In-work poverty among immigrants in the EU

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Abstract

A considerable share of the population is poor in the European Union (EU), among which many are poor despite working. Immigrants are overrepresented among the working poor. Working immigrants dispose lower household income on average and face higher risks of falling into poverty than working natives, according to a cross-sectional regression analysis on a sample of 22 EU member states in 2012. The differential between the two groups shrinks considerably, though does not disappear, when controlling for both micro level factors (socio-demographic characteristics such as attained education level, occupation, household size) and macro level explanatory variables (indicators of the labor market institutions and the welfare regime) of the level of household income and the risk of in-work poverty. The income gap underlines the need for better social inclusion of immigrants.

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I. Introduction

Labor is essential for integrating immigrants in European societies, though work may not be sufficient for accomplishing social inclusion of the foreign born. I address the question whether working immigrants tend to have lower household incomes than working natives and, thus, whether they have higher chances of being working poor, even when I control for the observable compositional differences between the two groups.

Immigrants are increasingly present on the labor market, as they accounted for 70% of the rise in the workforce in Europe over the last decade (OECD 2014). A considerable share, of approximately 10% of the population, is estimated to be foreign born in the EU (Eurostat 2015). It follows that integration and social inclusion of immigrants is a progressively challenging, laborious process. This rings particularly true having in mind the recent intense and often ill-informed discourse on immigration. Rising tensions and anti-immigrant hostility, frequently fueled by negative political rhetoric, have seriously detrimental consequences on the inclusion of foreign born in European societies.

Thus, evidence based analysis that yields a more comprehensible view on the situation of immigrants is of high importance for policy making. I contribute to the discourse by focusing on the case of working immigrants, who participate in the local labor market, but still remain poor. Special attention to immigrants is key, as they are overrepresented among the working poor in Europe.

I analyze the working population in a sample of 22 member states of the EU, based on the EU-SILC (European Union Statistics on Income and Living Conditions) of year 2012, in order to observe a snapshot of poverty for the stock of immigrants that year. I make a cross-sectional linear regression analysis, where the dependent variable is the household income, and the main independent variable of interest is being foreign born. I then estimate in-work poverty in a linear probability model in order to see whether immigrants are more likely to be working poor than their native counterparts. I control for micro and macro level explanatory factors of household income and in-work poverty to account for the observable heterogeneity among immigrants and natives. Compositional differences between the two groups are responsible for the bulk of the income differential, though a considerable part of the gap remains unexplained by them. I cannot disregard many of the sources of the unobserved heterogeneity, such as the differences in immigrants' motivations in the labor market and in the host country in general. Similarly, I cannot rule out the possibility of immigrants suffering differential, and often discriminatory treatment.

Still, some of the potential reasons of the explained and unexplained part of the income differential may be addressed by integration policies. I provide an overview of economic, political and moral aspects that need to be considered when forming immigrant integration policies, keeping in mind the cross-country differences in Europe. I argue that activation policies should be complemented by policies that aim for better utilization of the skill potential of immigrants both by recognizing as well as upgrading their human capital assets. Language education and vocational trainings may lift the working foreign born out of poverty, especially those who are at the lower end of the income distribution and are characterized by lower skillset.

The paper is structured as follows. Chapter II introduces the main concepts of the study. It describes the theoretical background of the notion of poverty and in-work poverty, and gives an overview of the stock and social inclusion of immigrants in the EU. Chapter III defines and describes the key variables of interest and presents the model specifications. Chapter IV outlines the main results, their robustness checks, and discusses them. Chapter V draws policy implications from the findings, while Chapter VI concludes.

II. Literature review

II.1. The concept of poverty

An alarming number of people are poor in Europe: around 25% of the population, approximately 124.2 million people were at risk of poverty in 2012 in the European Union (Eurostat 2014). What does that indicator mean? What does it tell about European societies?

In general, poverty refers to a lack of well-being. Poverty is a relative concept, which is based on a comparison against a reference point in a group. There is always a population in question (a group of households or individuals¹) with a defined benchmark of poverty based on which the subject (household, individual) is assessed (Atkinson 1998). It follows that being poor may refer to substantially different states of being and standards of living depending on the reference group and the benchmark². Thus, definition and measurement of poverty are at the core of understanding the state of a specific group of poor people.

The benchmark for assessing people, in other words the poverty line may be absolute or relative depending on different approaches to poverty, which all intrinsically involve value judgments.³ The standard of living approach (or welfare standpoint) favors absolute measures of poverty (like measures of material deprivation) that inform about the severity of poverty. On the other hand, the minimum rights approach relies on head-count measures, which view all people under the set poverty line as poor regardless of the depth of their poverty. A relative head-count measure shows the penetration of people who are deprived of the right to fully participate in the society's activities (Atkinson 1998, Atkinson et al. 2002).

¹ Indicators of well-being may also come from the macro level (i.e. GDP per capita) and the micro level (i.e. household income). Stiglitz et al. (2009) argue for micro level indicators as they reflect the standards of living of the population better.

 $^{^{2}}$ Being poor relative to developed country or developing country terms reflect substantially different living standards. Also, the notion of living standards has several aspects as well: a person may not be able to do a set of activities due to being money poor or time poor (Atkinson 1998).

³ Another issue is that poverty may be measured based on expense (approximates well-being by consumption) or income (measures well-being by the possibility of consumption) (Atkinson 1998).

Following the minimum rights approach, the European Union set a goal of social inclusion (within the Europe 2020 strategy for smart, sustainable and inclusive growth). The headline targets for social inclusion are that 75 % of the population aged 20-64 should be employed and that the number of people at risk of poverty should be fewer by 20 million by 2020 (European Commission 2010a). A person is at risk of poverty if he or she lives in a household with a disposable income below 60% of the median equivalent income of the population in the country⁴. The aim of the country specific poverty lines and targets are to ensure the right of the residents to fully participate in their respective society.⁵

Fully participating in the respective society is especially burdensome for immigrants, who are typically on the edge of the society at the time of arrival to the host country. Marginalization is due to the lack of cultural and social roots, and most importantly to a lack of job. Earnings and social bonds from employment decrease the vulnerability of the foreign born extensively (Bevelander and Groeneveld 2007). Activation and integration on the labor market are expected to alleviate poverty, both in the case of immigrants and the native population.

Accordingly, there is an implicit assumption in the European social inclusion strategy that higher employment correlates with or even induces lower poverty rates. Social investment would lead to more work, higher employment would lead to reduced poverty. Thus prevention of poverty by social investment would result in less social spending on poverty alleviation. However more than ten years after the Lisbon Strategy, the links between employment and poverty are not clear-cut among the Member States. Recent European trends prior to the crisis indicate that even if there is growth, which would translate into higher employment, the transmission channels between employment and poverty may not operate as expected (Marx, Vandenbroucke, and Verbist 2012, Marx 2013, Corluy 2014).

⁴ Poverty in the paper refers to the 'at risk of poverty' indicator, unless a different meaning is indicated.

⁵ For a review on the merits and demerits of the 'at risk of poverty' indicator see Atkinson et al. 2002, Decancq et al. 2013.

There are three main reasons why job growth may not result in poverty declines (Marx et al. 2013). Firstly, the distribution of the benefits is key, as job growth may not benefit poor people – an upswing in employment may increase the number of multi-earner households instead of decreasing the prevalence of jobless households. Secondly, the poverty line is a moving target as median equivalent income may shift in accordance with job growth. And thirdly, a job may not raise the income enough to escape poverty, which is the phenomenon of in-work poverty.

II.2. In-work poverty

A working poor person is already partly embedded in the society by employment, but still remains on the edge as a consequence of a low level of resources. The target of reducing in-work poverty builds on the minimum rights approach described before. Namely, working people should have the right to fully participate in the societies of the European Union. The **issue** of working poverty has received some attention recently and is part of the political agenda of the EU (European Commission 2010b). In the academic circles mostly European scholars have been engaged with the topic of in-work poverty (Lohmann 2009, Marx, Vanhille, and Verbist 2011, Marx and Nolan 2012, Spannagel 2013).⁶

Being an immigrant is mentioned as a risk factor of in-work poverty (Marx and Nolan 2012), though I have not come across an analysis dedicated to the underlying reasons of higher working poverty among immigrants. The size of this risk-difference and its explanations are not common knowledge. Before comparing working natives and immigrants, I describe the factors driving inwork poverty, which are shared among natives and immigrants.

Working poverty is regarded as an issue of post-industrial societies that experienced skill biased technological changes (Goldin and Katz 2007, Acemoglu and Autor 2012), which shifted the demand toward more skilled labor, resulting in higher wage inequality. In fact, demand is on the rise not only for the highest-skilled occupations (managers, professionals), but also for the lowest-

⁶The dominance of European scholars in the field is remarkable if we consider that working poverty is more prominent in the United States (Brady et al. 2010).

skilled occupations in the service sector. Whereas employment in the middle of skill and occupation distribution (including manufacturing and routine office jobs) is declining due to routinization and automatization (Autor et al. 2003). Accordingly, the OECD database shows that wage dispersion has been more pronounced toward the top than the bottom of the distribution (OECD 2008, 2011). The processes of job polarization (Goos, Manning, and Salomons 2011) and labor market segmentation (Frazer et al. 2011) have taken root in Europe, although with varying intensity across countries. The bulk of the trends in wage inequality can be explained by macro-contextual trends (Förster and Tóth 2015).

However, wage inequality and low payment is not the sole factor responsible for being working poor. Most low-paid workers are not poor if we account for their household context (Maitre, Nolan, and Whelan 2012). A closer look will expose the multi-faceted nature of in-work poverty (Ponthieux 2007). The phenomenon in simple terms is that a working person lives in a poor household. A household is poor if its resources are not sufficient to provide for its needs, meaning that the income discounted by the number and necessities of the household members is below the poverty line. Resources mainly come from earnings from employment supplemented by transfers and benefits provided by the state. The incomes of the individuals and the social transfers are pooled together and are distributed equally among the members of the household, i.e. the manager with top earnings and the unemployed member as well, given that they live in the same household. Thus, being poor despite working may be due to the characteristics of the individual, the household, and the labor market and welfare institutions of the country (summarized in 1. Table).

	Individual – Household level	Country level
Pasauraas of the household	Factors influencing	Labor market institutions;
Resources of the household	employment	Welfare regime
Needs of the household	Size and composition	

1. Table. The concept of in-work poverty - determinants of equalized disposable household income.

II.2.a. Micro level factors influencing in-work poverty

The individual contributes to the resources of the household by earning income from employment. One should earn a sufficient amount to pull the household out of poverty. Low wages, low paid jobs definitely increase the chances of living in a poor household (Grimshaw 2011; Maitre, Nolan, and Whelan 2012). The factors explaining low wages are influenced by both demographic characteristics and labor market circumstances of the individual. The most prominent explanatory variable is the education level, as poor education increases the risk of having a low paid job. Empirics show that acquiring higher levels of education is a reliable path to exit working poverty (Newman and Chen 2008).

Apart from the low educated, young people are also more affected by low wages, partly because they possess less work experience and because a higher share of them holds unskilled blue-collar jobs (compared to the respective share in the working age population) (Peña-Casas and Latta 2004). Women tend to earn lower payments as well, although the level of wage discrimination and the impact of being female on the probability of having a low wage in general are rather indecisive. Furthermore, part time work is associated with higher chances of poverty, albeit with considerable cross-country variation in this aspect in the EU (Horemans and Marx 2013). In addition, being self-employed and having temporary job contracts also tend to correlate with low wages and higher probability of being work-poor (Lohmann 2009, Marx and Nolan 2012, Spannagel 2013). Summarizing the sociodemographic profile of the working poor, the pool of vulnerable groups consists of young, single parents (single mothers especially), poorly educated, part-time and temporary workers.

On the other hand, needs of the household determine if the shared disposable income of the household is sufficient to escape poverty (Crettaz and Bonoli 2010). Needs are hard to measure as they are subjective to a great extent and they are largely influenced by the available resources. Disregarding the issue of subjectivity, a reasonable estimation of household needs is based on the

number of dependent members. A higher number of dependent members will decrease the per capita income allocated to the household members (with a decreasing marginal impact though), so a larger household is more likely to be working poor.

II.2.b. Country level factors influencing in-work poverty

As I analyze the relationship between being foreign born and being working poor at the European level, I should also account for the cross-country variance of in-work poverty rate that are due to the varying macro level characteristics of the countries. Multi-level models of in-work poverty estimations showed that the micro level socio-demographic attributes describing the composition of the labor force are related to and influenced by the macro level factors, like the labor market institutions and the welfare regime (Lohmann 2009, Spannagel 2013).

The qualificational composition of the labor force largely determines the prevalence of low wages. A higher share of low educated people in the country increases the frequency of low wages as returns are higher on high level skills. The share of low educated in the society is a significant factor explaining cross-country working poverty variance (Spannagel, 2013).

Wages on a labor market reflect the bargaining power relation between employers and employees. Union density of a country could reflect the support an employee may get to avoid low wages, although the measure may be misleading as the role of labor unions faded in many European countries. The coordination of wage setting is another indicator of bargaining coverage influencing working poverty (Lohmann 2009).

Remuneration from the labor market is supplemented by the benefits provided by the state. So the state may counteract earnings inequality on the labor market by redistribution. The welfare regime sets the circle of recipients as well as the amount of transfers and benefits the household receives. Thus the redistributive strategy may make a considerable difference in terms of in-work poverty rates. For example, in the case of unemployment replacement benefits, the transfers paid to the unemployed counterbalance the absence of earnings the household suffers. The family and children

benefits – another branch of the welfare system – support households that have to care for more dependent members. The higher the benefit, the lower the risk that the household falls into poverty due to its size. Apart from the size of the transfers, their targeting is also crucial in terms of poverty. The benefits can counterbalance wage inequality and may be able to lift up the low income households from poverty if the system is pro-poor (Lohmann 2009).

Defamilization measures of the welfare state make the members more independent from their family in financial terms. An indicator of defamilization is, for example, less reliance on the family in case of unemployment or low payments. Defamilization measures include public expenditure on child-care and pre-school as they increase female participation in the labor market. Consequently, females are less dependent on the earner of the household. The trend is beneficial as dual earner households face lower risk of being poor. Defamilization may ease intergenerational dependency, as pensions and other forms of state support contribute to the independence of elderly people from their children (Spannagel 2013).

Working poverty prevails among several vulnerable groups, whose poverty risks, stemming from their position in the labor market and their household composition, may be lessened by the welfare system, as described above. One of the vulnerable group consists of immigrants.

II.3. The vulnerable group of immigrants

The foreign born population accounted for 50.8 million in the EU-27⁷, representing approximately 10% of the population, as of 1 January 2013. From those 33.5 million were born outside of the EU-27 and 17.3 million were born in an EU-27 member state different from their country of residence (Eurostat 2015). The largest number of immigrants live in Germany, the United Kingdom, Italy, France and Spain; numbers are highest relative to the population in Luxemburg (44%) and also high (above 10%) in Cyprus, Latvia, Estonia, Ireland, Austria, Belgium and Spain. In Western Europe the percentage of foreign born almost doubled from less than 8% of the

⁷ EU27 stands for 27 member states of the European Union; all current member states expect for Croatia.

population in 1996 to almost 14% in 2010 (Eurostat 2015, D'Amuri and Peri 2011). Therefore, strengthening the social inclusion of immigrants has growing importance for reaching social cohesion in European countries.

There are several ways to strengthen social cohesion disrupted by the flow of immigrants. Integration, social inclusion and poverty alleviation of immigrants are closely related strategies. Integration is the broadest term, the settled immigrant population may be integrated in the society socio-economically, culturally and politically (Entzinger and Biezeveld 2003). Social inclusion is related most closely to socio-economic integration, as it refers to fighting against poverty and capability deprivation (Sen 2000). Given the similarities, I use the broader term of socio-economic integration and the narrower notion of social inclusion interchangeably.

Social inclusion is a challenging objective, given that negative perceptions of immigrants are widespread in Europe. According to a survey by Gallup, it is only Europe among the continents where the majority of people are in favor of reducing immigration (though attitudes in the Northern and Southern countries differ considerably) (IOM 2015). Much of the negative perception is due to misunderstandings about costs of migration and a lack of assessment of the benefits. Even the academic discussion is biased towards estimating the costs of immigration natives face in the labor market and less focused on the economic gains from immigration, as Borjas (1994) pointed out.

Estimates on immigrants' costs, their impact on native workers' employment and wage are mixed and differ across studies that analyze at regional or national level (Ottaviano and Peri 2006). Some argue that immigration increased competition for employment and reduced the wages of natives in the US, especially the earnings of low educated natives (Borjas 2013a). Others remark that immigrants and native workers of the same level of education and age were imperfect substitutes and complemented each other (Ottaviano and Peri 2006), causing immigrants to push natives toward more complex, better-paid jobs in Western Europe (D'Amuri and Peri 2011). Similarly, a study on OECD countries during the 1990s found positive effect of immigration on the wages of less educated natives and no or positive effect on the average native wages (Docquier, Ozden, and Peri 2011). Estimations on a sample of 14 OECD countries between 1980 and 2005 indicate that there was no crowding-out of natives and that the total GDP of the receiving country increased in the short run, without affecting average wages (Ortega and Peri 2009). However, a generalization of the findings should be cautious, as there is cross-country variance of immigrants' impact on natives' employment, depending on e.g. the flexibility of the labor market. Restrictive employment institutions amplified the negative consequences of immigration for natives in a sample of 18 European countries (Angrist and Kugler 2001).⁸

Another aspect, the working immigrants' situation in the labor market of the recipient country, has also received attention (Guzi, Kahanec, and Mýtna Kureková 2015). Work is 'proportionally' more important for immigrants as a way to be integrated in the society, as they do not possess the established networks of relatives and friends in the recipient country. The lack of social roots increases the vulnerability of immigrants in terms of social inclusion. It follows that some of the underlying reasons of native-immigrant labor market gaps are found to be the fewer time spent in the host country, fewer social capital and lower returns on human capital (Guzi, Kahanec, and Mýtna Kureková 2015).

Research focusing on the circumstances of immigrants in the recipient country found that immigrants are more likely to be at risk of poverty. One out of ten people at risk of poverty in the EU is foreign born (Lelkes and Zólyomi 2010). Work intensity⁹ of the household is strongly associated with the risk of poverty both in the case of natives and, even more so, in the case of

⁸ Another issue fueling negative attitudes towards immigrants is their fiscal impact (Boeri 2010). Findings are diverse on the evidence of immigrants being free riders and overburdening the welfare system. A study found no evidence of difference between benefit receipt of mobile EU citizens and natives in EU countries (Medgyesi and Pölöskei 2014). The OECD also noted that immigrants contribute more to public finances than they take out in public benefits and services in almost all European countries and concluded that immigrants are neither significant gain or drain for the public pool (OECD 2013).

⁹ The definition of work intensity is the following (Ward and Ozdemir 2013). Work intensity is calculated as the average of individual work intensities in the household. The individual work-intensity is the ratio of the number of months worked during the income reference period relative to the number of months the member could theoretically have worked.

immigrants. Risk of falling under the poverty line in the working age population is the highest (47.5%) among immigrants born outside the EU, who live in a household with low work intensity (0-0.49); locals with similarly low work intensity face only a 38% probability of falling into poverty (Lelkes et al. 2012). The relationship between household work intensity and poverty indicates that work may be the path for immigrants to escape poverty.

II.4. Research question

The idea of work as a path toward welfare leads to the main question of the paper: do immigrants have similar chances to escape poverty when working, as natives?

I analyze the working population (the 18-64-year-olds) in 22 countries of the EU. I focus on immigrants who are already partly integrated in the society via work. I will compare working immigrants and working natives in terms of their poverty outcomes.

Do working immigrants in the EU face on average a larger gap from the country's median disposable household income, and thus, face higher risks of falling into working poverty than working natives? Does this hold even when controlling for both micro level factors (compositional differences among the two groups, like different attained education levels, occupations, household sizes, etc.) and macro level explanatory variables (indicators of labor market institutions and welfare regime) of in-work poverty?

The questions are essential from an immigration policy point of view. Evidence of an income gap between working immigrants and natives would suggest that activation policy should be complemented by further integrating measures. A remaining differential between the two groups, after accounting for compositional differences between them, would indicate that poverty alleviation of immigrants would require distinct policy tools, specifically tailored for their needs.

III. Methodology

III.1. Description of the key variables

The dependent variable in question is the person equivalent household disposable income. The other, closely related main outcome variable is in-work poverty, which is an indicator formulated by the European Commission in order to have a consistent target across countries for lowering working poverty. In-work poverty is defined by the Eurostat as affecting those who are working and being poor at the same time based on the EU-SILC survey. The condition of working is met if the individual has been mainly working during the reference year, meaning that the respondent reported to be an employee or self-employed either in full or part time for at least 7 months in the calendar year of the survey. Besides, individuals are poor, whose person equivalent household disposable income is below 60 % of the median in the country in question¹⁰ (Eurostat 2014, Marx and Nolan 2012).

The definition of immigrant status according to the EU-SILC may be based on country of birth or citizenship. I measure the stock of migrants based on being foreign born, following Lelkes et al. (2010). Citizenship is a less reliable indicator of immigrant status for cross-country analysis purposes as rules and regulations of acquiring citizenship vary across countries. I assume that the bias stemming from the definition based on country of birth is small, as the number of nationals who happened to be living abroad when they were born is unlikely to be large or systematically different across countries Second generations of foreign born are not regarded as immigrants according to the definition based on country of birth. It follows that natives are those who were born to mothers residing in the country in question.

Other limitations of the immigrant measure are that it provides no information about the extent of assimilation or integration (note that some of the foreign born people may already own the citizenship of the country of residence). There is no indication about ethnicity; migrants are

¹⁰ The income data collected in EU-SILC refers to the year before the survey. Except for the UK and Ireland, where the reference period consists of the 12 month period prior to the interview.

categorized as born in the EU or outside the EU. The two groups are heterogeneous, although even if further breakdown would be possible, sample sizes would shrink drastically. The flow of immigrants is not measured either.

Furthermore, illegal or temporary migrants are likely to be underrepresented in the survey. Similarly, the survey is likely to somewhat underrepresent households both at the very low and very high end of the income distribution, as they are harder to reach during data collection (Nicaise and Schockaert 2014). Eventually, I assume that the survey gives a representative indication about the characteristics and circumstances of migrants, despite the probable understatement of the number of immigrants.

III.2. In-work poverty rates in the EU

Before describing the database and variables in more detail, I will present in-work poverty of working migrants and natives across EU countries. Approximately 9 % of the working age population was working poor in the EU in 2012 (Eurostat 2015b). A snapshot of in-work poverty rates in the EU in 2012 shows that there is variance across countries in the share of working population affected by poverty, ranging from less than 5% to almost one fifth (see 1. Figure). Countries with the highest in-work poverty rates are mostly the Mediterranean nations. Nordic countries tend to have lower levels of in-work poverty (especially Finland), though not predominantly. Varying rates prevail in Western and Eastern countries. For example the share of the working poor is very low in Belgium and the Netherlands, moderate in Germany and France and quite high in Luxembourg. From the Eastern bloc, Romania stands out with the highest in-work poverty rate of almost 20%, whereas Bulgaria is around the middle of the rank and Hungary fares rather well. All in all, neither a geographical, nor a welfare state regime pattern (as classified by Esping-Andersen 1999) is very strong in the distribution. In other words, countries from the same region may exhibit substantially different working poverty rates.



1. Figure. In-work poverty rate in the countries of EU27 (% of ages 18-64 of the working population). The figure indicates the share of migrants among the working poor. (Source: own calculation based on EU-SILC 2012.) Romania had no observation for immigrants among the working poor.¹¹

There is a very high variance across countries in the share of migrants among the working poor (see Figure 1. and 2.). Luxembourg is outstanding again with a share of approximately 80% of the working poor being immigrant. Proportions are high in the Southern countries (Cyprus, Spain, Italy, Greece) and in Belgium and Austria. Figures depend on the share of immigrants in the working population. Comparing the proportion of migrants among the working and the working poor population, immigrants are overrepresented among the working poor population in most of the countries (Figure 2). (The difference between the shares in the two subpopulations is striking in Belgium, Slovenia, Cyprus and Denmark.)

¹¹ Country codes of Figure 1. and 2. are as follows: BE – Belgium, BG – Bulgaria, CZ – Czech Republic, DK – Denmark, DE – Germany, EE – Estonia, IE – Ireland, EL – Greece, ES – Spain, FR – France, IT – Italy, CY – Cyprus, LV – Latvia, LT – Lithuania, LU – Luxembourg, HU – Hungary, MT – Malta, NL – Netherlands, AT – Austria, PL – Poland, PT – Portugal, RO – Romania, SI – Slovenia, SK – Slovakia, FI – Finland, SE – Sweden, UK – United Kingdom.



2. Figure. The proportion of immigrants among the working population in the EU, by countries. The proportion of immigrants (born outside the country of residence in or outside EU) among the working population and the working poor population between 18-64 years, by country in 2012. (Source: Own computations from EU-SILC 2012.) For the estimated proportions of the different populations see 8-13. Tables in Appendix.

It is uncertain if immigrants are proportionally more affected because of compositional differences between the groups of natives and immigrants, such as different age, educational and household structure, etc. or if there is a remaining gap between the two populations that is not explained by the observable variables generally influencing working poverty.

III.3. Database and variable description

The primary source of data for the analysis is the EU-SILC database, which aims at collecting timely and comparable cross-sectional, multidimensional micro-data on income, poverty, social exclusion and living conditions in countries of the European Union (Eurostat 2015c). The reference population of EU-SILC consists of all private households and their current members aged 16 and over residing in the territory of a member state at the time of data collection. Persons living in collective households and in institutions are not included. The data collected should be based on a nationally representative probability sample of the population residing in private households within the country (EU-SILC, 2012).

The EU-SILC covers all EU27 at the time (2012), though due to very small samples of immigrants I dropped some of the Eastern countries (Bulgaria, Hungary, Poland, Romania and Slovakia) (see

14. Table for the number of observations by country in the Appendix). I narrowed the dataset to the working population (according to the definition above) between ages of 18 and 64 years I would like to capture the general differences between working natives and working immigrants.

The unit of analysis will be the assumed head of household following the definition by Lelkes et al. (2012). The household head is taken to be the oldest man of working age (18-64) or the oldest woman of working age if there is no man of working age in the household. (Households with no members of working age are excluded from the sample.) Although the number of observations shrink when restricting the sample to the household head, in this way I eliminate the bias that would come from the nested nature of the dataset. Each household will be represented by the head of household only once.¹²

So the sample covers 22 EU member states, where 100016 observations represent the working household heads. Approximately 11% of them are immigrants (10769), 4236 born in the EU and 6533 born outside the EU (see 14. Table in Appendix).

III.3.a. Micro level variables

I include micro level control variables in the models that may be associated with in-work poverty and explain part of the differences between the native and immigrant working population, in line with the findings of the literature described in the previous chapter (for the definition of the variables see 15. Table in Appendix). In the selection of variables that are most relevant for analyzing working poverty I follow Lohmann (2009) and Spannagel (2013). All the variables at the individual and household level come from the EU-SILC of 2012. The demographic variables contain age, gender and marital status. Marital status is a dummy variable taking the value of zero if being married and one if being a single earner (never married, separated, widowed or divorced).

¹² Another way to account for the hierarchical data structure would be to estimate two-way clustered standard errors (see Cameron and Miller 2013).

The variables controlling for the labor circumstances of the individual include the highest education level attained based on the International Standard Classification of Education (ISCED) developed by the UNESCO. The population is grouped into individuals with higher than post-secondary education, with upper secondary education and with lower secondary or lower education. The occupation dummies are following the International Standard Classification of Occupations (ISCO-08) codes.¹³ Different working time is also accounted for: the self-defined current economic status of a working individual may be employee or self-employed working full or part time. An employment status dummy is included to consider the potential differences between employees and self-employed workers in terms of being affected by in-work poverty. The type of the contract indicating if the job is permanent or temporary is also controlled for.

At the household level I control for the number of employed members working full time and the number of employed members working part time in the household. The variables are constructed based on the self-defined current economic status of the household heads. The number of dependent members in the household is introduced in the model to account for the differences in the amount of income needed. A household member is dependent if he or she is below 18 years or between 18 and 24 and studying or above 64 years.

The raw socio-demographic profile of immigrants and natives is summarized in 2. Table. Average age of working immigrant household heads is slightly lower compared to their native counterparts. In the group of immigrants, there are somewhat more dependent and fewer full time employed household members. Part time jobs and especially temporary job contracts are more widespread among the foreign born. The educational attainment distribution of the two groups are similar, the share of high and low educated people are slightly higher among immigrants. The occupational

¹³The ISCO codes distinct managers and professionals (occupations of high skills that I label as professional occupations), technicians and associate professionals (occupation of medium high skills that I label as technician occupations), clerical support workers, service and sales workers, skilled agricultural, forestry and fishery workers, craft and related trades workers, plant and machine operators and assemblers (occupations of medium skills that I label as support/service occupations), and workers with elementary occupations (occupations of low skills that I label as elementary occupations).

distribution differs more: a much higher share of immigrants have elementary occupations, especially among the foreign born coming from outside the EU.

		atives	Immi	grants	Fro	m EU	From ou	tside EU
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
High_edu	0.37	0.48	0.40	0.49	0.42	0.49	0.39	0.49
Med_edu	0.43	0.49	0.37	0.48	0.33	0.47	0.39	0.49
Low_edu	0.20	0.40	0.23	0.42	0.24	0.43	0.22	0.42
Professional	0.27	0.44	0.23	0.42	0.28	0.45	0.20	0.40
Technician	0.16	0.37	0.11	0.32	0.13	0.34	0.10	0.30
Support/service	0.50	0.50	0.51	0.50	0.50	0.50	0.52	0.50
Elementary	0.06	0.24	0.14	0.35	0.10	0.30	0.17	0.38
Age (mean)	45.48	10.81	43.97	10.42	42.87	10.32	44.68	10.43
Female	0.16	0.36	0.18	0.39	0.16	0.37	0.20	0.40
Marital	0.41	0.49	0.37	0.48	0.40	0.49	0.35	0.48
Dependent members	1.00	1.05	1.10	1.12	1.00	1.06	1.16	1.16
(number)								
Full time employed	1.32	0.74	1.24	0.73	1.27	0.71	1.22	0.75
members (number)								
Part time job	0.08	0.28	0.11	0.31	0.09	0.29	0.11	0.32
Self-employed	0.18	0.38	0.12	0.33	0.12	0.33	0.12	0.32
Temporary contract	0.08	0.27	0.15	0.35	0.11	0.32	0.17	0.38

2. Table. Socio-demographic profile of immigrants and natives.

The mean indicates the share individuals in the sample of natives, immigrants (from within and outside the EU), who fall into the specific category (i.e. of having higher educational attainment). For a more detailed descriptive and summary statistics see 16-17. Tables in Appendix. For the detailed description of the variables see 15. Table in Appendix.

III.3.2. Macro level variables

I include macro level variables characterizing the labor market institutions and the welfare regime of the country that may explain some of the variance in household income of the household heads, in line with the in-work poverty estimation models of Lohamnn (2009) and Spannagel (2013).¹⁴ (For the definition of the variables and for their summary statistics see 18-19. Tables in Appendix.) Data on union density was retrieved from the OECD Labour Force Statistics. Another indicator that may capture the bargaining power of employees is the coordination of wage setting created by

¹⁴ All the macro variable refer to 2011 as the EU-SILC's survey year of 2012 covers 2011 as reference period in the case of income variables.

Visser (2012). I account for the qualificational composition of the labor force by including the share of low educated among the working age population.

Characteristics of the welfare state are proxied by the unemployment replacement rate obtained from the OECD Benefits and Wages Statistics, the percentage of public social benefits in cash paid to the lowest income quintiles of the total population, and the public spending on family cash transfers as a % of GDP, both collected from the OECD Social Expenditure database.

Some of the control variables measure dual earner support indicating the level of defamilization. Public expenditure on child-care and pre-school as % of GDP is retrieved from the OECD Social Expenditure database and an indicator of public childcare availability from Eurostat. Female unemployment rate from Eurostat is also included as it gives information about the prevalence of single earner households in the country, which are generally at higher risk of in-work poverty. Intergenerational dependency is introduced in the model as the share of young (20-29 years old) unemployed people living in parents' household. Data on the country-level macroeconomic statistics about unemployment rate and real economic growth rate (included as economic control variables) were obtained from Eurostat.

I decided not to include some of the macro variables considered relevant in order to avoid multicollinearity (see 20. Table in Appendix). As both union density and wage coordination are proxies for the bargaining power of the employees and are highly correlated, I only keep wage coordination as it is probably a less misleading measure than the old-fashioned indicator of union density. For similar reasons I only include family benefits expressed as a % of GDP and drop the variable of cash benefits received by the family.

III.4. Modeling strategy

III.4.a. OLS estimation

The first model is an Ordinary Least Squares (OLS) estimation, a cross-sectional linear regression model. As mentioned before, the population covers working household heads between ages 18 and 64 from 22 EU member states in 2012. The model is specified in the following way:

$Y_i = c + \alpha_1 IMM_i + \beta_1 DEM_i + \beta_2 EMP_i + \beta_3 HHD_i + \mu_1 CNTR + \epsilon_i$ (1)

The unit of analysis is the individual – the working household head denoted by 'i'. The dependent variable (Y) is a measure of the household income in terms of the median income in the country. It indicates the household's placement in the society, in terms of disposable income. In particular, 'Y' is the equivalent disposable household income of the household head expressed as a percentage of the median equivalent disposable household income in the country of residence.

'IMM' stands for the main variable of interest – the immigrant status – which is a dummy variable set to unity if the individual is foreign born. Though there are fewer observations per group, I also estimate the model with a distinction between immigrants born in and outside the EU, assuming that they may have systematically different in-work poverty outcomes. 'DEM' stands for the vector of the demographic characteristics of the individual (age, gender, marital status and highest education level attained). 'EMP' is a vector of the labor market circumstances of the individual (occupation, working time, type of employment, type of contract). 'HHD' represents the household characteristics (number of full and part time employees, number of dependent members). 'CNTR' represents country fixed effects to account for the heterogeneity of the EU member states that may be associated with in-work poverty.

$Y_i = c + \alpha_1 IMM_i + \beta_1 DEM_i + \beta_2 EMP_i + \beta_3 HHD_i + \gamma_1 LAB + \gamma_2 WLF + \gamma_3 ECC + \mu_1 CNTR + \epsilon_i$ (2)

The second model includes country level variables as well. 'LAB' refers to the labor market institutions of the country (union density, qualification of the labor force). 'WLF' is a vector of the characteristics of the welfare regime. 'ECC' is added to control for the differences due to general macroeconomic stance. Country fixed effects ('CNTR') are included in this model as well.

Model (1) and (2) primarily examine if immigrants face lower household income on average than natives, keeping other factors constant. In each case, I add an estimation with a distinction between immigrants born in and outside the EU. The models estimate cluster-robust standard errors that are robust to arbitrary heteroskedasticity while also allowing for arbitrary correlation between errors of observations from the same country (Cameron and Miller 2013). Potential shortcomings of the estimation may be that being working poor may be caused by omitted variables that are also correlated with being an immigrant (I further elaborate on omitted variables in the discussion of the results). Another problem may be the prevalence of spurious correlations or non-linear relationships between household income and the explanatory variables. However, it is important to bear in mind that the paper is more of an exploratory study than an inferential investigation. Moreover, the ease of interpretation justifies the application of the models as well.

III.4.2. Linear probability model

Model (3) proceeds with investigating if immigrants are more likely to be working poor than natives. As the dependent variable of in-work poverty is binary (it takes value 0 if a working individual is above and 1 if the working individual is below the poverty line), a linear probability model is included in the analysis. However, much of the information is lost about the relationship between the micro (including immigrant status) and macro factors, and household income when applying a dichotomous poverty variable instead of a continuous household income indicator. Nevertheless, a binary poverty variable fits the minimum right approach well. Apart from the general pitfalls of linear regression models mentioned above, the linear probability models may predict probabilities below 0 or above 1; the estimations are often biased and inconsistent (Horrace and Oaxaca 2006). Still, the model has the advantage that potentially endogenous group dummies can be estimated as well (Caudill 1988) and that is easy to interpret.

IV. Results and Discussion

IV.1. OLS estimation

The OLS regression results show that expected disposable household income of an immigrant, expressed as a percentage of the median disposable household income in the country, is 19 percentage points lower compared to that of a native, considering that only country fixed effects are included (see model M1.0). The difference decreases gradually when individual observable characteristics are controlled for (M1.1-3.). The baseline model (M1.3) indicates that if micro level characteristics are controlled for, the average gap between immigrants' and natives' household income (as a % of the median) drops to 11 percentage points (see 3. Table).

Household income (% of median)	(M1.0)	(M1.1)	(M1.2)	(M1.3)
Immigrant	-0.186***	-0.163***	-0.123***	-0.106***
	(0.0389)	(0.0225)	(0.0200)	(0.0213)
Med_edu		-0.357/***	-0.1/3***	-0.156***
		(0.0195)	(0.0142)	(0.0115)
Low_edu		-0.528***	-0.302***	-0.274***
		(0.0320)	(0.0308)	(0.0219)
Technician			-0.228***	-0.238***
			(0.0225)	(0.0217)
Support/service			-0.409***	-0.428***
			(0.0289)	(0.0300)
Elementary			-0.463***	-0.490***
			(0.0312)	(0.0293)
Demographic controls		Yes	Yes	Yes
Labor market circumstances				Yes
Country fixed effects	Yes	Yes	Yes	Yes
Constant	1.234***	0.484***	0.650***	0.623***
	(0.00609)	(0.0763)	(0.0715)	(0.0725)
Observations	100,016	100,016	97,537	65,603
R-squared	0.013	0.210	0.236	0.302

3. Table. Regression results of Model (1).

Cluster-robust standard errors in parentheses. Confidence levels: *** p < 0.01, ** p < 0.05, * p < 0.1. The reference category for the Education dummies is high education. The reference category for the Occupation dummies is professional occupation. The differences in the number of observations are due to missing observations for some of the variables. See the results in 21. Table in Appendix.

Education and occupation are strongly associated with household income, as the theory predicts.

A household head with elementary education is expected to dispose a 53 percentage points lower

income than a peer with tertiary education, holding everything else constant. Similarly, elementary workers face a 46 percentage points lower income on average compared to professionals, other variables kept equal. Interestingly, the average household income difference is only slightly narrowed when I control for education level ($\alpha_1 = -0.16$). Though when I also account for occupations, the gap between immigrants and natives decreases considerably ($\alpha_1 = -0.12$). The results indicate that immigrants may not be able to fully make use of, and benefit from their education, ending up in lower-skilled occupations.



3. Figure. The distribution of education degrees among immigrants and natives The sample consists of the working population between ages 18-64 in 22 member states of the EU. Source: own calculation from EU-SILC 2012.

Summary statistics show that the share of foreign born having lower-skilled occupation (elementary, clerical support and service workers) is much higher than that of natives, although the distribution of educational attainment in the two groups is rather similar (see Figure x and y). It follows that there is a more severe education-occupation mismatch among immigrants.¹⁵ More than 20% of foreign born having an elementary occupation hold a tertiary degree, compared to less than 10% among natives (see Figure 5.).¹⁶ A weighty reason for the education-occupation mismatch may be that the acquired skills in the country of origin are not transferable to the host country's labor market (Kogan 2011).

¹⁵ Immigrants are more likely to be overqualified not only at the aggregate, EU level, but at the country levels as well, in almost every case, especially in Greece, Spain and Italy (OECD 2014b, pp. 60.).

¹⁶ A greater educational mismatch among the high-skilled immigrants was also found in the US labor market (Chiswick 2009).



4. Figure. Education vs. occupation of immigrants and natives (number of observations).

. Note: Number of observations of the working population between ages 18-64 in 22 member states of the EU by education and occupation. Left figure: number of observation of immigrants(x axis), by occupation (y axis) and education level (color codes). Right figure: number of observation of immigrants, by occupation and education level. Note that the number of observations for natives is approximately ten times greater. Source: own calculation from EU-SILC 2012.



^{5.} Figure Education vs. occupation of immigrants and natives (shares, %). Figures for immigrants are presented on the left and for natives on the right. Note: the sample consists of working population between ages 18-64 in 22 member states of the EU. Left figure: share of immigrants (y axis) in different occupations (x axis), by education level (color codes). Right figure: share of natives in different occupations, by education level. Source: own calculation from EU-SILC 2012.

The same set of regressions with distinct groups for immigrants born in and outside the EU show that the income gap is sizeable if I do not control for the compositional differences between the two groups (see 4. Table). Foreign born from outside the EU fare worse; they dispose a 21 percentage points lower household income on average compared to natives. Whereas the gap is only 15 percentage points between immigrants born in the EU and natives. However, the gap between the categories of immigrants disappears when I include all the micro level control variables, which suggests compositional differences between immigrants born in and outside the EU are not substantial.

M1.0	M1.1	M1.2	M1.3
-0.148***	-0.134***	-0.112***	-0.106***
-0.207***	-0.178***	-0.129***	-0.106***
	Yes	Yes	Yes
		Yes	Yes
			Yes
Yes	Yes	Yes	Yes
100,016	100,016	97,537	65,603
0.014	0.210	0.236	0.302
	M1.0 -0.148*** -0.207*** Yes 100,016 0.014	M1.0 M1.1 -0.148*** -0.134*** -0.207*** -0.178*** Yes Yes Yes Yes 100,016 100,016 0.014 0.210	M1.0 M1.1 M1.2 -0.148*** -0.134*** -0.112*** -0.207*** -0.178*** -0.129*** Yes Yes Yes Yes Yes Yes 100,016 100,016 97,537 0.014 0.210 0.236

Cluster-robust standard errors in parentheses. Confidence levels: *** p < 0.01, ** p < 0.05, * p < 0.1. The reference category for the Immigrant dummies is Native. The differences in the number of observations are due to missing observations for some of the variables. See the results in 22. Table in Appendix.

4. Table. Regression results of Model (1) with a distinction between immigrants born within and outside the EU.

In the next set of models (2) I include the macro level variables to control for observed country characteristics that may explain the heterogeneity in disposable household income (see 5. Table). As the country fixed effects already accounted for most of the macro sources of variance in income dispersion, the overall picture does not change¹⁷. A full model (M2.3) that includes all the micro and macro control variables arrives at an estimated coefficient of -0.11 as well. In other words, comparing a native and an immigrant, a foreign born disposes an 11 percentage points lower household income on average (expressed as a % of the median household income in the country), holding everything else constant. Regarding the two groups of immigrants from and outside the EU, the gap between them decreases, but does not disappear entirely, when including all observable micro and macro controls.

¹⁷ Mutli-level models may better in capturing the influence of macro variables (labor market insitutions and welfare regime) on in-wok poverty

Household income (% of median)	M2.0	M2.1	M2.2	M2.3
T • .	0.400444	0.440444		
Immigrant	-0.180***	-0.112***		
Immigrant_eu			-0.136***	-0.1000***
Immigrant_o			-0.207***	-0.120***
Micro level controls		Yes		Yes
Labor market institutions variables	Yes	Yes	Yes	Yes
Welfare regime variables	Yes	Yes	Yes	Yes
Economic control variables	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Constant	1.705***	0.845***	1.696***	0.843***
Observations	79,980	53,541	79,980	53,541
R-squared	0.010	0.291	0.01	0.291

Cluster-robust standard errors in parentheses. Confidence levels: *** p<0.01, ** p<0.05, * p<0.1. The reference category for the Immigrant dummies is Native. The differences in the number of observations are due to missing observations for some of the variables.

5. Table. Regression results of Model (2).

I made several robustness checks of the baseline model (M1.3) to see how consistent the estimated coefficient of immigrant status is. I re-estimated the model on a subsample of the EU15 countries and the estimations remained mostly unchanged (see 23. Table in Appendix). The difference between the baseline results and that of the subsample of Germany, Spain, Italy, United Kingdom and France, where the largest number of immigrants reside, are not substantial either; the coefficient of the immigrant dummy is only 1 percentage points higher in absolute value (see 24. Table in Appendix). On the other hand, in the Mediterranean countries, where in-work poverty is high (Greece, Spain, Italy and Portugal), the gap between immigrants and natives is higher (see 25. Table in Appendix). Another interesting point is that in the 'PIGS' countries the estimated coefficients for immigrants from the EU and outside the EU do not converge strongly. Working immigrants born outside the EU face lower household income on average than immigrants from the EU, even after controlling for compositional differences between the two groups.

All in all, the coefficient of the immigrant dummy is stable. The re-estimations proved that there is a significant negative association between household income and being an immigrant in the EU.

IV.2. Linear probability model

The results suggest that an immigrant has a 10 percentage points higher probability on average of being working poor compared to a native, if only country fixed effects are included (see 6. Table). The gap between the probabilities of the two groups decreases gradually, when I add the individual and country level observable control variables. The chance of falling into in-work poverty is expected to be 7 percentage points higher in the case of being foreign born, keeping all else constant. The difference is considerable. A working household head holding only an elementary degree compared to someone with a tertiary education faces a similarly higher probability of working poverty on average as a foreign born compared to a native, holding all else equal.

Working poverty	(M3.0)	(M3.1)	(M3.2)	(M3.3)	(M3.4)
Immigrant	0.100***	0.0910***	0.0806***	0.0706***	0.0685***
	(0.0155)	(0.0127)	(0.0117)	(0.0115)	(0.00935)
Med_edu		0.0436***	0.0243***	0.0155***	0.0145***
		(0.00463)	(0.00509)	(0.00286)	(0.00297)
Low_edu		0.107***	0.0772***	0.0583***	0.0589***
		(0.0124)	(0.0137)	(0.00676)	(0.00785)
Technician			-0.0111*	0.00232	0.00262
			(0.00562)	(0.00236)	(0.00197)
Support/service			0.0380***	0.0409***	0.0413***
			(0.00817)	(0.00457)	(0.00472)
Elementary			0.0910***	0.105***	0.0999***
			(0.0182)	(0.0131)	(0.0138)
Demographic controls		Yes	Yes	Yes	Yes
Labor market circumstances				Yes	Yes
Macro level controls					Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Constant	0.0427***	0.156***	0.147***	0.0984***	0.246***
	(0.00243)	(0.0187)	(0.0188)	(0.0152)	(0.0223)
Observations	100,016	100,016	97,537	65,603	53,541
R-squared	0.027	0.082	0.090	0.112	0.109

Cluster-robust standard errors in parentheses. Confidence levels: *** p < 0.01, ** p < 0.05, * p < 0.1. The reference category for the Education dummies is high education. The reference category for the Occupation dummies is professional occupations. The differences in the number of observations are due to missing observations for some of the variables.

6. Table. Regression results of Model (3).

Immigrants born in the EU have a 7, whereas immigrants born outside the EU have a 12 percentage points higher probability on average, compared to the natives, being poor in spite of working (see 7. Table). The gap between the two categories of immigrants is stable to the inclusion of micro and macro level control variables, contrary to the results of the OLS regressions. This may indicate that immigrants born outside the EU tend to be at the lower end of the household income distribution compared to their counterparts born in the EU.

Working poverty	(M3.0)	(M3.1)	(M3.2)	(M3.3)	(M3.4)
Immigrant_b_eu	0.0672***	0.0671***	0.0610***	0.0547***	0.0512***
	(0.0124)	(0.0105)	(0.0102)	(0.00926)	(0.00888)
Immigrant_b_o	0.118***	0.104***	0.0915***	0.0801***	0.0804***
	(0.0211)	(0.0175)	(0.0161)	(0.0167)	(0.0152)
Demographic controls		Yes	Yes	Yes	Yes
Occupation controls			Yes	Yes	Yes
Labor market circumstances				Yes	Yes
Macro level controls					Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Constant	0.0437***	0.157***	0.148***	0.0990***	0.0545
	(0.00241)	(0.0187)	(0.0188)	(0.0152)	(0.0599)
Observations	100,016	100,016	97,537	65,603	53,541
R-squared	0.028	0.082	0.090	0.113	0.108

Cluster-robust standard errors in parentheses. Confidence levels: *** p < 0.01, ** p < 0.05, * p < 0.1. The differences in the number of observations are due to missing observations for some of the variables.

7. Table. Regression results of Model (3) with a distinction between immigrants born within and outside the EU.

IV.3. Overall discussion of the results

I re-emphasize that the paper is not aiming for establishing a causal relationship between being an immigrant and having lower household income or falling into in-work poverty. The group of natives (a base of locally born regardless of ethnicity) cannot be regarded as a proper comparison group for immigrants (an already heterogeneous pool of foreign born from all around the world) due to unobserved heterogeneity. Omitted variables that may explain the remaining income gap between immigrants and natives include ethnicity, cultural differences, lack of language proficiency, weaker social networks in the host country, and lower rates of benefit take-up. Many of these factors may be related to the time spent in the host country (Kahanec and Zimmermann 2008),

which is also unknown in this case. Accordingly, the cross-sectional analysis does not account for the cohort effects, namely that immigrants and the host country policies may be different at different times of arrival (Borjas 1985 in Kahanec and Zimmermann 2008).

Also, immigrants form a self-selected group. They may be more motivated on the labor market than their native peers (Borjas 1987, Chiquiar and Hanson 2002). Higher employment rates among immigrants, especially new-comer immigrants than among natives underlie the positive selection hypothesis in many European countries (Kahanec and Zimmermann 2008). On the contrary, temporary immigrants may only look for a short-term, lower-skilled job in order to quickly enter the labor market. Such intrinsic characteristics, like motivations regarding employment and work incentives, remain an important source of unknown underlying heterogeneity among immigrants and natives, and the chances of correcting for such variance by proper matching based on EU-SILC are very low. Therefore the unexplained difference between immigrants and natives in terms of poverty should not be interpreted as evidence of discrimination against the foreign born.

Still, the gap is considerable, which is in line with other estimations of immigrant-native gaps in occupational distribution and earnings (Dustmann and Frattini 2011). Around half of the raw differences between the income and poverty outcome of immigrants and natives are explained by the micro level controls, though a considerable part of the gap remains unexplained, which suggests either different behavior or unequal treatment of foreign born residents and natives. Apart from the motivational differences mentioned above, immigrants may be treated differently on the labor market or affected by the welfare system otherwise. Keeping in mind the limits of conclusions from the results, and without implying causality, I confirm that there is a room for convergence between the household income of the foreign and locally born populations.

V. Policy implications

Policy implications of the finding that working immigrants are poorer on average than working natives are numerous. This income gap calls for better social inclusion of immigrants, especially the more vulnerable lower educated. The remaining unexplained part of the differential in the estimations – despite controlling for observable compositional differences – suggests that immigrants form a distinct group, which needs specific policies apart from general policy tools to reduce in-work poverty. I re-emphasize that cross-country differences are great in the magnitude and purpose of immigration, and also in the labor market and welfare policy contexts. Given the differences, first I address three main aspects to consider when assessing immigration integration policies. I do not outline universal, EU-wide solutions, still I give some policy recommendations that ensue from my analysis, noting that any attempt of implementation should be cautious and build further on country specific evidence.

When forming policies for the integration of working immigrants, one should consider its economic, political, and, most importantly, its moral implications. From an economic point of view, working immigrants have the potential of increasing Europe's competitiveness via several channels. Integrating immigrants may alleviate the challenges Europe faces due to the demographic pressure of aging societies. A shrinking labor force may be substituted by foreign born both at the lower and the upper end of the skills distribution of workers, increasing the allocative efficiency within the European labor market.¹⁸ For example, the rising level of education and aging in Europe may result in labor shortages of young low-skilled natives, which immigrants could lessen. Many lower-skilled occupations (like agricultural and fishery, mining and construction, hotel and catering occupations) are already relying significantly on immigrants (OECD 2008, Manacorda, Manning, and Wadsworth 2010). The potential growth impact of immigrants, apart from their value added

¹⁸ The labor force coming outside of the EU has the potential to increase allocative efficiency at a higher, global level. Another note on the increased efficiency in the European labor market due to mobile workforce is that integration of high skilled immigrants is especially beneficial, if we consider that the costs of education and human capital investment debit the country of origin.

as labor force, is also due to their consumption in the host country, which increases the consumer demand for services, creating jobs locally (Hong and McLaren 2015). However, potential tradeoffs of the integration of immigrants in the labor market may be that the native workforce could be adversely affected, which would suggest that the protection of the local labor force and the integration of immigrants are mutually exclusive. Also, there is a widespread fear that immigrants may be a drain on the social security system and a burden on the welfare regime of the host country. Yet, research suggests that immigrants are net contributors to public finances (OECD 2013). Empirical studies on the overall economic impact of economic immigration in European countries indicate, contrary to suggestion, that immigrants benefit the host country (Kahanec and Zimmermann 2011). Still, the specific integration policies should be justified also based on an economic cost-benefit analysis.

However, potential economic benefits cannot provide sufficient base for social support of inclusion of immigrants. Foreign born often experience hostile reception in the host country, which is closely related to the political aspect of immigrant integration. A charged public and political discourse about immigrants has recently emerged in many of the EU countries. The responsibility of the political elite is enormous in forming social norms. Negative political rhetoric and adverse public opinion about foreign born often reinforce each other. Implying that immigrants are scapegoats for the lack of jobs or welfare in the society has detrimental consequences on social cohesion and may even lead to civil unrest. Thus, policy tools to support the integration of immigrants must be politically feasible. Even if economic benefits of creating a flexible and efficient labor market are clear, it may not be viable in the specific country to loosen procedural safeguards protecting mostly the native work force (OECD 2014). Another general caveat of policy making is the mismatch in the timing of costs and benefits accruing from investing in social inclusion of immigrants. Shorter political cycles than the time needed for the investment to bear returns hamper longer term strategies (OECD 2014).

Supporting the social inclusion of immigrants is, first and foremost, a moral obligation of policy makers and citizens. Immigrants should have equal access to social rights, based on moral values such as social solidarity and social justice. Immigrants should also have the right to fully participate in the society's activities. From this point of view, alleviating poverty and increasing social mobility is especially important for the low skilled immigrants who are more prone to be on the edge of not only the cultural community but the labor market as well.¹⁹ Second and third generations of foreign born still score lower on skills tests and have lower chances to move upward on the social ladder (OECD 2014). Consequently, if the vulnerability of the first generations of immigrants are not decreased, social inclusion of the coming generations will remain problematic.

I recommend some integration policy measures to decrease the income gap between working immigrants and natives that should be assessed at the country level against the above mentioned economic, political and moral considerations. I argue that activation policies should be complemented. Firstly, most immigrants would need education. Proficiency in the language of the host country is essential for integration and for holding higher-skilled, better paid jobs. Language is most often a precondition for the transferability of skills, which is identified as one of the key determinants of economic progress of immigrants in the host country (Chiswick 2005). The language handicap may be a relevant explanatory factor of the education-occupation mismatch found in the data, presented before.²⁰ The language deficit of immigrants compared to natives with the same level of education is actually reflected by skill tests (OECD 2014). Given that language proficiency is needed to fully utilize the skill potential of immigrants and to avoid wasting resources, language training programs should be provided by the state, with high incentives for foreign born to participate.²¹ Secondly, education of working immigrants should include adult vocational

¹⁹ The high-skilled segment of immigrants, on the contrary, have better labor outcomes in general and viewed as valuable assets in the host country. Larger stock of high-skilled immigrants is generally associated with productivity growth (Kahanec and Zimmermann 2011)

²⁰ The problem of down-skilling immigrants in the European context is analyzed by Dustmann and Frattini, 2011.

²¹ Lower incentives to invest in host-country specific skills, like language results in slower economic assimilation (Borjas 2013).

trainings and enhancement of skills on the job, supplemented by a certification of the acquired knowledge to ensure its recognition and transferability on the labor market.

I emphasized the micro level driving forces of in-work poverty and the compositional differences between working immigrants and natives, which explain some part of the income gap between the two groups. Still, I am aware that labor market and welfare policies are highly important for the social inclusion of foreign born. Harmonizing the work contracts for immigrants and natives could moderate dual labor markets. Flexibility of the labor market, in other words the ease of hiring and firing could favor not only the entry to the labor force, but the advancement in the occupational positions as well. Also, once legally working in the host country, immigrants should have similarly generous welfare benefits as natives. Such policy options would need further research; the careful analysis of labor and welfare policy tools is beyond the scope of the paper

The economic, political and moral implications of immigration policy are largely overlapping, still exact measures are often contradictory and extremely hard to synchronize. There is no magic bullet to successfully integrate working immigrants overnight, especially given the dynamics and new flows of immigration. Careful tailoring of the immigration policy to the specific country context, in order to make use of immigrants' potential economic benefits in a politically feasible manner and in line with high moral standards, is likely to remain a challenge in Europe for the upcoming decades.

VI. Concluding remarks

I found that there is a gap in the household income of working immigrants and natives, even if I control for the observable compositional differences between the two groups. Immigrants are expected to dispose a 11 percentage points lower income and have a 7 percentage points higher probability to be working poor, keeping all else equal, based on a cross-sectional regression analysis on the EU-SILC database of 2012. There may be several reasons underlying the unexplained part of this income gap. Foreign born and natives may have different unobserved motivations and behavior. Also, they may be treated differently on the labor market or affected otherwise by the welfare system.

Policies for better social inclusion of immigrants should be assessed based on their economic, political and moral implications. I argue for the education of foreign born, as it supports the utilization of their skill potential. Strengthening a mindset that considers immigrants as equal in terms of social rights, and as valuable assets is essential to reduce the emerging hostility towards foreign born internationals in Europe.

References

- Acemoglu, Daron, and David Autor. 2012. "What Does Human Capital Do? A Review of Goldin and Katz's The Race between Education and Technology." Working Paper 17820. National Bureau of Economic Research. http://www.nber.org/papers/w17820.
- Angrist, Joshua, and Adriana Kugler. 2001. "Protective or Counter-Productive? European Labor Market Institutions and the Effect of Immigrants on EU Natives." Working Paper 8660. National Bureau of Economic Research. http://www.nber.org/papers/w8660.

Atkinson, A. B. 1998. Poverty in Europe: (Jrjo Jahnsson Lectures). Wiley.

- Atkinson, A. B., Cantillon, B., Marlier, E. and Nolan, B. 2002. "Social Indicators. The EU and Social Inclusion." Oxford: Oxford University Press
- Autor, David H., Frank Levy, and Richard J. Murnane. 2003. "The Skill Content of Recent Technological Change: An Empirical Exploration." *The Quarterly Journal of Economics* 118 (4): 1279–1333. doi:10.1162/003355303322552801.
- Bevelander, Pieter, and Sandra Groeneveld. 2007. "How Many Hours Do You Have to Work to Be Integrated? Full Time and Part Time Employment of Native and Ethnic Minority Women in the Netherlands." SSRN Scholarly Paper ID 978783. Rochester, NY: Social Science Research Network. http://papers.ssrn.com/abstract=978783.
- Boeri, Tito. 2010. "Immigration to the Land of Redistribution." *Economica* 77 (308): 651–87. doi:10.1111/j.1468-0335.2010.00859.x.
- Borjas, George J. 1987. "Self-Selection and the Earnings of Immigrants." The American Economic Review 77 (4): 531-53.
- ------. 1994. "The Economic Benefits from Immigration." NBER Working Paper 4955. National Bureau of Economic Research, Inc. https://ideas.repec.org/p/nbr/nberwo/4955.html.
- ------. 2013a. "Immigration and the American Worker. A Review of the Academic Literature." http://www.hks.harvard.edu/fs/gborjas/publications/popular/CIS2013.pdf
- ———. 2013b. "The Slowdown in the Economic Assimilation of Immigrants: Aging and Cohort Effects Revisited Again." Working Paper 19116. National Bureau of Economic Research. http://www.nber.org/papers/w19116.
- Brady, David, Andrew S. Fullerton. 2010. "More Than Just Nickels and Dimes: A Cross-National Analysis of Working Poverty in Affluent Democracies." *Social Problems* 57 (4): 559–85. doi:10.1525/sp.2010.57.4.559.
- Cameron, A. Colin and Douglas L. Miller. 2013. "A Practitioner's Guide to Cluster-Robust Inference."

http://cameron.econ.ucdavis.edu/research/Cameron_Miller_Cluster_Robust_October15 2013.pdf

- Card, David, Jochen Kluve, and Andrea Weber. 2010. "Active Labor Market Policy Evaluations: A Meta-Analysis." Working Paper 16173. National Bureau of Economic Research. http://www.nber.org/papers/w16173.
- Caudill, Steven B. 1988. "An Advantage of the Linear Probability Model over Probit or Logit." Oxford Bulletin of Economics and Statistics 50 (4): 425–27.
- Chiquiar, Daniel, and Gordon H. Hanson. 2002. "International Migration, Self-Selection, and the Distribution of Wages: Evidence from Mexico and the United States." Working Paper 9242. National Bureau of Economic Research. http://www.nber.org/papers/w9242.
- Chiswick, Barry R. 2005. The Economics of Immigration: Selected Papers of Barry R. Chiswick. Edward Elgar Publishing.
 - -----. 2009. "Educational Mismatch: Are High-Skilled Immigrants Really Working at High-Skilled Jobs and the Price They Pay If They Aren't?"

- Corluy, Vincent. 2014. Reconciling Work and Poverty Reduction: How Successful Are European Welfare States?. Oxford: Oxford University Press.
- Crettaz, Eric, and Giuliano Bonoli. 2010. "Why Are Some Workers Poor? The Mechanisms That Produce Working Poverty in a Comparative Perspective." SSRN Scholarly Paper ID 1691662. Rochester, NY: Social Science Research Network. http://papers.ssrn.com/abstract=1691662.
- D'Amuri, Francesco, and Giovanni Peri. 2011. "Immigration, Jobs and Employment Protection: Evidence from Europe." Working Paper 17139. National Bureau of Economic Research. http://www.nber.org/papers/w17139.
- Decancq, Koen. 2013. "The Evolution of Poverty in the European Union: Concepts, Measurement and Data."
- Docquier, Frédéric, Caglar Ozden, and Giovanni Peri. 2011. "The Labor Market Effects of Immigration and Emigration in OECD Countries." IZA Discussion Paper 6258. Institute for the Study of Labor (IZA). https://ideas.repec.org/p/iza/izadps/dp6258.html.
- Dustmann, Christian, and Tommaso Frattini. 2011. "Immigration: The European Experience." SSRN Scholarly Paper ID 2023575. Rochester, NY: Social Science Research Network. http://papers.ssrn.com/abstract=2023575.
- Entzinger, Han, Renske Biezeveld 2003. Benchmarking in Immigrant Integration. European Research Centre on Migration and Ethnic Relations (ERCOMER). ec.europa.eu/dgs/.../e.../benchmarking_final_en.pdf
- Esping-Andersen, Gota. 1990. "The Three Worlds of Welfare Capitalism. Princeton University Press." Princeton, New Jersey.
- European Commission. 2010a. "Europe 2020. A European strategy for smart, sustainable and inclusive growth."

http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007 %20-%20Europe%202020%20-%20EN%20version.pdf

- European Commission. 2010b. "In-work poverty in the EU." Eurostat Methodologies and Working Papers. http://ec.europa.eu/eurostat/documents/3888793/5848841/KS-RA-10-015-EN.PDF/703e611c-3770-4540-af7c-bdd01e403036
- Eurostat. 2014. "People at-risk of poverty or social exclusion." http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/People_at_risk_of_pov erty_or_social_exclusion
- Eurostat. 2015a. "Migration and migrant population statistics." http://ec.europa.eu/eurostat/statistics-
- explained/index.php?title=Migration_and_migrant_population_statistics&oldid=221574 Eurostat. 2015b. "In-work at-risk-of-poverty rate."
 - http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tes ov110&plugin=1
- Eurostat 2015c. "European Union Statistics on Income and Living Conditions." http://ec.europa.eu/eurostat/web/microdata/european_union_statistics_on_income_an d_living_conditions
- Förster, Michael F., and István György Tóth. 2015. "Chapter 19 Cross-Country Evidence of the Multiple Causes of Inequality Changes in the OECD Area." In *Handbook of Income Distribution*, edited by Anthony B. Atkinson and François Bourguignon, 2:1729–1843. Handbook of Income Distribution. Elsevier. http://www.sciencedirect.com/science/article/pii/B9780444594297000200.
- Frazer, Hugh; Marlier, Eric 2010. "In-work poverty and labour market segmentation in the EU key lessons." Synthesis report. Brüssel, 64 S. http://www.iab.de/764/section.aspx/Publikation/k110302r01

- Goldin, Claudia, and Lawrence F. Katz. 2007. "The Race between Education and Technology: The Evolution of U.S. Educational Wage Differentials, 1890 to 2005." Working Paper 12984. National Bureau of Economic Research. http://www.nber.org/papers/w12984.
- Goos, Maarten, Alan Manning, and Anna Salomons. 2011. "Explaining Job Polarization: The Roles of Technology, Offshoring and Institutions." SSRN Scholarly Paper ID 1983952. Rochester, NY: Social Science Research Network. http://papers.ssrn.com/abstract=1983952.
- Grimshaw, Damian. 2011. "What Do We Know about Low Wage Work and Low Wage Workers? : Analysing the Definitions, Patterns, Causes and Consequences in International Perspective." ILO Working Paper 464858. International Labour Organization. https://ideas.repec.org/p/ilo/ilowps/464858.html.
- Guzi, Martin, Martin Kahanec, and Lucia Mýtna Kureková. 2015. "What Explains Immigrant-Native Gaps in European Labor Markets: The Role of Institutions." http://www.muni.cz/research/publications/1228238.
- Heckman, James J., Robert J. Lalonde, and Jeffrey A. Smith. 1999. "Chapter 31 The Economics and Econometrics of Active Labor Market Programs." In *Handbook of Labor Economics*, edited by Orley C. Ashenfelter and David Card, 3, Part A:1865–2097. Elsevier. http://www.sciencedirect.com/science/article/pii/S1573446399030126.
- Hong, Gihoon, and John McLaren. 2015. "Are Immigrants a Shot in the Arm for the Local Economy?" Working Paper 21123. National Bureau of Economic Research. http://www.nber.org/papers/w21123.
- Horemans, Jeroen, and Ive Marx. 2013. "In-Work Poverty in Times of Crisis: Do Part-Timers Fare Worse?" ImPRovE Working Paper 13/14. Herman Deleeck Centre for Social Policy, University of Antwerp. https://ideas.repec.org/p/hdl/improv/1314.html.
- Horrace, William C., and Ronald L. Oaxaca. 2006. "Results on the Bias and Inconsistency of Ordinary Least Squares for the Linear Probability Model." *Economics Letters* 90 (3): 321–27. doi:10.1016/j.econlet.2005.08.024.
- IOM 2015. "Migration Policy practice." International Organization for Migration. http://publications.iom.int/bookstore/free/MPP20.pdf
- Kahanec, Martin, and Klaus F. Zimmermann. 2008. "International Migration, Ethnicity and Economic Inequality." IZA Discussion Paper 3450. Institute for the Study of Labor (IZA). https://ideas.repec.org/p/iza/izadps/dp3450.html.
 - 2011. "High-Skilled Immigration Policy in Europe." SSRN Scholarly Paper ID 1767902.
 Rochester, NY: Social Science Research Network. http://papers.ssrn.com/abstract=1767902.
- Kogan, Irena. 2011. "New Immigrants Old Disadvantage Patterns? Labour Market Integration of Recent Immigrants into Germany." *International Migration* 49 (1): 91–117. doi:10.1111/j.1468-2435.2010.00609.x.
- Lelkes, Orsolya, Lucinda Platt and Terry Ward. 2009. "Vulnerable Groups: The Situation of People with Migrant Backgrounds." European Observatory on the Social Situation and Demography. http://www.tarsadalomkutatas.hu/kkk.php?TPUBL-A-891/publikaciok/tpubl_a_891.pdf
- Lelkes, Orsolya and Eszter Zólyomi. 2010. "Detailed analysis of the relative position of migrants." http://ec.europa.eu/social/BlobServlet?docId=6722&langId=en. Social Situation Observatory – Income distribution and living conditions
- Lelkes, Orsolya, Márton Medgyesi and István György Tóth. 2012."The Factors Affecting the Risk of Poverty and Inequalities in Income Distribution." European Observatory on the Social Situation and Demography. http://www.tarki.hu/adatbank-h/kutjel/pdf/b243.pdf
- Lohmann, Henning. 2009. "Welfare States, Labour Market Institutions and the Working Poor: A Comparative Analysis of 20 European Countries." *European Sociological Review* 25 (4): 489–504. doi:10.1093/esr/jcn064.

- Maitre, Bertrand, Brian Nolan, and Christopher T. Whelan. 2012. "Low Pay, in-Work Poverty and Economic Vulnerability: A Comparative Analysis Using Eu-Silc*." *The Manchester School* 80 (1): 99–116. doi:10.1111/j.1467-9957.2011.02230.x.
- Manacorda, Marco, Alan Manning, and Jonathan Wadsworth. 2010. "The Impact of Immigration on the Structure of Wages: Theory and Evidence from Britain." CEPR Discussion Paper 7888. C.E.P.R. Discussion Papers. https://ideas.repec.org/p/cpr/ceprdp/7888.html.
- Marx, Ive. 2013. "Towards a Better Marriage between Job Growth and Poverty Reduction."
- Marx, Ive, and Brian Nolan. 2012. "GINI DP 51: In-Work Poverty." GINI Discussion Paper 51. AIAS, Amsterdam Institute for Advanced Labour Studies. https://ideas.repec.org/p/aia/ginidp/51.html.
- Marx, Ive, Pieter Vandenbroucke, and Gerlinde Verbist. 2012. "Can Higher Employment Levels Bring down Relative Income Poverty in the EU? Regression-Based Simulations of the Europe 2020 Target." *Journal of European Social Policy* 22 (5): 472–86. doi:10.1177/0958928712456577.
- Marx, Ive, Josefine Vanhille, and Gerlinde Verbist. 2011. "Combating In-Work Poverty in Continental Europe: An Investigation Using the Belgian Case." IZA Discussion Paper 6067. Institute for the Study of Labor (IZA). https://ideas.repec.org/p/iza/izadps/dp6067.html.
- Medgyesi, Márton, Péter Pölöskei. 2013. "Access of mobile EU citizens to social protection." Social Situation Monitor. ec.europa.eu/social/BlobServlet?docId=11568...en
- Newman, Katherine, and Victor Tan Chen. 2008. The Missing Class: Portraits of the Near Poor in America. II edition. Boston: Beacon Press.
- Nicaise, Ides, and Ingrid Schockaert. 2014. The Hard-to-Reach among the Poor in Europe. Lessons from Eurostat's EU-SILC Survey in Belgium. Cambridge University Press. https://lirias.kuleuven.be/handle/123456789/424147.
- OECD. 2008a. "Growing unequal? Income distribution and poverty in OECD countries." Paris: OECD.

http://www.oecd.org/els/soc/growingunequalincomedistributionandpovertyinoecdcoun tries.htm

- OECD. 2008.b. "International Migration Outlook 2008." http://www.oecd.org/els/mig/internationalmigrationoutlook2008.htm
- OECD. 2011. "Divided we stand: Why inequality keeps rising." Paris: OECD. http://www.oecd.org/els/soc/49170768.pdf
- OECD. 2013. "International Migration Outlook 2013." http://www.oecd-ilibrary.org/socialissues-migration-health/international-migration-outlook-2013_migr_outlook-2013-en
- OECD. 2014a. "Is migration good for the economy?" Migration Policy Debates. http://www.oecd.org/migration/mig/OECD%20Migration%20Policy%20Debates%20 Numero%202.pdf
- OECD. 2014.b. "International Migration Outlook 2014." http://www.oecd.org/migration/international-migration-outlook-1999124x.htm
- Ortega, Francesc, and Giovanni Peri. 2009. "The Causes and Effects of International Migrations: Evidence from OECD Countries 1980-2005." Working Paper 14833. National Bureau of Economic Research. http://www.nber.org/papers/w14833.
- Ottaviano, Gianmarco I. P., and Giovanni Peri. 2006. "Rethinking the Effects of Immigration on Wages." Working Paper 12497. National Bureau of Economic Research. http://www.nber.org/papers/w12497.
- Peña-Casas, Ramón and Mia Latta. 2004. "Working poor in the European Union." European Foundation for the Improvement of Living and Working Conditions, 2004.
- Ponthieux, Sophie. 2007. "The working poor Limits of the EU indicator « in-work poverty risk », limits of the statistical category « working poor », and exploration of a notion of « poverty in earned income »." in Eurostat Methodologies and Working Papers.

http://ec.europa.eu/eurostat/documents/3888793/5848841/KS-RA-10-015-EN.PDF/703e611c-3770-4540-af7c-bdd01e403036

- Sen, Amartya. 2000. "Social Exclusion: Concept, Application and Scrutiny." Office of Environment and Social Development, Asian Development Bank, Social Development Papers 1 (June).
- Spannagel, Dorothee. 2013. "In-work Poverty in Europe Extent, Structure and Causal Mechanisms." COPE Combating Poverty in Europe. http://cope-research.eu/wp-content/uploads/2013/03/In-work_Poverty_in_Europe.pdf
- Stiglitz, J.E., Sen, A. and Fitoussi, J.-P. 2009. "Report by the Commission on the Measurement of Economic Performance and Social Progress." Commission on the Measurement of Economic Performance and Social Progress.
- Visser, Jelle. 2012. "Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts in 34 countries between 1960 and 2012." http://www.uvaaias.net/208
- Ward, Terry, and Erhan Ozdemir. 2013. "Measuring Low Work Intensity an Analysis of the Indicator." ImPRovE Working Paper 13/09. Herman Deleeck Centre for Social Policy, University of Antwerp. https://ideas.repec.org/p/hdl/improv/1309.html.

Appendix

8. Table. The estimated proportion of working poor among the working population.
Population is between ages 18-64, by country, in 2012. (Source: Own computations from EU-SILC 2012.)
Country Proportion Robust Std. 95% Confidence interval

code		Err.		
BE	0.045916	0.003896	0.038856	0.054187
BG	0.073335	0.004891	0.064307	0.083518
CZ	0.0458	0.003235	0.039861	0.052575
DK	0.056342	0.006841	0.04434	0.071351
DE	0.076808	0.003289	0.070605	0.083507
EE	0.084937	0.005328	0.07506	0.095979
IE	0.052846	0.00585	0.042486	0.065559
GR	0.15035	0.00891	0.133708	0.16866
ES	0.122441	0.005354	0.112328	0.133329
FR	0.078865	0.003599	0.072094	0.086214
IT	0.111086	0.003658	0.104115	0.118461
CY	0.079426	0.005002	0.070159	0.089799
LV	0.092116	0.004851	0.083038	0.102075
LT	0.075961	0.006582	0.064024	0.089911
LU	0.102302	0.007078	0.089238	0.117033
HU	0.052938	0.002779	0.047748	0.058657
MT	0.052008	0.004176	0.044405	0.060829
NL	0.046595	0.003953	0.039431	0.054986
AT	0.080922	0.005307	0.071111	0.091953
PL	0.110003	0.004308	0.101838	0.118735
РТ	0.09816	0.00535	0.08816	0.109158
RO	0.188785	0.008449	0.172778	0.205905
SI	0.06438	0.00361	0.057656	0.071828
SK	0.061666	0.004243	0.053856	0.070524
FI	0.03641	0.002448	0.031905	0.041524
SE	0.069942	0.003918	0.062642	0.078022
UK	0.08715	0.004195	0.079271	0.095731

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9. Table. The estimated proportion of immigrants among the working population.	on.
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Population is	between age	s 18-64, by	country, in 2012. (Source: Own computations from EU-SILC 2012.
Country	Proportion	Robust Std.	95% Confidence interval

code		Err.		
BE	0.148217	0.007021	0.134976	0.162512
BG	0.004412	0.001074	0.002737	0.007107
CZ	0.0346	0.002753	0.029591	0.040421
DK	0.065607	0.004827	0.056756	0.075726
DE	0.122846	0.005536	0.1124	0.134116
EE	0.120494	0.006115	0.109014	0.133002
IE	0.213625	0.010043	0.1946	0.233969
GR	0.119735	0.009759	0.101888	0.14022
ES	0.1517	0.007317	0.137909	0.166604
FR	0.091353	0.003537	0.084653	0.098527
IT	0.128674	0.00465	0.119832	0.138067
CY	0.215741	0.007725	0.200986	0.231266
LV	0.106576	0.004863	0.097414	0.116489
LT	0.056297	0.005126	0.047054	0.067229
LU	0.50464	0.010717	0.483638	0.525626
HU	0.010758	0.001451	0.008257	0.014007
MT	0.050808	0.004241	0.043112	0.059793
NL	0.117286	0.006946	0.104342	0.131601
AT	0.18418	0.008289	0.168485	0.200984
PL	0.002553	0.000668	0.001528	0.004263
PT	0.090066	0.005114	0.080533	0.100606
RO	0.000901	0.000435	0.00035	0.002319
SI	0.118559	0.004624	0.109791	0.127925
SK	0.010988	0.001401	0.008555	0.014103
FI	0.03788	0.002631	0.033048	0.043387
SE	0.125364	0.004537	0.116738	0.13453
UK	0.144456	0.005795	0.133464	0.156191

10. Table. 7	The estimated p	roportion of m	nigrants born outside EU among the working population.
Population	is between ages	s 18-64, by cou	antry, in 2012. (Source: Own computations from EU-SILC 2012.)
Country	Proportion	Robust Std.	95% Confidence interval

code		Err.		
BE	0.07615	0.005485	0.066071	0.087623
BG	0.002831	0.000828	0.001595	0.005018
CZ	0.012902	0.002052	0.009442	0.017609
DK	0.040972	0.003978	0.033848	0.049519
DE	0.122846	0.005536	0.1124	0.134116
EE	0.120494	0.006115	0.109014	0.133002
IE	0.049828	0.004856	0.041127	0.060254
GR	0.08693	0.008069	0.072362	0.104101
ES	0.107279	0.00658	0.095048	0.120873
FR	0.059825	0.00289	0.054405	0.065747
IT	0.085027	0.004031	0.077451	0.093268
CY	0.110245	0.005468	0.099976	0.121427
LV	0.106576	0.004863	0.097414	0.116489
LT	0.05232	0.004863	0.043568	0.062714
LU	0.107151	0.007803	0.09279	0.123433
HU	0.003058	0.000904	0.001713	0.005455
MT	0.050808	0.004241	0.043112	0.059793
NL	0.094404	0.00681	0.081876	0.108623
AT	0.11702	0.007251	0.103538	0.131998
PL	0.001867	0.000515	0.001087	0.003206
РТ	0.066388	0.004417	0.058237	0.075587
RO	0.000901	0.000435	0.00035	0.002319
SI	0.118559	0.004624	0.109791	0.127925
SK	0.000818	0.000349	0.000355	0.001887
FI	0.020292	0.00204	0.016655	0.024701
SE	0.080372	0.003791	0.073249	0.088123
UK	0.096099	0.004691	0.08729	0.105694

11. Table. Th	ne estimated pro	oportion of m	higrants born within EU among the working population.
Population is	s between ages	18-64, by cou	ntry, in 2012. (Source: Own computations from EU-SILC 2012.)
Country	Proportion	Robust Std.	95% Confidence interval

code		Err.					
BE	0.072067	0.004728	0.063331	0.081901			
BG	0.001582	0.000688	0.000675	0.003705			
CZ	0.021697	0.001871	0.018318	0.025684			
DK	0.024634	0.002871	0.019591	0.030935			
DE		no observatio	ns				
EE		no observatio	ns				
IE	0.163797	0.009203	0.146547	0.182643			
GR	0.032805	0.006538	0.022147	0.04834			
ES	0.044421	0.0039	0.037374	0.052725			
FR	0.031528	0.00217	0.027542	0.03607			
IT	0.043648	0.002703	0.038646	0.049264			
CY	0.105496	0.006064	0.094187	0.117987			
LV	LV		no observations				
LT	0.003978	0.001317	0.002078	0.007602			
LU	0.397489	0.010698	0.37672	0.418634			
HU	0.0077	0.00114	0.005758	0.01029			
MT		no observatio	ns				
NL	0.022882	0.002079	0.019143	0.02733			
AT	0.06716	0.004996	0.058006	0.07764			
PL	0.000686	0.000372	0.000237	0.001985			
РТ	0.023679	0.00287	0.018659	0.030008			
RO		no observatio	ns				
SI		no observatio	ns				
SK	0.010169	0.001359	0.007823	0.013209			
FI	0.017589	0.001693	0.014561	0.021233			
SE	0.044991	0.002752	0.039895	0.050704			
UK	0.048358	0.003853	0.041341	0.056495			

12. Table. 1	The estimated p	proportion of m	igrants among the wor	rking poor population	n.
Population	is between age	es 18-64, by cour	ntry, in 2012. (Source:	Own computations f	from EU-SILC 2012.)
Country	Proportion	Robust Std.	95% Confidence interval	*	

code		Err.		
BE	0.454297	.0404096	.3768737	0.533995
BG	0.00452	.0038148	.0008611	0.023365
CZ	0.10616	.0254532	.0655965	0.167315
DK	0.166114	.0440397	.0965091	0.27087
DE	0.139691	.020052	.1048062	0.183803
EE	0.193754	.0243746	.1503758	0.246022
IE	0.31063	.0520006	.2187126	0.420391
GR	0.21742	.0320545	.161102	0.286697
ES	0.295305	.0243768	.2498568	0.345215
FR	0.19109	.0166269	.1605965	0.225815
IT	0.26337	.015708	.233753	0.295292
CY	0.608964	.0308006	.5472125	0.667411
LV	0.104439	.0139738	.0800472	0.135171
LT	0.058504	.0243297	.0254762	0.128696
LU	0.790162	.0239989	.7392706	0.833359
HU	0.015988	.006387	.0072778	0.034757
MT	0.072376	.0196791	.0420746	0.121726
NL	0.18822	.036195	.1271975	0.269479
AT	0.39151	.0342165	.32684	0.460227
PL	0.001028	.0005867	.0003353	0.003144
РТ	0.10092	.0156605	.0740991	0.136024
RO		(no observatio	ons)	
SI	0.310033	.027269	.2592549	0.365845
SK	0.017385	.0080264	.0069947	0.04255
FI	0.090777	.0221378	.0557274	0.144498
SE	0.260665	.0233962	.2174675	0.309054
UK	0.227298	.0210457	.1886938	0.27116

13. Table. T	he estimated	proportion of w	orking poor among we	orking immigrant po	pulation.
Population i	s between ag	es 18-64, by cour	ntry, in 2012. (Source:	Own computations	from EU-SILC 2012.)
Country	Proportion	Robust Std.	95% Confidence interval	_	

code		Err.		
BE	0.140738	0.015521	0.11297	0.173992
BG	0.075128	0.061573	0.014099	0.31573
CZ	0.140524	0.032964	0.087388	0.218242
DK	0.142657	0.036691	0.084599	0.230524
DE	0.08734	0.013548	0.064182	0.117803
EE	0.136579	0.018716	0.103856	0.177571
IE	0.076842	0.015028	0.052089	0.111969
GR	0.273012	0.041168	0.200051	0.360589
ES	0.238349	0.022722	0.196693	0.285689
FR	0.164967	0.014496	0.138477	0.195376
IT	0.22737	0.015048	0.199227	0.258207
CY	0.224193	0.016272	0.193913	0.25769
LV	0.090268	0.01238	0.068762	0.117652
LT	0.078939	0.032204	0.034721	0.169577
LU	0.160184	0.012578	0.137036	0.186398
HU	0.078673	0.031006	0.035605	0.164925
MT	0.074084	0.020319	0.042852	0.125106
NL	0.074775	0.016253	0.04852	0.113542
AT	0.172015	0.019565	0.13697	0.213806
PL	0.044271	0.026752	0.013236	0.137907
РТ	0.109989	0.017719	0.079757	0.149815
SI	0.168354	0.016562	0.138334	0.203353
SK	0.097573	0.042867	0.039972	0.219224
FI	0.087253	0.021517	0.05329	0.139668
SE	0.145428	0.013936	0.120181	0.174924
UK	0.137128	0.014133	0.111702	0.167252
СН	0.128136	0.011824	0.10669	0.153155
HR	0.084123	0.01652	0.056899	0.122678
IS	0.085928	0.018007	0.056584	0.12842
NO	0.117614	0.016926	0.088272	0.155049
RO		no observation	15	

	Working	Native	Migrant	EU	non-EU
BE	3050	2572	478	231	247
BG	2603	2591	12	3	9
CZ	4795	4641	154	112	42
DK	3433	3272	161	80	81
DE	7382	6942	440	0	440
EE	3064	2723	341	0	341
IE	2180	1750	430	322	108
GR	2470	2260	210	47	163
ES	6639	6109	530	168	362
FR	6648	6016	632	199	433
IT	10684	9690	994	342	652
CY	2953	2364	589	271	318
LV	3074	2696	378	0	378
LT	2564	2384	180	9	171
LU	3752	1869	1883	1561	322
HU	5585	5525	60	45	15
MT	2361	2241	120	0	120
NL	6614	6260	354	93	261
AT	3547	3033	514	202	312
PL	7358	7341	17	3	14
РТ	3063	2823	240	53	187
RO	3529	3525	4	0	4
SI	5391	4751	640	0	640
SK	3105	3059	46	43	3
FI	6047	5843	204	108	96
SE	4285	3729	556	205	351
UK	6020	5279	741	233	508
Total	122196	111288	10908	4330	6578

14. Table. Number of observations for the working household heads, aged 18-64, by country of birth. Population is between ages 18-64. Number of working people (who are the head of households) in total, number of native and immigrant working people (either from within EU or outside EU), by country. (Immigrants are residents born elsewhere.) (Source: Own computations from EU-SILC 2012.)

	Individual level	
	Demographic	
age	Age	Year of the survey (rb010) minus the Year of birth (rb080)
female	Gender	Sex (rb090) 0=Male, 1=Female
immigrant	Immigrant status	Country of birth (pb210) is other than the country of residence. 0=native, 1=immigrant; 'immigrant_o' stands for immigrant from non-EU country, 'immigrant_eu' for immigrant from EU country.
marital	Marital status	Based on Marital status (pb190) 0=Never married or Married, 1= Separated or Widowed or Divorced
edu	Education	Based on Highest ISCED level attained (pe040) 0=higher than post- secondary education that I label High_edu 1=upper secondary education that I label Med_edu, 2=lower secondary or lower education level that I label Low_edu.
	Household level	
hhnbr_dep	Number dependent members	Number of household members who are below 18 years or between 18 and 24 and studying (based on Self-defined current economic crisis (pl031) Pupil, student, further training, unpaid work experience) or above 64 years
hhnbr_emp_f	Number of employed members working full time	Number of household members who are employees or self- employed working full time (based on Self-defined current economic status (pl031))
hhnbr_emp_p	Number of employed members working part time	Number of household members who are employees or self- employed working part time (based on Self-defined current economic status (pl031))
	Labor market circumstance	
occup	Occupation	Variables based on Occupation (ISCO-08) (pl051) codes. Professional (0) stands for codes: 1=Managers, 2=Professionals, Technician (1) for code: 3=Technicians and associate professionals. Support/service (2) for codes: 4=Clerical support workers, 5=Service and sales workers, 6=Skilled agricultural, forestry and fishery workers, 7=Craft and related trades workers, 8=Plant and machine operators, and assemblers, Elementary for code: 9=Elementary occupations.
part_time	Working time	Based on Self-defined current economic status (pl031) 0=employee or self-employed working full time, 1=employee or self-employed working part time
self_emp	Employment status	Based on Self-defined current economic status (pl031) 0=employee working full or part time, 1=self-employed working full or part time
temporary_job	Type of contract	Based on Type of contract (pl140) 0=permanent job, 1=temporary job

15. Table. Micro level explanatory variables of in-work poverty.

16.	Table.	D	escriptiv	ve :	statistics	of	the	native	and	immigrant	sam	ples.
										()		

Samples consist of the working household heads between ages 18-64 in the sample of 22 member states of the EU. See the description of variables in 15. Table in Appendix. (Source: Own computations from EU-SILC 2012.)

	Natives		Immigrants		From EU		From outside EU	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
High_edu	0.37	0.48	0.40	0.49	0.42	0.49	0.39	0.49
Med_edu	0.43	0.49	0.37	0.48	0.33	0.47	0.39	0.49
Low_edu	0.20	0.40	0.23	0.42	0.24	0.43	0.22	0.42
Professional	0.27	0.44	0.23	0.42	0.28	0.45	0.20	0.40
Technician	0.16	0.37	0.11	0.32	0.13	0.34	0.10	0.30
Support/service	0.50	0.50	0.51	0.50	0.50	0.50	0.52	0.50
Elementary	0.06	0.24	0.14	0.35	0.10	0.30	0.17	0.38
age	45.48	10.81	43.97	10.42	42.87	10.32	44.68	10.43
female	0.16	0.36	0.18	0.39	0.16	0.37	0.20	0.40
marital	0.41	0.49	0.37	0.48	0.40	0.49	0.35	0.48
hhnbr_dep	1.00	1.05	1.10	1.12	1.00	1.06	1.16	1.16
hhnbr_emp_f	1.32	0.74	1.24	0.73	1.27	0.71	1.22	0.75
hhnbr_emp_p	0.26	0.48	0.26	0.49	0.28	0.49	0.25	0.49
part_time	0.08	0.28	0.11	0.31	0.09	0.29	0.11	0.32
self_emp	0.18	0.38	0.12	0.33	0.12	0.33	0.12	0.32
temporary_~b	0.08	0.27	0.15	0.35	0.11	0.32	0.17	0.38

17. Table. Summary statistics of the micro level variables in the sample of 22 EU member states. See the description of variables in 15. Table in Appendix. (Source: Own computations from EU-SILC 2012.)

Variable	Obs	Mean	Std. Dev.
age	100016	45.31579	10.77708
female	100016	0.160484	0.367057
marital	100016	0.406035	0.491094
Edu			
Med_edu	100016	0.420813	0.493692
Low_edu	100016	0.201788	0.401337
hhnbr_dep	100016	1.010348	1.062861
hhnbr_emp_f	100016	1.31398	0.736458
hhnbr_emp_p	100016	0.259619	0.484739
Occupationl			
Technician	97537	0.158381	0.3651
Support/service	97537	0.504321	0.499984
Elementary	97537	0.068026	0.251791
part_time	94362	0.086952	0.281767
self_emp	94362	0.169899	0.375546
temporary_~b	70337	0.086157	0.280597

Variable	Concept	Operationalization	Data Source
	Labor market institutions		
union_den	Union density	The ratio of wage and salary earners that are trade union members, divided by the total number of wage and salary earners. (Density is calculated using survey data, wherever possible, and administrative data adjusted for non-active and self-employed members otherwise.) (2011)	OECD Labour Force Statistics
wage_coord	Coordination of wage setting	Coordination of wage-setting (2011)	Visser; http://www.uva- aias.net/208
share_low_edu	Qualificational composition of labour force	Share of low educated (ISCED 0-2) among working age (18-64) population	EU-SILC-2012 (own calculation)
	Welfare regime		
unemp_repl	Unemployment replacement rate	Net replacement rates for a married single- earner couple with 2 children, 67 % of the average wage in the initial phase of unemployment (2011)	OECD Benefits and Wages Statistics
redistr	% of cash benefits paid to the lowest quintile	Percentage of public social benefits in cash paid to the lowest income quintiles of the total population (2011)	OECD Social Expenditure database
fam_benefit	Family, children benefit (euro ppp 2005 per inhabitant)	Benefits for family/children, Euro per inhabitant at constant 2005 prices (2011)	Eurostat
fam_cash	Family cash benefits as % of GDP	Family cash transferred public spending, % of GDP (2011)	OECD Social Expenditure database
childcare_sp	Public expenditure on child-care and pre-school as % of GDP	Public expenditure on childcare and pre- school as % of GDP (2011)	OECD Social Expenditure database
childcare_av	Public childcare availability	Average number of weekly hours of formal care from 3 years to minimum compulsory school age - Children with or without formal care (2011)	Eurostat
fem_emp	Female employment	Female unemployment rate, annual average, % (2011)	Eurostat
intergen_dep	Intergenerational dependency	Share of young unemployed (20-29 years) living in parents' (mother's and/or father's) household	EU-SILC-2012 (own calculation)
	Economic controls		
unemp	Unemployment rate	Unemployment rate, annual average, % (2011)	Eurostat
ec_growth	Economic growth (real, %)	Real GDP growth rate, volume, percentage change on previous year (2011)	Eurostat

18. Table. Macro level explanatory variables of in-work poverty. Variable Concept Operationalization

19. Table. Summary statistics of the macro level variables in the sample of 22 EU member states. See the description of variables in 18. Table in Appendix. (Source: Own computations from EU-SILC 2012.)

Variable	Obs	Mean	Std. Dev.	Min	Max
union_den	350577	30.70311	19.18096	6.8	68.39
wage_coord	428727	2.988265	1.197759	1	5
share_low_~u	442595	0.246302	0.139318	0.092198	0.611816
fem_emp	428727	63.84665	7.804323	43.8	76.5
unemp_repl	375538	74.30969	8.869079	51	89
redistr	375538	18.53866	6.899139	7.75	34.15
fam_benefit	428727	611.9973	534.7747	77.46	2579.43
childcare_sp	375537	0.762504	0.41383	0.33	2.01
childcare_av	428727	26.76544	5.42077	17.8	35.3
intergen_dep	442595	0.09265	0.062711	0.018519	0.266518
unemp	428727	9.496862	4.525107	4.6	21.4
ec_growth	428727	1.977731	1.989456	-8.9	8.3

20. Table. Correlation matrix of the macro level explanatory variables in the sample of 22 EU member states. *: Correlation is significant at the 1% level. (Source: own calculation. For the definition and sources of the data see 18. Table in Appendix.) (Source: Own computations from EU-SILC 2012.)

	union	wage_c	low_edu	fem_emp	unemp_r	redistr	fam_b	fam_c	child_sp	child_a	intergen	unemp	ec_gr
union_den	1												
wage_coord	0.619*	1											
sh_low_edu	-0.098*	0.116*	1										
fem_emp	0.289*	0.139*	-0.703*	1									
unemp_repl	0.061*	0.512*	0.213*	0.010	1								
redistr	0.485*	0.013*	-0.657*	0.801*	-0.030*	1							
fam_benefit	0.427*	0.495*	-0.119*	0.326*	0.350*	0.231*	1						
fam_cash	0.118*	-0.161*	-0.347*	0.308*	-0.154*	0.269*	0.628*	1					
childcare_sp	0.572*	0.062*	-0.280*	0.452*	-0.189*	0.638*	0.342*	0.149*	1				
childcare_av	0.372*	0.229*	0.027*	-0.012*	-0.006	-0.137*	-0.101*	-0.253*	0.166*	1			
intergen_dep	-0.252*	-0.132*	0.565*	-0.644*	0.028*	-0.736*	-0.439*	-0.424*	-0.328*	0.258*	1		
unemp	-0.264*	-0.149*	0.363*	-0.289*	-0.141*	-0.431*	-0.374*	-0.278*	-0.156*	0.131*	0.756*	1	
e g growth	-0.049*	-0.285*	-0.558*	0.364*	-0.270*	0.288*	0.110*	0.422*	-0.011	0.034*	-0.480*	-0.111*	1

21. Table. Regression results of Model (1).

Baseline	(M1.0)	(M1.1)	(M1.2)	(M1.3)
immigrant_b	-0.186***	-0.163***	-0.123***	-0.106***
	(0.0389)	(0.0225)	(0.0200)	(0.0213)
age		0.00975***	0.00897***	0.00734***
		(0.00171)	(0.00156)	(0.00147)
female		-0.192***	-0.192***	-0.176***
		(0.0187)	(0.0185)	(0.0174)
marital		-0.120***	-0.106***	-0.0929***
		(0.0235)	(0.0221)	(0.0265)
Med_edu		-0.357***	-0.173***	-0.156***
		(0.0195)	(0.0142)	(0.0115)
Lowedu		-0.528***	-0.302***	-0.274***
		(0.0320)	(0.0308)	(0.0219)
hhnbr_emp_f		0.370***	0.370***	0.438***
		(0.0181)	(0.0176)	(0.0228)
hhnbr_emp_p		0.198***	0.207***	0.229***
		(0.00918)	(0.0108)	(0.0133)
hhnbr_dep		0.109***	0.108***	0.112***
		(0.00561)	(0.00530)	(0.00633)
Technician			-0.228***	-0.238***
			(0.0225)	(0.0217)
Support/service			-0.409***	-0.428***
			(0.0289)	(0.0300)
Elementaryl			-0.463***	-0.490***
			(0.0312)	(0.0293)
part_time				0.0799***
				(0.0210)
self_emp				0.285*
				(0.161)
temporary_job				-0.0905***
				(0.0144)
Country fixed effects	Yes	Yes	Yes	Yes
Constant	1.234***	0.484***	0.650***	0.623***
	(0.00609)	(0.0763)	(0.0715)	(0.0725)
Observations	100,016	100,016	97,537	65,603
R-squared	0.013	0.210	0.236	0.302

Robust standard errors in parentheses

EU vs non-EU	M11.0	M11.1	M1.2	M1.5
immigrant_b_eu	-0.148***	-0.134***	-0.112***	-0.106***
	(0.0410)	(0.0294)	(0.0277)	(0.0277)
immigrant_b_o	-0.207***	-0.178***	-0.129***	-0.106***
	(0.0426)	(0.0259)	(0.0221)	(0.0241)
age		0.00976***	0.00898***	0.00734***
		(0.00171)	(0.00156)	(0.00147)
female		-0.192***	-0.191***	-0.176***
		(0.0187)	(0.0185)	(0.0174)
marital		-0.121***	-0.106***	-0.0929***
		(0.0235)	(0.0221)	(0.0264)
Med_edu		-0.357***	-0.173***	-0.156***
		(0.0195)	(0.0142)	(0.0115)
Low_edu		-0.528***	-0.302***	-0.274***
		(0.0320)	(0.0308)	(0.0218)
hhnbr_emp_f		0.370***	0.369***	0.438***
		(0.0182)	(0.0176)	(0.0227)
hhnbr_emp_p		0.198***	0.207***	0.229***
		(0.00917)	(0.0108)	(0.0133)
hhnbr_dep		0.109***	0.108***	0.112***
		(0.00561)	(0.00530)	(0.00634)
Technician			-0.228***	-0.238***
			(0.0226)	(0.0218)
Support/service			-0.409***	-0.428***
			(0.0289)	(0.0300)
Elementary			-0.462***	-0.490***
			(0.0314)	(0.0295)
part_time				0.0799***
				(0.0210)
self_emp				0.285*
				(0.161)
temporary_job				-0.0905***
				(0.0142)
Country fixed effects	Yes	Yes	Yes	Yes
Constant	1.233***	0.483***	0.649***	0.623***
	(0.00612)	(0.0764)	(0.0717)	(0.0726)
Observations	100,016	100,016	97,537	65,603
R-squared	0.014	0.210	0.236	0.302

22. Table. Regression results of Model (1) with a distinction between immigrants born within and outside the EU. **EU vs non-EU M1.0 M1.1 M1.2 M1.3**

Robust standard errors in parentheses

23. Table. Regress	ion results of Mod	del (1) on a subs	sample of EU15.	
EU15	M1.2	M1.3	M1.2	M1.3
immigrant_b	-0.125***	-0.111***		
	(0.0244)	(0.0263)		

	(0.0244)	(0.0263)		
immigrant_b_eu			-0.106***	-0.101***
			(0.0304)	(0.0309)
immigrant_b_o			-0.140***	-0.118***
			(0.0290)	(0.0313)
age	0.00988***	0.00847***	0.00988***	0.00847***
	(0.00187)	(0.00179)	(0.00188)	(0.00179)
female	-0.169***	-0.153***	-0.169***	-0.153***
	(0.0182)	(0.0140)	(0.0183)	(0.0140)
marital	-0.115***	-0.0952**	-0.115***	-0.0953**
	(0.0271)	(0.0346)	(0.0271)	(0.0346)
Med_edu	-0.166***	-0.150***	-0.166***	-0.150***
	(0.0170)	(0.0130)	(0.0170)	(0.0130)
Low_edu	-0.308***	-0.277***	-0.308***	-0.277***
	(0.0341)	(0.0220)	(0.0341)	(0.0220)
hhnbr_emp_f	0.368***	0.441***	0.367***	0.441***
	(0.0233)	(0.0294)	(0.0233)	(0.0293)
hhnbr_emp_p	0.214***	0.234***	0.214***	0.234***
	(0.0126)	(0.0157)	(0.0126)	(0.0156)
hhnbr_dep	0.104***	0.106***	0.104***	0.107***
	(0.00556)	(0.00741)	(0.00557)	(0.00743)
Technician	-0.223***	-0.229***	-0.223***	-0.229***
	(0.0258)	(0.0257)	(0.0258)	(0.0258)
Support/service	-0.393***	-0.403***	-0.393***	-0.403***
	(0.0317)	(0.0345)	(0.0318)	(0.0346)
Elementary	-0.438***	-0.463***	-0.437***	-0.462***
	(0.0338)	(0.0339)	(0.0341)	(0.0342)
part_time		0.0889***		0.0889***
		(0.0208)		(0.0209)
self_emp		0.411**		0.410**
		(0.171)		(0.171)
temporary_job		-0.110***		-0.109***
		(0.0130)		(0.0129)
Country fixed effects	Yes	Yes	Yes	Yes
Constant	0.603***	0.555***	0.603***	0.554***
	(0.0877)	(0.0894)	(0.0880)	(0.0895)
Observations	73,879	49,601	73,879	49,601
R-squared	0.213	0.287	0.213	0.287

Robust standard errors in parentheses

24. Table. Regression results of Model (1) on a subsample of EU5. EU5 stands for Germany, Spain, Italy, United Kingdom and France.

EU5	M1.2	M1.3	M1.2	M1.3
immigrant_b	-0.137**	-0.124**		
	(0.0367)	(0.0385)		
immigrant_b_eu			-0.112*	-0.101*
			(0.0500)	(0.0373)
immigrant_b_o			-0.147**	-0.132**
			(0.0407)	(0.0451)
age	0.0100*	0.00746*	0.0100*	0.00747*
	(0.00391)	(0.00311)	(0.00392)	(0.00311)
female	-0.167***	-0.152***	-0.167***	-0.153***
	(0.0343)	(0.0258)	(0.0345)	(0.0260)
marital	-0.121*	-0.103	-0.121*	-0.103
	(0.0552)	(0.0622)	(0.0553)	(0.0623)
Med_edu	-0.190***	-0.167***	-0.190***	-0.167***
	(0.0234)	(0.0122)	(0.0235)	(0.0123)
Low_edu	-0.329***	-0.275***	-0.329***	-0.274***
	(0.0411)	(0.0183)	(0.0412)	(0.0182)
hhnbr_emp_f	0.401***	0.462***	0.401***	0.462***
	(0.0377)	(0.0494)	(0.0378)	(0.0494)
hhnbr_emp_p	0.224***	0.235***	0.224***	0.235***
	(0.0247)	(0.0263)	(0.0248)	(0.0263)
hhnbr_dep	0.110***	0.112***	0.110***	0.112***
	(0.00808)	(0.0112)	(0.00799)	(0.0111)
Technician	-0.250***	-0.264***	-0.250***	-0.264***
	(0.0423)	(0.0241)	(0.0424)	(0.0242)
Support/service	-0.439***	-0.449***	-0.439***	-0.450***
	(0.0421)	(0.0264)	(0.0423)	(0.0265)
Elementary	-0.493***	-0.520***	-0.493***	-0.520***
	(0.0477)	(0.0230)	(0.0478)	(0.0231)
part_time		0.0912**		0.0913**
		(0.0204)		(0.0205)
self_emp		0.455		0.454
		(0.217)		(0.217)
temporary_job		-0.103***		-0.103***
		(0.0198)		(0.0197)
Country fixed effects	Yes	Yes	Yes	Yes
Constant	0.551**	0.558**	0.551**	0.558**
	(0.178)	(0.147)	(0.178)	(0.147)
Observations	36,535	27,817	36,535	27,817
R-squared	0.186	0.239	0.186	0.239

Robust standard errors in parentheses

25. Table. Regression results of Model (1) on a subsample of Mediterranean countries. Mediterranean countries in the sample are Greece, Spain, Italy and Portugal

Mediterranean countries	M1.2	M1.3	M1.2	M1.3
immigrant_b	-0.181**	-0.172*		
	(0.0343)	(0.0470)		
immigrant_b_eu			-0.165***	-0.144***
			(0.00188)	(0.00460)
immigrant_b_o			-0.189*	-0.186
			(0.0505)	(0.0698)
age	0.0138**	0.0110**	0.0138**	0.0111**
	(0.00282)	(0.00152)	(0.00282)	(0.00148)
female	-0.209**	-0.207**	-0.209**	-0.207**
	(0.0289)	(0.0270)	(0.0290)	(0.0271)
marital	-0.00470	0.0492**	-0.00453	0.0495**
	(0.0101)	(0.00911)	(0.0102)	(0.00874)
Med_edu	-0.214***	-0.139***	-0.214***	-0.139***
	(0.0113)	(0.0136)	(0.0114)	(0.0136)
Low_edu	-0.414***	-0.305***	-0.414***	-0.305***
	(0.0241)	(0.0303)	(0.0243)	(0.0307)
hhnbr_emp_f	0.422***	0.516***	0.422***	0.516***
	(0.0278)	(0.0356)	(0.0278)	(0.0357)
hhnbr_emp_p	0.203**	0.219**	0.203**	0.219**
	(0.0332)	(0.0289)	(0.0334)	(0.0293)
hhnbr_dep	0.115***	0.127***	0.115***	0.127***
	(0.00418)	(0.00478)	(0.00415)	(0.00436)
Technician	-0.188**	-0.307*	-0.188**	-0.307*
	(0.0391)	(0.0880)	(0.0394)	(0.0883)
Support/service	-0.399**	-0.506**	-0.399**	-0.506**
	(0.0671)	(0.104)	(0.0673)	(0.104)
Elementary	-0.450**	-0.573**	-0.450**	-0.572**
	(0.0793)	(0.0869)	(0.0800)	(0.0880)
part_time		0.116**		0.115**
		(0.0137)		(0.0140)
self_emp		0.416		0.416
		(0.307)		(0.307)
temporary_job		-0.123**		-0.123**
		(0.0273)		(0.0274)
Country fixed effects	Yes	Yes	Yes	Yes
Constant	0.518*	0.569***	0.517*	0.567***
	(0.137)	(0.0443)	(0.139)	(0.0465)
Observations	19,967	13,682	19,967	13,682
R-squared	0.231	0.406	0.231	0.406

Robust standard errors in parentheses