Research Institute for the Evaluation of Public Policies

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Another battle of the have-nots? The Impact of Immigration on the Poverty Risk of Western European Natives

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Abstract

This paper examines the impact of immigration on natives' poverty risk in Western European countries. In doing so, it contributes to the academic debate on immigration impact in two manners. First, it introduces a novel outcome in this debate, i.e. natives' poverty risk. Second, it brings together two strands of literature: that of the immigration impact on labour market outcomes and the one on the relationship between immigration and public finance. In fact, since poverty risk significantly varies in consequence of work attachment and public programs access, the impact of immigration on the poverty risks of European natives can be coherently investigated by combining the labour market channel with the public-finance channel. Empirically, we estimate to which extent immigrants affect poverty risk of natives, measured in terms of income poverty and material deprivation. Our analysis focuses on both the overall impact, i.e., how all immigrants affect the poverty risk of all natives, and the more specific skill-composition impact, i.e., how the share of low-skilled immigrants affects the poverty risk of low-skilled natives. To this end, we analysed an aggregate panel dataset composed by EU-15 countries plus Norway and Switzerland, annually observed for the period 2005-2018. Our findings indicate that higher shares of immigration do not increase the risk of poverty and material deprivation among natives.

JEL-Code: J61, O15, I3

Key words: Poverty risk of natives, Immigration, Western Europe

1. Introduction

Over the last years, a widespread concern has gone through public debate in advanced democracies. It regards the fact that increasing immigration from less developed countries would worsen living conditions of 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 for living standards of the most vulnerable natives of host nations. According to several people, immigrants would increase the poverty risk of natives of affluent democracies because they crowd out job opportunities, depress wages, consume a large share of public resources, and make small contributions to tax revenue. Thus, another battle of the have-nots would materialize.

That public concern results particularly serious in Western Europe. This is because the number of immigrants 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 for natives' living standard because of their low levels of education (Razin and Sadka 2014; Polavieja 2016). In Western Europe, the overall share of immigrant-natives increases from circa 5 percent in 2005 to 10 percent in 2018. Moreover, the proportion of low-skilled immigrants over the low-skilled natives moved from 15 percent in 2005 to almost 30 percent in 2018 (Eusilc).

Accordingly, the present paper intends to examine the impact of immigration on natives' poverty risk in Western European countries. In doing so, it does not only offer a grounded response to the current public concern, but also contributes to the academic debate on immigration impact. It does this in two manners. 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 in which extent immigration affect natives' poverty risk. So far, the immigration impact on living conditions of natives is mainly inferable in an indirect way: referring to the rich literature regarding the 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: that of the above-mentioned immigration impact on labour market outcomes and the one on the relationship between immigration and public finance. In fact, since poverty risk significantly varies in consequence of work attachment and public programs 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 referring and combining the labour market channel and the public-finance channel. Basically, the labour-market channel works as far as increased immigration leads to a more intensive labour market competition between natives and foreign-born individuals. Therefore, natives in competition with immigrants would face higher poverty risk in consequence of lower wages and more unemployment. On the other hand, the public-finance channel operates as long as immigrants disproportionately abuse of social schemes and negatively contribute to public finances, leaving available fewer public resources for native to escape poverty risk.

Empirically, we estimate to which extent immigrants affect poverty risk of natives, measured in terms of income poverty and material deprivation. Our analysis focuses on both the overall impact, i.e., how all

immigrants affect the poverty risk of all natives, and the more specific skill-composition impact, i.e., how the share of low-skilled immigrants affects the poverty risk of low-skilled natives. To this end, we analysed an aggregate panel dataset composed by EU-15 countries plus Norway and Switzerland, annually observed for the period 2005-2018. Our findings indicate that immigration do not increase the risk of poverty and material deprivation among European natives.

The rest of the paper is organized as follows: section 2 provides a review of the existing literatures on the immigration impact on labour market outcomes and the relationship between immigration and public finance. Section 3 illustrate 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 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 for labour market in consequence of different skill composition of immigrants. Therefore, wage and employment opportunity will decrease only for those native workers who compete with immigrants with similar skills. On the other hand, the wage of complementary native workers will increase since their productivity rises from working with immigrants. In practice, 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 inflow of new immigrants correspond to an increase of the return to the capital so that investments will progressively raise and, then, labour demand will be able to absorb the overall workforce mitigating the initial detrimental effect for native low-skilled workers (Dadush 2014).

In any case, the hypothesis that unskilled migration must negatively impact on unskilled natives reposes on two assumptions. First, capital would react to immigration shocks with insufficient and tardive 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. Hence an extensive body of empirical studies has attempted to solve this puzzle testing the validity of these two assumptions. On the one hand, several empirical works have demonstrated that capital do not react with insufficient and tardive 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 native and immigrant workers with low skill. The results of some of these studies are consistent with the assumption that immigrants and natives are perfect substitute. However, not all of these studies find an unfavourable effect for 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 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 immigrants with low skill does not produce a significant detrimental impact on the native counterparts (Ottaviano and Peri 2012; Manacorda et al. 2012; D'amuri and al. 2010).

Furthermore, the absence of substitutability between low-skilled immigrants and natives with comparable levels of education makes so that these latter can be even pushed toward better paid occupations. This is because immigrants specialize in manual-intensive jobs for which they have comparative advantages, while natives pursue jobs 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 our topic. They concern the net fiscal position of migrants and the welfare state take-up of migrants.

The net fiscal position of migrants is examined to evaluate whether immigrants are or not a burden for 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. By so doing, one can establish whether immigrants are net contributors or net receivers. Several studies were performed at national level, while others were carried out at 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 will emerge that Immigrants are overrepresented in the working-age population and then 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 take-up of migrants, the issue becomes whether their probability of resorting to a certain 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 for immigrants than natives of 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 by immigrants varies in 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 restricted 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 minimums for years of employment contributions and residency requirements, appears to lower the welfare take-up of migrants (Giulietti 2014).

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

Poverty is a multidimensional phenomenon. At 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 according to an indirect approach to poverty. 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 to the national poverty threshold. On the other hand, material deprivation is based on a direct approach to poverty, i.e. on 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 (for more details on the construction of these indicators, see the next section).

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 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 also income poverty rate and material deprivation rate of the sole natives are considerably affected by these broad factors. Accordingly, 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 poverty risks of European natives are associated to their work attachment and public programs they benefit, our knowledge about the relationship between immigration and labour market, on the one side, and immigration and public finance, on the other, can be exploited to conjecture how immigration may (or may not) impact poverty risks of natives.

The labour-market channel works as far as increased immigration leads to more intensive labour market competition between natives and foreign-born individuals. Basically, natives in competition with immigrants would suffer lower wages and higher risk of unemployment. This would in turn increase their poverty risk. The higher risk of income poverty would mechanically materialize: wage reduction and higher risk of unemployment would decrease equivalized 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 on the 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 less levels of education, 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 of their wages and augment their 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 worse the position of these latter in the labour market. Clearly, this would happen to the extent that low-skilled immigrants are perfect substitute of less educated natives. If native and migrant low-skilled workers are imperfect substitutes (see the previous section), a high concentration of immigrants in the low educated group should not significantly increase poverty risks of less educated natives. Consequently, one should also expect that the poverty risks of all natives do not increase significantly. In

[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.

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 for public budget of destination countries and use welfare programs more intensively than natives. More precisely, if immigrants disproportionately abuse of social schemes and, at the same time, negatively contribute to public finances, native individual will have less public resource available to them. This might in turn increase poverty risk for a certain number of natives. In fact, social programs are necessary for many people to realize equivalized 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., individuals less educated once again. Generally, they are not able to ensure by themselves a good life to 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 results 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 2014).

However, like in the case of 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 low educated group to generate a disproportionate use of public resources. In fact, 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 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 labour-market channel and public-finance channel are illustrated separately but clearly, they operate jointly in the different countries. Some basic scenarios can thus be sketched just to elucidate that potential combination. First, if immigrants reduce job opportunities for certain natives, these latter might necessitate unemployment benefits to escape poverty risk. Nevertheless, that risk will increase if public resources are in short supply in 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 confrontation with immigrants in demanding those benefits.

4. Data and method

4.1 Outcome and explanatory variables

4.1.1 Outcome variables

Poverty is here measured by referring to two indicators officially used at 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 (after social transfers) 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 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. It is severe material deprivation rate which corresponds to the enforced inability to pay for at least four of the above-mentioned items.

Table 1: At-risk-of-poverty rate of natives. Average 2005-2018

country	Threshold= **50%** of the **national** median	Threshold= **50%** of the **native** median	Sign.	Threshold= **60%** of the **national** median	Threshold= **60%** of the **native** median	Sign.
AT	6.1	7.1	***	10.9	12.5	***
BE	6.3	7.3	***	12.5	14.6	***
CH	7.6	8.4	***	12.5	14.0	***
DE	7.7	8.0	***	13.1	13.5	***
DK	2.7	2.8	**	5.8	6.1	***
ES	11.7	12.9	***	18.1	19.7	***
FI	4.7	4.8	***	9.4	9.7	***
FR	5.3	5.8	***	10.8	11.7	***
GR	13.0	14.2	***	19.5	20.7	***
IE	8.5	8.8	*	17.2	17.6	***
IS	3.3	3.4		6.5	6.6	
IT	9.7	10.4	***	15.6	16.5	***
NL	2.6	2.7	***	5.5	6.0	***
NO	3.9	4.1	*	6.8	7.1	***
PT	12.8	12.7		19.9	19.7	
SE	3.8	4.3	***	7.3	8.5	***
UK	9.4	9.7	***	16.0	16.6	***

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 being part of the national income distribution. In other words, in 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 in consequence of 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.

Furthermore, since low-skilled European natives potentially constitute the group most exposed to the immigration impact (see Section 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 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.

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

4.1.2 Explanatory variables

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 and another explanatory variable relating to their skills. Our first explanatory variable corresponded to the percentage of immigrants on natives.[3] Our second explanatory variable corresponded to the percentage of low-skilled immigrants on low-skilled natives. The source used to compute these two variables is the harmonized European Union Labour Force Survey (EULFS), which homogenizes country-specific labour force surveys at the European level (see Eurostat 2019).[4]

The national rates computed through the data provided by the two sources above mentioned (EU-SILC and EULFS) were used to assembly a dataset which it is composed by EU-15 countries plus Norway and Switzerland, annually observed for the period 2005-2018.

[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.

[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] 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 distinguishing between 15 groups of nationality/place of birth while EUSILC only for natives, EU born and other.

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

Since we assume that immigration impacts poverty risk of natives through the labour market channel and the public-finance channel, that impact should materializes in the long run. Accordingly, our regression models were estimated in levels. Nonetheless, the high persistence of both outcome variables and explanatory variables (their auto-regressive coefficients are systematically close to one[5]) 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). Moreover, as robustness check, we estimated our models also differencing our variables (for a similar strategy, see Cattaneo et al. 2013).

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 share of the economically active population, and (2) the OECD Employment Protection Legislation index.

Nonetheless, the model specification far described cannot ensure that the remaining variation of poverty risk of natives was due to an exogenous variation of 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 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 circulate better within ethnic networks and immigrants generally prefer 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 annual levels of the natives' poverty risk measured in Western Europe over the 2005-2018 period does 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

[5] 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.

immigration inflows from a certain country, nations with larger past presence of immigrants receive a larger inflow, independently from their proportion of vulnerable natives. The Instrument $\hat{z}_{c,t}$ is derived from:

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

$$\hat{F}_{c,t}^{N} = F_{c,2005}^{N} + \sum_{s=2006\ldots t} \Delta F_{c,s}^{N}$$

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

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

Operationally speaking, we construct that IV combining EULFS data with information of other sources. From OECD International Migration Database, we collected the stock of foreign people by nationality between 2005 and 2018 and from EUROSTAT the stock of native people in 2005 $\hat{F}_{c,t}^{N}$. Hence, we computed the population of immigrants by area of origin in 2005 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) Middle east. Then, we used the data on aggregate yearly stock of immigrants from those eight areas of origin into the 17 considered E.U. countries, available until 2018, and we construct the overall growth rates of each area-of-origin immigrant group. We then multiply the initial (2005) 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 is 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 immigrant is regressed on the instrument $\hat{z}_{c,t}$ and equation [3] the second stage including the predicted share of immigrant from equation 2.

5. Empirical results

Table 2 displays the regression coefficients estimated for our first explanatory variable, i.e. the percentage of immigrants on natives. These coefficients were obtained estimating distinct regression models for the following dependent variables: POV60, POV50, MADEP, and SEDEP. Table 3 reports the regression coefficients of our second explanatory variable, i.e., the percentage of low-skilled immigrants on low-skilled natives. In this case, the dependent variables of the estimated models were: LPOV60, LPOV50, LMADEP, and LSEDEP

Since both the explanatory variables and the outcome variables are expressed in percentage, 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. In this regard, it should be noticed that the standard errors in IV equation are small and the first stage of the IV is strong, with a F-stat of 154 (Table 2) and 237 (Table 3).

Moreover, all these models were estimated including country and year fixed effects plus a country-specific time trend and the two control variables described above[6].

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

	POV50		POV60		MADEP		SEDEP	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
	0.026	0.055	0.026	-0.014	0.057	-0.140	0.150	0.011
	(0.043)	(0.070)	(0.036)	(0.060)	(0.092)	(0.146)	(0.181)	(0.325)
N	229	229	229	229	229	229	229	229
R2	0.912	0.457	0.902	0.445	0.704	0.588	0.666	0.609
F-stat		153.7		153.7		153.7		153.7

Notes: The explanatory variable is the percentage of immigrants on natives. The models control for EAP and EPL, country and year fixed effects and time trend. Standard errors in parenthesis.

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

	LPOV50		LPOV60		LMADEP		LSEDEP	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
	0.058	-0.034	0.029	-0.032	-0.109	-0.147**	-0.114	0.005
	(0.046)	(0.057)	(0.039)	(0.049)	(0.068)	(0.067)	(0.107)	(0.113)
N	226	226	226	226	226	226	226	226
R2	0.737	0.447	0.728	0.381	0.752	0.601	0.720	0.654
F-stat		237.4		237.4		237.4		237.4

Notes: The explanatory variable is the percentage of low-skilled immigrants on low-skilled natives. The models control for EAP and EPL, country and year fixed effects and time trend. Standard errors in parenthesis.

Although the estimated models are numerous and different, the pattern of 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 OLS coefficients are quite similar to IV ones, both in terms of value and statistical significance. Although in some cases these coefficients show different signs, they are in both cases close to zero. Moreover, if one excludes IV coefficients estimated for the percentage of low-skilled immigrants on low-skilled natives in the model having MADEP as the dependent variable (see Table 3), all the coefficients reported in the two tables are not statistically significant. This similarity between OLS and IV estimates might be viewed as the result of a lack of endogeneity. However, OLS coefficients might be similar to IV

[6] 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

ones also because the above-mentioned sources of endogeneity yield contrasting biases that may cancel each other out. In fact, while measurement error may make OLS coefficients downwardly biased, simultaneity can generate the opposite bias.

Beyond this, it is important to note that these results clearly indicate that immigration does not impact poverty risk of Western European natives, both measured in terms of income poverty and material deprivation. The fact that many coefficients reported in table 2 and 3 are pretty close to the null and almost all of them are not statistically significant denotes that the lack of an effect applies to both the overall relationship, i.e., how all immigrants may affect the poverty risk of all natives, and the more specific skill-composition relationship, i.e., how the share of low-skilled immigrants may affect the poverty risk of low-skilled natives.

A very similar picture arises if one look at the coefficients obtained estimating first-difference models (see Table A1 and A2 in Appendix). Also, in this case, the coefficients show very small values and almost all are not statistically significant (only two of them were found to be statistically significant out of 16 estimated).

6. Conclusion

Focusing on Western European countries, this paper has examined the (potential) immigration impact on living conditions of natives. Analyzing an aggregate panel dataset composed by EU-15 countries plus Norway and Switzerland, we do not find any confirmation about the immigration impact on natives' poverty risk. The lack of any effect is in line with many studies concerning the immigration impact on labour-market outcomes. Nevertheless, focusing on natives' poverty risk, our study allows to maintain that immigrants do not affect the living conditions of the most vulnerable groups of Western European natives. In other words, our findings make it problematic to argue that immigrants damage the weakest groups of natives by competing with them on the labor market and taking away public resources from them. So, if someone conjectures another battle of the have-nots, the native component does not appear as a loser.

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Appendix

Table A1: OLS and IV estimates in first difference of the effects of immigration on natives' poverty risks and material deprivation.

	POV50		POV60		MADEP		SEDEP	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
	-0.088*	-0.109	-0.070	-0.185**	0.031	-0.091	0.0797	-0.293
	(0.051)	(0.095)	(0.048)	(0.086)	(0.088)	(0.182)	(0.163)	(0.412)
N	212	212	212	212	212	212	212	212
R2	0.189	0.117	0.212	0.115	0.321	0.310	0.365	0.349
Weak identification		82.85		82.854		82.85		82.85

Notes: the models control for EAP and EPL, country and year fixed effects and time trend; standard errors in parenthesis

Table A2: OLS and IV estimates in first difference of the effects of low-skilled immigration on low-skilled natives' poverty risks and material deprivation.

	LPOV50		LPOV60		LMADEP		LSEDEP	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
	0.0709	0.134	-0.0317	0.0036	-0.0926	0.00261	-0.0510	0.0329
	(0.061)	(0.090)	(0.0487)	(0.077)	(0.069)	(0.101)	(0.088)	(0.167)
N	209	209	209	209	209	209	209	209
R2	0.090	0.064	0.078	0.051	0.328	0.275	0.391	0.358
Weak identification		204.01		204.01		204.01		204.01

Notes: the models control for EAP and EPL, country and year fixed effects and time trend; standard errors in parenthesis