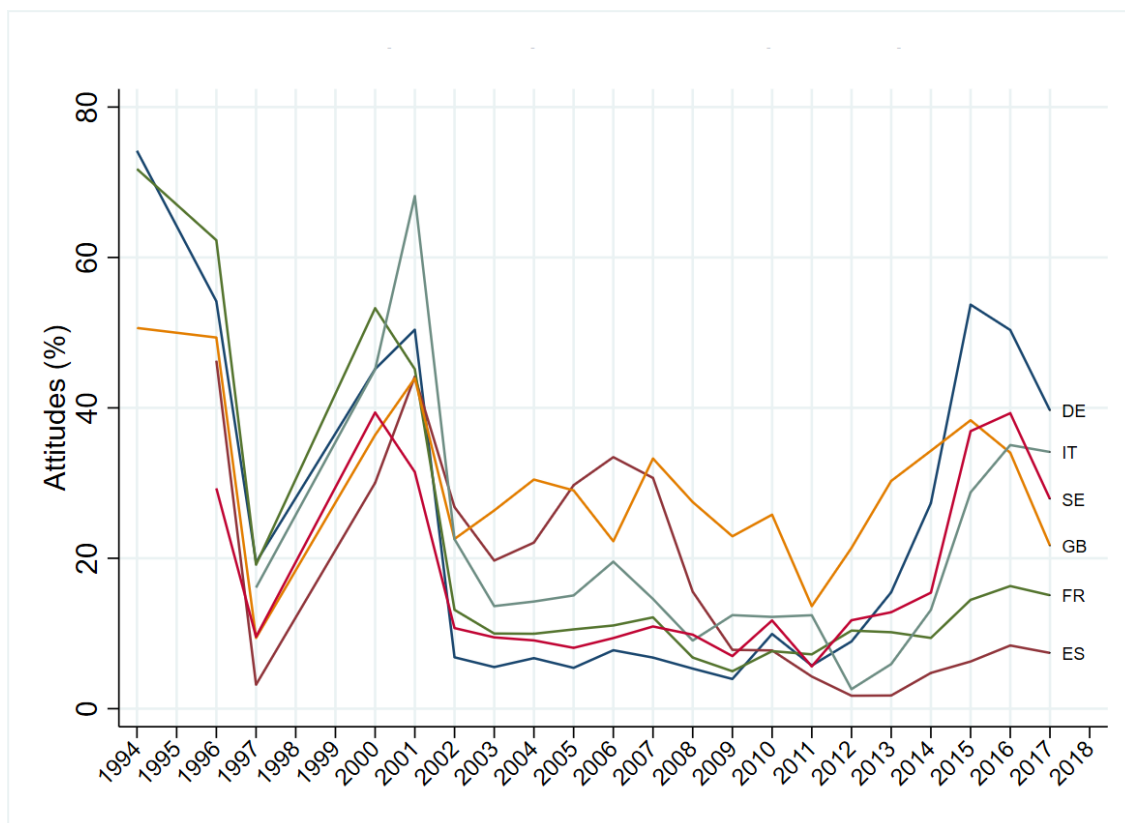


**Source:** Authors' calculations based on Eurobarometer, years 1994 - 2017.

**Figure 3:** Attitudes trends, comparison between the United Kingdom and Germany, 2001-2017
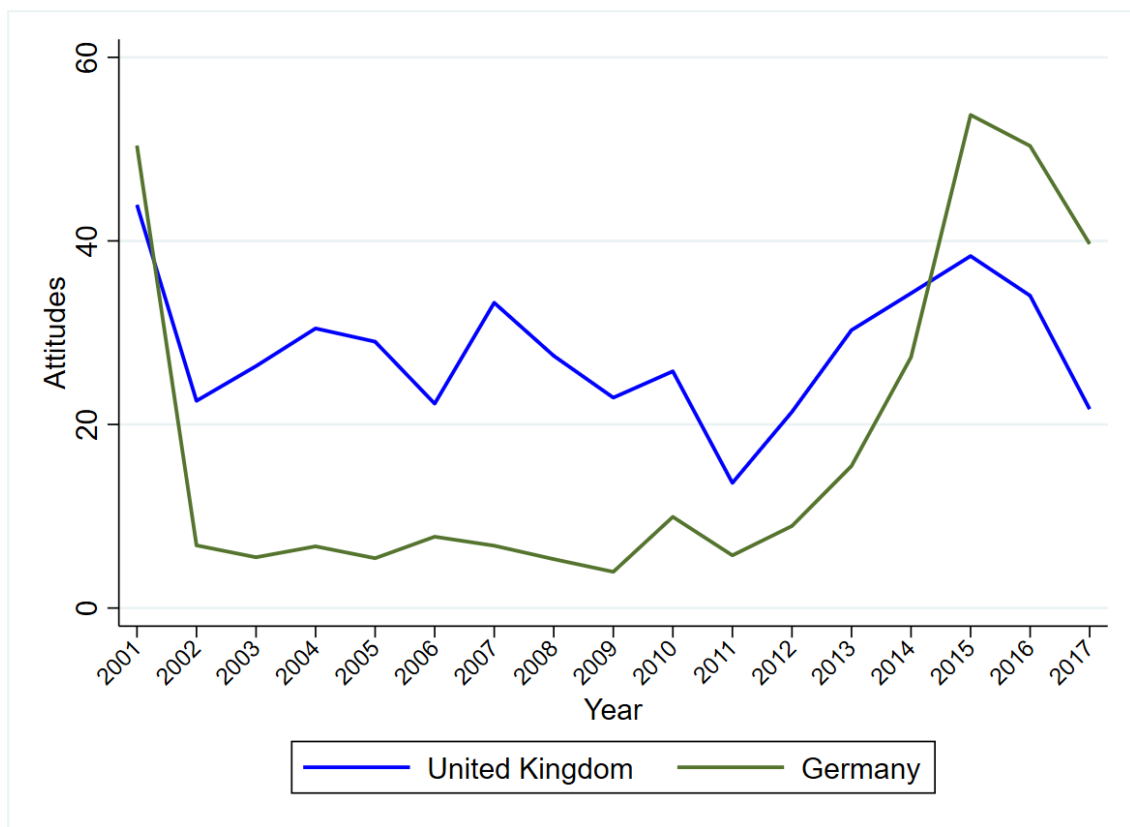


**Source:** Authors' calculations based on Eurobarometer, years 2001 - 2017.

# 4 Empirical Strategy

Following the literature on the determinants of international migration, we estimate a gravity model underpinned by a Random Utility Model (RUM), where an individual migration decision is based on a utility maximisation problem where income is maximised and migration costs minimised. Within this framework, anti-immigration attitudes at destination can be seen as an additional migration cost. Thus, we expect that more negative attitudes would reduce migration flows as anti-immigration and hostile environments for migrants would be a cost.

The following equation estimates the determinants of bilateral migration inflows into EU destination countries:

$$Inflows(log)_{o,d,t} = \alpha_{o,d} + \beta_1 log(GDP)_{d,t-1} + \beta_2 Unemployment_{d,t-1} + \beta_3 log(Networks)_{o,d,t-5} + \\ \beta_4 Attitudes_{d,t-1} + \beta_5 X_{do} + \gamma_t + \theta_d + \delta_{o,t} + \epsilon_{odt}$$

$$(1)$$

where the dependent variable is the log of the inflows of migration from country of origin $o$ to destination $d$ in year $t$. We use log inflows except when we estimate PPML models. *Attitudes* is our focal variable which measures anti-immigrants attitudes in destination $d$ and year $t-1$. To isolate the relationship between *Attitudes* and the dependent variable we control for a number of important determinants of migration inflows.[6] We include two controls for economic conditions at destination: $log(GDP)$ which is the log of real GDP per capita at destination $d$ and year $t-1$, and *Unemployment* that is the unemployment rate at destination $d$ and year $t-1$. Both variables are from The World Bank data. Then we control for *Network*, which is the log stock of migrants from country of origin $o$ in destination $d$ and year $t-5$. $X_{d,o}$ is a vector of (dyadic) variables to control for geographical and cultural factors linking origin and destination countries. These are dummy variables taking the value 1 if the two countries share a common language, ever had colonial ties, and share a border. We also include the distance between the capital cities of the two considered countries. The data are retrieved from the CEPII *Gravity* database.[7]

As our analysis aims at establishing a causal relationship between anti-immigration attitudes and migration inflows in the destination countries, it has to overcome several empirical challenges. Beine et al. (2016) provides a very useful guide on these challenges when estimating gravity models on the determinants of international migration. The first one is the presence of zeroes in our dependent variable that, although has been partially mitigated by the decision of only taking into account those origin-destination pairs for which we have observations for all years, still account for the 12% of our observations. Following Silva and Tenreyro (2006) we also estimate equation (1) using PPML.

The second empirical challenge is the presence of multilateral resistance to migration. In their paper Bertoli and Fernández-Huertas Moraga (2013) define multilateral resistance to

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[6]See Beine et al. (2016) for a detailed description.

[7]Head et al. (2010).

migration as an additional confounding factor represented by the attractiveness of alternative destinations that influences bilateral migration flows and may bias the coefficients of interest if ignored. They account for this issue by estimating their model with the Common Correlated Effects (CCE) technique proposed by Pesaran (2006). This approach requires a sufficiently large panel dimension as they mention and hence is too demanding for our data structure, in particular when using Instrumental Variables (IV) as well. Therefore, following the strategy of Ortega and Peri (2013), we mitigate the potential bias arising from multilateral resistance by adding origin-time fixed effects in the main specifications. We also check the robustness of our estimates by using CCE.

The third challenge is represented by the potential endogeneity of *Attitudes*. Our results could be biased due to reverse causality if large inflows negatively affect natives attitudes towards migration. Indeed previous studies have shown that there is a correlation in that direction. Although we lag *Attitudes* one year this may not be sufficient to minimise this bias. We address this concern by adopting an instrumental variable approach. Even in the GMM setting, relying on an internal instrument is not a valid option because of the potential presence of serial correlation in the error term (Beine et al., 2016). The main challenge is to find an exclusion restriction that influences anti-immigration attitudes without being simultaneously correlated with migration inflows. We rely on the sociological literature analysing how religiosity influences attitudes towards migrants (Daniels and Von Der Ruhr, 2005; Leon McDaniel et al., 2011; Storm, 2018). In particular, Storm (2018) finds that it is not religiosity in itself that influences anti-immigration attitudes, but rather the degree to which individual's religiosity conforms to the most common adopted religion in the country where they live. This is related to several sociological theories regarding social conformity and group conflict threat to natives' way of life, culture, and traditions due to immigrants who have different languages and cultures. See Javdani (2020) for an overall review. Following Storm (2018), we define our instrument as the percentage of nationals who conform to the country's main religion, defined as the religion which has the greatest number of respondents who declared to belong to it. To compute the variable we use the Eurobarometer's question: *"Do you consider yourself as belonging to a particular religion? (If yes) Which one ?"*. In order to improve the strength of our instrument we follow Mayda (2006) and Cavaille and Marshall (2019) who find a negative relationship between natives level of education and anti-immigration attitudes, and interact the percentage of people belonging to the major religion by the number of low-educated natives. The latter is defined as the number of people who completed up to secondary education level.[8] The data on education come from Eurostat. It is important here to highlight that our identification relies on the assumption that our IV (share of conformity to majority religion * share of low educated amongst natives) does not affect migration flows directly except through natives' attitudes. Our instrumental variable is defined as follows:

$$IV_{d,t} = Perc\_maj\_rel_{d,t} * Tot\_low\_ed_{d,t} \tag{2}$$

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[8] We also check the robustness of our results using only the percentage of nationals who conforms to the country's main religion, and find that the coefficient of attitudes is negative and statistically significant though the Kleigergen-Paap statistics is low suggesting a possible weak instrument. See Table C.4 in Appendix C.

We rely on the IV approach and estimate basic Two-Stage Least Squares (2SLS), as well as an IV-Poisson models (Beine et al., 2016). As proposed by Tenreyro (2007) and adopted by Beine et al. (2014) and Czaika and Parsons (2017) we use an IV-PPML based on a GMM estimator. We also estimate our model using a system GMM and our IV as an external instrument to be able to include the full set of fixed effects in particular origin-time fixed effects. Another potential concern for our identification, is an omitted variable bias. So, a negative relationship between attitudes and the dependent variable could be capturing policy restrictiveness, rather than measuring the real influence of attitudes on migration inflows, see (Facchini and Mayda, 2008; Ortega and Peri, 2013). To account for this potential concern, we also run separate estimates of migration inflows between EU countries where policy-makers are bound by the free movement within the area and cannot set up restrictive policies.[9]

## 5 Results

### 5.1 Baseline results

First, we estimate OLS and PPML models. Table 2 presents the baseline results for the total sample. Columns 1 to 4 provides the results of the OLS estimations, while Columns 5 to 8 of the PPML estimations. We start by adding only the economic controls. In both the OLS and PPML estimations, $(log)GDP$ shows a positive and significant coefficient, while the coefficient of $Unemployment$ is negative and significant as expected. We then add the geographical and cultural links which all show the expected sign. The only exception is $Contiguity$, which has a negative but non-significant coefficient in the OLS estimation, but shows the expected sign in the PPML model. Also $Network$ has a positive and strongly statistically significant coefficient in all estimations. When we include $Attitudes$ we find that it has a negative and strongly significant coefficient in both the OLS and PPML estimations.

As mentioned in Section 4 in Table 3 we run separate estimations for intra-EU inflows (Column 1 for the OLS and Column 2 for the PPML) and inflows happening outside the EU area (Column 3 for the OLS and Column 4 for the PPML). The results show that for intra-EU inflows the coefficient of $Attitudes$ is negative and strongly statistically significant, as for the total sample, confirming that our results are not driven by policy restrictiveness. For the non-EU, we also find a negative impact of $Attitudes$ on flows though the coefficients of $Attitudes$ but non-significant in the OLS specification.

From the results of the baseline estimations we can conclude that attitudes towards migration are negatively associated with inflows. In the next section, we investigate whether the results hold when we adopt an IV approach and endogeneity is accounted for.

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[9]The dummy variable indicating whether an origin country is part of the EU is time-variant, therefore takes into account the different years of access to the EU.

**Table 2:** Natives' Attitudes and Migration Inflows: OLS and PPML estimations, total sample

| | OLS | | | | PPML | | | |
|---|---|---|---|---|---|---|---|---|
| | Inflows (log) | Inflows (log) | Inflows (log) | Inflows (log) | Inflows | Inflows | Inflows | Inflows |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| GDPpc dest (log, t-1) | 0.699** | 0.925** | 0.305 | 0.320 | 1.933** | 2.457** | 0.118 | 0.400 |
| | (0.294) | (0.283) | (0.297) | (0.298) | (0.762) | (0.774) | (1.321) | (1.342) |
| Unempl. dest (t-1) | -0.0227*** | -0.0219*** | -0.0437*** | -0.0492*** | -0.0680*** | -0.0625*** | -0.105*** | -0.123*** |
| | (0.00438) | (0.00420) | (0.00486) | (0.00525) | (0.0103) | (0.00999) | (0.0145) | (0.0143) |
| Contiguity | | -0.259 | -0.104 | -0.104 | | 0.447 | 0.209* | 0.204* |
| | | (0.224) | (0.0915) | (0.0914) | | (0.279) | (0.109) | (0.106) |
| Distance (log) | | -0.837*** | -0.282*** | -0.282*** | | -0.614*** | -0.215** | -0.209** |
| | | (0.139) | (0.0551) | (0.0551) | | (0.186) | (0.0755) | (0.0736) |
| Common language | | 1.742*** | 0.595*** | 0.594*** | | 1.431*** | 0.465*** | 0.454*** |
| | | (0.187) | (0.0795) | (0.0793) | | (0.224) | (0.109) | (0.106) |
| Colonial ties | | 1.209*** | 0.384*** | 0.383*** | | 0.880*** | 0.288*** | 0.272** |
| | | (0.176) | (0.0676) | (0.0675) | | (0.157) | (0.0856) | (0.0840) |
| Networks (t-5) | | | 0.650*** | 0.651*** | | | 0.644*** | 0.652*** |
| | | | (0.0179) | (0.0179) | | | (0.0433) | (0.0423) |
| Attitudes (%, t-1) | | | | -0.00309** | | | | -0.00894*** |
| | | | | (0.00120) | | | | (0.00168) |
| Origin-time FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 13443 | 13443 | 13443 | 13443 | 15053 | 15053 | 15053 | 15053 |
| R-squared | 0.780 | 0.854 | 0.931 | 0.931 | | | | |
| Log-likelihood | | | | | -14592674.1 | -8758441.2 | -3943568.5 | -3902121.9 |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

**Table 3:** Natives' Attitudes and Migration Inflows: OLS and PPML estimations, by EU and non-EU origin

| | EU | | Non-EU | |
|---|---|---|---|---|
| | OLS | PPML | OLS | PPML |
| | Inflows (log) | Inflows | Inflows (log) | Inflows |
| | (1) | (2) | (3) | (4) |
| GDPpc dest (log, t-1) | 0.431 | -0.272 | 0.181 | 0.511 |
| | (0.398) | (2.720) | (0.364) | (1.194) |
| Unempl. dest (t-1) | -0.0712*** | -0.129*** | -0.0432*** | -0.117*** |
| | (0.00990) | (0.0240) | (0.00593) | (0.0148) |
| Contiguity | 0.138 | 0.101 | 0.0368 | 0.835*** |
| | (0.113) | (0.124) | (0.192) | (0.226) |
| Distance (log) | -0.264** | -0.0586 | -0.543*** | -0.190 |
| | (0.0870) | (0.0897) | (0.109) | (0.158) |
| Common language | 0.0466 | 0.370** | 0.744*** | 0.567*** |
| | (0.164) | (0.158) | (0.103) | (0.137) |
| Colonial ties | 0.131 | 0.392** | 0.343*** | 0.154* |
| | (0.226) | (0.154) | (0.0802) | (0.0923) |
| Networks (t-5) | 0.528*** | 0.641*** | 0.634*** | 0.633*** |
| | (0.0446) | (0.0604) | (0.0192) | (0.0330) |
| Attitudes (%, t-1) | -0.00773** | -0.0154*** | -0.000976 | -0.00333* |
| | (0.00249) | (0.00293) | (0.00129) | (0.00200) |
| Observations | 2969 | 3037 | 10474 | 12016 |
| R-squared | 0.906 | | 0.939 | |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p <$ 0.10, ** $p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

## 5.2 IV estimations

Table 4 presents the results of the 2SLS model estimation. Column 1 presents the results for the total sample, Column 2 for the intra-EU inflows, and Column 3 for the non-EU to EU inflows. We report the Kleibergen-Paap F statistics for all the estimations to test if our instrument is weak. As the values are always larger than 100 (Lee et al., 2021), there are concerns about the weakness of the IV. Table B.2 in Appendix B reports the first stage estimations. The coefficient of the instrument is positive and statistically significant, reflecting the role played by cultural conformity and education in shaping public attitudes as suggested in the literature by (Storm, 2018; Mayda, 2006; Cavaille and Marshall, 2019).

The IV estimations largely confirm our baseline results, suggesting a negative and significant relationship between anti-immigration attitudes and inflows for the total sample and intra-EU inflows. Moreover, we can notice that the coefficients of *Attitudes* is negative and statistically significant also for non-EU origin countries. This suggests that, even after controlling for endogeneity, anti-immigration attitudes negatively influence inflows of migrants within the free movement scheme of EU countries, as well as for non-EU to EU flows.

Table 5 presents the results for the IV Poisson. The results confirm the ones of the 2SLS: we find a negative and significant coefficient for *Attitudes* and have further confirmation of the causal relationship between anti-immigration attitudes and migration inflows. However, as we are unable to control for the multilateral migration resistance in this setting, we also use GMM estimator with our IV where we also control for the multilateral migration resistance.[10] We include zeros on this specification to ensure comparability with Table 5, but we also exclude the zeros as shown in the Appendix Table 8. The results in Table 6 suggest that a 1 percent increase in anti-immigration attitudes reduces the bilateral flow by 0.04 percent (around 40 immigrants), while a 1 percent increase in unemployment reduces the bilateral inflow by 0.09% (90 immigrants). As expected the effect of GDP per capita on inflows is much larger as 1 percent increase leads to 2.1 percent increase (210 immigrants) in bilateral flows, a finding that is well established in the literature about the role of income in driving immigration. Put differently, the marginal effect of 1 percent increase in unemployment rate is equivalent to double that of the increase in anti-immigration attitudes, while a 1 percent reduction in GDP is equivalent to almost five fold increase in anti-immigration attitude. Also, a 1 percent point reduction in the size of *Networks* is similar to the effect of around a 10 percent increase in anti-immigration attitudes. Interestingly, the impact of anti-immigration attitudes is larger for non-EU immigration compared to intra-EU migration. However, the elasticity of anti-immigration attitudes compared to the usual drivers of migration such as income or unemployment is higher for EU migrants; i.e. although anti-immigration attitudes matter for non-EU to EU migration, they are smaller in size relative to income and unemployment.

Our results suggest that natives' attitudes are an important determinant of migration and that negative attitudes can discourage migration inflows. We also find that natives' attitudes do not offset the effect of other important economic and non-economic determinants (i.e. GDP per capita, unemployment, and networks), but rather play an important role. In

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[10]When using the IV Poisson we are unable to include origin-time fixed effects. Also, including fixed effects in this setting could lead to biased estimations due to the incidental parameter problem (Windmeijer and Santos Silva, 1997).

particular, we find that the effect of natives' attitudes if compared to other determinants is smaller but not negligible. Our results hold when accounting for the endogeneity and therefore suggest a causal relationship between natives' attitudes and migration inflows.

**Table 4:** Natives' Attitudes and Migration Inflows: 2SLS, by EU and non-EU origin

|  | Total | EU | Non-EU |
|---|---|---|---|
|  | Inflows (log) | Inflows(log) | Inflows (log) |
|  | (1) | (2) | (3) |
| GDPpc dest (log, t-1) | 0.450 | 0.0802 | 0.607* |
|  | (0.278) | (0.424) | (0.345) |
| Unempl. dest (t-1) | -0.0958*** | -0.108*** | -0.0883*** |
|  | (0.00805) | (0.0178) | (0.00855) |
| Contiguity | -0.105 | 0.134 | 0.0299 |
|  | (0.0797) | (0.101) | (0.164) |
| Distance (log) | -0.284*** | -0.257** | -0.550*** |
|  | (0.0477) | (0.0792) | (0.0926) |
| Common language | 0.586*** | 0.0504 | 0.736*** |
|  | (0.0691) | (0.147) | (0.0884) |
| Colonial ties | 0.375*** | 0.131 | 0.338*** |
|  | (0.0584) | (0.204) | (0.0686) |
| Networks (t-5) | 0.654*** | 0.538*** | 0.636*** |
|  | (0.0157) | (0.0426) | (0.0165) |
| Attitudes (%, t-1) | -0.0292*** | -0.0284** | -0.0270*** |
|  | (0.00342) | (0.00872) | (0.00365) |
| Origin-time FE | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 13443 | 2969 | 10474 |
| R-squared | 0.927 | 0.903 | 0.935 |
| F-statistics | 176.9 | 23.79 | 161.0 |
| P-value underid. test | 0.000 | 0.000 | 0.000 |
| Kleibergen-Paap statistics | 401.2 | 119.4 | 294.8 |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

**Table 5:** Natives' Attitudes and Migration Inflows: IV Poisson GMM estimation, by EU and non-EU origin

|  | Total sample | EU | Non-EU |
|---|---|---|---|
|  | Inflows | Inflows | Inflows |
|  | (1) | (2) | (3) |
| GDPpc dest (log, t-1) | 3.366*** | 0.329 | 3.517** |
|  | (0.939) | (0.229) | (1.160) |
| Unempl. dest (t-1) | -0.219*** | -0.134*** | -0.222*** |
|  | (0.0205) | (0.0131) | (0.0315) |
| Common language | 0.531*** | 0.471*** | 0.677*** |
|  | (0.0699) | (0.105) | (0.104) |
| Colonial ties | 0.275*** | 0.457*** | 0.207** |
|  | (0.0595) | (0.135) | (0.0787) |
| Distance (log) | -0.231*** | -0.0597 | -0.384*** |
|  | (0.0477) | (0.0476) | (0.114) |
| Contiguity | 0.225*** | 0.121* | 0.790*** |
|  | (0.0658) | (0.0658) | (0.137) |
| Networks (t-5) | 0.579*** | 0.559*** | 0.535*** |
|  | (0.0252) | (0.0565) | (0.0292) |
| Attitudes (%, t-1) | -0.0604*** | -0.0201*** | -0.0606*** |
|  | (0.00906) | (0.00398) | (0.0150) |
| Origin FE | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 15053 | 3037 | 12016 |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

**Table 6:** Natives' Attitudes and Migration Inflows: GMM estimation, by EU and non-EU origin

|  | Total sample | EU | Non-EU |
|---|---|---|---|
|  | Inflows (log+1) | Inflows (log+1) | Inflows (log+1) |
|  | (1) | (2) | (3) |
| GDPpc dest (log, t-1) | 2.068*** | 0.834*** | 1.022*** |
|  | (0.160) | (0.0315) | (0.0297) |
| Unempl. dest (t-1) | -0.0901*** | -0.0994*** | -0.0897*** |
|  | (0.00525) | (0.0107) | (0.00551) |
| Common language | 0.800*** | -0.0233 | 1.004*** |
|  | (0.0259) | (0.0510) | (0.0319) |
| Colonial ties | 0.472*** | 0.154** | 0.400*** |
|  | (0.0236) | (0.0550) | (0.0278) |
| Distance (log) | -0.399*** | -0.373*** | -0.725*** |
|  | (0.0174) | (0.0212) | (0.0311) |
| Contiguity | -0.131*** | 0.197*** | -0.0428 |
|  | (0.0300) | (0.0351) | (0.0553) |
| Networks (t-5) | 0.553*** | 0.412*** | 0.532*** |
|  | (0.00426) | (0.0109) | (0.00489) |
| Attitudes (%, t-1) | -0.0476*** | -0.0301*** | -0.0427*** |
|  | (0.00320) | (0.00773) | (0.00345) |
| Origin-time FE | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 15053 | 3037 | 12016 |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

# 6 Robustness

To assess the robustness of our results we provide a number of checks. First we run the same regressions with two alternative estimators, and secondly we re-estimate the baseline model and IV estimations using two alternative dependent variables.

## 6.1 Alternative estimations

In Table 7 we estimate our model with the Common Correlated Effects estimator proposed by Pesaran (2006) that allows us to get consistent estimations even in presence of multilateral resistance to migration, see Bertoli and Fernández-Huertas Moraga (2013). This estimator is quite demanding in terms of data, and due to the structure of our panel (which is unbalanced) we lose a number of observation compared to the PPML and OLS estimations. Nonetheless, the coefficient of *Attitudes* is still negative in all three columns and significant for the total sample and the one of non-EU, where we have the greatest number of observations.

We also replicate the GMM estimation in Table 6 but we exclude the zeros and control for the multilateral migration resistance using origin-time fixed effects. Table 8 presents the results. The coefficient of *Attitudes* is always negative and statistically significant confirming our earlier results, and is slightly larger than in Table 6 as we exclude the zero bilateral migration flows.

**Table 7:** Natives' Attitudes and Migration Inflows: Common Correlated Effects Estimations (CCE), by EU and non-EU origin

|  | Total sample | EU | Non-EU |
|---|---|---|---|
|  | Inflows (log) | Inflows (log) | Inflows (log) |
|  | (1) | (2) | (3) |
| Unempl. dest (t-1) | -0.0800*** | -0.0185 | -0.0937*** |
|  | (0.00778) | (0.0121) | (0.00941) |
| Networks (t-5) | 0.0354** | 0.185*** | 0.0289** |
|  | (0.0128) | (0.0314) | (0.0143) |
| Attitudes (%, t-1) | -0.00347** | -0.00301 | -0.00497** |
|  | (0.00150) | (0.00400) | (0.00161) |
| Dyadic FEs | Yes | Yes | Yes |
| Observations | 11719 | 2167 | 9190 |
| R-squared | 0.493 | 0.434 | 0.510 |
| P-value CD test | 0.000 | 0.000 | 0.000 |

Notes: Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

**Table 8:** Natives' Attitudes and Migration Inflows: GMM with external instrument estimations, by EU and non-EU origin

|  | Total sample | EU | Non-EU |
|---|---|---|---|
|  | Inflows (log) | Inflows (log) | Inflows (log) |
|  | (1) | (2) | (3) |
| GDPpc dest (log, t-1) | 0.603*** | 0.836*** | 1.060*** |
|  | (0.115) | (0.0250) | (0.0301) |
| Unempl. dest (t-1) | -0.0744*** | -0.0900*** | -0.0649*** |
|  | (0.00355) | (0.00862) | (0.00357) |
| Common language | 0.817*** | 0.0344 | 1.017*** |
|  | (0.0179) | (0.0403) | (0.0216) |
| Colonial ties | 0.543*** | 0.153*** | 0.480*** |
|  | (0.0166) | (0.0434) | (0.0190) |
| Distance (log) | -0.394*** | -0.369*** | -0.759*** |
|  | (0.0121) | (0.0169) | (0.0221) |
| Contiguity | -0.136*** | 0.189*** | 0.00899 |
|  | (0.0203) | (0.0277) | (0.0365) |
| Networks (t-5) | 0.524*** | 0.387*** | 0.507*** |
|  | (0.00325) | (0.00869) | (0.00365) |
| Attitudes (%, t-1) | -0.0214*** | -0.0273*** | -0.0198*** |
|  | (0.00195) | (0.00603) | (0.00198) |
| Origin-time FE | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 13443 | 2969 | 10474 |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

## 6.2 Migration Stocks and Emigration Rates: Alternative dependent variables

In this sub-section we describe the estimations we run on two alternative dependent variables. The first one is the bilateral stocks of migrants. Since bilateral data on outflows are not available for all the countries and time periods, we use migration stocks to capture net migration, i.e. the difference between inflows and outflows. In essence we hypothesise that anti-immigration attitudes also have a negative impact on migrant stocks. A rise in natives' hostility is likely to push immigrants to leave the host country. For example, following the Brexit vote in the UK, anecdotal evidence has suggested that the hostile environment towards EU immigrants in the UK and the feeling that they are not wanted there, have led to many immigrants leaving the UK. Similar to migration flows, we use bilateral migration stock data from the OECD International Migration Database.

Table 9 presents the baseline results. Table 10 the 2SLS and the GMM estimator with external instrument. These additional estimations confirm the results we found on the inflows and suggest that anti-immigration attitudes have a negative effect also on bilateral stocks both for EU and non-EU migrants. However, based on Table 10 Columns 4-6, the estimates suggest that natives' attitudes have a bigger marginal effect on migration inflows compared to migration stocks.

Following the literature, we also examine the impact of attitudes on emigration rate which is defined as the ratio between bilateral inflows and population in the country of origin, see for example Bertoli and Fernández-Huertas Moraga (2013) and Gorinas and Pytliková (2017). This measure captures the propensity to emigrate, and allows us to examine the role played by natives' attitudes on the emigration rate. Again we distinguish between EU and non-EU countries of origin. Table 11 presents the baseline results, while Table 12 the 2SLS and the GMM with external instrument. Similarly as for inflows, Table 11 shows that the coefficient of *Attitudes* is negative and significant for the total and the sample of EU countries, and negative but non-significant for the sample of non-EU. On the other hand, when we correct for the endogeneity of *Attitudes* (Table 12) the coefficient is negative and significant in all estimations. This confirms a negative relationship between anti-immigration attitudes and emigration rates.[11]

Thus, our findings show the role played by natives' attitudes as a negative determinant of migration which hold for inflows, stocks and emigration rates using various estimation techniques.

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[11]For completeness we also include the estimates using IV-Poisson, though without origin-time fixed effects as before. See Table D.5 for the estimates on migration stocks and Table E.6 for the estimates on emigration rates.

**Table 9:** Natives' Attitudes and Migration Stocks: OLS and PPML estimations, EU and non-EU origin

| | Total sample | | EU | | Non-EU | |
|---|---|---|---|---|---|---|
| | OLS | PPML | OLS | PPML | OLS | PPML |
| | Stocks (log) | Stocks | Stocks (log) | Stocks | Stocks (log) | Stocks |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| GDPpc dest (log, t-1) | 0.155 | -2.192*** | 1.131* | -3.236*** | 0.111 | -1.448** |
| | (0.375) | (0.432) | (0.645) | (0.541) | (0.469) | (0.662) |
| Unempl. dest (t-1) | -0.0362*** | -0.0554*** | -0.0150* | -0.0506*** | -0.0408*** | -0.0625*** |
| | (0.00500) | (0.00565) | (0.00893) | (0.0103) | (0.00617) | (0.0116) |
| Contiguity | -0.213 | -0.139 | -0.0127 | 0.0147 | 0.246 | 0.522** |
| | (0.131) | (0.116) | (0.111) | (0.144) | (0.329) | (0.234) |
| Distance (log) | -0.364*** | -0.181** | -0.413*** | -0.0320 | -0.530*** | -0.356*** |
| | (0.0744) | (0.0685) | (0.0836) | (0.0855) | (0.126) | (0.0997) |
| Common language | 0.444*** | 0.462*** | 0.118 | 0.142 | 0.476*** | 0.572*** |
| | (0.107) | (0.130) | (0.220) | (0.196) | (0.130) | (0.136) |
| Colonial ties | 0.291** | 0.0342 | -0.0786 | -0.196 | 0.159 | 0.154* |
| | (0.0972) | (0.0814) | (0.210) | (0.141) | (0.110) | (0.0807) |
| Networks (t-5) | 0.759*** | 0.838*** | 0.667*** | 0.860*** | 0.785*** | 0.804*** |
| | (0.0253) | (0.0274) | (0.0462) | (0.0403) | (0.0229) | (0.0345) |
| Attitudes (%, t-1) | -0.00450*** | -0.00659*** | -0.00578** | -0.00701*** | -0.00444*** | -0.00546*** |
| | (0.000944) | (0.00122) | (0.00190) | (0.00193) | (0.00108) | (0.00148) |
| Origin-time FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 11253 | 11593 | 2658 | 2672 | 8595 | 8921 |
| R-squared | 0.947 | | 0.931 | | 0.955 | |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$.
**Source:** Authors' calculations based on OECD data on migration stocks by nationality, years 1995-2018.

**Table 10:** Natives' Attitudes and Migration Stocks: 2SLS and GMM with external instrument, by EU and non-EU origin

| | 2SLS | | | GMM | | |
|---|---|---|---|---|---|---|
| | Total | EU | Non-EU | Total | EU | Non-EU |
| | Stocks (log) | Stocks (log) | Stocks (log) | Stocks (log+1) | Stocks (log+1) | Stocks (log+1) |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| GDPpc dest (log, t-1) | 0.644** | 1.020** | 0.708* | 1.842*** | 0.965*** | 1.146*** |
| | (0.288) | (0.400) | (0.378) | (0.161) | (0.0204) | (0.0177) |
| Unempl. dest (t-1) | -0.0933*** | -0.0611*** | -0.0932*** | -0.0605*** | -0.0343*** | -0.0625*** |
| | (0.00591) | (0.0156) | (0.00691) | (0.00298) | (0.00841) | (0.00311) |
| Contiguity | -0.153 | 0.0101 | 0.253 | -0.255*** | 0.0497** | 0.205*** |
| | (0.108) | (0.0967) | (0.264) | (0.0175) | (0.0209) | (0.0328) |
| Distance (log) | -0.300*** | -0.360*** | -0.461*** | -0.465*** | -0.517*** | -0.742*** |
| | (0.0602) | (0.0717) | (0.103) | (0.0102) | (0.0126) | (0.0186) |
| Common language | 0.378*** | 0.0351 | 0.423*** | 0.656*** | 0.104*** | 0.755*** |
| | (0.0896) | (0.187) | (0.107) | (0.0156) | (0.0290) | (0.0196) |
| Colonial ties | 0.355*** | -0.0653 | 0.255** | 0.447*** | -0.0797** | 0.299*** |
| | (0.0775) | (0.179) | (0.0840) | (0.0145) | (0.0331) | (0.0171) |
| Networks (t-5) | 0.763*** | 0.692*** | 0.782*** | 0.638*** | 0.513*** | 0.656*** |
| | (0.0223) | (0.0419) | (0.0194) | (0.00290) | (0.00643) | (0.00339) |
| Attitudes (%, t-1) | -0.0347*** | -0.0300*** | -0.0320*** | -0.0280*** | -0.0175*** | -0.0232*** |
| | (0.00278) | (0.00806) | (0.00298) | (0.00167) | (0.00485) | (0.00154) |
| Origin-time FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 11253 | 2658 | 8595 | 11593 | 2672 | 8921 |
| R-squared | 0.944 | 0.935 | 0.953 | | | |
| F-statistics | 142.3 | 34.37 | 185.7 | | | |
| P-value underid. test | 0.000 | 0.000 | 0.000 | | | |
| Kleibergen-Paap statistics | 322.5 | 64.00 | 253.3 | | | |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration stocks by nationality, years 1995-2018.

**Table 11:** Natives' Attitudes and emigration rate: OLS and PPML estimations, by EU and non-EU origin

| | Total | | EU | | Non-EU | |
|---|---|---|---|---|---|---|
| | OLS | PPML | OLS | PPML | OLS | PPML |
| | log(Inflows/ori pop) | Inflows/ori pop | log(Inflows /ori pop) | Inflows/ori pop | log(Inflows/ori pop) | Inflows/ori pop |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| GDPpc dest (log, t-1) | 0.329 | 0.755 | 0.431 | 0.432 | 0.191 | 1.295 |
| | (0.298) | (2.139) | (0.398) | (2.279) | (0.363) | (2.819) |
| Unempl. dest (t-1) | -0.0485*** | -0.122*** | -0.0712*** | -0.120*** | -0.0423*** | -0.114*** |
| | (0.00522) | (0.0192) | (0.00990) | (0.0232) | (0.00589) | (0.0236) |
| Contiguity | -0.103 | 0.00126 | 0.138 | 0.210 | 0.0378 | 0.504** |
| | (0.0915) | (0.108) | (0.113) | (0.144) | (0.192) | (0.185) |
| Distance (log) | -0.283*** | -0.352*** | -0.264** | -0.211** | -0.544*** | -0.264* |
| | (0.0551) | (0.0708) | (0.0870) | (0.0954) | (0.109) | (0.136) |
| Common language | 0.595*** | 0.523*** | 0.0466 | 0.0129 | 0.745*** | 0.628*** |
| | (0.0794) | (0.101) | (0.164) | (0.202) | (0.103) | (0.129) |
| Colonial ties | 0.384*** | 0.418*** | 0.131 | 0.181 | 0.344*** | 0.395** |
| | (0.0675) | (0.104) | (0.226) | (0.142) | (0.0802) | (0.126) |
| Networks (t-5) | 0.650*** | 0.646*** | 0.528*** | 0.603*** | 0.633*** | 0.650*** |
| | (0.0179) | (0.0361) | (0.0446) | (0.0628) | (0.0192) | (0.0308) |
| Attitudes (%, t-1) | -0.00312** | -0.00683** | -0.00773** | -0.0145*** | -0.00100 | -0.00120 |
| | (0.00120) | (0.00210) | (0.00249) | (0.00265) | (0.00129) | (0.00301) |
| Origin-time FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 13422 | 15025 | 2969 | 3037 | 10453 | 11988 |
| R-squared | 0.923 | | 0.897 | | 0.932 | |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

**Table 12:** Emigration rate: 2SLS and GMM with external instrument

| | 2SLS | | | GMM | | |
|---|---|---|---|---|---|---|
| | Total | EU | Non-EU | Total | EU | Non-EU |
| | log(Inflows/ori pop) | log(Inflows/ori pop) | log(Inflows /ori pop) | log(Inflows(+1)/ori pop) | log(Inflows(+1)/ori pop) | log(Inflows(+1)/ori pop) |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| GDPpc dest (log, t-1) | 0.457* | 0.0802 | 0.612* | 2.081*** | -0.857*** | -0.674*** |
| | (0.277) | (0.424) | (0.344) | (0.160) | (0.0313) | (0.0292) |
| Unempl. dest (t-1) | -0.0949*** | -0.108*** | -0.0871*** | -0.0890*** | -0.113*** | -0.0947*** |
| | (0.000804) | (0.0178) | (0.00853) | (0.00525) | (0.0107) | (0.00544) |
| Contiguity | -0.104 | 0.134 | 0.0310 | -0.130*** | 0.199*** | -0.0390 |
| | (0.0798) | (0.101) | (0.164) | (0.0299) | (0.0348) | (0.0544) |
| Distance (log) | -0.285*** | -0.257** | -0.551*** | -0.401*** | -0.375*** | -0.728*** |
| | (0.0478) | (0.0792) | (0.0926) | (0.0174) | (0.0211) | (0.0305) |
| Common language | 0.587*** | 0.0504 | 0.737*** | 0.802*** | -0.0214 | 1.006*** |
| | (0.0691) | (0.147) | (0.0884) | (0.0258) | (0.0506) | (0.0314) |
| Colonial ties | 0.376*** | 0.131 | 0.340*** | 0.474*** | 0.151** | 0.402*** |
| | (0.0585) | (0.204) | (0.0686) | (0.0236) | (0.0546) | (0.0273) |
| Networks (t-5) | 0.653*** | 0.538*** | 0.635*** | 0.551*** | 0.409*** | 0.530*** |
| | (0.0157) | (0.0426) | (0.0165) | (0.00426) | (0.0108) | (0.00481) |
| Attitudes (%, t-1) | -0.0291*** | -0.0284** | -0.0269*** | -0.0473*** | -0.0243** | -0.0348*** |
| | (0.00343) | (0.00872) | (0.00365) | (0.00320) | (0.00767) | (0.00340) |
| Origin-time FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 13422 | 2969 | 10453 | 15025 | 3037 | 11988 |
| R-squared | 0.920 | 0.894 | 0.929 | | | |
| F-statistics | 175.2 | 25.13 | 158.2 | | | |
| P-value underid. test | 0.000 | 0.000 | 0.000 | | | |
| Kleibergen-Paap statistics | 393.7 | 119.2 | 288.0 | | | |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

# 7 Conclusion

During the last few years Europe has seen a surge in negative attitudes towards migration. In this paper, we study the effects of anti-immigration attitudes on bilateral migration inflows to the EU. We examine the effects of natives' attitudes whilst controlling for the most important migration determinants as it is conventionally done in the literature. We also deal with the endogeneity between public attitudes and migration flows by implementing an IV strategy based on the literature that analyses cultural conformity and anti-immigration attitudes. We use as instrument the percentage of natives who conform to the country's main religion which we interact by the number of low educated natives, following another branch of the literature that relates anti-immigration attitudes to the average level of education of the host countries. Finally, we also account for multilateral resistance to migration by including origin-time fixed effects and providing a robustness check in which we use the Common Correlated Estimator technique.

Our results show that anti-immigration attitudes have a negative and significant impact on migration inflows to the EU. In terms of magnitude, a 10 percent increase in negative attitudes reduces inflows by 0.4 percent. The effect is about a half of that of unemployment, whose 10 percent increase would lead to a 0.9 percent reduction of the inflows. This suggests that public attitudes are a significant driver of immigration flows albeit smaller if compared to other economic factors such as income and unemployment. We also find that anti-immigration attitudes affect bilateral migration stocks and emigration rates. Moreover, our findings suggest that the impact of anti-immigration attitudes is larger for non-EU immigration compared to intra-EU migration. Yet, the elasticity of anti-immigration attitudes with respect to immigration is higher relative to the elasticities of economic drivers, such as income and unemployment, for EU migrants.

One important implication of our findings is that natives' anti-immigration attitudes are likely to deter immigration. In times when there are labour shortages and governments want to attract the best and the brightest anti-immigration attitudes would discourage immigration. Importantly, the anti-immigration attitudes impact migration within the EU as well, which would suggest that public attitudes might be a hurdle for intra-EU labour mobility. Overall, our results indicate that there is a need for building better social cohesion between natives and immigrants to reduce social tensions and mis-perceptions on immigration to ensure more harmonious societies.

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# 8 Appendix

## A Attitudes Measures

In this appendix we explore the reliability of our *Attitudes* measure. First, we show the correlation between attitudes and migration inflows. Figure A.1 plots the linear relationship between *Attitudes* and migration inflows for the period 1995-2013 (to avoid the so-called asylum crisis). We notice that the relationship is negative suggesting that when the attitude score increases the inflows decrease as expected. We also see that the slope of the fitted line for EU is steeper compared to non-EU migrants. Of course this figure just shows correlation but in section 5 we examine the causal relationship when controlling for other factors and for the endogeneity between *Attitudes* and migration flows.

**Figure A.1:** Attitudes and migration inflows, 1995-2013
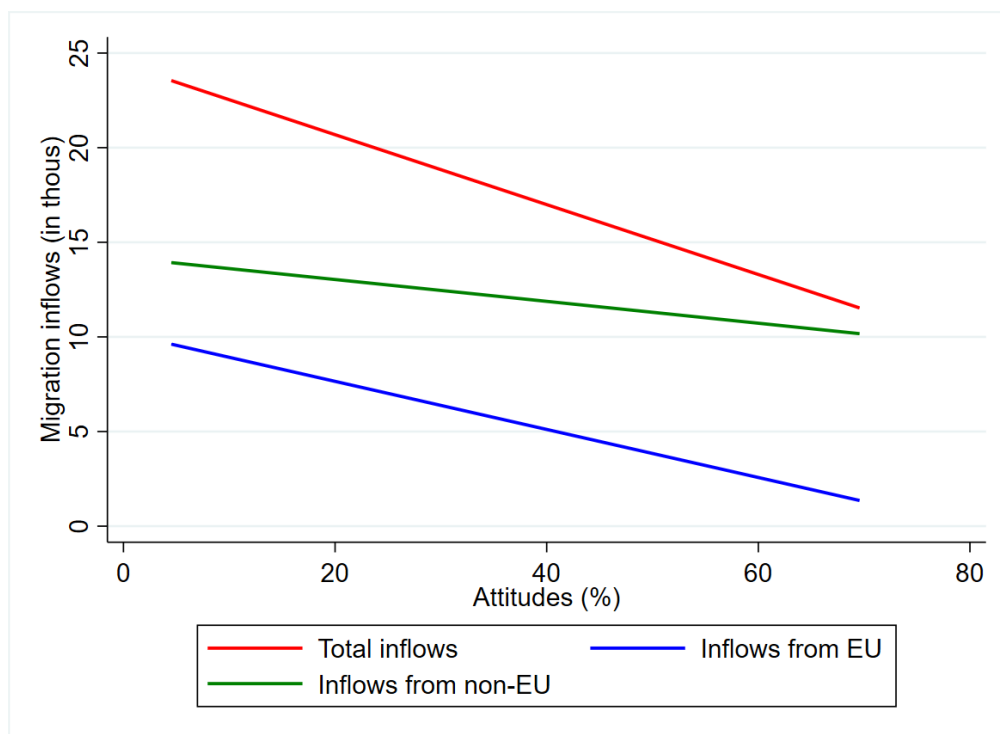


**Source:** Authors' calculations based on Eurobarometer and OECD International Migration Database.

Secondly, we examine the comparability of our *Attitudes* measure with respect to other questions in the Eurobarometer and using the European Social Survey. Table A.1 presents a robustness check in which we use an alternative measure for *Attitudes*. We use the following Eurobarometer question: *"Immigrants contribute a lot to our country: Totally agree/Tend to agree/Tend to disagree/Totally disagree"*. We code the answers *Tend to disagree* and *Totally disagree* as 1 and the answers *Tend to agree* and *Totally agree* as 0, so that countries with higher scores are the ones with more negative attitudes towards migrants. As for the measure of attitudes we used throughout the paper we only consider the answers of natives. We have information for the following years: 1994, 1997, 2000, 2003, 2006, 2008, 2011, 2012, and 2014. The results show that the coefficient of *Attitudes_alt* is negative and significant, confirming the relevant role of attitudes in influencing migration flows.

**Table A.1:** Natives' Attitudes and Migration Stocks, alternative attitude measure: OLS and PPML estimations, EU and non-EU

| | Total sample | | EU | | Non-EU | |
|---|---|---|---|---|---|---|
| | OLS | PPML | OLS | PPML | OLS | PPML |
| | Inflows (log) | Inflows | Inflows (log) | Inflows | Inflows (log) | Inflows |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| GDPpc dest (log, t-1) | 0.124 | -0.324 | 0.585** | -0.0218 | -0.0427 | -0.620** |
| | (0.100) | (0.197) | (0.191) | (0.220) | (0.112) | (0.244) |
| Unempl. dest (t-1) | -0.0302*** | -0.0585*** | -0.0314*** | -0.0672*** | -0.0311*** | -0.0503*** |
| | (0.00291) | (0.00942) | (0.00831) | (0.0162) | (0.00315) | (0.00722) |
| Contiguity | 0.0712 | 0.237* | 0.268* | 0.122 | 0.0748 | 0.611** |
| | (0.0966) | (0.143) | (0.139) | (0.154) | (0.173) | (0.282) |
| Distance (log) | 0.117* | 0.169* | 0.217** | 0.222** | -0.0234 | 0.187 |
| | (0.0600) | (0.0957) | (0.0859) | (0.0965) | (0.0947) | (0.262) |
| Common language | 0.203*** | -0.0852 | -0.00221 | -0.0209 | 0.182** | -0.0783 |
| | (0.0577) | (0.0767) | (0.164) | (0.0985) | (0.0592) | (0.0992) |
| Colonial ties | 0.206*** | 0.149* | 0.0528 | 0.216 | 0.155** | 0.118 |
| | (0.0617) | (0.0871) | (0.213) | (0.135) | (0.0608) | (0.113) |
| Networks (t-5) | 0.835*** | 0.882*** | 0.780*** | 0.886*** | 0.853*** | 0.874*** |
| | (0.0125) | (0.0273) | (0.0305) | (0.0345) | (0.0122) | (0.0309) |
| Attitudes_alt (%, t-1) | -0.00829*** | -0.00926*** | -0.00181 | -0.00992** | -0.0113*** | -0.00709** |
| | (0.00112) | (0.00261) | (0.00205) | (0.00321) | (0.00139) | (0.00317) |
| Origin-time FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 7998 | 9068 | 1861 | 1895 | 6137 | 7173 |
| R-squared | 0.928 | | 0.866 | | 0.942 | |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$.
**Source:** Authors' calculations based on OECD data on migration stocks by nationality, years 1995-2018.

Finally, we compare our attitudes measure with three questions from the 2002 European Social Survey (ESS) which included a special module with questions on attitudes of immigration (Card et al., 2012). Figure A.2a ranks the destination countries according to our *Attitudes* measure based on the Eurobarometer for the year 2002. Figure A.2b ranks the destination countries based on the following ESS question: *"If people who have come to live and work here are unemployed for a long period, they should be made to leave"*, while sub-figure A.2c on the question: *"Would you say that people who come to live here generally take jobs away from workers in [country]"*. Both these figures rank the countries from the highest to the lowest score, where higher scores imply negative attitudes towards migrants. Figure A.2d ranks the countries according to the question: *"When people leave their countries to come to live in [country], do you think it has a bad or good effect on those countries in the long run?"* and this time it ranks the countries from the lowest to the highest score, where lowest scores denote more negative attitudes. We can notice that the country ranking is quite consistent amongst the four different measures of attitudes, confirming the close relationship between salience and negative attitudes. Moreover, even the three questions from the ESS 2002, do not provide the exact ranking of country by negative attitudes suggesting that there will always be slight variation in the ranking depending on the wording of the question, though again overall they produce similar rankings.

**Figure A.2:** Comparison between different measures of attitudes, year 2002

**(a)**



**(b)**



**(c)**



**(d)**

# B First stage of the 2SLS

**Table B.2:** First stage of the 2SLS (Table 4)

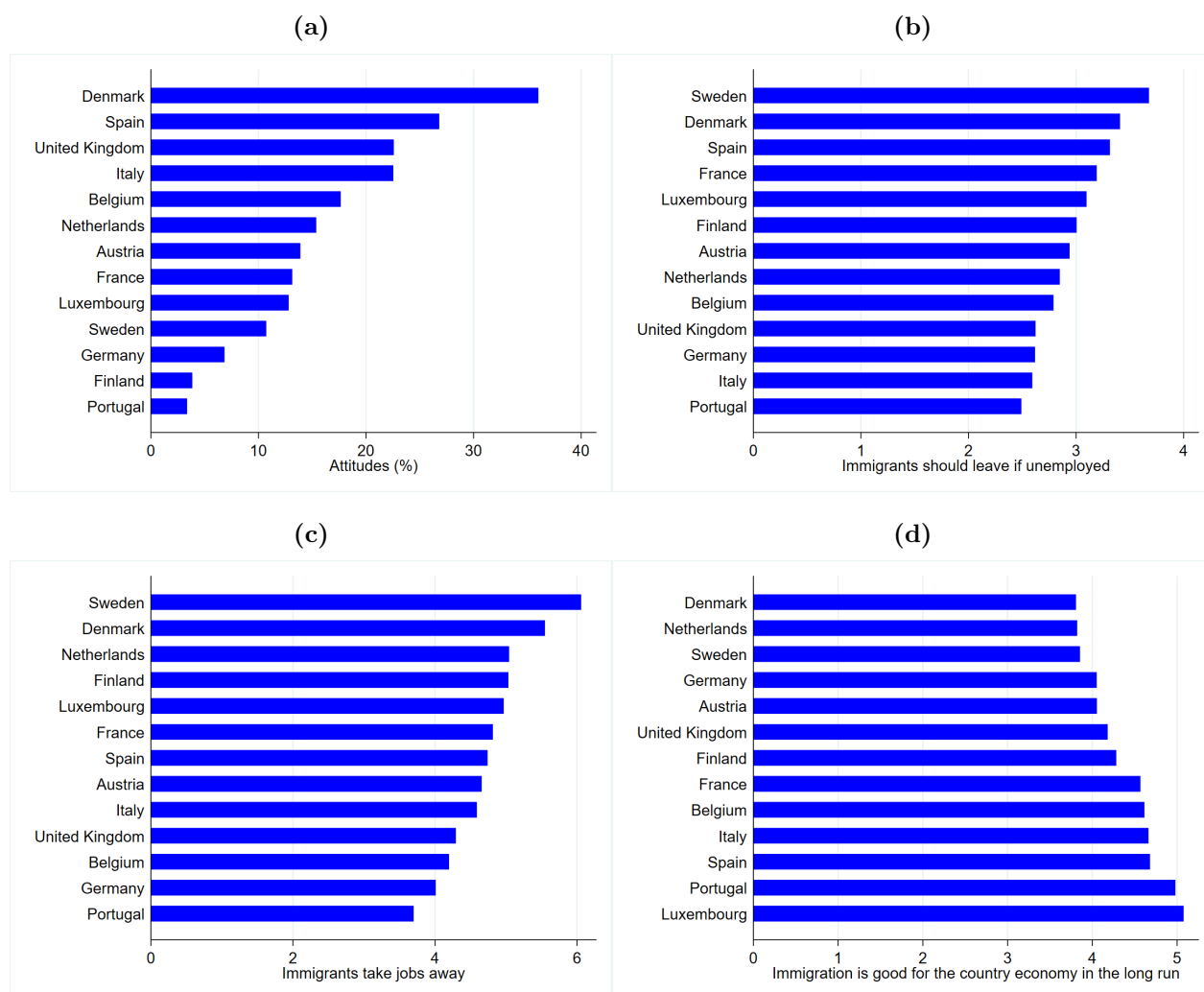|  | Total | EU | Non-EU |
|---|---|---|---|
|  | Attitudes (%, t-1) | Attitudes (%, t-1) | Attitudes (%, t-1) |
|  | (1) | (2) | (3) |
| GDPpc dest (log, t-1) | -12.13*** | -22.55*** | -5.179** |
|  | (1.789) | (3.093) | (2.186) |
| Unempl. dest (t-1) | -2.197*** | -2.022*** | -2.194*** |
|  | (0.0281) | (0.0593) | (0.0323) |
| Contiguity | -0.176 | -0.0676 | -0.443 |
|  | (0.345) | (0.448) | (0.649) |
| Distance (log) | -0.291 | 0.367 | -0.936** |
|  | (0.204) | (0.268) | (0.389) |
| Common language | 0.272 | 0.261 | 0.490 |
|  | (0.301) | (0.653) | (0.379) |
| Colonial ties | 0.134 | 0.163 | 0.258 |
|  | (0.280) | (0.703) | (0.337) |
| Networks (t-5) | -0.171*** | 0.321** | -0.301*** |
|  | (0.0489) | (0.115) | (0.0579) |
| Maj rel*low ed (level) | 0.0234*** | 0.0220*** | 0.0236*** |
|  | (0.000581) | (0.00143) | (0.000642) |
| Origin-time FE | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 13443 | 2969 | 10474 |
| R-squared | 0.848 | 0.833 | 0.853 |
| F-statistics | 1477.7 | 218.6 | 1268.9 |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

# C   Alternative instrument

In this Appendix, we use an alternative instrument, namely percentage of nationals who conform to the country's main religion. Table C.3 and C.4 show the first and second stage of migration inflows (log) as dependent variable for the total , EU origin and non-EU origin samples.

**Table C.3:** IV estimation: Natives' Attitudes and Migration Flows: Alternative instrument

|  | Total | EU | Non-EU |
|---|---|---|---|
|  | Inflows (log) | Inflows | Inflows (log) |
|  | (1) | (2) | (3) |
| GDPpc dest (log, t-1) | 1.015** | -6.140** | 1.420** |
|  | (0.511) | (2.919) | (0.489) |
| Unempl. dest (t-1) | -0.299*** | -0.761** | -0.174*** |
|  | (0.0430) | (0.259) | (0.0265) |
| Contiguity | -0.110 | 0.0716 | 0.0168 |
|  | (0.0772) | (0.0807) | (0.160) |
| Distance (log) | -0.293*** | -0.128* | -0.564*** |
|  | (0.0455) | (0.0738) | (0.0902) |
| Common language | 0.551*** | 0.118 | 0.722*** |
|  | (0.0661) | (0.108) | (0.0871) |
| Colonial ties | 0.342*** | 0.134 | 0.330*** |
|  | (0.0555) | (0.141) | (0.0670) |
| Networks (t-5) | 0.670*** | 0.718*** | 0.639*** |
|  | (0.0156) | (0.0684) | (0.0164) |
| Attitudes (%, t-1) | -0.143*** | -0.395** | -0.0768*** |
|  | (0.0240) | (0.149) | (0.0150) |
| Origin-time FE | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 13443 | 2969 | 10474 |
| R-squared | 0.831 | 0.0312 | 0.910 |
| F-statistics | 185.8 | 22.51 | 161.2 |
| P-value underid. test | 0.000 | 0.008 | 0.000 |
| Kleibergen-Paap statistics | 49.49 | 6.692 | 53.68 |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

**Table C.4:** Alternative instrument, first stage

|  | Total | EU | Non-EU |
|---|---|---|---|
|  | Attitudes (%, t-1) | Attitudes (%, t-1) | Attitudes (%, t-1) |
|  | (1) | (2) | (3) |
| GDPpc dest (log, t-1) | 6.310*** | -17.47*** | 19.06*** |
|  | (1.869) | (3.209) | (2.289) |
| Unempl. dest (t-1) | -1.777*** | -1.793*** | -1.714*** |
|  | (0.0281) | (0.0598) | (0.0321) |
| Contiguity | -0.0215 | -0.142 | -0.263 |
|  | (0.370) | (0.467) | (0.699) |
| Distance (log) | -0.0422 | 0.376 | -0.222 |
|  | (0.219) | (0.280) | (0.419) |
| Common language | -0.292 | 0.185 | -0.270 |
|  | (0.322) | (0.681) | (0.408) |
| Colonial ties | -0.298 | 0.00219 | -0.157 |
|  | (0.299) | (0.734) | (0.362) |
| Networks (t-5) | 0.130** | 0.480*** | 0.0572 |
|  | (0.0518) | (0.120) | (0.0614) |
| Tot_maj (log) | 0.900*** | 0.652*** | 1.112*** |
|  | (0.104) | (0.187) | (0.123) |
| Origin-time FE | Yes | Yes | Yes |
| Destination FE | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes |
| Observations | 13443 | 2969 | 10474 |
| R-squared | 0.825 | 0.819 | 0.829 |
| F-statistics | 1119.1 | 175.2 | 958.1 |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration inflows by nationality, years 1995-2018.

# D Migration Stocks

**Table D.5:** Natives' Attitudes and Migration Stocks: IV PPML, by EU and non-EU origin

|                        | Total        | (EU)         | Non-EU       |
|------------------------|--------------|--------------|--------------|
|                        | Stocks       | Stocks       | Stocks       |
|                        | (1)          | (2)          | (3)          |
| GDPpc dest (log, t-1)  | -0.282       | 0.254*       | -0.334       |
|                        | (0.562)      | (0.137)      | (0.642)      |
| Unempl. dest (t-1)     | -0.101***    | -0.0269**    | -0.102***    |
|                        | (0.0117)     | (0.00999)    | (0.0140)     |
| Common language        | 0.510***     | 0.257***     | 0.695***     |
|                        | (0.0499)     | (0.0758)     | (0.0646)     |
| Colonial ties          | 0.0957**     | -0.0485      | 0.225***     |
|                        | (0.0383)     | (0.0905)     | (0.0445)     |
| Distance (log)         | -0.220***    | -0.0673*     | -0.524***    |
|                        | (0.0326)     | (0.0362)     | (0.0678)     |
| Contiguity             | -0.116**     | -0.0103      | 0.581***     |
|                        | (0.0495)     | (0.0558)     | (0.101)      |
| Networks (t-5)         | 0.760***     | 0.765***     | 0.689***     |
|                        | (0.0157)     | (0.0339)     | (0.0200)     |
| Attitudes (%, t-1)     | -0.0355***   | -0.0119**    | -0.0314***   |
|                        | (0.00593)    | (0.00374)    | (0.00689)    |
| Origin FE              | Yes          | Yes          | Yes          |
| Destination FE         | Yes          | Yes          | Yes          |
| Year FE                | Yes          | Yes          | Yes          |
| Observations           | 11593        | 2672         | 8921         |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration stocks by nationality, years 1995-2018.

# E    Emigration Rate

**Table E.6:** Natives' Attitudes and Emigration Rate: IV PPML, by EU and non-EU origin

|                       | Total             | (EU)              | Non-EU            |
|-----------------------|-------------------|-------------------|-------------------|
|                       | Inflows/ori pop   | Inflows/ori pop   | Inflows/ori pop   |
|                       | (1)               | (2)               | (3)               |
| GDPpc dest (log, t-1) | 3.170**           | 0.138             | 3.101**           |
|                       | (1.257)           | (0.174)           | (1.538)           |
| Unempl. dest (t-1)    | -0.228***         | -0.126***         | -0.224***         |
|                       | (0.0223)          | (0.0121)          | (0.0250)          |
| Common language       | 0.723***          | 0.0523            | 0.943***          |
|                       | (0.0809)          | (0.0947)          | (0.112)           |
| Colonial ties         | 0.527***          | 0.225**           | 0.541***          |
|                       | (0.0747)          | (0.104)           | (0.103)           |
| Distance (log)        | -0.481***         | -0.250***         | -0.611***         |
|                       | (0.0532)          | (0.0545)          | (0.116)           |
| Contiguity            | -0.0407           | 0.220**           | 0.530***          |
|                       | (0.0664)          | (0.0763)          | (0.131)           |
| Networks (t-5)        | 0.502***          | 0.522***          | 0.451***          |
|                       | (0.0285)          | (0.0499)          | (0.0327)          |
| Attitudes (%, t-1)    | -0.0556***        | -0.0159***        | -0.0540***        |
|                       | (0.00790)         | (0.00320)         | (0.0104)          |
| Origin FE             | Yes               | Yes               | Yes               |
| Destination FE        | Yes               | Yes               | Yes               |
| Year FE               | Yes               | Yes               | Yes               |
| Observations          | 15025             | 3037              | 11988             |

**Notes:** Standard errors clustered at the country-pair level in parentheses. * $p < 0.10$, **$p < 0.05$, *** $p < 0.001$. **Source:** Authors' calculations based on OECD data on migration stocks by nationality, years 1995-2018.