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Barrera, Oscar; Bensidoun, Isabelle; Edo, Anthony

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Second-Generation Immigrants and Native Attitudes Toward Immigrants in Europe

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IZA DP No. 15393

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Oscar Barrera
Sorbonne Université

Isabelle Bensidoun
CEPII

Anthony Edo
CEPII and IZA

JUNE 2022

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IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Second-Generation Immigrants and Native Attitudes Toward Immigrants in Europe*

This paper investigates the role played by immigrants and their children in shaping native attitudes toward immigrants in the European Union. By exploiting the 2017 Special Eurobarometer on immigrant integration, we show that countries with a relatively high share of immigrants are more likely to believe that immigrants are a burden on the welfare system and worsen crime. In contrast, native opinions on the impact of immigration on culture and the labor market are unrelated to the presence of immigrants. We also find that the effects of second-generation immigrants on pro-immigrant attitudes toward security and fiscal concerns are positive (as opposed to first-generation immigrants). Finally, we find no impact of the immigrant share on the attitudes of natives supporting far-left or left political parties, while it is the most negative among respondents affiliated with far-right parties.

JEL Classification: F22, J15, P16

Keywords: immigration, second-generation immigrants, attitudes toward immigrants, public opinion

Corresponding author:
Anthony Edo
CEPII – Centre d'Études Prospectives et d'Informations Internationales
20, avenue de Ségur
75007 Paris
France
E-mail: anthony.edo@cepii.fr

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1 Introduction

The rise in international migration over the past years, and more particularly the large influx of refugees to the European Union in 2015-2017, has motivated several studies to explore the relationship between immigration and the rise of extreme-right political parties in Europe (Guriev and Papaioannou, 2022). But whether and how immigration affects the political arena depend largely on attitudes and beliefs of majority populations toward immigrants.

Several factors can affect anti-immigrant attitudes. Adverse economic conditions and individual vulnerability (as measured by social and economic status) are important factors behind hostility toward immigrants (see, e.g., Kunovich, 2004; Mayda, 2006; Semyonov et al., 2006; Hainmueller and Hopkins, 2014; Gorodzeisky and Semyonov, 2019). Negative views toward immigrants also depend on the content and intensity of the political discourses and media coverage (see, e.g., Dunaway et al., 2010; Facchini et al., 2017; Dennison and Geddes, 2019; Couttenier et al., 2021).

There is more controversy regarding the relationship between immigrant group size and anti-immigrant attitudes. Does the relative size of immigrants matter in determining attitudes and beliefs toward immigrants? Are people, in countries where the share of immigrants is high, more prone to express negative attitudes as emphasized by the "group-threat theory" formulated by Blumer (1958) and Blalock (1967)? Or, on the contrary, are they more inclined to hold positive attitudes thanks to more interactions with immigrants, as emphasized by the intergroup contact theory introduced by Allport (1954)? The answers are mixed. While some studies show that the relative size of immigrants indeed matters in determining attitudes and beliefs toward immigrants (Quillian, 1995; Dustmann and Preston, 2001; Semyonov et al., 2008), the meta-analysis by Pottie-Sherman and Wilkes (2017) concludes that anti-immigrant sentiment is not related to immigrant group size.

This paper takes a fresh look at the role played by immigrant population size in shaping native attitudes toward immigrants in the European Union (EU) by including for the first time second-generation immigrants in the analysis. Such inclusion allows us to contribute to the literature in two important ways. Because second-generation immigrants can be used by natives to infer immigrant characteristics, we show that their absence from the econometric analysis biases the estimated impact of the share of immigrants on immigrant attitudes. Second, we can compare the role played by first- and second-generation immigrants in shaping native opinions about the effects of immigrants on a large set of outcomes such as crime, welfare systems, culture and the labor market.

Our main empirical strategy uses cross-country variations in the stock of immigrants and native attitudes in 2017. While some of the previous literature discussed the endogeneity issue induced

by the fact that migrants prefer to live in economically booming and more tolerant countries (Schlueter and Scheepers, 2010), few studies account for this identification problem. A notable exception is Dustmann and Preston (2001) who find spurious positive correlations between ethnic concentration and positive attitudes across English regions. To account for the endogeneity of the share of immigrants across European countries, we perform two alternative instrumental variable (IV) strategies. Our main IV strategy relies on the literature using a historical distribution of immigrants in 1990 across European countries to instrument for current immigrant penetration (Altonji and Card, 1991). This strategy is based on the fact that migrant settlement patterns are partly determined by the presence of earlier migrants, whereas the past distribution of immigrants is in principle uncorrelated with current socio-economic conditions. As an alternative approach, we exploit data from aircraft bombing during WWII to propose a novel IV strategy to account for the endogeneity of immigration. This alternative instrument is based on the idea that the most damaging countries due to aerial bombing during WWII experienced large immigration flows for reconstruction in subsequent years and, therefore, should have relative more immigrants today through network effects.

To perform the analysis, we combine country-level data from Eurostat and the OECD with attitudinal data from the Special Eurobarometer 469 implemented in October 2017 in the European Union. This survey was specifically designed to assess attitudes of Europeans towards people born outside the European Union and, therefore, contains a rich set of items assessing opinions about immigrants and their estimated population size. More specifically, we investigate the role played by immigration in shaping native opinions about the effects of immigrants on crime, welfare systems, culture and the labor market. All interviews were conducted face-to-face to ensure all respondents have the same understanding of the questions allowing comparisons across countries.

This paper provides several findings. First, our analysis of the impact of immigrant population size on pro-immigrant attitudes shows that it is crucial to control for the share of second-generation immigrants in the regression analysis, and for the endogenous settlement patterns of immigrants, to avoid misleading interpretations and derive causal estimates. In fact, the inclusion of the share of second-generation immigrants as an additional regressor generally makes the estimated effects of immigrants on pro-immigrant attitudes significantly negative. Similarly, we show that correcting for endogeneity always lead to more negative estimated effects, indicating that negative views toward non-European immigrants are more pronounced in countries where the share of non-European immigrants is relatively large. Taken together, these findings suggest that basic estimated effects of the share of immigrants on pro-immigrant attitudes are biased upward.

Second, we decompose the average impact of immigrants on attitudes and find that the negative effect of immigrants on pro-immigrant attitudes is driven by security and fiscal concerns. The

countries where the share of immigrants is higher are more likely to express that non-European immigrants worsen crime and are a burden on the welfare system. These results are consistent with Rydgren (2008), Semyonov et al. (2008) and Turper (2016) who show, in the European context, that the fear that immigrants will commit crimes or be a fiscal burden to society are the major sources of opposition to immigration. However, our results indicate that immigrant population size is unrelated to the probability in responding that non-European immigrants enrich national cultural life. This finding suggests that immigrants does not impose a threat to cultural identity. This result is in line with Algan et al. (2017) who show that the anti-immigrant sentiment induced by the 2008 economic crisis was only related to the economic impact induced by immigrants rather than their potential impact on cultural identity. In addition, we find that being exposed to non-European immigrants does not affect native opinions that non-European immigrants take jobs away from natives or help to fill jobs. These latter results on the impact of immigration on economic attitudes are consistent with Preston (2014, p. 569) arguing that "economic hostility to immigration is driven by concern about effects on public finances as much as and probably more than by effects on labour market outcomes."

Third, we show that the impact of the share of second-generation immigrants on pro-immigrant attitudes on their effects on crime and the welfare system is positive, as opposed to the impact of first-generation immigrants. These differential effects on native attitudes toward immigrants are consistent with the fact that immigrants are less integrated than their children – first-generation immigrants indeed have lower earnings, lower employment rates and lower educational attainment than their children (Algan et al., 2010). However, the positive attitudinal impact of second-generation immigrants is only driven by immigrant children of European origin. We find that the population share of second-generation immigrants of non-European origin does not matter in shaping opinions regarding the impact of non-European immigrants on crime. We also show that the skepticism about the impact of immigration on welfare systems is stronger in countries with a relatively high share of second-generation immigrants of non-European origin.

Finally, we study the heterogeneous effects of immigrant shares on native attitudes toward immigrants by exploiting individual political affiliations. We find that the beliefs of natives supporting far-left or left political parties are insensitive to the presence of immigrants. In contrast, the estimated impact of immigrant population size on the beliefs that immigrants worsen crime and welfare systems is the most negative among natives supporting right- or far-right political parties.

The remainder of this paper is as follows. The next section provides a theoretical discussion on the attitudinal impact of first- and second-generation immigrants. Section 3 describes the data and presents some descriptive statistics. Section 4 shows the empirical strategy and discusses the main

identification issues. Section 5 investigates the impact of first- and second-generation immigrants on native attitudes toward non-European immigrants. Section 6 studies the heterogeneous effects of immigrants across individual political preferences. Section 7 concludes.

2 Conceptual framework

2.1 General attitudes toward immigrants

The aim of this paper is to isolate the impact of immigrant population on native attitudes toward immigrants. One empirical challenge is to control for key factors that affect immigrant settlement patterns and shape attitudes toward immigrants. In this regard, socio-economic conditions in a country can confound the relationship between native attitudes and the share of immigrant in the population (see, e.g., Quillian, 1995; O'rourke and Sinnott, 2006; Semyonov et al., 2006; Dustmann and Preston, 2007). Another important potential confounding variable that has been overlooked in the literature is the relative size of second-generation immigrants. Indeed, natives could form their opinions not only using the size of first-generation immigrants, but also on citizens with an immigrant background like second-generation immigrants (Alesina et al., 2022. Forthcoming.). One reason is that natives could confuse first- and second-generation immigrants based on their physical appearance. Natives could also project onto immigrants certain (real or perceived) characteristics from second-generation immigrants. As a result, native citizens could use second-generation immigrants in a given country to infer immigrant characteristics and form their attitudes toward immigrants.

Given the relatively large share of second-generation immigrants in the European Union (7.4 percent) as compared to that of immigrants (10.6 percent), one may therefore expect that:

Hypothesis 1: *Omitting the share of second-generation immigrants as an additional explanatory variable in the regression model biases the estimated impact of immigrants on native attitudes toward immigrants*

Given the positive correlation between the share of first- and second-generation immigrants,[1] the direction of the bias will depend on the correlation between the size of the second-generation immigrants and native attitudes toward immigrants. A positive relationship between the share of immigrant children and pro-attitudes toward immigrants would imply that the estimated effects of

[1] In 2017, the correlation coefficient between the population share of first-generation immigrants and the population share of second-generation immigrants in the European Union is 0.62.

the share of immigrants on such attitudes are biased upward. In contrast, a negative relationship would lead to a negative bias in the estimates.

A large literature shows that negative attitudes and prejudice toward immigrants and minorities rise with their relative size (see, e.g., Kunovich (2004); Quillian (1995); Scheepers et al. (2002); Semyonov et al. (2006, 2008)). The main mechanism that explains anti-immigrant attitudes is the "group-threat theory" or "ethnic competition theory". This theory predicts that a rise in the relative size of immigrants and minorities lead to anti-immigrant attitudes and racial prejudice due to increased competition (whether actual or perceived) for scarce resources such as jobs, housing and political power (Quillian, 1995; Hainmueller and Hopkins, 2014). Alternative mechanisms can explain why increased presence of immigrants in a country is likely to generate negative attitudes toward immigrants. First, the majority ethnic group could fear to lose its economic advantage over the minority ethnic group as the latter increases (Quillian, 1995, p. 592). Immigrants can also be perceived as being a major cause of criminality, detrimental for public finance and/or a threat to the national identity (Gorodzeisky and Semyonov, 2019). To contribute to this literature, we test the following hypothesis:

Hypothesis 2: *Anti-immigrant attitudes are stronger in countries where the immigrant population size is larger*

A rejection of Hypothesis 2 would be in line with the meta-analysis of Pottie-Sherman and Wilkes (2017) that anti-immigrant sentiment is not related to immigrant group size. To reject such hypothesis, one needs to be sure that the estimated results are not biased due to simultaneity issues and/or omitted variable bias. Yet, immigrants could choose to live in the most prosperous regions in which racial intolerance and prejudice could be the lowest, creating a spurious positive relationship between immigration and pro-immigrant attitudes. This positive bias could be reinforced if the share of second-generation immigrants is not included in the regression analysis.

The role played by the relative size of second-generation immigrants in shaping native attitudes toward immigrants can differ from the relative size of first-generation immigrants. Indeed, the degree of economic and social integration of immigrant children is stronger than the one of immigrants. In this regard, some studies show that the gap between second-generation immigrants and natives are narrower on variables such as education, earnings, employment rates and occupational choices (Aleksynska and Algan, 2010; Algan et al., 2010; Constant and Zimmermann, 2003). Moreover, the higher social and economic integration of immigrant children could lead to more interactions and contact opportunities with the majority ethnic group, thereby inducing more favorable attitudes toward immigrants. This mechanism is in line with the contact hypothesis

developed by Allport (1954), which claims that inter-group contact reduces racial prejudice and can thus limit the scope of anti-immigrant attitudes. As a result, we predict that:

Hypothesis 3: *The impact of second-generation immigrants on anti-immigrant attitudes is less negative than the impact of first-generation immigrants*

2.2 Decomposing economic and non-economic concerns in driving opinions about immigration

Exploiting European Social Survey data, Rydgren (2008) and Semyonov et al. (2008) highlight that the main sources of opposition to immigration are based on the view that immigrants generate crime and insecurity problems, and they abuse the welfare state. Turper (2016) finds similar evidence using experimental data for the Netherlands by showing that anti-immigrant sentiment is strongly rooted in considerations about social welfare costs and criminality of potential immigrants. Exploiting British surveys on attitudes, Dustmann and Preston (2007) show that fiscal concerns are more important in determining attitudes to immigration than labor market concerns. They also conclude that cultural prejudice is an important determinant of attitudes toward immigration from countries with ethnically different populations. Further evidence by Card et al. (2012) indicate that cultural concerns are the main driving force behind the skepticism toward immigration in Europe and that labor market concerns only play a secondary role. This study contrasts with the findings by Algan et al. (2017) who show that the anti-immigrant sentiment induced by the 2008 economic crisis was only related to economic concerns, not to cultural ones. Moreover, given the fact that immigrants and natives could be imperfect substitutes or complements in production (Borjas, 2003; Ottaviano and Peri, 2012), immigration could generate positive attitudes toward immigrants regarding their labor market effects. Based on these evidence, we thus conjecture that:

Hypothesis 4: *The impact of immigrants on anti-immigrant attitudes is mostly driven by concerns related to crime and public finance and much less by labor market concerns*

The attitudinal impact of first- and second-generation immigrants could differ since immigrant children are more integrated than their parents. Because second-generation immigrants are much closer to the majority ethnic group in terms of education, occupation, language proficiency, earnings and employment rates, their effects on anti-immigrant attitudes toward crime and public finance could be weaker or even negative. We thus predict that:

***Hypothesis 5**: The impact of the share of second-generation immigrants on anti-immigrant attitudes toward crime and public finance is weaker than the impact of immigrants*

It is however difficult to formulate a clear hypothesis on how attitudes about the impact of immigration on the labor market should react to a rise in the size of second-generation immigrants. On the one hand, native respondents could express more pro-immigrant attitudes in contact with second-generation immigrants who are better integrated than their parents. On the other hand, second-generation immigrants could be viewed as competing for the same jobs than natives, thereby increasing labor market competition. Such prediction is corroborated by Dustmann and Preston (2007, Table 7) who show that labor market concerns are key to understand the main drivers of native opinions to high-educated European immigrants (who are more likely to compete with British workers).

3 Data and descriptive statistics

We perform our empirical analysis by exploiting individual- and country-level variables in the European Union by combining three datasets. Individual-level variables are taken from the Eurobarometer 469 while country-level variables are mostly taken from Eurostat and the OECD.

3.1 Indicators of attitudes toward immigrants

We exploit the Special Eurobarometer 469 (Wave EB-88.2) on the "Integration of immigrants in the European Union" to derive a large set of measures describing individual attitudes towards immigrants and immigration. This survey was carried out interviewing 28,080 residents in the European Union between 21 and 30 October 2017. Individuals were interviewed face-to-face at home and in the official languages of the respective country where the interview took place. This survey contains a comprehensive set of socio-economic and immigration-related variables, as well as measures on political opinions.

From the Eurobarometer 469 survey, we use the country of birth of each respondent as well as the country of birth of her/his parents to exclude from the sample first- and second-generation immigrants. More precisely, we exclude all individuals who are born outside the reporting country and all individuals who have at least one parent born outside their living country. Out of a total of 28,080, we thus exclude 3,730 respondents from the sample. This strategy avoids any composition issues in estimating the impact of the share of first- and second-generation immigrants on pro-immigrant attitudes.

Table 1 presents the questions used to measure native attitudes toward immigrants. The Eurobarometer 469 defines immigrants as individuals born outside the European Union, who have moved away from their country of birth and are at the moment staying legally in the European Union. This definition was repeated several times during the interviewing process to ensure all respondents have the same understanding of how an immigrant is defined in the survey. In this paper, we exploit five questions addressed to respondents regarding their opinions on the potential effects of immigrants on society. In particular, the respondents were asked to indicate whether they agree or disagree with the following statements:

1. Immigrants worsen crime problems.
2. Immigrants are a burden on our welfare system.
3. Immigrants enrich national cultural life.
4. Immigrants take jobs away from workers.
5. Immigrants help to fill jobs for which it is hard to find workers.

For each of these indicators of attitudes, the response categories are "agree", "tend to agree", "tend to disagree", disagree" and "don't know (DK)". Based on this information, we create five dummy variables equal to one when the answer refers to a positive (pro-immigrant) response ("agree" and "tend to agree"), and zero when it refers to a negative (anti-immigrant) response ("tend to disagree" and "disagree"). We also exploit these five dummy variables to create the mean level of attitudes of each respondent by computing the share of positive responses – i.e., share of pro-immigrant attitudes.

Table 3 provides a detailed description of native attitudes about the impact of immigrants across European countries. In the European Union, 39 percent of natives believe that non-European immigrants do not worsen crime or are not a fiscal burden. In contrast, they are more likely to express positive views about the impact of non-European immigrants on cultural and economic concerns. Also, the last column indicates that the share of positive attitudes toward immigrants among natives is 55 percent. As one can seen in Table 3, native attitudes toward immigrants strongly differs across countries. Negative views are marked in Bulgaria, Greece and Hungary, three countries which have been disproportionately exposed to the refugee crisis in 2015. The most positive views are observed in Sweden and Luxembourg. The last row of the table indicates that some surveyed individuals did not respond to at least one of the five attitudinal questions regarding the impact of immigration in their countries. In fact, 5 to 7 percent of native respondents did not provide an answer to one of them.

3.2 Individual-level variables

In the empirical analysis, we include a large set of individual-level variables based on the Eurobarometer 469 to account for individual differences in terms of demographic and socio-economic characteristics. We use one female dummy, two age dummies (15-30 years of age / 31-54 years of age), three education dummies (16-19 years / higher than 20 years / still studying), two employment dummies (unemployed / inactive), and a dummy capturing the size of the city of residence. For these dummy variables, the reference categories are as follows: male, more than 54 years old, lower than 15 years of education, small town and rural areas.

The Eurobarometer also asked a question on political preference: "In political matters people talk of "the left" and "the right". How would you place your views on this scale? with a given scale from 1 to 10, from the "the more at left" to the "more at right"". We group categories 9 and 10 to define a dummy variable indicating a preference for far-right political parties. We also exploit this question to create an additional political dummy equal to one when the respondent does not prefer to answer the question.

In addition, we build a binary variable indicating whether respondents have difficulties in paying bills (or insufficient income). This variable equals one if the answers to this income question are "most of the time" or "from time to time" and zero if the answer if "almost never" or "never". Finally, we construct a life satisfaction dummy variable equal to one if the respondent is "very satisfied" or "fairly satisfied" and zero if the answer is"not very satisfied" or "not at all satisfied".

To have the same sample size across empirical specifications, we systematically excluded from the sample the 931 respondents (out of a total of 24,350 native respondents) who do no report their education and satisfaction levels, the size of their city of residence and whether they have difficulties in paying their bills.

Table 4 shows the average attitudes of native respondents according to their personal characteristics. It shows that older natives, low educated and unemployed individuals, citizens with political preferences for the far-right have are more likely to express negative attitudes toward immigrants. Table 4 also shows that the wealthiest natives (with no difficulties in paying bills) and those with the highest life satisfaction have more negative attitudes toward non-European immigrants.

Unless otherwise specified, we will exclude the 3,687 respondents who do not express their opinions on at least one of the five indicators of attitudes in the remainder of the paper. Although this strategy does not affect our results and conclusions, it allows us to hold constant the sample composition of respondents.

3.3 Country-level variables

3.3.1 First- and second-generation immigrants

Our data on the share of immigrants are taken from Eurostat, while the data on the size of second-generation immigrants are taken from the OECD (OECD, 2018). An immigrant is thus defined as someone who is born outside her/his living country. Second-generation immigrants are defined as individuals having at least one parent born outside the European Union.

The empirical analysis decomposes the first- and second-generation immigrants by country of origin (European v. non-European origin). Because OECD data does not distinguish immigrant children by country of origin, we rely on the decomposition of second-generation immigrants made by Eurostat in 2014.[2] To infer the share of second-generation immigrants of European and non-European origin in 2017, we thus combine the share of immigrant children in 2017 (from OECD data) with the decomposition by country of origin in 2014 (provided by Eurostat).

As shown in Table 2, European countries vary considerably according to the size of first- and second-generation immigrants. The share of immigrants is the largest in in Luxembourg, Cyprus and Austria and the lowest in countries such as Poland, Bulgaria and Romania. The largest shares of second-generation immigrants are in Estonia and Latvia (almost 20 percent), two former Eastern bloc countries. In Western European countries, the relative size of immigrant children is the strongest in Luxembourg (19.7 percent) and France (15.1 percent) and the weakest in Spain (2.1 percent) and Italy (2.5 percent).

3.3.2 Socio-economic variables

We first exploit the Eurobarometer 469 to compute demographic variables for each country: the share of females, the share of individuals aged 15-30 and the share of high educated individuals. From Eurostat, we use Gross Domestic Product (GDP) per capita, the unemployment rate which is the number of unemployed persons as a percentage of the labor force, and the Gini index measuring equivalised disposable income inequality within a country. Table 2 shows that European countries differ in terms of their socio-economic conditions. Luxembourg, Sweden, the Netherlands are the most prosperous countries in Europe based on their GDP per capita or unemployment rate. Bulgaria, Romania, and Croatia have the lowest GDP per capita, while Greece and Italy have the highest unemployment rate. The Gini coefficient shows that income inequality is the largest in

[2]More precisely, Eurostat provides the population share of second-generation immigrants of non-European and European origins. These data come from the 2014 labour force survey ad hoc module on "The labour market situation of migrants and their immediate descendants". They cover all European countries except Bulgaria, Denmark, Ireland and the Netherlands.

Bulgaria and Spain, while it is the lowest in Slovenia and Slovakia.

4 Empirical strategy

4.1 Main empirical approach

4.1.1 The econometric equation

In order to investigate the impact of immigration on native attitudes toward immigrants, we estimate the following baseline equation:

$$Attitudes_{ic} = \gamma_0 + \gamma_1 \cdot imm_c + \gamma_2 \cdot imm_c^{2nd} + \eta \cdot \theta_{ic} + \pi \cdot \theta_c + \epsilon_{ic} \,. \tag{1}$$

The dependent variable measures attitudes of individual i living in country c toward immigrants originating from non-European countries, and the error term is denoted ϵ_{ic}. Our main variable of interest imm_c is the share of immigrants in the population of country c. In our baseline regressions, we do not decompose immigrant population by country of origin (European v. non-European) as native attitudes toward non-European immigrants could be driven by both immigrants groups, either because they use European immigrants to form their opinions toward non-European immigrants, or because they do not make any difference between these two population groups.

Equation 1 includes the share of second-generation immigrants imm_c^{2nd} as the exclusion of this variable can lead to an omitted variable bias in the estimation of γ_1 (see Hypothesis 1). In addition, we include a large set of control variables both defined at the individual-level (θ_{ic}) or at the country-level (θ_c) to account for socio-economic differences across individuals and countries. As individual level variables, we follow the literature by including a set of dummies to control for gender, age, education, employment status, political preferences and town size. Because our dataset does not provide any information on earnings, we use a binary variable indicating whether individuals have difficulties in paying bills or insufficient income. Finally, we follow Quillian (1995) by including the degree in life satisfaction.

As country-level variables, we first include the share of females, share of individuals aged 15-30 and share of high educated individuals (with more than 20 years of education). This inclusion aims at reducing the variation of the outcome variable and helps improve the precision of our estimates. We also include a set of socio-economic controls at the country-level that could affect both the size of the immigrant group and native attitudes. More precisely, we include log GDP per capita (Quillian, 1995; Semyonov et al., 2006), unemployment rate (Coenders and Scheepers, 2008), and

the Gini index (O'rourke and Sinnott, 2006; Herda, 2010).

The standard errors from the estimated parameters of Equation 1 need to be adjusted for clustering at the country-level to adjust for within-country correlation across individuals. In fact, when analyzing the effects of aggregate variables on micro units, we have to account for the possibility of a within-group correlation of random disturbances by clustering standard errors at the group level (Moulton, 1990). In the empirical section, we also weight each regression by using the individual weight provided by the Eurobarometer.

4.1.2 Endogeneity of the immigrant share

The main empirical issue is the endogeneity of our main variable of interest imm_c. Indeed, immigrants are unlikely to be randomly distributed across countries. They may choose the countries with the best socio-economic opportunities, which can also be the more welcoming and tolerant countries. Immigrants may also be attracted to places where attitudes toward immigrants are the most positive. As a result, the endogenous locational choice of immigrants could create a spurious positive relationship between the share of immigrants and pro-immigrant attitudes. To address this issue, we use an instrumental variable (IV) approach. As instrument, we use the share of immigrants in 1990 taken from the world development indicators of the World Bank. This instrumental variable is based on the fact that past settlement of immigrants can predict subsequent flows across locations through network effects (Altonji and Card, 1991; Card, 2001; Gross and Schmitt, 2003) — past immigrants may, for instance, provide new immigrants with information on labor and housing markets. Our main identifying assumption is that the unobserved socio-economic factors that influenced immigrant settlement patterns in 1990 are not persistent 25 years later.

We show the baseline IV first-stage estimates in Table 5. Column 1 shows that the first-stage estimated coefficient on the instrument is one and significant at the 1 percent level, indicating a strong positive correlation between the instrument and the share of immigrants. Moreover, the Kleibergen-Paap F-test of the excluded instrument (denoted Kleibergen-Paap rk Wald F statistic or K.-P. rk Wald F stat. in the econometric tables) is equal to 58.7. This is larger than the lower bound of 10 suggested by the literature on weak instruments, indicating that the IV estimates do not suffer from a weak instrument problem (Stock et al., 2002). Our first-stage statistical tests therefore suggest that the share of immigrants in 1990 is a strong instrument.

4.1.3 Native internal migration

An additional identification issue is related to the potential migration response of natives to the influx of migrants in a particular area (Hewstone, 2015).[3] Indeed, native citizens with negative attitudes toward immigrants could move into areas not targeted by immigrants in order to avoid any disamenity to interact with minorities. Instead, more tolerant people could self-select into places that are more diverse (Dustmann and Preston, 2001; Pettigrew and Tropp, 2006). These internal migration flows could thus lead to positive estimated effects of immigration on native attitudes toward immigrants due to a change in the sample composition of native citizens, rather than to a change in preferences of existing citizens. Because we use cross-country variations (instead of cross-regional variations), native internal migration response should not undermine our ability to identify the effect of immigration on native attitudes toward immigrants.

4.2 Decomposing the share of immigrants by country of origin

We also estimate Equation 1 by decomposing imm_c into the share of non-European immigrants and the share of European immigrants. The main goal is to estimate the impact of non-European immigrants on attitudes toward non-European immigrants assuming that all respondents based their attitudes on non-European immigrants only. As for the share of immigrants, the share of non-European immigrants is endogenous to socio-economic conditions. To account for the endogeneity of this variable of interest, we use two alternative instruments.

First, we exploit the World Bank Data and use the share of non-European immigrants in 1990. Column 2 from Table 5 shows that the first-stage estimated coefficient on the instrument is between 0.67 and significant at the 1 percent level, while the F-test of the excluded instrument is close to 43.2. These IV first-stage results indicate a positive correlation between the instrument and the endogenous variable, suggesting that the share of non-European immigrants in 1990 is an important predictor of the share of the actual share of non-European immigrants in 2017.

Second, we create a novel type of instrument by using the quantity of explosive material in tons carried by allied troops in aircraft divided by the are of the targeted country during World War II. This measure is a proxy for the intensity and potential damages of bombings incurred by targeted countries. Thus, this instrument should be positively correlated with subsequent immigration inflows as the most damaging countries due to aerial bombing should then experienced large immigration flows for reconstruction. After the massive destruction of fixed capital during WWII, Europe indeed experienced an industrial expansion, the development of guest worker programs

[3] See also Borjas (2006) and Edo et al. (2019) who respectively emphasize this issue when analyzing the impact of immigration on the labor market and political consequences.

and large labor migration inflows (Garcés-Mascareñas and Penninx, 2016). Through network externalities, one should expect that these historical waves of migrants triggered subsequent inflows, creating a correlation between the bombing variable and the share of non-European immigrants in 2017. Moreover, the link between immigration after WWII and the subsequent waves of migrants was reinforced after the oil crisis of the 1970s. In fact, this crisis leads some European countries to restrict (or stop) labor migration and allow immigration mostly through family reunification. Labor migration was thus followed by family migration, thereby increasing the size of the immigrant population in some European countries despite closing their guest worker programs (Garcés-Mascareñas and Penninx, 2016). Moreover, the intensity of bombing during WWII should not be correlated with the unobserved component of native attitudes in European countries 70 years later.

The data on aerial bombing are mostly taken from the THOR (Theater History of Operations) dataset providing historic aerial bombings from World War I to the Vietnam War. The dataset offers detailed information by date, conflict, geographic location, targeted area and take off region. These records combined two main sources of US and Royal Air Force data, as well as some Australian, New Zealand and South African air force missions.[4] Because Great Britain was much less exposed to allied air bombings than continental European countries, the available information could largely underestimate the damage caused in that country during WWII. We thus complement the THOR dataset with detailed information from Baldoli et al. (2011) on the German aircraft bombing on the British Islands between 1940 and 1945.[5]

To assess the statistical relationship between the bombing variable and the share of non-European immigrants, we exploit migration data from Determinants of International Migration project (DEMIG). We find a strong correlation between the instrument and the inflow of migrants from non-European countries between 1945 and 1975.[6] More precisely, we find a correlation coefficient of 0.75 between our instrument and the total inflow of migrants across European countries

[4]The data on tons of explosive material used during WWII refer to 19 out of 28 European countries as no incursions took place for the remaining nine European countries which remained neutral during the whole conflict (Estonia, Finland, Ireland, Latvia, Lithuania, Malta, Portugal, Spain and Sweden). Estonia, Latvia and Lithuania jointly declared their neutrality in Riga. The policy of Irish neutrality was adopted by the Irish Parliament. Portugal was officially neutral during World War II. Despite the Spanish intention to take part in the conflict and meetings with German officials in 1940, Spain did not entry into the war. Finally, Sweden and Finland announced during the conflict that they planned to be neutral in any sizable European conflict. Given their neutrality, the allied forces did not conduct any military intervention in these nine European countries.

[5]Baldoli et al. (2011) do not decompose British Islands into Great Britain and Ireland. Since Great Britain is closer to France and Germany, we assume that the bombing attacks by German aircraft only damaged Great Britain.

[6]Due to data limitations, the 1945-1955 period considers 9 European countries; the 1956-1975 period considers an unbalanced panel of 15 countries.

over the 1945-1955 period. The coefficient increases to 0.83 over the 1956-1965 period and jumps to 0.85 over the 1966-1975 period. These strong cross-country correlations are not surprising as the most damaged countries during WWII were encouraged to import foreign workers from developing countries (in most cases from former colonies) in order to carry out tasks of reconstruction.[7]

The validity of our alternative IV strategy is confirmed by the main first-stage IV estimates provided in column 3 of Table 5. The IV first-stage estimated coefficient on the instrument is 0.15 and significant at the 1 percent level. This result shows a strong positive relationship between our instrument and the share of non-European immigrants, confirming that non-European immigrants disproportionately settled in the most damaged countries due to WWII (proxied by aerial bombing). Moreover, the F-test of excluded instrument is 10.5 in the first-stage regressions, suggesting that our IV estimates should identify the true impact of the share of non-European immigrants on native attitudes toward this immigrant population.

5 Main empirical results

5.1 Impact of immigrants on native attitudes

5.1.1 Impact on the average level of attitudes

Table 6 estimates the coefficient γ_1 on the share of immigrants from Equation 1. As dependent variable, we use the average level of native attitudes toward (non-European) immigrants – i.e. the share of positive (pro-immigrant) attitudes expressed by respondents. As a first step, we do not exclude the respondents not expressing their opinions to at least one the five attitudinal questions to maximize the number of observations.[8] While columns 1-4 run the OLS regressions, columns 6

[7]Several historical examples taken from Miller and Castles (2009) confirm this interpretation. Immediately after WWII, the British government brought in 90,000 workers from refugee camps and from Italy through the European and non-European voluntary worker scheme. The scheme was fairly small and operated until 1951 since it was easier to make use of colonial workers afterwards. A further 100,000 Europeans entered Britain on work permits between 1946 and 1951 and some European migration continued subsequently. After 1945, Belgium also recruited foreign workers mostly originating from former colonies in Africa (especially Congolese migrants) and Italy to work in coal mines, the iron and the steel industry. This system operated until 1963. France established the Immigration National Office (ONI) in 1945 to organize the recruitment of workers from Southern Europe and its colonies to cope with their labor needs. For instance, ONI coordinated the employment of up to 150,000 seasonal agricultural workers per year mainly from Spain and North Africa. By 1970, two million foreign workers lived in France. Right after WWII, the Netherlands implemented a guest worker program to recruit foreign workers who mainly came from Turkey and Morocco to face labor shortages. In the 1960s and early 1970s, Luxembourg industries concentrated a high number of non-European immigrant workers. In Germany, the inflows of migrants after WWII came disproportionately from Turkey and Mediterranean countries.

[8]Appendix-Table A.1 reproduces the same regressions as in Table 6 but focuses on the respondents who answer the five attitudinal questions. Our results are unchanged. Appendix-Table A.2 also reproduces Table 6 but excludes

implement the IV regressions using the share of immigrants in 1990 as instrument.

The first column only includes the share of immigrants as regressor. The estimated impact indicates a positive and significant relationship between the share of immigrants and the average level of native attitudes to immigration. The inclusion of the individual-level variables in column 2 does not affect this positive correlation. Column 3 includes the country-level controls to account for the fact that immigrant settlement patterns across European countries can be due to differences in GDP per capita, unemployment rate and/or income inequality. The estimated coefficient in column 3 drops considerably to virtually zero, which is consistent with the fact that rich countries attract more immigrants and express more positive attitudes toward them (Semyonov et al., 2006).

In column 4, we include the share of second-generation immigrants. This inclusion makes the estimated coefficient on the share of immigrants negative and significant at the 5 percent level. This result suggests that the estimates from columns 1-3 are upward biased, and including the share of second-generation immigrants reduces the positive bias. This is in line with Hypothesis 1. The estimated effect from column 4 implies that a 1 percentage point increase in the share of immigrants reduces the share of positive (pro-immigrant) responses by 0.8 percentage point.

Instrumenting the share of immigrants in column 5 makes the negative impact of immigrants on pro-immigrant attitudes even stronger and more significant, implying that a 1 percentage point increase in the share of immigrants reduces the average level of attitudes by 1.4 percentage point. This larger magnitude is consistent with the theoretical sense of the bias as discussed in Section 4.1. The results in columns 4-5 are moreover consistent with Hypotheses 2 and 3. The fact that anti-immigrant attitudes are more pronounced in countries where the share of immigrants is larger is consistent with Hypothesis 2, while the positive association between the share of second-generation immigrant and native attitudes toward immigrants is in line with Hypothesis 3.

Appendix-Tables A.3 and A.4 respectively report the estimated coefficients on the individual- and country-level variables. Table A.3 shows that being a women, high educated and satisfied in life deter the expression of anti-immigrant attitudes. Instead, individuals who are not employed, have a political preference for far-right parties and have low earnings are more likely to hold negative attitudes. These results are consistent with the literature (Ceobanu and Escandell, 2010; Gorodzeisky and Semyonov, 2019; Meuleman et al., 2020; Semyonov et al., 2008): Negative views toward immigrants are more pronounced among individuals who are socially and economically vulnerable and hold conservative political ideologies. Appendix-Table A.4 shows that richer countries

four potential outliers: Bulgaria, Poland, and Romania where the share of immigrants is below 3%, and Luxembourg where the share of immigrants is 45.7%. Hence, Appendix-Table A.2 deals with a sample of European countries where the share of immigrants is between 3.4% and 20.3 %. All our conclusions derived from the baseline Table 6 remain unchanged.

with high level of GDP per capita are more likely to have pro-immigrant attitudes. The results also indicate a weak association between unemployment rate and the mean level of attitudes. Finally, the estimated coefficients on the Gini index is negative and significant at the 1 percent level in all specifications. As already explained by O'rourke and Sinnott (2006), this result is consistent with the notion that more unequal countries welcome relatively more high-skilled immigrants, a group which is less likely to generate anti-immigrant attitudes.

5.1.2 Decomposing native attitudes across non-economic and economic concerns

Tables 7 and 8 estimate the impact of immigrants on attitudes by looking at several attitudinal dimensions. While Table 7 focuses on the impact of immigration on the beliefs that immigrants do not worsen crime and welfare systems, Table 8 examines whether immigrants are perceived to enrich culture or to affect the labor market. Each of these tables report OLS and IV estimation results and use the same control variables as in Table 6. To have a balanced sample of observations across specifications, we keep the native respondents who provide their opinion on the five attitudinal questions on how immigration affects their countries.

The results from Tables 7 indicate that the impact of the share of immigrants on native concerns about crime and the welfare system becomes significantly negative only when the share of second-generation immigrants is included as an additional regressor. This is consistent with our previous results and Hypothesis 1. As expected, columns 3 and 6 show that correcting for endogeneity even produce more negative estimates. The estimated coefficients in columns 3 and 6 imply that a 1 percentage point increase in the immigrant share reduces the probability to express a positive opinion toward the impact of immigrants on crime and welfare systems by 2.5 percent and 3.6 percent, respectively. In contrast, the estimated coefficient on the share of second-generation immigrants is significantly positive. This result is consistent with Hypothesis 3, indicating that countries with a relatively large share of second-generation immigrants are more likely to express positive opinions on how immigrants affect crime and public finance. In addition, the asymmetric impact between immigrants and their children on pro-immigrant attitudes toward crime and public finance is consistent with Hypothesis 5.

Table 8 focuses on the beliefs of natives toward the impact of immigration on culture (columns 1-3), and whether immigrants take jobs away from workers (columns 4-6) or help to fill jobs (columns 7-9). In columns 1-3, the OLS and IV estimated results show that cultural concerns are not related to immigrant group size. Similarly, the belief that immigrants could depress employment is independent from immigration. Columns 7-9 also show a weak negative relationship between the share of immigrants and public opinions on whether immigrants help to fill jobs. As we will

show later, this negative impact is only driven by the share of European immigrants as they are less likely to work in low paid occupations. In Table 8, the estimated coefficients on the share of second-generation immigrants are always insignificant.

Taken together, Tables 7 and 8 show that countries with higher share of immigrants are more likely to believe that immigrants foster crime or are a threat to social protection systems. However, we find no relationship between immigrant population size and the sentiment that immigrants can be a threat for cultural identity or take jobs away from workers. These findings are consistent with Hypothesis 4.

5.2 Decomposing first- and second-generation immigrants by origin

Tables 9 and 10 reproduces the two previous tables by using the share of non-European immigrants as our main variable of interest and controlling for the share of European immigrants. All our previous conclusions hold. First, the inclusion of the share of second-generation immigrants in Table 9 turns the estimated coefficients on the share of non-European immigrants to be negative. Second, correcting for the endogeneity of such regressor makes the estimated coefficient even more negative and significant. In sum, Table 9 shows that in countries where the share of non-European immigrants is stronger, the probability to believe that non-European immigrants foster crime and public deficits is higher.

In line with our previous findings, the IV estimates from Table 10 shows that the relative size of first- and second-generation immigrants does not drive opinions on the impact of immigration on culture and employment. Columns 7-9 from Table 10 show that the weak relationship observed in Table 8 between the share of immigrants and the probability to believe that immigrants fill low paid jobs masks a strong heterogeneity according to whether immigrants originate from European or non-European countries. More precisely, the belief that immigrants fill jobs for which it is hard to find workers is negatively related with the share of European immigrants and unrelated to the share of non-European immigrants. This asymmetric result is consistent with the fact that European immigrant workers, originating from richer countries than non-European immigrants, are less willing to accept low wages and hard working conditions than non-European immigrants (Edo, 2015).

To test the IV results from Tables 9 and 10, Table 11 implements an alternative IV strategy by using quantity of explosive material by the are of the targeted country during WWII as instrument for the share of non-European immigrants (see Section 4.2). Our previous results and conclusions are confirmed. The impact of the share of non-European immigrants on native attitudes foster the expressions of anti-immigrant attitudes on the effects of immigrants on crime and the welfare

system. The estimated magnitude in columns 1-2 is even larger than in Table 9, suggesting that the alternative instrument provides a larger source of exogenous variation leading to estimates which are less biased upward.

To compare the attitudinal responses induced by non-European immigrants and second-generation immigrants of non-European origin, Table 12 decomposes immigrant children by country of origin (European v. non-European origin). As instrument for the share of non-European immigrants, Table 12 uses our baseline instrument based on network effects – i.e., the share of non-European immigrants in 1990. In column 2, the estimated effects of the share of second-generation immigrants of non-European origin and European origin are positive and of identical size (although the coefficient on the share of second-generation immigrants of non-European origin is only significant at the 10 percent level). However, the results in columns 3-4 show that the perceptions of natives that immigrants are a fiscal burden is equally driven by the sizes of first- and second-generation immigrants from non-European countries, whereas the estimated effect of the share of second-generation immigrants of European origin is positive and strongly significant. The fact that a rise in the number of children from European immigrants generates positive attitudes on the impact of immigrants on crime and welfare systems is in line with the view that second-generation immigrants of European origin are more integrated than those of non-European origin. One reason is due to the fact that immigrant children originating from non-European countries are more likely to be discriminated against than those originating from European countries (Adida et al., 2010; Edo et al., 2017).

In columns 5-8 of Table 12, the estimated coefficients are insignificant. This result is consistent with our previous finding that native opinions regarding the impact of immigrants on culture and employment are unrelated to immigrant population size. The two last columns of Table 12 show that countries with a relatively high share of second-generation immigrants of non-European origin are less likely to express that non-European immigrants help to fill jobs. As for European immigrants, we interpret this result as consistent with the view that second-generation immigrants of non-European origin are less inclined to accept lower wages and harder working conditions than their parents.

6 Immigration, native attitudes and political preferences

This section goes beyond the average impact of immigrants on pro-immigrant attitudes by using variations in political preferences across respondents. We derive the political preference of each respondent from the political question D1 of the Eurobarometer. It regroups the political preference

of respondents on a scale from 1 to 10, with 1 for far-left preferences and 10 for far-right preferences. From this question, we create five dummy variables: preference for far-left parties (group 1-2), left parties (group 3-4), center parties (group 5-6), right (group 7-8), far-right parties (group 9-10). Because 16 percent of respondents do not answer that political question, we create an additional dummy variable indicating that respondents do not express their political affiliation.[9]

In order to investigate the differential impact of the share of immigrants on native attitudes across political preferences, we estimate the following equation:

$$\begin{aligned} Attitudes_{ic} &= \beta_0 + \beta_1 \cdot imm_c + \sum_{p=1}^{6} \alpha_p \cdot (imm_c \times I\,(political\,preference = p)) \\ &\quad + \beta_2 \cdot imm_c^{2nd} + \mu \cdot \theta_{ic} + \rho \cdot \theta_c + \xi_{ic}\,. \end{aligned} \tag{2}$$

This equation pertains to Equation 1. The dependent variable measures attitudes of individual i living in country c toward immigrants originating from non-European countries, and the error term is denoted ξ_{ic}. The immigration variable is imm_c, the share of second-generation immigrants is imm_c^{2nd}, while the two vectors $\theta_{ic}$and $\theta_c$respectively controls for a set of individual- and country-level socio-economic characteristics.

Equation 2 differs from our baseline Equation 1 in two ways. First, Equation 2 includes the dummy variables indicating the political affiliations of respondents, as well as the "no response" dummy. In the regressions, we drop the political dummy indicating "far-left preferences" ($p = 1$) and, therefore, use the "far-left" category as the reference group. Second, we interact each political dummy with imm_c. Since the far-left political category is the omitted category, β_1 provides the average impact of imm_c on the attitudes of far-left respondents. By construction, the estimates of the coefficients $\alpha_{p\in(2,6)}$ reveal the attitudinal impact of imm_c for each political group relative to the omitted dummy "far-left preferences".[10]

Panel A of Table 13 reports the estimates of β_1 and $\alpha_{p\in(2,6)}$ from Equation 2. Panel B uses these estimation results to provide the estimated impact of imm_c for each sub-group of respondents sharing the same political preference. As dependent variables, we use our six measures of attitudes: mean level of attitudes (column 1), attitudes toward non-European immigrants about their impact on crime (column 2), welfare systems (column 3), culture (column 4) and the labor market (columns

[9] 8 percent of respondents have far-left preferences, 20 percent of respondents have left preferences, 34 percent of respondents have center preferences, 15 percent of respondents have right preferences, 5 percent have far-right preferences.

[10] To account for the endogeneity of the immigration variable, we interact our baseline instrument with the political dummies. The IV estimates from Equation 2 thus exploit six instruments.

5-6).

The results from Panels A and B indicate that the average impact of the share of immigrants on native attitudes is strongly heterogeneous across respondents' political preferences. From Panel A, the estimated coefficients on the share of immigrants indicate that the attitudes of far-left respondents are insensitive to immigrant population size. While the estimated coefficients on the interaction terms are insignificant for the left political group, they become increasingly negative and significant as political preferences move to the right. Moreover, in both panels, the estimated coefficients are always the most negative and significant within the far-right political group.[11] This finding is not surprising. In fact, extreme right-wing political parties are characterized by anti-immigrant platforms, and negative views toward immigrants in Europe are more pronounced among individuals who support far-right parties (Bohman, 2011; Semyonov et al., 2006). More precisely, the estimates from Panel B in column 1 indicate that a 1 percentage point increase in the share of immigrants reduces the share of pro-immigrant attitudes by 1.5 percentage points among native citizens who support center political parties, 1.9 percentage points for right respondents, and 3.7 percentage for far-right respondents.[12]

Columns 2-3 indicate that the impact of immigrants on anti-immigrant attitudes regarding their impact on crime and welfare systems is negative among native citizens supporting center, right or far-right parties. In contrast, this impact is only negative and significant among far-right respondents in columns 4-5 (opinions on culture and the labor market). Contrary to individuals who support center and right parties, the attitudinal responses to immigration among far-right respondents are not only related to its impact on crime and public finance. Immigration also makes them increasingly worried about cultural issues and the number of available jobs.

Finally, the estimated impact of immigrants on attitudes within the group of respondents who decided to not report their political affiliation is negative and greater in magnitude than left or far-left voters. This result suggests that these respondents tend to behave like respondent affiliated with right or far-right parties. This interpretation would be consistent with Funk (2016) who explains that citizens with politically incorrect views (such as far-right opinions) may choose not to provide their opinions to such political questions.

[11] Appendix-Table A.5 provides similar patterns when using the share of non-European immigrants as our main variable of interest.

[12] To better visualize the heterogeneous effects of immigration on the mean level of attitudes across respondents' political preferences, Appendix-Figure 1 graphs the estimation results from Panel B of Table 13 and Appendix-Table A.5.

7 Conclusion

This paper analyzed how native attitudes toward immigrants are affected by immigrant population size using cross-country evidence in Europe. An important contribution of this paper is to account for second-generation immigrants in explaining cross-country variations in attitudes toward immigrants. Because immigrant children can be considered as foreign-born by the native population or used to form their opinions about their parents, we find that excluding the size of second-generation immigrants in regressions biases the estimated impact of immigrants on native attitudes toward immigration. This important result indicates that native attitudes and beliefs toward immigrants and immigration are also shaped by the size of immigrant children.

On average, we find that countries with a relatively high share of immigrants are more likely to express negative concerns toward non-European immigrants. However, we find that this negative relationship is only driven by insecurity and fiscal concerns. Moreover, we find that being exposed to immigrants does not affect native opinions on the role played by non-European immigrants in shaping national cultural life and the labor market.

In addition, we show that the impact of the share of second-generation immigrants on pro-immigrant attitudes is either positive or less negative than the impact induced by first-generation immigrants. These differential effects between first- and second-generation immigrants are consistent with the fact that immigrant children are more economically and socially more integrated than their parents.

Finally, we go beyond the average effect of immigration on attitudes toward immigrants by using variations in political preferences across respondents. We find that the average attitudinal responses to immigration are strongly heterogeneous. While the opinions of respondents affiliated with far-left or left parties are insensitive to immigrant population size, we find that respondents affiliated with right or far-right parties living in countries with higher shares of immigrants are more likely to believe that immigrants are a fiscal burden and worsen crime.

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Tables

Table 1: Questions used for the outcome variables from the Special Eurobarometer 469

Potential effects of immigrants and immigration on the society

There are different views regarding the impact of immigrants on society in (OUR COUNTRY).

To what extent do you agree or disagree with each of the following statements? Overall, immigrants

1. worsen the crime problems in our country
2. are a burden on our welfare system
3. enrich national cultural life (art, music, food etc.)
4. take jobs away from workers
5. help to fill jobs for which it is hard to find workers

Table 2: Country-level variables

	Share of first generation imm.	Share of second generation imm.	GDP per capita	Unemployment rate	Gini Coefficient
	(1)	(2)	(3)	(4)	(5)
Austria	18.80	12.31	53,894.55	5.50	27.90
Belgium	16.53	11.37	49,525.73	7.10	26.00
Bulgaria	2.05	0.24	20,948.24	6.20	40.20
Croatia	12.99	10.31	26,261.74	11.00	29.90
Cyprus	20.33	3.58	36,155.68	11.10	30.80
Czech Republic	4.40	4.58	38,037.21	2.90	24.50
Denmark	11.62	7.21	54,337.41	5.70	27.60
Estonia	14.63	19.73	33,493.19	5.80	31.60
Finland	6.34	4.09	46,343.69	8.60	25.30
France	12.18	15.07	44,125.39	9.40	29.30
Germany	14.67	7.73	52,574.26	3.80	29.10
Great Britain	14.12	9.93	44,909.09	4.30	33.10
Greece	11.62	1.98	28,579.71	21.50	33.40
Hungary	5.24	1.50	28,798.64	4.20	28.10
Ireland	16.65	5.37	77,679.03	6.70	30.60
Italy	9.99	2.53	40,981.30	11.20	32.70
Latvia	12.89	19.81	28,378.07	8.70	34.50
Lithuania	4.47	5.29	33,324.96	7.10	37.60
Luxembourg	45.71	19.70	107,525.20	5.60	30.90
Malta	15.12	1.95	41,474.25	4.00	28.20
Netherlands	12.51	9.42	54,504.01	4.90	27.10
Poland	1.72	2.09	29,582.64	4.90	29.20
Portugal	8.50	3.88	32,554.28	9.00	33.50
Romania	2.15	0.09	26,589.93	4.90	33.10
Slovakia	3.43	1.90	32,376.22	8.10	23.20
Slovenia	11.88	10.64	36,163.36	6.60	23.70
Spain	12.95	2.09	39,087.06	17.20	34.10
Sweden	17.84	10.14	51,404.77	6.70	28.00
European Union	10.60	7.40	41,715.19	7.96	30.75

Sources. Eurostat and OECD. **Sample.** EU28 countries.

Table 3: Attitudes toward immigrants across European countries at the country-level

	Non-European immigrants...					
	do not worsen crime	are not a fiscal burden	enrich culture	do not take jobs	Help to fill jobs	Mean level of attitudes
	(1)	(2)	(3)	(4)	(5)	(6)
Austria	0.26	0.26	0.66	0.53	0.69	0.48
Belgium	0.41	0.36	0.64	0.60	0.75	0.55
Bulgaria	0.24	0.19	0.32	0.42	0.33	0.31
Croatia	0.46	0.36	0.52	0.48	0.55	0.48
Cyprus	0.25	0.37	0.33	0.32	0.83	0.43
Czech Republic	0.24	0.30	0.29	0.44	0.67	0.39
Denmark	0.24	0.40	0.80	0.77	0.86	0.61
Estonia	0.39	0.34	0.57	0.72	0.66	0.54
Finland	0.45	0.51	0.79	0.83	0.84	0.68
France	0.56	0.51	0.65	0.68	0.76	0.63
Germany	0.33	0.26	0.69	0.78	0.75	0.56
Great Britain	0.54	0.53	0.80	0.61	0.87	0.67
Greece	0.26	0.21	0.37	0.25	0.60	0.34
Hungary	0.30	0.23	0.32	0.49	0.38	0.35
Ireland	0.57	0.43	0.77	0.57	0.84	0.64
Italy	0.21	0.32	0.46	0.39	0.72	0.42
Latvia	0.46	0.42	0.46	0.62	0.60	0.51
Lithuania	0.58	0.42	0.62	0.61	0.73	0.59
Luxembourg	0.60	0.62	0.80	0.80	0.82	0.73
Malta	0.17	0.21	0.30	0.34	0.87	0.39
Netherlands	0.38	0.43	0.84	0.84	0.84	0.67
Poland	0.40	0.35	0.58	0.46	0.80	0.52
Portugal	0.46	0.39	0.80	0.48	0.85	0.60
Romania	0.44	0.41	0.50	0.52	0.51	0.48
Slovakia	0.33	0.25	0.44	0.37	0.55	0.39
Slovenia	0.39	0.31	0.49	0.49	0.81	0.50
Spain	0.47	0.54	0.69	0.49	0.80	0.60
Sweden	0.37	0.61	0.94	0.88	0.92	0.75
European Union	0.39	0.39	0.63	0.58	0.74	0.55
Do not answer	0.07	0.06	0.05	0.04	0.04	-

Sources. Eurobarometer 2017. **Sample.** EU28 countries. **Notes.** The table provides the share of respondents who disagrees with the statement that immigrants worsen crime problems in column 1, or disagrees with the statement that immigrants are a burden on the welfare system in column 2, or agrees with the statement that immigrants enrich national cultural life in column 3, or disagrees with the statement that immigrants take jobs away from worker in column 4, or agrees with the statement that immigrants help to fill jobs for which it's hard to find workers in column 5. In column 6, we report the share of positive attitudes toward immigrants.

Table 4: Attitudes toward immigrants in the European Union at the individual-level

	Non-European immigrants...					
	do not worsen crime	are not a fiscal burden	enrich culture	do not take jobs	Help to fill jobs	Mean level of attitudes
	(1)	(2)	(3)	(4)	(5)	(6)
Female	0.41	0.39	0.63	0.56	0.74	0.55
Male	0.38	0.40	0.62	0.60	0.75	0.55
15-30 years of age	0.46	0.47	0.66	0.60	0.74	0.59
31-54 years of age	0.41	0.41	0.65	0.58	0.75	0.56
55+ years of age	0.34	0.34	0.58	0.56	0.74	0.52
Low educated	0.29	0.29	0.52	0.43	0.70	0.45
Medium educated	0.34	0.34	0.57	0.52	0.71	0.50
High educated	0.49	0.49	0.74	0.72	0.81	0.65
still studying	0.51	0.54	0.71	0.64	0.76	0.63
Employed	0.42	0.41	0.66	0.61	0.76	0.57
Unemployed	0.35	0.36	0.58	0.41	0.67	0.48
Inactive	0.37	0.37	0.59	0.56	0.74	0.53
Far-left	0.53	0.54	0.72	0.65	0.79	0.65
Left	0.51	0.53	0.75	0.70	0.80	0.66
Right	0.30	0.31	0.54	0.54	0.71	0.48
Far-right	0.25	0.25	0.40	0.42	0.66	0.40
No political answer	0.33	0.34	0.52	0.44	0.69	0.47
Small town and rural areas	0.39	0.38	0.63	0.59	0.75	0.55
Large town	0.42	0.41	0.63	0.57	0.75	0.56
Difficulties paying bills	0.33	0.33	0.54	0.44	0.68	0.47
No difficulties paying bills	0.43	0.43	0.67	0.65	0.78	0.59
Satisfied in life	0.42	0.42	0.66	0.61	0.77	0.58
Not satisfied in life	0.26	0.26	0.43	0.38	0.60	0.39
European Union	0.39	0.39	0.63	0.58	0.74	0.55
Do not answer	0.07	0.06	0.05	0.04	0.04	-

Sources. Eurobarometer 2017. **Sample.** EU28 countries. **Notes.** The table provides the share of respondents who disagrees with the statement that immigrants worsen crime problems in column 1, or disagrees with the statement that immigrants are a burden on the welfare system in column 2, or agrees with the statement that immigrants enrich national cultural life in column 3, or disagrees with the statement that immigrants take jobs away from worker in column 4, or agrees with the statement that immigrants help to fill jobs for which it's hard to find workers in column 5. In column 6, we report the share of positive attitudes toward immigrants.

Table 5: IV first-stage estimates

	Dependent variable		
	Share of immigrants	Share of non-European immigrants	
	(1)	(2)	(3)
1. Share of immigrants in 1990	1.00***	-	-
	(0.13)		
2. Share of non-European immigrants in 1990	-	0.67***	-
		(0.10)	
3. Aerial bombing during WWII	-	-	0.15***
			(0.05)
Individual controls	X	X	X
Country-level controls	X	X	X
Kleibergen-Paap rk Wald F statistic	58.66	43.20	10.45
Cluster	28	28	28
Observations	19,732	19,732	19,732

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** The dependent variable is the share of immigrants in column 1, and the share of non-European immigrants in columns 2-3. As main regressor of interest, specification 1 uses the share of immigrants in 1990, specification 2 uses the share of non-European immigrants in 1990, and specification 3 uses aerial bombing during WWII. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6: Average impact of immigrants on attitudes

	OLS estimate				IV estimate
	(1)	(2)	(3)	(4)	(5)
1st generation immigrants	1.10***	0.79***	-0.02	-0.79**	-1.44**
	(0.37)	(0.27)	(0.35)	(0.38)	(0.73)
2nd generation immigrants	-	-	-	0.91***	1.18***
				(0.25)	(0.34)
Individual controls	-	X	X	X	X
Country-level controls	-	-	X	X	X
K.-P. rk Wald F stat.	-	-	-	-	61.44
Cluster	28	28	28	28	28
Observations	23,236	23,236	23,236	23,236	23,236

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** The dependent variable is an index capturing the average level of attitudes toward immigrants. In the IV regression, we instrument the share of immigrants by the share of immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 7: Impact of immigrants on attitudes toward crime and public finance

	Immigrants ...					
	do not worsen crime			are not a fiscal burden		
	OLS Estimate		IV	OLS Estimate		IV
	(1)	(2)	(3)	(4)	(5)	(6)
1st generation imm.	0.03	-1.59***	-2.48**	-0.36	-1.95**	-3.60***
	(0.48)	(0.53)	(0.99)	(0.52)	(0.74)	(1.28)
2nd generation imm.	-	1.98***	2.35***	-	1.94***	2.63***
		(0.38)	(0.43)		(0.50)	(0.71)
Individual controls	X	X	X	X	X	X
Country-level controls	X	X	X	X	X	X
K.-P. rk Wald F stat.	-	-	58.66	-	-	58.66
Cluster	28	28	28	28	28	28
Observations	19,732	19,732	19,732	19,732	19,732	19,732

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** In columns 1-3, the dependent variable is a dummy variable indicating that the respondent disagrees with the statement that immigrants worsen crime problems. In columns 4-6, the dependent variable is a dummy variable indicating that the respondent disagrees with the statement that immigrants are a burden on the welfare system. In IV regressions, we instrument the share of immigrants by the share of immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 8: Impact of immigrants on attitudes toward culture and economic opportunities

	Immigrants ...								
	enrich culture			do not take jobs			help to fill jobs		
	OLS estimate		IV	OLS estimate		IV	OLS estimate		IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1st generation imm.	0.34	0.35	-0.23	0.91	0.41	0.52	-0.85	-0.83	-1.19*
	(0.48)	(0.63)	(0.82)	(0.66)	(0.73)	(0.92)	(0.52)	(0.63)	(0.69)
2nd generation imm.	-	-0.02	0.23	-	0.61	0.57	-	-0.03	0.12
		(0.40)	(0.44)		(0.48)	(0.59)		(0.51)	(0.57)
Individual controls	X	X	X	X	X	X	X	X	X
Country-level controls	X	X	X	X	X	X	X	X	X
K.-P. rk Wald F stat.	-	-	58.66	-	-	58.66	-	-	58.66
Cluster	28	28	28	28	28	28	28	28	28
Observations	19,732	19,732	19,732	19,732	19,732	19,732	19,732	19,732	19,732

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** In columns 1-3, the dependent variable is a dummy variable indicating that the respondent agrees with the statement that immigrants enrich national cultural life. In columns 4-6, the dependent variable is a dummy variable indicating that the respondent disagrees with the statement that immigrants take jobs away from worker. In columns 7-9, the dependent variable is a dummy variable indicating that the respondent agrees with the statement that immigrants help to fill jobs for which it's hard to find workers. In IV regressions, we instrument the share of immigrants by the share of immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 9: Impact of non-European immigrants on attitudes toward crime and public finance

	Immigrants ...					
	do not worsen crime			are not a fiscal burden		
	OLS estimate		IV	OLS estimate		IV
	(1)	(2)	(3)	(4)	(5)	(6)
Non-European imm.	0.76	-2.43**	-3.56***	0.60	-2.16	-3.97**
	(0.69)	(0.90)	(1.23)	(0.62)	(1.34)	(1.72)
European immigrants	-1.44	-0.77	-0.54	-2.32**	-1.75*	-1.38
	(0.98)	(0.76)	(0.80)	(0.96)	(0.97)	(1.13)
2nd generation imm.	-	2.33***	2.81***	-	2.02**	2.79***
		(0.53)	(0.57)		(0.79)	(0.92)
Individual controls	X	X	X	X	X	X
Country-level controls	X	X	X	X	X	X
K.-P. rk Wald F stat.	-	-	43.20	-	-	43.20
Cluster	28	28	28	28	28	28
Observations	19,732	19,732	19,732	19,732	19,732	19,732

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** In columns 1-3, the dependent variable is a dummy variable indicating that the respondent disagrees with the statement that immigrants worsen crime problems. In columns 4-6, the dependent variable is a dummy variable indicating that the respondent disagrees with the statement that immigrants are a burden on the welfare system. In IV regressions, we instrument the share of non-European immigrants by the share of non-European immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 10: Impact of non-European immigrants on attitudes toward culture and economic opportunities

	Immigrants ...								
	enrich culture			do not take jobs			help to fill jobs		
	OLS estimate		IV	OLS estimate		IV	OLS estimate		IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Non-European imm.	1.05**	2.06*	1.09	1.92***	2.01**	1.33	-0.10	1.01	0.35
	(0.48)	(1.01)	(1.08)	(0.60)	(0.90)	(1.08)	(0.61)	(0.95)	(0.98)
European immigrants	-1.10	-1.31*	-1.11	-1.14	-1.16	-1.02	-2.39***	-2.62***	-2.49***
	(0.71)	(0.71)	(0.72)	(0.94)	(0.94)	(0.95)	(0.84)	(0.83)	(0.86)
2nd generation imm.	-	-0.74	-0.33	-	-0.07	0.22	-	-0.81	-0.53
		(0.56)	(0.51)		(0.63)	(0.65)		(0.59)	(0.59)
Individual controls	X	X	X	X	X	X	X	X	X
Country-level controls	X	X	X	X	X	X	X	X	X
K.-P. rk Wald F stat.	-	-	43.20	-	-	43.20	-	-	43.20
Cluster	28	28	28	28	28	28	28	28	28
Observations	19,732	19,732	19,732	19,732	19,732	19,732	19,732	19,732	19,732

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** In columns 1-3, the dependent variable is a dummy variable indicating that the respondent agrees with the statement that immigrants enrich national cultural life. In columns 4-6, the dependent variable is a dummy variable indicating that the respondent disagrees with the statement that immigrants take jobs away from worker. In columns 7-9, the dependent variable is a dummy variable indicating that the respondent agrees with the statement that immigrants help to fill jobs for which it's hard to find workers. In IV regressions, we instrument the share of non-European immigrants by the share of non-European immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 11: Impact of non-European immigrants on attitudes using an alternative IV strategy

	Immigrants ...				
	do not worsen crime	are not a fiscal burden	enrich culture	do not take jobs	help to fill jobs
	(1)	(2)	(3)	(4)	(5)
Non-European imm.	-5.63**	-4.45**	-0.10	-0.31	1.89
	(2.26)	(2.22)	(2.33)	(2.85)	(2.49)
European immigrants	-0.12	-1.28	-0.87	-0.68	-2.80***
	(1.05)	(1.12)	(0.87)	(1.26)	(0.87)
2nd generation imm.	3.69***	2.99***	0.18	0.92	-1.19
	(1.00)	(1.04)	(0.99)	(1.32)	(1.17)
Individual controls	X	X	X	X	X
Country-level controls	X	X	X	X	X
K.-P. rk Wald F stat.	10.45	10.45	10.45	10.45	10.45
Cluster	28	28	28	28	28
Observations	19,732	19,732	19,732	19,732	19,732

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** The dependent variable is a dummy variable indicating that the respondent disagrees with the statement that immigrants worsen crime problems in column 1, or disagrees with the statement that immigrants are a burden on the welfare system in column 2, or agrees with the statement that immigrants enrich national cultural life in column 3, or disagrees with the statement that immigrants take jobs away from worker in column 4, or agrees with the statement that immigrants help to fill jobs for which it's hard to find workers in column 5. In IV regressions, we instrument the share of non-European immigrants by aerial bombing during WWII. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 12: Decomposing second-generation immigrants by origin group

	Immigrants ...									
	do not worsen crime		are not a fiscal burden		enrich culture		do not take jobs		help to fill jobs	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Non-European imm.	-2.32*	-5.06***	-1.61**	-2.66**	2.27	0.34	1.75	-0.63	1.55	2.24
	(1.15)	(1.68)	(0.72)	(1.31)	(1.86)	(1.97)	(1.62)	(1.80)	(1.65)	(1.85)
2nd generation imm. of non-EU origin	0.48	3.56*	-4.50***	-3.31**	-3.07	-0.89	1.43	4.11	-5.19	-5.96*
	(1.89)	(2.17)	(1.41)	(1.36)	(3.94)	(3.86)	(2.76)	(2.88)	(3.15)	(3.10)
European immigrants	-0.56	0.72	-1.33*	-0.84	-1.17	-0.26	-1.26	-0.14	-2.77**	-3.09**
	(0.81)	(1.11)	(0.69)	(0.96)	(1.17)	(1.26)	(1.39)	(1.57)	(1.00)	(1.33)
2nd generation imm. of EU origin	3.18***	3.57***	4.76***	4.91***	0.10	0.38	-0.92	-0.58	0.61	0.51
	(0.65)	(0.67)	(0.65)	(0.67)	(0.66)	(0.70)	(0.95)	(0.96)	(0.64)	(0.68)
Individual controls	X	X	X	X	X	X	X	X	X	X
Country-level controls	X	X	X	X	X	X	X	X	X	X
K.-P. rk Wald F stat.	-	25.53	-	25.53	-	25.53	-	25.53	-	25.53
Cluster	24	24	24	24	24	24	24	24	24	24
Observations	16,888	16,888	16,888	16,888	16,888	16,888	16,888	16,888	16,888	16,888

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries except Bulgaria, Denmark, Ireland and Netherlands. **Notes.** The dependent variable is a dummy variable indicating that the respondent disagrees with the statement that immigrants worsen crime problems in columns 1-2, or disagrees with the statement that immigrants are a burden on the welfare system in columns 3-4, or agrees with the statement that immigrants enrich national cultural life in columns 5-6, or disagrees with the statement that immigrants take jobs away from worker in columns 7-8, or agrees with the statement that immigrants help to fill jobs for which it's hard to find workers in columns 9-10. In IV regressions, we instrument the share of non-European immigrants by the share of non-European immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 13: Heterogeneous impact of immigrants on attitudes across political preferences

	Immigrants ...					
	Mean level of attitudes	do not worsen crime	are not a fiscal burden	enrich culture	do not take jobs	help to fill jobs
	(1)	(2)	(3)	(4)	(5)	(6)
	A. Impact relative to the far-left political group					
Share of immigrants	-0.37	-0.34	-1.91	0.38	0.80	-0.76
	(0.96)	(1.39)	(1.59)	(1.10)	(0.85)	(0.93)
— × Far-left	-	-	-	-	-	-
— × Left	0.22	-0.53	0.36	0.80	0.24	0.25
	(0.62)	(0.51)	(0.50)	(1.02)	(0.88)	(0.70)
— × Center	-1.10**	-2.30**	-1.98***	-0.40	-0.15	-0.64
	(0.52)	(0.98)	(0.71)	(0.64)	(0.67)	(0.62)
— × Right	-1.56**	-3.05**	-2.46**	-1.32	-0.70	-0.26
	(0.72)	(1.27)	(1.08)	(0.87)	(0.61)	(0.53)
— × Far-right	-3.37**	-4.49**	-3.53**	-3.26**	-2.67*	-2.90**
	(1.48)	(1.88)	(1.77)	(1.43)	(1.54)	(1.20)
— × No political answer	-0.86	-1.89*	-1.69*	-1.13*	0.39	0.00
	(0.71)	(1.07)	(0.86)	(0.69)	(0.82)	(0.81)
	B. Impact of immigrants for each political group					
Far-left	-0.37	-0.34	-1.91	0.38	0.80	-0.76
	(0.96)	(1.39)	(1.59)	(1.10)	(0.85)	(0.93)
Left	-0.14	-0.86	-1.55	1.17	1.04	-0.51
	(0.80)	(1.12)	(1.50)	(1.01)	(0.99)	(0.86)
Center	-1.46**	-2.64***	-3.89***	-0.03	0.65	-1.40*
	(0.66)	(0.91)	(1.24)	(0.85)	(0.90)	(0.78)
Right	-1.92***	-3.39***	-4.37***	-0.94	0.11	-1.02
	(0.67)	(0.95)	(1.24)	(0.82)	(0.83)	(0.78)
Far-right	-3.74***	-4.82***	-5.44***	-2.89**	-1.86	-3.66***
	(1.08)	(1.19)	(1.40)	(1.17)	(1.64)	(1.01)
No political answer	-1.23	-2.22**	-3.60***	-0.76	1.19	-0.76
	(0.75)	(0.95)	(1.33)	(0.97)	(1.11)	(0.69)
Observations	19,732	19,732	19,732	19,732	19,732	19,732

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** The dependent variable in column 1 is an index capturing the average level of attitudes toward immigrants. The dependent variable is a dummy variable indicating that the respondent disagrees with the statement that immigrants worsen crime problems in column 2, or disagrees with the statement that immigrants are a burden on the welfare system in column 3, or agrees with the statement that immigrants enrich national cultural life in column 4, or disagrees with the statement that immigrants take jobs away from worker in column 5, or agrees with the statement that immigrants help to fill jobs for which it's hard to find workers in column 6. Panel A reports the difference in percentage points between the attitudinal impact of immigrants within each political group and the reference far-left category. Panel B reports the attitudinal impact of immigrants for each political group. In all regressions, our instruments exploit the share of immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for far-left parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of second-generation immigrants, percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.1: Average impact of immigrants on attitudes conditional of responding the five questions

	OLS estimate				IV estimate
	(1)	(2)	(3)	(4)	(5)
1st generation immigrants	1.20***	0.86***	0.02	-0.72*	-1.40**
	(0.35)	(0.26)	(0.35)	(0.37)	(0.69)
2nd generation immigrants	-	-	-	0.90***	1.18***
				(0.24)	(0.33)
Individual controls	-	X	X	X	X
Country-level controls	-	-	X	X	X
K.-P. rk Wald F stat.	-	-	-	-	58.66
Cluster	28	28	28	28	28
Observations	19,732	19,732	19,732	19,732	19,732

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** The dependent variable is an index capturing the average level of attitudes toward immigrants. In the IV regression, we instrument the share of immigrants by the share of immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.2: Average impact of immigrants on attitudes excluding potential outliers

	OLS estimate				IV estimate
	(1)	(2)	(3)	(4)	(5)
1st generation immigrants	1.75***	1.07*	-0.05	-0.94**	-1.77**
	(0.62)	(0.52)	(0.37)	(0.35)	(0.74)
2nd generation immigrants	-	-	-	1.16***	1.45***
				(0.24)	(0.30)
Individual controls	-	X	X	X	X
Country-level controls	-	-	X	X	X
K.-P. rk Wald F stat.	-	-	-	-	48.20
Cluster	24	24	24	24	24
Observations	20,315	20,315	20,315	20,315	20,315

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries except Bulgaria, Luxembourg, Poland and Romania.**Notes.** The dependent variable is an index capturing the average level of attitudes toward immigrants. In the IV regression, we instrument the share of immigrants by the share of immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.3: Estimated coefficients on the individual controls from the regressions in Table 6

	(1)	(2)	(3)	(4)	(5)
Female	-	0.01*	0.01*	0.01*	0.01**
		(0.01)	(0.01)	(0.01)	(0.01)
15-30 years of age	-	0.02	0.02	0.02	0.02
		(0.02)	(0.02)	(0.02)	(0.02)
31-54 years of age	-	0.01	0.01	0.01	0.01
		(0.01)	(0.01)	(0.01)	(0.01)
16-19 years of education	-	0.03***	0.03**	0.02**	0.02*
		(0.01)	(0.01)	(0.01)	(0.01)
>20 years of education	-	0.14***	0.13***	0.13***	0.12***
		(0.02)	(0.02)	(0.02)	(0.02)
Still studying	-	0.14***	0.14***	0.13***	0.13***
		(0.03)	(0.03)	(0.03)	(0.03)
Unemployed	-	-0.03*	-0.04**	-0.04**	-0.04**
		(0.02)	(0.02)	(0.02)	(0.02)
Inactive	-	-0.02*	-0.02**	-0.03**	-0.03***
		(0.01)	(0.01)	(0.01)	(0.01)
Far-right voters	-	-0.13***	-0.13***	-0.12***	-0.13***
		(0.04)	(0.04)	(0.04)	(0.04)
No political answer	-	-0.06***	-0.06***	-0.06***	-0.06***
		(0.02)	(0.02)	(0.02)	(0.02)
Living in large town	-	0.01	0.01	0.01	0.01
		(0.02)	(0.01)	(0.01)	(0.01)
Difficulties paying bills	-	-0.06***	-0.05***	-0.06***	-0.06***
		(0.02)	(0.01)	(0.01)	(0.01)
Satisfied in life	-	0.10***	0.10***	0.10***	0.09***
		(0.01)	(0.01)	(0.01)	(0.01)

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** This table reports the estimated coefficients on the individual-level covariates from the regressions presented in Table 6. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for non far-right parties, small town and rural areas, no difficulties paying bills, not satisfied in life. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.4: Estimated coefficients on the country-level controls from the regressions in Table 6

	(1)	(2)	(3)	(4)	(5)
Share of females	-	-	0.00	-0.02	-0.03**
			(0.02)	(0.01)	(0.01)
Share of individuals aged 15-30	-	-	0.02**	0.01	0.01*
			(0.01)	(0.01)	(0.01)
Share of high educated individuals	-	-	0.00***	0.00**	0.00
			(0.00)	(0.00)	(0.00)
Log GDP per capita	-	-	0.18*	0.19**	0.26**
			(0.10)	(0.09)	(0.13)
Unemployment rate	-	-	0.01	0.01	0.01**
			(0.01)	(0.00)	(0.00)
Gini index	-	-	0.01***	0.01***	0.02***
			(0.00)	(0.00)	(0.00)

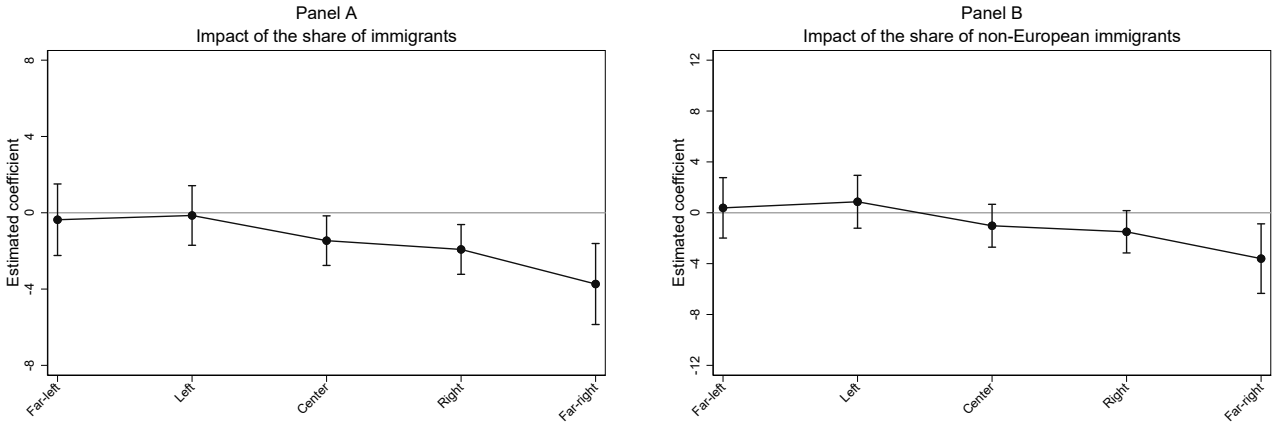
Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** This table reports the estimated coefficients on the country-level covariates from the regressions presented in Table 6. As country-level controls,we include percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.5: Heterogeneous impact of non-European immigrants on attitudes across political preferences

	Immigrants ...					
	Mean level of attitudes	do not worsen crime	are not a fiscal burden	enrich culture	do not take jobs	help to fill jobs
	(1)	(2)	(3)	(4)	(5)	(6)
	A. Impact relative to the far-left political group					
Non-European imm.	0.39	-0.44	-1.74	1.88	1.27	0.96
	(1.21)	(1.68)	(2.01)	(1.51)	(0.98)	(1.32)
— × Far-left	-	-	-	-	-	-
— × Left	0.48	-0.96	0.69	1.46	0.77	0.43
	(0.95)	(0.75)	(0.72)	(1.60)	(1.35)	(1.07)
— × Center	-1.41**	-3.41***	-2.65***	-0.45	0.38	-0.90
	(0.68)	(1.26)	(0.92)	(0.99)	(1.04)	(0.87)
— × Right	-1.88**	-4.05***	-3.20**	-1.48	-0.35	-0.33
	(0.94)	(1.56)	(1.34)	(1.24)	(1.00)	(0.75)
— × Far-right	-3.99**	-5.66**	-3.99*	-3.83**	-3.03	-3.44**
	(1.88)	(2.31)	(2.25)	(1.90)	(2.07)	(1.53)
— × No political answer	-1.09	-2.77**	-2.02*	-1.48*	0.81	0.00
	(0.88)	(1.33)	(1.13)	(0.83)	(1.21)	(1.02)
	B. Impact of non-European immigrants for each political group					
Far-left	0.39	-0.44	-1.74	1.88	1.27	0.96
	(1.21)	(1.68)	(2.01)	(1.51)	(0.98)	(1.32)
Left	0.86	-1.39	-1.05	3.34**	2.04	1.39
	(1.06)	(1.36)	(1.92)	(1.42)	(1.25)	(1.23)
Center	-1.02	-3.85***	-4.39***	1.42	1.65	0.06
	(0.86)	(1.16)	(1.70)	(1.08)	(1.06)	(1.13)
Right	-1.50*	-4.48***	-4.94***	0.39	0.92	0.62
	(0.85)	(1.21)	(1.72)	(1.07)	(0.96)	(1.15)
Far-right	-3.61***	-6.10***	-5.73***	-1.95	-1.77	-2.48*
	(1.39)	(1.56)	(2.01)	(1.46)	(1.97)	(1.37)
No political answer	-0.71	-3.20***	-3.76**	0.39	2.08	0.96
	(0.89)	(1.10)	(1.73)	(1.16)	(1.29)	(1.00)
Observations	19,732	19,732	19,732	19,732	19,732	19,732

Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** The dependent variable in column 1 is an index capturing the average level of attitudes toward immigrants. The dependent variable is a dummy variable indicating that the respondent disagrees with the statement that immigrants worsen crime problems in column 2, or disagrees with the statement that immigrants are a burden on the welfare system in column 3, or agrees with the statement that immigrants enrich national cultural life in column 4, or disagrees with the statement that immigrants take jobs away from worker in column 5, or agrees with the statement that immigrants help to fill jobs for which it's hard to find workers in column 6. Panel A reports the difference in percentage points between the attitudinal impact of non-European immigrants within each political group and the reference far-left category. Panel B reports the attitudinal impact of non-European immigrants for each political group. In all regressions, our instruments exploit the share of non-European immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. Reference categories are as follows: male, more than 54 years old, lower than 15 years of education and not reported, political preference for far-left parties, small town and rural areas, no difficulties paying bills, not satisfied in life. As country-level controls, we include percent share of European immigrants, percent share of second-generation immigrants, percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors (in parentheses) are clustered at the country level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Figure 1: Estimated impact on the mean level of attitudes from Tables 13 and A.5



Sources. Eurobarometer 2017, Eurostat and OECD. **Sample.** EU28 countries. **Notes.** The graphs show the IV estimated impact of the share of immigrants (Panel A) or the share of non-European immigrants (Panel B) on the average level of attitudes toward immigrants. We plot the IV estimated coefficients and associated 95 percent confidence intervals from a regression in which we interact the immigration variable with political groups. As instrument, Panel A uses the share of immigrants in 1990, and Panel B uses the share of non-European immigrants in 1990. As individual controls, we use gender, age, level of education, employment status, political preference, town size, difficulties paying bills and life satisfaction. As country-level controls, we include percent share of second-generation immigrants, percent share of females, percent share of individuals aged 15-30, percent share of high educated individuals (with more than 20 years of education), Log GDP per capita, unemployment rate (in percent) and Gini index. All the regressions use the individual weight provided by the Eurobarometer. The standard errors are clustered at the country level.