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of Western European Natives

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Abstract

This paper examines the impact of immigration on natives' poverty risk in Western European countries. Since poverty risk generally varies across nations depending on work attachment and public programme access, it is assumed that the immigration impact is exercised through the combination of the labor market channel with the public-finance channel. The empirical investigation was focused on both the poverty risk of all the European natives and the poverty risk of low-skilled natives. To this end, an aggregate panel dataset composed of 14 Western European countries, annually observed for the period 2007-2018 was analysed. Findings clearly indicate that higher shares of immigration do not increase the risk of income poverty and material deprivation among Western European natives.

Introduction

In recent years, a widespread concern has permeated public debate in advanced democracies. It regards the concern that increasing immigration from less developed countries would worsen living conditions of many natives of richer countries. In fact, although migration is often considered as motivated by the will to escape from poverty, foreign-born individuals are, at the same time, viewed as a threat to the living standards of the most vulnerable natives of host nations. According to this view, immigrants would increase the poverty risk of natives of affluent democracies by crowding out job opportunities, depressing wages, consuming a large share of public resources, and making limited contributions to tax revenue. Thus, another battle of the have-nots would materialise.

This public concern emerges as particularly serious in Western Europe. This is because the number of immigrants that have arrived in this area is larger than in other rich territories of the world. Moreover, immigrants residing in Western European countries appear as a more severe challenge to natives' living standards because of their low levels of education (Razin and Sadka 2014; Polavieja 2016). In Western Europe, the overall proportion of immigrants compared to natives increased from circa 5.3 percent in 2007 to 8 percent in 2018. Moreover, the proportion of low-skilled immigrants over the low-skilled natives moved from 16 percent in 2005 to almost 26 percent in 2018 (EULFS).

Accordingly, the present paper intends to examine the impact of immigration on natives' poverty risk in Western European countries. In doing so, it not only offers a grounded response to the current public concern, but also contributes to the academic debate on immigration impact. It does this in two ways. First, examining natives' poverty risk, it introduces a novel outcome in this literature. Several analyses were performed to detect the factors affecting the poverty risks among immigrants and, in fewer cases, to compare poverty risks between immigrants and their native-born counterparts (e.g., Sener 2019; Barrett et al. 2013). However, no attempt – to the best of our knowledge – has been made to estimate the extent to which immigration affects natives' poverty risk. So far, the immigration impact on the living conditions of natives is mainly inferable in an indirect way by referring to the rich literature on the potential changes in labour market outcomes, i.e., wage and occupational opportunity (e.g., Peri 2014).

Second, focusing on natives' poverty risk, we can combine two distinct strands of literature on immigration: the above-mentioned impact of immigration on labour market outcomes, and the relationship between immigration and public finance. In fact, since poverty risk significantly varies depending on of work attachment and public programme access (Marx et al. 2015; Maitre et al. 2012; Devilde 2019; Esping-Andersen et al. 2002), the impact of immigration on the poverty risks of European natives can be coherently investigated by conjecturing a combination between the labour market channel and the public finance channel. The labour market channel works inasmuch as increased immigration leads to more intensive labour market competition between natives and foreign-born individuals. Therefore, natives in competition with immigrants would face higher poverty risk as a consequence of lower wages and more unemployment. On the other hand, the

public finance channel operates as long as immigrants disproportionately take advantage of social schemes and negatively contribute to public finances, leaving available fewer public resources for natives to escape from poverty risk.

Empirically, we estimate the extent to which immigrants affect the poverty risk of natives, measured by two indicators officially used at the EU level, i.e., the standard low-income poverty indicator and the material deprivation rate. Our analysis focuses on both the poverty risk of all the European natives and the poverty risk of low-skilled natives.

To this end, we analysed an aggregate panel dataset composed of 14 Western European countries, annually observed for the period 2007-2018. In order to address endogeneity and achieve causal inference, we use an instrumental variable approach. Consistent with several other studies, we employed an instrument based on the assumption that the distribution of immigrants of different nationalities across countries derives from historical settlements. Our findings indicate that immigration do not increase the risk of poverty and material deprivation among European natives.

The rest of the paper is organised as follows: section 2 provides a review of the existing literature on the impact of immigration on labour market outcomes and the relationship between immigration and public finance. Section 3 illustrates how immigration may impact poverty risk of natives through the labour market channel and the public finance channel. Section 4 presents data and the empirical strategy, while section 5 presents results. Section 6 concludes.

2. Literature review

2.1 The immigration impact on labour market outcomes

Standard economic models assume that the impact of immigration on the labour market outcomes of destination countries is different between the short run (i.e., the instant after the immigrants arrive) and long run (i.e., after capital has fully adjusted to their entry). If labour markets are flexible and native workers and immigrants are perfect substitutes, the inflow of new immigrants would increase the number of workers in the short run. In practice, the mechanical effect is the same as a one-time increase of the domestic labour force. Accordingly, under the assumption that the capital stock in the economy is fixed, this workforce increase implies a reduction of the average wage which, in turn, penalizes a certain amount of native workers. However, according to these generic models, in the long run these detrimental effects are generally compensated. This is because the initial reduction in the wage and the overall increase in the number of workers increase the return to the capital. This makes it such that any capital would be encouraged to either flow from abroad or to accumulate domestically. The capital stock accumulation increases labour productivity and, hence, wage of workers will increase and labour demand will be able to absorb the entire labour supply (Edo et al. 2018).

Nevertheless, since the assumption that all native workers and all immigrants are perfect substitutes is too strong, further economic models are developed to predict different impacts on labour market as a function of different skill compositions of immigrants. Therefore, wages and employment opportunities will decrease only for those native workers who compete with immigrants with similar skills. On the other hand, the wages of complementary native workers will increase since their productivity rises from working with immigrants. In practice, with an inflow of low-skilled immigrants, as is increasingly the case in advanced countries and in particular in Europe, the wages of native low-skilled workers will decrease, while the wages of native high-skilled workers will increase. However, also in this case, the initial effect of the inflow of new immigrants corresponds to an increase of the return to the capital so that investments will progressively rise and, then, labour demand will be able to absorb the overall workforce, mitigating the initial detrimental effect on native low-skilled workers (Dadush 2014).

In any case, the hypothesis that unskilled migration must negatively impact on unskilled natives rests on two assumptions. First, capital would react to immigration shocks with insufficient and late investments to compensate native unskilled workers. Second, immigrants with low levels of education would be perfect substitutes of native unskilled workers. Theoretically, it is thus problematic to predict the impact of low-skilled immigrants on the labour market. An extensive body of empirical studies has attempted to solve this puzzle by testing the validity of these two assumptions. On the one hand, several empirical works have demonstrated that capital does not react with insufficient and late investments. Firms respond to immigrant inflows by expanding, investing, adjusting product specialization, adopting efficient technologies, and creating new businesses. Therefore, once these adjustments are accounted for, little evidence of a wage-and-employment-reduction effect of immigration was found for natives. The wage as well as employment opportunity of natives, even of those natives with similar skills to those of immigrants, do not change much (Constant 2014; Peri 2014). On the other hand, many empirical studies become highly centred on the degree of substitutability between low-skilled native and immigrant workers. The results of some of these studies are consistent with the assumption that immigrants and natives are perfectly substitutable. However, not all of these studies find an unfavourable effect on native low-skilled workers (Borjas 2003; Aydemir and Borjas 2007; Borjas and Katz 2007; Borjas 2014; Edo and Toubal 2015). In contrast, several studies demonstrated how native and migrant unskilled workers are imperfect substitutes. This essentially because foreign low-skilled workers do not speak the language of host countries, lack social networks, are discriminated against, and/or simply have lower expectations than natives with comparable levels of education. New immigrants may be stronger labour market competitors of earlier immigrants than of native workers. All these studies conclude that an inflow of low-skilled immigrants does not produce a significant detrimental impact on their native counterparts (Ottaviano and Peri 2012; D'amuri and al. 2010).

Furthermore, the absence of substitutability between low-skilled immigrants and natives with comparable levels of education means that the latter can be even pushed towards better-paid

occupations. This is because immigrants specialize in manual-intensive jobs for which they have comparative advantages, while natives pursue jobs with more communication-intensive tasks (Peri and Sparber 2009, Edo et al. 2018).

To sum up, the recent literature on the labour market impact of immigration indicates that immigration has a negligible average impact on wages and employment of natives, even among those with a low level of education.

2.2 The relationship between immigration and public finance

Differently from the rich literature on the labour market impact of immigration, the body of studies concerning the relationship between immigration and public finance of destination countries is less developed and more recent. However, two strands of this latter literature are particularly relevant for this research. They concern the net fiscal position of migrants and the welfare state uptake of migrants.

The net fiscal position of migrants is examined to evaluate whether or not immigrants are a burden for the public finance of host societies. In practice, the net fiscal effect of immigration is estimated at aggregate level by computing the difference between the various levies, contributions, and taxes they pay and the totality of benefits they receive. In so doing, one can establish whether immigrants are net contributors or net receivers. Several studies were performed at the national level, while others were carried out at the cross-country level (Bonin 2006; Rowthorn 2008; Chojnicki 2018; Barbone et al 2009; Boeri 2010). Most of these studies show that the average burden of immigration on public finance is generally negligible, sometimes slightly positive or slightly negative. For instance, using data for 13 Western European countries, Barbone et al. (2009) demonstrate that migrants make a certain net positive contribution to the national tax and benefits systems, although a considerable heterogeneity across nations arises.

Other differences then arise in relation to the educational structure of immigrants. While skilled migrants are usually net contributors to the welfare state, unskilled migrants are generally net beneficiaries. Nevertheless, if one takes into account the significant differences in the age structure between natives and immigrants, it emerges that immigrants are overrepresented in the working-age population and hence pay relatively more taxes, levies, and contributions (Edo et al. 2018; Preston 2014).

Turning to the strand of the literature concerning the extent of the welfare uptake of migrants, the issue becomes whether their probability of resorting to a given social scheme is higher than that of natives. To this end, two measures are generally adopted. The first one is welfare dependency, which simply expresses the degree to which immigrants take up welfare more intensively than natives. The second one is the residual welfare dependency which expresses the higher probability of immigrants than natives resorting to a social protection scheme after considering the different

observable attributes (e.g., age, gender, marital status, size of household, level of qualification, etc.) of the two groups.

Some works addressed this issue from a national perspective (Riphahn 2004; Hansen and Lofstrom (2009; Barrett and McCarthy 2007) while others examined relative rates of receipt of welfare across immigrants and natives in a European setting (Boeri 2010; Barbone et al 2009; Barrett and Maître 2013). The conclusions of these studies are substantially similar: immigrants are in general found to not receive more welfare benefits than natives even if welfare state coverage of immigrants varies to some extent across countries.

Some differences also emerge across different programmes. For instance, Barrett et al. (2013) concluded that immigrants are more likely to be in receipt of unemployment-related supports in a wide range of countries and also of family-related payments. On the other hand, they are less likely to receive old age payments and sickness/disability payments. However, after controlling for socio-economic characteristics, these authors find little evidence of excessive receipt of support by immigrants relative to natives. To the extent that higher rates of receipt are present, they appear to be restricted to unemployment support; but even in this case, this only applies in a limited number of European countries.

Furthermore, the under-representation of migrants among welfare recipients observed in several European countries can be attributed mainly to informational and linguistic deficiencies, cultural and social norms, and discrimination. In addition, the presence of eligibility criteria, such as minimum years of employment contributions and residency requirements, appears to lower the welfare uptake of migrants (Giulietti 2014).

3. The potential impact of immigration on poverty and material deprivation risks of natives

Poverty is a multidimensional phenomenon. At the EU level, income poverty is officially used in conjunction with material deprivation in order to capture the multidimensional nature of poverty. Income poverty is computed through an indirect approach. Poverty is in this case viewed as the lack of monetary resources available to individuals for maintaining ordinary or minimum living conditions in the society where they live. Accordingly, an individual is considered economically poor (or at risk of poverty) if the equivalised income of his/her household is below the national poverty threshold. On the other hand, material deprivation is based on a direct approach i.e., on the direct observation of the effective rather than potential satisfaction of needs. Here the focus of the analysis is thus on the goods and services households can consume. Therefore, people unable to afford certain basic items are considered to be materially deprived.

Since income poverty and material deprivation are designed to capture different poverty dimensions, several studies were performed to establish whether individuals with income below

the national poverty threshold are also materially deprived (e.g., Whelan et al. 2004; Berthoud and Bryan 2010). However, even if some differences arise at the individual level, cross-national variations largely depend on common broad factors, such as labour market patterns and public arrangements (Fusco et al. 2011; Marx et al. 2015; Maitre et al. 2012; Devilde 2019).

If so, one can reasonably expect that the income poverty rate and material deprivation rate of the sole natives are also considerably affected by these broad factors. Therefore, the two strands of literature reviewed in the previous section can be used to identify two channels, i.e., the labour market channel and the public finance channel, through which immigration may impact on the poverty risk of European natives.[1] In other words, if the poverty risks of European natives are associated with their work attachment and the public programmes from which they benefit, our knowledge about the relationship between immigration and the labour market on the one hand, and immigration and public finance on the other, can be exploited to conjecture how immigration may (or may not) impact the poverty risks of natives.

The labour market channel works insofar as increased immigration leads to more intensive labour market competition between natives and foreign-born individuals. In short, natives in competition with immigrants would suffer lower wages and higher risk of unemployment. This would in turn increase their poverty risk. This is because wage reduction and higher risk of unemployment would decrease equivalised disposable incomes, making a certain number of natives – namely, those placed just above the poverty threshold – at risk of poverty. However, that reduction of monetary resources would also decrease the ability of certain natives to afford basic items, making them materially deprived.

Nevertheless, the labour market channel can effectively operate in relation to the proportion of immigrants compared to natives. To affect poverty levels for a relevant number of natives, the share of foreign individuals cannot be clearly negligible. Moreover, since individuals with higher risk of poverty are generally those with lower levels of education (e.g., Rovny 2014), the labour market channel can exercise a significant effect in relation to the national skill composition of immigrants. Specifically, if immigrants are concentrated in the highly educated group or evenly distributed across skill groups, low-skilled natives should not increase their poverty risk. In fact, there is no reason to believe that they should suffer from a reduction in their wages and a higher risk of unemployment. On the other hand, the poverty risk of low-skilled natives should increase as a consequence of an inflow of new less educated immigrants. The competition between new immigrants and low-skilled natives would worsen the position of the latter in the labour market. Clearly, this would happen to the extent that low-skilled immigrants are a perfect substitute of less educated natives. If low-skilled native and migrant workers are imperfect substitutes (see the previous section), a high concentration of immigrants in the less educated group should not

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[1] These two channels were also identified by Huber and Oberdabernig (2016) to examine the impact of welfare benefits on natives' and immigrants' attitudes towards immigration.

significantly increase the poverty risks of less educated natives. Consequently, one should also expect that the poverty risks of all natives not to increase significantly. In fact, if the poverty and material deprivation rates do not markedly vary for the most vulnerable groups of natives, these same rates should not vary for all natives as well.

The public finance channel operates as long as immigrants are a burden on the public budget of destination countries and use welfare programmes more intensively than natives. More precisely, if immigrants disproportionately use social schemes and, at the same time, negatively contribute to public finances, native individuals will have less public resource available to them. This might in turn increase poverty risk for a certain number of natives. Indeed, social programmes are necessary for many people to attain an equivalised income above the poverty threshold and/or benefit from an ordinary set of goods and services. This works especially for the most vulnerable natives, i.e., less educated individuals. Generally, they are not able to independently ensure a good life for their entire families and need welfare state arrangements. To avoid falling below the income poverty threshold, they often need to receive social transfers. Analogously, social assistance emerges as a last resort for material deprivation since it is more involved with the provision of minimum levels of consumption than in addressing relative income needs (Esping-Andersen et al. 2002; Bonoli 2007; Nelson 2012).

However, as in the case of the labour market channel, this mechanism can actually work in relation to the number of immigrants present in a nation and its skill composition. First, the number of immigrants present in a nation must be relevant to affect public finance. Second, immigrants have to be concentrated in the less educated group to generate a disproportionate use of public resources. Indeed, whereas highly educated immigrants are often net contributors, less educated foreign-born individuals are in general net beneficiaries (see the previous section). Nonetheless, even when immigrants are clustered in the scarcely educated group, a positive and significant effect on the poverty levels of natives cannot be taken for granted. In fact, immigrants are often found to not enjoy more social benefits than natives after the respective socio-economic characteristics are controlled for (see subsection 2.2).

So far, the labour market channel and public finance channel have been illustrated separately, but clearly, they operate jointly in different settings and countries. Some basic scenarios can thus be sketched just to elucidate this potential combination. First, if immigrants reduce the job opportunities for certain natives, the latter might require unemployment benefits to escape poverty risk. That risk will increase if public resources are in short supply as a consequence of unbalanced access by immigrants. Second, even if immigrants are imperfect substitute of natives and thus do not affect their wage and job opportunities, certain natives may, for other reasons, need social benefits to reach an adequate standard of living. Therefore, their poverty risk might depend on their competition with immigrants demanding those benefits.

4. Data and method

4.1 Outcome and explanatory variables

Outcome variables

Poverty is measured by two indicators officially used at the EU level. The first one is the standard low-income poverty indicator, i.e., the at-risk-of-poverty rate which corresponds to the proportion of individuals with an equivalised disposable income below the at-risk-of-poverty threshold set at 60 % of the national median equivalised disposable income after social transfers. However, since it is possible that in a given year the proportion of persons above or below the threshold could vary depending on relative changes in the value of certain transfers/payments, we also use the at-risk-of-poverty rate computed with a poverty threshold set at 50% of the national median equivalised disposable income.

The second indicator is the material deprivation rate, which coincides with the percentage of the population that cannot afford at least three of following nine items (1) to pay their rent, mortgage or utility bills; (2) to keep their home adequately warm; (3) to face unexpected expenses; (4) to eat meat or proteins regularly; (5) to go on holiday; (6) a television set; (7) a washing machine; (8) a car; (9) a telephone (EUROSTAT 2020). Like in the case of income poverty, a second indicator is used to strengthen the measurement. This is the severe material deprivation rate, which corresponds to the enforced inability to pay for at least four of the above-mentioned items.

Consistent with our research objective, these two indicators are computed and analysed for the sole native individuals. However, a specific issue concerning the computation of the at-risk-of-poverty rate must be addressed. This is because income poverty is a relative measure, i.e. a person is at risk of poverty if the equivalised income of her household is below to the national poverty threshold. Consequently, immigrants may mechanically affect income-poverty risk of natives simply by being part of the national income distribution. In other words, as a consequence of their positioning in the national income distribution, immigrants can imply a variation of the at-risk-of-poverty rate for native individuals. If so, the estimation of the immigration impact on this latter variable will result biased. Accordingly, we assessed if the at-risk-of-poverty rate for natives significantly changes following the inclusion of immigrants in the national income distribution. As Table 1 shows, this happens for almost all the countries included in our sample. Therefore, the at-risk-of-poverty rate for Western European natives was computed and analysed excluding the immigrants from the national income distributions.

Table 1: Comparison average native at-risk-of-poverty rate using different poverty thresholds (with or without immigrants) by countries (2007-2018)

	Natives' poverty risk					
Country	Poverty threshold 50% obtained using the whole population	Poverty threshold 50% excluding immigrants	Sign. ttest	Poverty threshold 60% obtained using the whole population	Poverty threshold 60% excluding immigrants	Sign. ttest
AT	6.6	7.6	***	6.6	13.0	***
BE	6.1	7.2	***	6.1	14.5	***
CH	8.1	9.0	***	8.1	14.9	***
DE	9.9	10.3	***	9.9	16.5	***
DK	6.6	6.8		6.6	12.5	***
ES	11.7	13.0	***	11.7	19.7	***
FI	5.7	5.9	**	5.7	12.9	***
FR	5.5	6.0	***	5.5	12.2	***
GR	12.4	13.4	***	12.4	19.8	***
IT	11.3	12.1	***	11.3	18.8	***
NO	6.1	6.3	*	6.1	11.0	**
PT	11.4	11.3		11.4	17.6	
SE	6.2	7.0	***	6.2	13.7	***
UK	9.1	9.4	**	9.1	15.9	**

Note: the at-risk-of-poverty rate corresponds to the proportion of individuals with an equivalised disposable income below the at-risk-of-poverty threshold set at 50% or 60 % of the national median equivalised disposable income after social transfers.

Furthermore, since low-skilled European natives potentially constitute the group most exposed to the immigration impact (see sections 2 and 3), both the at-risk-of-poverty rate and the material deprivation rate were referred to low-skilled European natives in addition to all European natives.[2] Therefore, our outcome variables are the following: (1) the percentage of European natives at risk of poverty, computed with a poverty threshold set at 60% of the national median equivalised disposable income (POV60); (2) the percentage of European natives at risk of poverty computed with a poverty threshold set at 50% of the national median equivalised disposable income (POV50); (3) the percentage of European natives materially deprived (MADEP); (4) the percentage of European natives severely deprived (SEDEP); (5) the percentage of low-skilled European natives at risk of poverty, computed with a poverty threshold set at 60% of the national median equivalised disposable income (LPOV60); (6) the percentage of low-skilled European natives at risk of poverty, computed with a poverty threshold set at 50% of the national median equivalised

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[2] Low-skilled individuals were identified as those with elementary occupations (ISCO-88 major group 9 in current or last occupation). We opted for this definition because the education variables ISCED were aggregated in different ways in EULFS and EUSILC and was not possible to harmonize them in a proper way. One source of criticism to this definition is that living conditions of inactive and unemployed natives may be affected by immigration. However, we used also the last occupation for those that were unemployed at the time of the interview reducing the risk of excluding this population.

disposable income) (LPOV50); (7) the percentage of low-skilled European natives deprived (LMADEP); and (8) the percentage of low-skilled European natives severely deprived (LSEDEP). In all cases, natives were considered aged 25-64 years. (See Table A1 in Appendix for descriptive statistics.)

All these indicators were computed using data from the European Union Statistics on Income and Living Conditions (EU-SILC).

Explanatory variable

In line with the argumentation developed in the previous section, we used an explanatory variable based on the overall proportion of immigrants present in a country. It corresponds to the ratio of immigrants to the native population.[3] (see Table A1 in Appendix for descriptive statistics). We used this ratio instead of the ratio of immigrants over the whole population because it gives a direct measure of immigrants in relation to natives (Aleksynska and Tritah 2015)[4].

The source used to compute our explanatory variable is the harmonised European Union Labour Force Survey (EULFS), which homogenises country-specific labour force surveys at the European level (see Eurostat 2019).[5]

The national rates computed through the data provided by the two sources mentioned above (EU-SILC and EULFS) were used to assemble a dataset that is composed of 14 Western Europe countries (Austria, Belgium, Germany, Denmark, Finland, France, Greece, Italy, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom), annually observed for the period 2007-2018.

4.2 Empirical strategy

In order to estimate the overall impact of immigration on poverty, we estimate the following OLS regressions:

$$y_{c,t,n} = \phi_c + \gamma_t + \phi_{c,t} + \delta X_{c,t} + \beta f_{c,t,n} + u_{c,t} \qquad [1]$$

where $y_{c,t,n}$ refers to the outcome of interest, in the country (c), year (t) and the samples n=1 (all the population) and n=2 (low-skilled population only). As mentioned above, we employed eight

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[3] Immigrants were classified as all individuals born in any country outside the considered one and, as done for natives, were considered aged 25-64 years.

[4] A second explanatory variable could correspond to the percentage of low-skilled immigrants on low-skilled natives. However, we did not use it because the first stage of the instrumental variable (see below) results considerably weak.

[5] We used two different data sources because the EULFS has a more detailed migration variable than EUSILC but, unfortunately, lacks information on income and living conditions. More precisely, EULFS allows a distinction to be made between 15 groups of nationality/place of birth while EUSILC only considers natives, EU-born and other.

outcomes for each sample n. Our key explanatory variable is $f_{c,t,n}$ which captures the ratio of immigrants to natives for samples n and across countries and years.

Since we assume that immigration impacts the poverty risk of natives through the labour market channel and the public finance channel, this impact should materialise in the long run. Accordingly, our regression models were estimated in levels. Nonetheless, the high persistence of both outcome variables and the explanatory variable (their auto-regressive coefficients are systematically close to one[6]) may bias the estimation. Hence, a country-specific time trend, $\phi_{c,t}$, was used as a regressor to deal with this potential bias (for a similar strategy, see Cortes 2008)[7].

Furthermore, our regression models included a full battery of dummy variables for all countries ϕ_c and years γ_t to tackle bias from unobserved variables that do not change across units and over time. Additionally, two control variables were included in our regression models, $\delta X_{c,t}$. They are (1) the dependency ratio, and (2) the OECD Employment Protection Legislation index.

Nonetheless, the previous model specification cannot ensure that the remaining variation in poverty risk of natives was due to an exogenous variation in immigrants. As several studies point out (e.g., Card and DiNardo 2000), when immigration is used as explanatory variable, endogeneity is likely to arise. This can be due to measurement error and simultaneity. Measurement error may derive from the fact that migration rates are, as in our case, computed from surveys, denoting imprecise figures. Simultaneity may arise if immigrants tend to cluster in those countries with high levels of well-being and low levels of poverty risk. If so, immigration may not only affect poverty rates of host countries, but this latter can, at the same time, influence immigration.

As is well known, the endogeneity problem can be solved by using the instrumental-variable (IV) approach. To this end, we employed an IV widely used in the immigration-impact scholarship (e.g., Peri and Sparber 2009; Cattaneo et al 2013) and initially proposed by Altonji and Card (1991). This instrument is based on the assumption that the distribution of immigrants of different nationalities across countries derives from historical settlements. Specifically, since information on host countries circulates better within ethnic networks and immigrants generally prefer to live near nationals, new immigrants are more likely to move to the same country in which previous immigrants of the same nationality reside. Therefore, assuming that the annual levels of natives' poverty risk measured in Western Europe over the 2007-2018 period do not vary systematically with foreigners' early settlements, the instrument can be used as a reliable predictor of the proportion of immigrants observed year by year in each country. In other words, in periods of large immigration inflows from a certain country, nations with a larger past presence of immigrants

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[6] We run simple auto-regressive model because the time series in our panel dataset are too short to opt for any panel unit root test.

[7] We also estimated our models in first difference, but the results are not reported here because the first stage of the IV is extremely weak.

receive a larger inflow, independently of their proportion of vulnerable natives. Therefore the Instrument $\hat{z}_{c,t}$ is derived as follows:

$$\left(\Delta F_{c,t}^N\right)$$

$$\hat{F}_{c,t}^N = F_{c,2007}^N + \sum_{s=2006...t} \Delta F_{c,s}^N$$

$$\hat{F}_{c,t} = \sum_N \hat{F}_{c,t}^N$$

$$\hat{z}_{c,t} = \left(\hat{F}_{c,t}/Pop_{c,t}\right)$$

Operationally speaking, we constructed the IV by combining EULFS data with information from other sources. From the OECD International Migration Database, we collected the stock of foreign people by nationality between 2007 and 2018 and from EUROSTAT the stock of native people in 2007 $\hat{F}_{c,t}^N$. Hence, we computed the population of immigrants by area of origin in 2007 using eight large geographic groups. Specifically, i) Africa; ii) Asia; iii) Central and South America; iv) North America; v) Oceania; vi) Eastern Europe; vii) Western Europe; viii) the Middle east. Then, we used the data on aggregate yearly stock of immigrants from those eight areas of origin into the 17 considered EU countries, available until 2018, and we constructed the overall growth rates of each area-of-origin immigrant group. We then multiplied the initial (2007) number of immigrants in each country by the overall growth rate of that area-of-origin immigrant group. Finally, we aggregated across areas of origin within each country to calculate the total imputed number of immigrants in the country in that year, $\hat{F}_{c,t}$. This number was divided by the total (initial natives plus imputed migrants) population, $Pop_{c,t}$ to obtain the imputed migrants' share.

Therefore, we also estimated the following structural regression:

$$\hat{f}_{c,t,n} = \phi_c + \gamma_t + \phi_{c,t} + \delta X_{c,t} + \beta \hat{z}_{c,t,n} + u_{c,t} \qquad [2]$$

$$y_{c,t,n} = \phi_c + \gamma_t + \phi_{c,t} + \delta X_{c,t} + \beta \hat{f}_{c,t,n} + \epsilon_{c,t} \qquad [3]$$

Where equation [2] represents the first stage in which the endogenous share of immigrants is regressed on the instrument $\hat{z}_{c,t}$ and equation [3] the second stage including the predicted share of immigrants from equation 2.

5. Empirical results

Table 2 displays the regression coefficients obtained by estimating distinct regression models for the following dependent variables: POV60, POV50, MADEP, and SEDEP, i.e., the at-risk-of-poverty rates and the material deprivation rates referred to all European natives. Table 3 reports the regression coefficients computed by estimating distinct regression models for the following dependent variables LPOV60, LPOV50, LMADEP, and LSEDEP. i.e., the at-risk-of-poverty rates and the material deprivation rates referred to low-skilled European natives.

Table 2: OLS and IV estimates of the effects of immigration on natives' poverty risks and material deprivation.

	POV60				POV50				MADEP				SEDEP			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV	OLS	OLS	IV	IV	OLS	OLS	IV	IV
	0.025	0.003	0.232**	0.148	0.015	-0.003	0.134*	0.075	0.255	0.109	0.320	-0.558	0.084	0.014	0.108	-0.27
	(0.0497)	(0.0503)	(0.0903)	(0.0926)	(0.0395)	(0.0386)	(0.0750)	(0.0776)	(0.200)	(0.190)	(0.389)	(0.491)	(0.102)	(0.0982)	(0.211)	(0.247)
N	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168
R2	0.933	0.926	0.441	0.416	0.926	0.922	0.494	0.459	0.768	0.663	0.489	0.171	0.743	0.645	0.431	0.208
F			90.6	89.0			90.6	89.0			90.6	89.0			90.6	89.0
Country fixed effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year fixed effects	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Trend	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y

Notes: The explanatory variable is immigrants as a percentage of natives. The models control for EAP and EPL. Standard errors in parentheses

Table 3: OLS and IV estimates of the effects of low-skilled immigration on low-skilled natives' poverty risks and material deprivation.

	LPOV60				LPOV50				LMADEP				LSEDEP			
	OLS	OLS	IV	IV	OLS	OLS	IV	IV	OLS	OLS	IV	IV	OLS	OLS	IV	IV
	-0.086	-0.075	-0.195	-0.251	-0.040	-0.032	-0.239	-0.205	0.497	0.197	0.751	-0.737	0.237	0.083	0.207	-0.638
	(0.169)	(0.170)	(0.265)	(0.269)	(0.176)	(0.172)	(0.249)	(0.253)	(0.325)	(0.340)	(0.573)	(0.759)	(0.243)	(0.253)	(0.404)	(0.495)
N	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168
R2	0.821	0.807	0.502	0.491	0.785	0.781	0.434	0.424	0.804	0.705	0.557	0.227	0.761	0.685	0.482	0.224
F			90.6	89.0			90.6	89.0			90.6	89.0			90.6	89.0
Country fixed effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year fixed effects	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Trend	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y

Notes: The explanatory variable is immigrants as a percentage of natives. The models control for EAP and EPL. Standard errors in parentheses

Since both the explanatory variable and the outcome variables are expressed in percentages, the coefficients reported in Table 2 and 3 represent percentage point differences in the outcome variables. For each model, we report both OLS and IV coefficients.

Moreover, all these models were estimated including the two control variables described above, country and year fixed effects plus a country-specific time trend[8]. However, year fixed effects and time trend were not included together to avoid collinearity problems.

Although the estimated models are numerous and different, the pattern of our results is common to them. Therefore, it is sufficient to make a general comment without having to dwell on individual models.

In both Tables 2 and 3, the coefficients denote several differences in terms of value and sign depending on the estimation method (OLS vs IV) and model specification (year fixed effects vs time trend) considered. IV coefficients are generally higher than OLS ones. This may be due to measurement error that, as is known, makes OLS coefficients downwardly biased. The signs of IV coefficients substantially vary across models denoting an unclear pattern. However, the overwhelming majority of them as well as all OLS coefficients do not result statistically significant. The only departures are the IV coefficients estimated including country and year fixed effects in the models having POV60 and POV50 as the dependent variable (see Table 2).

These results clearly indicate that immigration does not impact the poverty risk of Western European natives, both measured in terms of income poverty and material deprivation. Moreover, the lack of an effect was observed whether one focuses on the poverty risks of all European natives or consider those of low-skilled natives only.

Conclusion

Recent public debates on immigration policies in affluent democracies have stressed that migrants from less developed countries are a threat for the economic growth and living conditions of numerous natives. The idea behind this is that migrants would compete with some natives in the labour market and reduce public resources because they would abuse welfare programmes and not adequately contribute to public revenue. These behaviours would pose a threat especially to the most vulnerable groups of natives who would, in turn, experience a higher risk of poverty.

Therefore, it is timely to investigate whether a higher influx of immigrants impacts on the economic well-being and poverty of the host population and, especially, those low-skilled natives who are generally more vulnerable and, at the same time, exposed to competition from immigrants. This also because natives' poverty risk has not yet been used as an outcome in the literature on immigration impact.

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[8] These models were also estimated by excluding the two controls and entering them one at a time, but the results remain essentially unchanged. Results are available upon request.

Focusing on Western European countries, this paper has precisely examined the impact of immigration on the poverty risks of natives. Analysing an aggregate panel dataset composed of 14 Western European countries, we do not find any confirmation of the hypothesis that increased immigration would intensify native poverty risks. This result appears robust to different model specifications and to the use of both income poverty and material deprivation as measures of poverty risk.

The lack of any effect is in line with many studies concerning the immigration impact on labour market outcomes and public finance of developed countries. Nevertheless, focusing on natives' poverty risk, our analysis highlights that immigrants do not affect the living conditions of a specific segment of the population, i.e., the most vulnerable native groups of Western European countries. In other words, our findings do not show any evidence that immigrants damage the weakest groups of the native population. So, if someone conjectures another battle of the have-nots, the native component does not appear as a loser.

This conclusion has some relatively obvious implications. First, native Europeans do not need greater protection where there are more immigrants. Their poverty risks can be addressed according to their specific needs and not through anti-immigrant policies. Second, public concerns about immigrants as a potential source of hardship for European citizens are ill-founded and therefore counterproductive to a civil coexistence.

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Appendix

Table A1: Descriptive Statistics

	2007		2018	
	Media	SD	Media	SD
Share immigrant/native	7.9	4.8	11.5	3.7
POV60	11.5	3.9	13.0	4.1
POV50	7.1	3.0	8.1	3.6
MADEP	9.4	4.9	17.5	10.8
SEDEP	3.8	2.2	7.3	5.2
LPOV60	19.5	6.5	25.9	7.5
LPOV50	11.8	5.7	16.9	6.8
LMADEP	19.7	8.1	34.7	16.6
LSEDEP	8.7	4.5	16.0	10.5