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Abstract

Using data from the European Social Survey 2002-2011 covering immigrants in 26 European countries, this paper analyzes the impact of source- and host-country characteristics on female immigrant labor supply. We find that immigrant women's labor supply in their host country is positively associated with the labor force participation rate in their source country, which serves as a proxy for the country's preferences and beliefs regarding women's roles. The effect of this cultural proxy on the labor supply of immigrant women is robust to controlling for spousal, parental, and a variety of source-country characteristics. This result suggests that the culture and norms of their source country play an important role for immigrant women's labor supply. Moreover, we find evidence for a strong positive correlation between the host-country female labor force participation rate and female immigrant labor supply, suggesting that immigrant women assimilate to the work behavior of natives.

JEL Classifications: J16, J22, J61

Keywords: female labor force participation, immigration, cultural transmission

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1 Introduction

The first decade of the 21st century has seen large waves of migration to the EU Member States from both within the EU and from outside it. In 2008, 3.8 million people migrated to and between the EU-27 Member States. Moreover, the share of immigrants that migrate from countries with substantially different cultures and traditions toward the European origin population increases. From the 47.3 million immigrants living in EU Member States, about two-thirds were born outside the European Union, almost equally divided between America, Asia, Africa, and countries in Europe outside the EU-27 (European Commission, 2011).[1]

As many European countries face the problem of an aging population, which is expected to put downward-pressure on labor supply in the years to come, immigration is seen as a means of filling in current and future labor market needs and thus ensure economic sustainability and growth. As a result, the active recruitment of high-skilled immigrants on the one hand, and the integration of recent immigrants into the host-countries' labor markets on the other hand, have become important policy goals within Europe (European Commission, 2010b). However, although issues concerning the labor market integration of immigrants are high on the political agenda in many European countries, immigrants still show a significantly lower labor market attachment than the native population (European Commission, 2011). As a result, an intense political debate is taking place in Europe around migration issues with a focus on the costs and benefits of cultural diversity.[2]

The aspect of a low labor market attachment of immigrants is especially relevant for immigrant women. In 2008, the labor market participation of foreign-born women living within the EU-27 was nine percentage points below that for native-born women (69% as opposed to 78%). The lower overall participation rate of foreign-born women, however, is mainly due to the significantly lower activity rate of women originating from non-EU countries (67%), whereas women born in another EU country do hardly differ from natives (76%) (European Commission, 2011). The determinants of these differences in labor market participation across immigrants' home-country groups remain an open question.

Previous studies for immigrants in the U.S. suggest that differences in labor market behavior across immigrant women's source countries can, at least partly, be explained by differences in female labor force participation rates (FLFPR) between these countries (Antecol, 2000; Fernández and Fogli, 2009; Blau *et al.*, 2011; Blau and Kahn, 2011). The

[1] For an overview of the history of immigration into Europe, see Bauer *et al.* (2000).

[2] Amongst others, German Chancellor Angela Merkel and British Prime Minister David Cameron recently called Europe's approach to multiculturalism into question, thereby triggering a public controversy over the cultural integration of immigrants. While Angela Merkel said that the attempts to build a multicultural society in Germany have "failed, utterly failed" (BBC, 2010), David Cameron stated that the "doctrine of state multiculturalism" has failed and will no longer be state policy (BBC, 2011).

authors argue that differences in FLFPR across immigrants' source-country groups reflect differences in the preferences and beliefs regarding women's roles in family and society between these countries, and that these cultural differences ultimately affect the labor market behavior of immigrant women in their host country. Furthermore, they reveal that these cultural effects persist in the long run (Blau *et al.*, 2011) and influence the labor supply behavior of second- and higher-generation women (Antecol, 2000; Fernández and Fogli, 2009).

As Figure 1 shows, there is indeed a considerable variation in FLFPR across the world. In particular, pronounced differences between the developed countries, which experienced a steady increase in FLFP since the 1970s, and the less developed countries, which experienced no such trend so far, can be observed. Against this background, it is important to note that European immigrants increasingly come from countries that are characterized by relatively low FLFPR as compared to the European average, such as the Middle Eastern and Northern African countries. These cross-country differences in FLFPR may therefore help explain the heterogeneity in LFP of immigrant women in Europe.

But not only do we observe large variations in FLFPR across immigrants' source countries, we also observe large differences in FLFPR across European countries, ranging from 51.0 percent for Italy to 76.6 percent for Sweden in 2011. While previous evidence for the U.S. suggests that home-country FLFP influences immigrant women's labor supply behavior in the host country, so far little is known about the role of host-country FLFP in immigrant women's behavior. In particular, it is of interest whether immigrant women assimilate to the labor market behavior of native women, or whether their labor supply decisions are not affected by the FLFP in their host country at all.

The aim of this paper is study the impact of source- and host-country characteristics on female immigrant labor supply. In our empirical analysis, we employ data from five rounds of the European Social Survey (ESS) covering immigrants in 26 European countries surveyed between 2002 and 2011. These data are augmented with an extensive set of aggregated source- and destination-country characteristics.

We find that women who migrate from countries with relatively high levels of female labor supply have a higher probability of participating in the labor force in their respective host country. This positive effect of the FLFP in the (parents') source country on women's labor supply in their host country holds for second-generation immigrants as well. We are further able to show that most of this effect remains when controlling for the human capital of a woman's partner, the past labor supply of her parents, and a variety of source-country characteristics that might be correlated with FLFPR. These results suggest that the culture and norms of the source country play an important role for immigrant women's labor supply decisions. Moreover, we find evidence for an impact of host-country FLFPR on female immigrant labor supply, suggesting that immigrant women assimilate to the

work behavior of natives.

The remainder of the paper is organized as follows. The next section provides a brief overview of the literature on the role of culture in economic behavior and presents the results of former studies analyzing the labor supply of female immigrants. Section 3 describes the data used, provides some descriptive statistics and explains the identification strategy of our analysis. We present and discuss the main estimation results in Section 4, while the results of several robustness checks are presented in Section 5. The final section summarizes the results and discusses their implications.

2 Background

The present study contributes to the evolving literature on the impact of culture on social and economic behavior. In this strand of literature, differences in culture are broadly interpreted as systematic variations in preferences and beliefs across time, space, or social groups (Fernández, 2011). The main difficulty in identifying the role of culture in economic behavior is to isolate it from those of the economic and institutional environment in which economic decisions are taken. A possible solution to this problem is brought about by what Fernández (2011) refers to as the epidemiological approach. The main idea of this approach is to identify the effect of culture through the variation in economic outcomes of individuals who share the same economic and institutional environment, but whose social beliefs are potentially different. One way to apply this approach is to focus on the economic behavior of immigrants. When individuals emigrate, they take some aspects of their culture with them and transmit them intergenerationally, while they live in the economic and formal institutional environment of the host country. Studying the economic behavior of immigrants from different countries of origin in their host country may therefore be a useful strategy to isolate culture from strictly economic and institutional effects.

In this paper, we study the effect of culture on the labor supply of first- and second-generation female immigrants in Europe. In doing so, our study builds on research that has examined the effect of home-country characteristics on U.S. immigrant women's labor supply.[3] An early attempt to identify the effect of culture on immigrant labor supply is the study by Reimers (1985), who uses ethnic dummy variables to examine whether cultural factors play a direct role in married women's LFP in the U.S.

As Reimers' dummy-variable approach does not allow for a quantification of these cultural effects, more recent studies address this limitation by using quantitative variables as proxies for culture. In particular, they use past values of FLFPR in the immigrant's

[3]The role of source-country variables, in different contexts, has been examined in several studies. For example, Borjas (1987) on the native/immigrant wage differential, Blau (1992) on the fertility behavior among first-generation immigrant women, and Antecol (2001) on the role of home-country variables in explaining variation in the gender wage gap across home-country groups within the U.S.

country of origin as a cultural proxy. As Fernández and Fogli (2009) point out, the main idea for using this aggregate variable is that it reflects the market work decisions of women in the source country, which (in addition to each woman's individual characteristics) depend on the economic and institutional environment as well as the preferences and beliefs within the country. While the economic and (formal) institutional conditions of the country of origin should no longer be relevant for emigrated women, the preferences and beliefs embodied in this variable may still matter. Hence, if this aggregate variable has explanatory power for the variation in the labor market behavior of immigrant women, even after controlling for their individual economic attributes, only the cultural component of this variable can be responsible for this correlation.

The first study to analyze the effect of source-country FLFPR on the work outcomes of female immigrants is the study by Antecol (2000), who finds the source-country FLFPR to be positively correlated with the LFP of first-generation immigrant women in the U.S. These findings, though weaker, even hold for second- and higher-generation immigrants. However, as Fernández and Fogli (2009) point out, these results might be driven by unobserved heterogeneity, as the analysis does not control for important individual characteristics such as years of education or parental background.

In their study on the work and fertility behavior of U.S.-born daughters of immigrants to the U.S., Fernández and Fogli (2009) use various measures of average parental education and average education of the immigrant group to control for human capital factors. They find that the labor supply and fertility behavior of second-generation female immigrants is positively associated with both FLFPR and fertility rates in their parents' country of origin. The authors also show that the husband's culture, as proxied by the FLFPR in the country of ancestry of his parents, has a large impact on his wife's labor supply.

The effect of the immigrant women's own labor supply prior to migrating and the FLFPR in their source country is investigated by Blau and Kahn (2011) to provide evidence on the role of human capital and culture in affecting immigrants' labor supply and wages in the U.S. Their results provide further evidence that women from source countries with relatively high levels of FLFP have higher working hours in the U.S. Moreover, they reveal that most of this effect remains even when controlling for the immigrant's own pre-migration labor supply, which itself strongly affects immigrants' labor supply in the U.S. In a similar study, Blau *et al.* (2011) show that source-country FLFPR is also positively associated with immigrant women's labor supply assimilation profiles, with those coming from high female labor supply countries eventually assimilating fully to native labor supply levels.

The results of these studies suggest an important role for source-country culture in affecting immigrant women's labor supply. However, the effect of culture on immigrants' behavior may weaken as immigrants assimilate to the culture of their host country. This

argument is based on Fernández' notion that nothing in the conception of culture considers it as static or slow changing. In fact, culture might change over time and the speed of cultural change depends on how quickly social beliefs and preferences alter over time, which in turn depends on the individual's environment (Fernández, 2011).

A salient example of a cultural change is seen in the evolution of social attitudes and beliefs toward women's market work, which serves as one possible explanation for the dramatic change in FLFP over time. In order to explain the sharp increase in FLFPR, Fogli and Veldkamp (2011) as well as Fernández (2013) develop a model of cultural change that is brought about by a process of endogenous intergenerational learning. In their model, women are assumed to learn about the long-term payoffs of working by observing (noisy) private and public signals and then make a work decision. When very few women participate in the labor market, the noisiness of the public signal is high and learning is very slow. As information accumulates in some regions, the signal improves and beliefs about work become more positive. As a result, the proportion of women who work in that region increases.[4]

While it is not the aim of this paper to provide an empirical test of these theories, their main implications can be easily applied to female immigrant labor supply decisions. By observing other working women in the host country, female immigrants might change their attitudes and beliefs regarding women's role in the workplace and gradually adapt to the behavior of native women. The higher thereby, all else equal, the proportion of working women in the host country, the more positive the beliefs about work and the higher the probability that an immigrant women decides to participate in the labor market. Assessing the relationship between host-country FLFP and the labor supply of female immigrants might therefore provide some insights into whether immigrant women change their attitudes and beliefs and assimilate to the labor market behavior of natives.

While – since the seminal work of Chiswick (1978) – a sizable body of literature has evolved that examines immigrant-native assimilation patterns within a given destination country, studies that analyze immigrants in different resident countries to provide evidence on the role of host-country characteristics in immigrant behavior are scarce. The only study that aims at assessing the effect of host-country FLFP on female immigrant labor supply is Kok *et al.* (2011) for the Netherlands. However, as their study is based on immigrants within a single country, their identification of the host-country effect does not rely on differences in FLFPR between immigrants' countries of residence, but on the difference in levels and speed of adjustment between different cohorts of immigrants. In particular, they

[4]The main difference between the two models lies in the assumption regarding the driving force behind female labor supply dynamics. While Fernández (2013) assumes that women start with biased, pessimistic beliefs about working women which become more positive as participation rises, Fogli and Veldkamp (2011) assume that women start with unbiased beliefs, but face uncertainty about the effects of maternal employment on their children, which falls as information accumulates.

use the increase in FLFPR over successive birth cohorts of native women as a proxy for Dutch culture. The authors' results suggest that both differences in home-country female participation and the trend in native female participation, as a measure for host-country culture, have an impact on the participation of immigrant women. The authors conclude from these results that host-country participation is at least as important as home-country participation in affecting immigrants' labor supply decisions.

Although a positive relationship between host-country FLFP and immigrant women's labor supply might be indicative of immigrant women adapting to the culture of their host country and therefore to the work behavior of natives, other explanations are also possible. As a given woman's decision to participate in the labor market does not only depend on her preferences and beliefs, but also on a whole series of economic and institutional factors that may differ across countries, FLFP at the aggregate level will not only reflect a country's cultural environment, but its economic and institutional conditions as well. However, although we are not able to identify the source of assimilation, the effect of the LFPR of native women in a given country on the work behavior of immigrants is still indicative as to whether immigrants adapt to the labor market behavior of natives.

In the present paper, we make a number of contributions to the existing literature. First, we contribute to the literature on the role of source-country culture on female immigrant labor supply. While previous literature has exclusively focused on the U.S.[5], we analyze the labor market behavior of immigrants in 26 European countries, thereby providing first evidence on this topic for Europe.

Second, we take advantage of the use of cross-country data as compared to single-country data to analyze immigrant labor supply behavior. Observing immigrants in different destination countries enables us to provide evidence on the relationship between host-country FLFP and immigrants LFP, thereby shedding light on assimilation patterns of immigrants to the work behavior of natives. Effectively, we are able to disentangle the effects of source- and host-country FLFP on immigrant women's labor supply. In contrast to earlier work, our research design allows us to control for a variety of source- and host-country characteristics beyond FLFPR. While controlling for a large set of macroeconomic indicators ensures that we estimate the true effect of source- and host-country FLFP on immigrant women's labor supply, assessing the effect of these economic and institutional conditions on immigrant behavior is of considerable interest in itself.

Lastly, we conduct our analysis separately for first- and second-generation immigrants. As Fernández and Fogli (2009) outline, the effect of source-country culture on economic actions should be weaker for second-generation immigrants than for first-generation immigrants, as cultural transmission is restricted mostly to parents and ethnic social networks rather than operating in society at large (e.g., schools, media, etc.). On the other

[5]With exception of the paper by Kok *et al.* (2011) for the Netherlands.

hand, we expect the effect of host-country FLFP to be stronger for second-generation immigrants than for first-generation immigrants, as second-generation immigrants grow up with the culture of their host country. Hence, analyzing the differing effects of source- and host-country characteristics on the labor supply of first- and second-generation immigrants sheds further light on cultural and economic assimilation patterns.

3 Method, Data, and Descriptive Statistics

3.1 Method

In our empirical analysis, we start with estimating the following model:

$$lfp_{ijk} = \Phi(\boldsymbol{x_i'}\boldsymbol{\beta} + \sum_{j=2}^{J} \delta_j c_j^s + \sum_{k=2}^{K} \gamma_k c_k^h + \boldsymbol{p_{jk}'}\boldsymbol{\lambda} + \boldsymbol{t_i'}\boldsymbol{\vartheta} + \epsilon_{ijk}), \tag{1}$$

where lfp_{ijk} is a binary indicator that takes value 1 if immigrant woman i from source country j in host country k participates in the labor market at the time of observation. In $\boldsymbol{x_i}$, we include a set of individual characteristics and household characteristics as outlined below. $\sum \delta_j c_j^s$ and $\sum \gamma_k c_k^h$ are full sets of dummy variables for the immigrant's source and host country, respectively, while $\boldsymbol{p_{jk}}$ is a vector of country-pair variables describing the economic and cultural relationship between an immigrant's source and host country. $\boldsymbol{t_i}$ is a set of dummy variables for the year of observation and ϵ_{ijk} is the error term.

Hence, we start our analysis of immigrant women's labor supply by using country dummies rather than the quantitative source- and host-country variables as our cultural proxies. This has the benefit of not requiring the relationship between culture and lfp_{ijk} to be linear in the cultural proxy. Furthermore, it allows to fully capture the effects of source-country culture and host-country characteristics on immigrant women's labor supply. However, the main drawback of including the woman's country of ancestry and her residing country as proxy variables is that such an approach is not explicit as to why different groups of immigrants, as defined by their source and host country, differ in their labor market behavior.

The next logical step therefore is to replace the source-country dummies – $\sum \delta_j c_j^s$ – by a vector of source-country characteristics – $\boldsymbol{s_j}$:

$$lfp_{ijk} = \Phi(\boldsymbol{x_i'}\boldsymbol{\beta} + \boldsymbol{s_j'}\boldsymbol{\theta} + \sum_{k=2}^{K} \gamma_k c_k^h + \boldsymbol{p_{jk}'}\boldsymbol{\lambda} + \boldsymbol{t_i'}\boldsymbol{\vartheta} + \epsilon_{ijk}). \tag{2}$$

Model 2 is similar to the so-called epidemiological approach used, amongst others, by Antecol (2000), Fernández *et al.* (2004) and Fernández (2007). This approach enables us to measure the effect of source-country FLFP on immigrant women's labor supply in their host country, while holding the host-country characteristics fixed, i.e., by still including a

set of dummies for the immigrant's host country – $\sum \gamma_k c_k^h$. In doing so, we are able to test whether the positive correlation between source-country FLFP and immigrant women's labor supply in the U.S. holds for immigrants into Europe as well. The identification of this cultural effect on the labor supply decisions of female immigrants rests on the assumption that there are no unobserved factors that influence an immigrant woman's labor supply in her host country and are correlated with the FLFPR in her source country, once the other covariates are controlled for.

One of the main contributions of our paper is that we are not only able to assess the effect of source-country characteristics on female immigrant labor supply, but are also able to shed some light on the role of host-country characteristics in the labor market behavior of female immigrants in these countries. In doing so, we estimate the following model:

$$lfp_{ijk} = \Phi(\boldsymbol{x_i'}\boldsymbol{\beta} + \sum_{j=2}^{J} \delta_j c_j^s + \boldsymbol{h_k'}\boldsymbol{\pi} + \boldsymbol{p_{jk}'}\boldsymbol{\lambda} + \boldsymbol{t_i'}\boldsymbol{\vartheta} + \epsilon_{ijk}). \tag{3}$$

This model differs from Model 1 only by including a vector of host-country characteristics – $\boldsymbol{h_k}$ – instead of the host country dummies – $\sum \gamma_k c_k^h$. This approach enables us to measure the effect of host-country FLFP on immigrant women's labor supply, while holding the source-country characteristics fixed, i.e., by still including a set of dummies for the immigrant's source country – $\sum \delta_j c_j^s$. Model 3 therefore allows us to test whether immigrant women assimilate to the labor market behavior of native women in their host country. The identification of the host-country FLFPR effect rests on the assumption that, given the other covariates, immigrant women's labor force participation decisions are not related to any unobserved factors that are correlated with the FLFPR in the immigrants' host country.

In order to consistently estimate the parameters of equations (1) to (3), we specify the probability that a certain individual participates in the labor market by the use of a binary probit model, implying the assumption that ϵ_{ijk} follows a normal distribution.[6] We estimate marginal effects in all models. To address the problem of intraclass correlation in standard errors of immigrants within source- and host-country groups, respectively, we cluster standard errors at the source-country level (Model 2) and host-country level (Model 3), respectively.[7] We further use host-country population weights in all regressions, which ensure that each country is represented in proportion to its actual population size.

[6]Logit and linear probability models yielded similar results.

[7]While estimating clustered standard errors is the standard solution to address the problem of within-group error correlation, the standard errors obtained by this method might still be downward biased if the number of clusters is very small (see, e.g., Angrist and Pischke, 2009). We therefore check the robustness of our results (see Section 5.5) by estimating a linear regression model with standard errors obtained by a bias-reduced linearization method as proposed by Bell and McCaffrey (2002).

3.2 The European Social Survey

Our basic data source at the individual level is the European Social Survey (ESS), a multi-country biennial cross-sectional survey funded jointly by the European Commission, the European Science Foundation and academic funding bodies in each participating country.[8] The central aim of the ESS is to gather data about people's social values, cultural norms and behavioral patterns within Europe. The first round of the ESS was fielded in 2002/2003. Up to now, five waves are available, covering a total of 33 nations. The survey consists of two elements – a basic interview questionnaire conducted in every round and a supplementary questionnaire devoted to specific topics, which changes over time.

In particular, the ESS contains information on the country of birth of both the respondent and the parents, which allows us to precisely identify the source country of both first- and second-generation immigrants. We define first-generation immigrants as individuals born outside their resident country. Respondents are classified as second-generation immigrants if one or both parents are born outside the host country.

We use the cumulative ESS data, which pools the common information from the first to the fifth ESS round, including a total of 31 countries and roughly 243,000 individuals. We exclude host countries not belonging to the European Union (except for Switzerland and Norway)[9] as well as those for which the number of surveyed female immigrants is particularly small (lower than 15 individuals). The latter restriction is also applied to the source countries, i.e., we eliminate source countries with fewer than 15 observations.[10] We consider women aged 26 to 59 years only, in order to avoid variations in FLFP due to differences in education leaving ages and statutory retirement ages across countries. Our final sample consists of 8,251 immigrants in 26 countries[11], of which roughly 63% are first-generation and 37% are second-generation immigrants.[12] These immigrants come from 59 different source countries, while the number of distinct source countries is much

[8]The ESS uses a methodologically rigorous multinational design that guarantees representativeness. Extensive documentation of the data is available at http://ess.nsd.uib.no/.

[9]In particular, we exclude immigrants in Croatia, Israel, Russia, Turkey, and the Ukraine. In doing so, we assure that the countries in our sample fundamentally underly the same institutions and regulations, and thus comprise a more homogeneous sample.

[10]Increasing the threshold to 20 or 25 individuals per host and source country, respectively, yielded similar results.

[11]The host countries included in our sample are Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Great Britain, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, the Netherlands, Norway, Portugal, Poland, Slovenia, Slovakia, Spain, Sweden, and Switzerland. We do not observe a sufficient number of first-generation immigrants in Bulgaria and Poland, and of second-generation immigrants in Cyprus, Italy, and Portugal, which reduces the generation-specific samples to 24 and 23 countries, respectively. A robustness analysis including only the intersection of both country samples yields similar results.

[12]The low share of second-generation immigrants in our data can be explained by the fact that information on the parents' country of birth is only included from round 2 of the ESS onwards.

higher for first-generation than for second-generation immigrants (58 as opposed to 30).[13]

Our outcome of interest is an individual's labor market status at the time of the interview (lfp_{ijk}). In particular, lfp_{ijk} is a binary indicator that takes value 1 if immigrant woman i from source country j in host country k stated that her main activity within the past 7 days was either being employed or being unemployed while actively looking for a job, and 0 otherwise.

The ESS data contain detailed information on the respondent's socio-demographic characteristics as well as the composition of her household. Based on this information, we generate the following variables which serve as controls in all our regressions: age (3 categories), highest level of education (primary, secondary, or tertiary education), partner living within the household, number of children, youngest child is 0-2 years and 3-5 years, respectively, and population density (thinly, medium, or densely populated).

For both first- and second-generation immigrants, we further include some immigration-specific variables. For first-generation immigrants, we include indicators for the immigrant's years since migration (5 categories) and for whether she immigrated after age 18.[14] The inclusion of the latter variable allows us to control for whether a woman obtained her (primary and secondary) education in her host or in her source country, with the former presumably being less affected by home-country characteristics and more similar to natives when they reach adulthood than those migrating as adults. Moreover, we include a dummy variable indicating whether an immigrant woman speaks the host country's language. This information is obtained from a question included in the ESS that asks respondents to name up to two languages they speak most often at home. The variable takes value 1 if one of these two languages is also one of the official languages of the immigrant's country of residence. While the aforementioned variables are specific to first-generation immigrants, we also include an additional variable for second-generation immigrants, indicating whether both parents or only one of them were born outside the resident country.

Although the ESS is not designed as a household survey, but is in effect an individual survey, it contains information on a respondent's partner. Controlling for partner characteristics in women's labor supply decisions is meaningful for two reasons. First, for those living with a partner some kind of joint decision-making process with respect to labor supply and household production has to be assumed.[15] Independent of which kind of

[13]For a list of the source countries included in our sample, see Table A2 in the Appendix. Note that we had to aggregate some source countries in case political transformations led to a separation or unification of these countries over time. These aggregate countries are Czechoslovakia, the USSR, and Yugoslavia. The macroeconomic indicators for these countries are calculated as a population-weighted average of the single-country values.

[14]As controlling for age, years since migration, and age at migration in a linear form is not possible due to perfect correlation of these variables, we decided to include both age and years since migration in categories which allows us to further add a dummy variable indicating the age at migration.

[15]The economic theory of joint labor supply decisions within the household was initiated by Becker (1965) and developed, amongst others, by Gronau (1977), Manser and Brown (1980) and McElroy and

model is assumed to underlie a couple's decision-making process, women are predicted to be less likely to participate the higher their partner's earnings potential. Second, there is evidence of assortative mating in the marriage market, i.e., more educated (and hence higher income) men tend to be married to more educated women (see, e.g., Pencavel, 1998). The husband's higher income will decrease the incentives for his wife to engage in market work and, in this way, mask the strength of the effect of source-country culture on women's labor supply decisions. We attempt to capture the impact of both assortative mating and joint decision making within the household by controlling for the partner's highest level of education and his working hours. However, as these variables are endogenous to a women's LFP decision, we will not include them in our basic regression model.

As Blau and Kahn (2011) show, a strong predictor of an immigrant women's labor supply in the host country is their own labor supply in the source country prior to migrating. If immigrant women from high FLFP countries have more work experience prior to their arrival in the host country, then the observed effect of source-country FLFP may be due to the relatively high levels of job-related human capital that they accumulated before migration. Hence, without taking the immigrants' pre-migration labor supply into account, we cannot be sure whether a positive relationship between high source-country FLFP and immigrant women's labor supply in their host country provides evidence for an effect of broader culture on immigrants' labor market behavior, or whether it simply reflects the immigrant woman's own pre-migration behavior.

While the ESS data do not allow to control for an immigrant's own labor supply in the source country, they provide information on the human capital and labor supply of the immigrant's parents. In particular, each respondent is asked about (i) his mother's and father's highest level of education and (ii) their labor market status at the time the respondent was 14 years old. As the empirical literature on intergenerational mobility has consistently documented a high persistence between parents' and children's economic outcomes[16], we use these indicators as a proxy for the immigrant's own labor supply prior to migration. In doing so, we are able to test whether the effect of source-country FLFP on immigrant labor supply persists even if the immigrant's pre-migration human capital is controlled for.

Table 1 shows the descriptive statistics of the individual and household characteristics outlined above separately for the sample of first- and second-generation female immigrants (columns 2 and 3). For comparison, column 4 further shows the respective values for native women. With respect to our dependent variable, women's probability of participating in the labor market (lfp_{ijk}), distinct differences between the three samples appear. At the time of the interview, 69% of the native women, as compared to 65% of the first-generation

Horney (1981).

[16]For a recent overview of studies on intergenerational mobility, see Black and Devereux (2011).

and 71% of the second-generation immigrant women indicate to actively participate in the labor market. Hence, while the LFP of first-generation immigrant women is indeed considerably lower than that of native women, the LFP of second-generation immigrant women even exceeds the LFP of natives.[17] This result might support our notion that recent waves of immigrants into Europe increasingly come from countries that are characterized by low FLFPR, and therefore show a lower labor market attachment than former immigrant women. However, it is also necessary to take into account the changing reasons for migration. During the 1950s and 1960s, many European countries, such as Germany, Great Britain, and France, encouraged labor immigration in order to fill gaps in the national labor market, while in the later decades migration for family reunion and the seeking of political asylum became more important (European Commission, 2011).

Table 1 further shows that first-generation immigrant women are slightly younger (41 years on average) than second-generation and native women (43 years on average) and have a higher number of children (0.73 as opposed to 0.63 for second-generation immigrants and 0.59 for native women). Regarding the educational attainment of the three groups, no clear pattern emerges. While the share of women with a tertiary degree is highest among first-generation immigrants, they also have the highest share of women with a primary degree. This might again reflect that the reasons for migration are quite diverse. With respect to the immigrant-specific variables, the results show that more than 40% of the first-generation immigrant women live in their destination country for more than 20 years, and the majority of these women migrated after the age of 18 (83%). We further see that 30% of the second-generation women have both a mother and a father who were born outside the residence country, while the rest are daughters of interethnic marriages.

Whereas the personal characteristics of the partners and fathers do not differ substantially across the three groups of women, we observe large differences regarding the employment status and the educational attainment of the mothers of these women. In particular, mothers of first-generation immigrant women are much less likely to have been employed when their daughter was 14 years old than mothers of second-generation and native women (48% as opposed to 58% and 55%), though being better educated than the latter. This observation highlights the importance of testing the robustness of our results to controlling for parental characteristics. If the latter are not controlled for, a positive correlation between source-country FLFP and the labor supply of immigrant women might purely arise from the fact that the mothers of immigrants from high-LFP countries are more likely to have been employed than those from low-FLFP countries. In this case, it is rather the actual behavior of the mother than the preferences and beliefs held within the source country that ultimately determine the labor supply of immigrant women in Europe.

[17] Note that the mean values for the three groups are not statistically different from each other.

3.3 Aggregated Data

For the analysis of source- and host-country effects, we augment our individual data with an extensive time-series, cross-country database of aggregated source- and host-country characteristics.[18] While for first-generation immigrants source-country characteristics refer to the immigrant's country of birth, the source-country characteristics for second-generation immigrants refer to the country of birth of the father or the mother of the immigrant, depending on who of the two was born in a foreign country. In case both parents were born outside the host country and emigrated from different countries, we use the mother's birthplace to assign the country-of-ancestry indicators to second-generation women, as we assume the intergenerational transmission of beliefs and values regarding women's role in society to be stronger between mothers and daughters than between fathers and daughters (cf. Casey and Dustmann, 2010).[19]

For both first- and second-generation immigrants, the host-country indicators were assigned to immigrants based on their country of destination and the year of observation (2002 to 2011). With respect to the source-country characteristics, however, the optimal point in time to take these indicators from is not obvious.

For first-generation immigrants, one possibility is to measure the source-country variables at the time these immigrants left that country. These values reflect the norms and values the immigrants grew up with and carry to their host country. A second possibility is to use the current values of the source-country indicators. These values reflect the norms and values currently held by the immigrant's counterparts, i.e., the individuals living in the immigrant's country of ancestry at time of observation. For second-generation immigrants, the same reasoning applies. On the one hand, it could be argued that the values of the source-country variables measured at the time the immigrant's parents left their home country would best reflect the culture of the country of ancestry. On the other hand, one could argue that the norms and values that parents and society transmit to second-generation immigrants might be best reflected by a comparison of what the counterparts of these women are currently doing in the country of ancestry.

The main problem with assigning second-generation immigrants the source-country characteristics based on the year their parents left the country is that this information is not included in our data. Moreover, even if we were able to observe the parents' year of arrival, data limitations would not permit us to use years prior to 1960, since values for most of our macroeconomic indicators are not available prior to that year. Hence, we decided to assign both first- and second-generation immigrants the source-country

[18] See Table A3 in the Appendix for a detailed description of the macroeconomic data.

[19] In our sample, 5.4% of the second-generation female immigrants have parents who are born in different source countries. As a robustness check, we have also run our regressions using the country characteristics of the father's birthplace for these women. The results of our regressions remain unaffected.

characteristics based on the year of observation (2002 to 2011).[20] Following this approach has several advantages. First, we can make sure that the macroeconomic indicators are available for the majority of the source countries in our sample. In doing so, we avoid the problem of a non-random selection of source countries into our sample, which would otherwise arise from the fact that long-ranging time-series data for our macroeconomic indicators of interest are only available for a limited number of countries. Second, using current values of the macroeconomic indicators for both first- and second-generation immigrants has the advantage of treating first- and second-generation immigrants similarly, which makes a comparison of the behavior of the two groups more meaningful. Lastly, the use of current values of the source-country characteristics takes into account that, if not emigrated, immigrant women would have gradually changed their preferences and beliefs in the same way as those still living in the source country, and does therefore not assume culture to be constant over time. However, in order to assure that our results are not driven by the choice of observation time, we further perform a sensitivity analysis in which we assign first-generation immigrants the source-country indicators based on their year of migration (see Section 5.4).

The variables of our main interest are $FLFPR_j$ and $FLFPR_k$, the female labor force participation rates of the immigrant's source and host country, respectively. These variables cover the rate of the economically active population for women in a given age group, which are available in 5-year-intervals ranging from "25 to 29" to "55 to 59". We use age-specific participation rates instead of a single measure over all age groups in order to avoid the FLFPR to vary with the age structure among the population, thereby blurring differences in women's economic activity between the countries. The differentiation by age group is especially important for the host-country FLFPR, as the demographic composition of immigrants differs largely across European countries.

While the host-country FLFPR may reflect the economic, institutional, and cultural environment of the immigrant, only the cultural component is reflected in the source-country FLFPR. The estimated effect of the latter on female immigrant labor supply therefore provides insights into the role of culture as opposed to institutions and purely economic factors in explaining the diversity of labor market outcomes between immigrants. However, as Fernández (2011) claims, parents are not the only transmitters of culture. The relationships and institutions of the local environment also impact individual behavior. By observing other working women in the host country, female immigrants might change their attitudes and beliefs regarding women's role in the workplace and gradually adapt to the behavior of native women. The estimated effect of the host-country FLFPR on the labor supply of female immigrants therefore reveals whether immigrant women compare

[20] In doing so, we follow Antecol (2000), Fernández and Fogli (2009), and Kok *et al.* (2011), while Blau and Kahn (2011) and Blau *et al.* (2011) use past values of the source-country characteristics for their analysis of the labor market behavior of first-generation immigrants.

themselves with native women and gradually assimilate to their labor market behavior.[21]

On both the source- and the host-country level, we control for a variety of additional economic and institutional indicators that might have an impact on individual labor supply decisions. On both levels, we include the country's total fertility rate and its GDP per capita, the latter being an important push and pull factor of immigration, respectively. On the source-country level, we further include a variable denoting the average years of schooling of the source-country population in the immigrant's age group.[22] As shown by Borjas (1992, 1995), the level of ethnic human capital (as measured by average wages or education of the immigrant group) may help to explain individual outcomes such as education or earnings due to ethnic externalities in the human capital process. As Fernández and Fogli (2009) state, one way to think about these human capital externalities is that the human capital embodied in an individual's ethnic network matters. Including the school enrollment rates in the source country in our analysis can therefore serve as a proxy for average (parental) human capital and for the human capital embodied in the woman's ethnic network.

We further include some additional indicators on the host-country and the country-pair level. A major concern when examining the labor market behavior of immigrants across host countries is the selection of immigrants into these countries. Although cross-country migration decisions are clearly non-random, our primary concern here is whether selective migration could spuriously generate an effect of host-country FLFPR on immigrant women's labor supply in their host country. It can be argued that female immigrants with high preferences for women's market work, who intend to participate in the labor market in their host country, will migrate to countries that offer the best opportunities to do so. If this is the case, a positive correlation between immigrant women's probability of participating in the labor market and the FLFPR in their host country may not provide clear evidence for an assimilation of immigrants towards the FLFP of natives, but might rather reflect a selection of high pre-migration labor supply women into high FLFP host countries.

In order to address this problem, we attempt to control for the immigrant's migration decision as well as possible. In addition to including indicators for the host country's GDP and fertility rate, we control for the country's unemployment rate, arguing that women with high preferences for market work, whose migration decision is economically

[21] A remaining concern when analyzing the relationship between immigrant women's labor supply and the FLFPR in their host-country is that the participation decisions of immigrant women are already embodied in the latter. Hence, even in the absence of any assimilation patterns, there might exist a positive, though very small, correlation between the LFP of immigrant women and the FLFPR in their host country. In order to eliminate this possible correlation, we alternatively used the predicted LFPR of native women (calculated from the ESS data) as our measure for the host-country FLFPR. The results are robust to using this alternative measure.

[22] As for the FLFPR, the age groups range from "25 to 29" to "55 to 59" in 5-year-intervals.

motivated, will migrate to countries with good employment opportunities and therefore low unemployment rates.

We further capture the selection of immigrants into host countries by controlling for the total share of migrants as well as the share of migrants from the women's source country among the host country's population. While the former variable captures the host country's cultural diversity in general, the latter variable controls for the fact that immigrants from countries with less traditional gender roles may choose to move to less traditional countries, and similarly, those from countries with more traditional gender roles may choose to move to more traditional countries. However, although this variable serves as a proxy for the immigrant's migration decision, it might also reflect the immigrants' composition of the neighborhood. As Fernández and Fogli (2009) argue, an individual's neighborhood may play an important role in transmitting and preserving a set of beliefs or preferences, independently of the human capital embodied in an individual's ethnic network. A neighborhood that has a relatively high proportion of individuals from the same source country may help preserve that country's culture by punishing behavior that is different from the norm and thereby keep the culture of the source country alive. Although the share of immigrants of the same ancestry is only a raw proxy of the immigrant's neighborhood, it might still provide some insights into the role of neighborhoods in cultural transmission.

Finally, we add some variables capturing the relationship between the immigrant's country of birth and her country of residence. First, we control for whether the two countries share or have ever shared a colonial relationship. This is to acknowledge the fact that countries that had the same colonial history often established similar institutional settings, which not only facilitates migration flows, but also reduces the barriers of immigrants to enter the host country's labor market.

Moreover, we include indicators for the geographical, linguistic, and genetic distance between the immigrant's source country and her host country, which serve as proxies for the individual costs of migration. The geographical distance is defined as the geodesic distance between the capitals of the source and the host country in 1,000 kilometers.

The linguistic distance measures the phonetic similarity between all of the world's languages. The basic idea is to compare pairs of words having the same meaning in two different languages according to their pronunciation. The average similarity across a specific set of words is then taken as a measure for the linguistic distance between the languages (Bakker *et al.*, 2009).[23]

Lastly, genetic distance is measured as the difference in allele frequencies. Alleles are the specific manifestation of a gene, which might differ between individuals. The

[23]This measure was first applied to economics by Isphording and Otten (2011), who analyze the effect of linguistic distance on the language fluency of immigrants in Germany.

genetic distance measure as defined by Cavalli-Sforza *et al.* (1994) is related to the inverse probability that groups of alleles are the same for two populations. Hence, the lower the common frequency of alleles in two populations, the longer these populations have been separated.[24] Genetic distance therefore serves as a proxy for the cultural distance between two countries, which might have an impact on the immigrants' migration decision.

While geographical, linguistic, and genetic distance, to a certain extent, all measure the direct and indirect costs of migration, their effect on the labor supply behavior of immigrants is theoretically ambiguous. As Chiswick (1999) states, immigrants who come from a greater distance are likely to have higher labor market returns to migration than those coming shorter distances, all else equal. Stated differently, immigrants who migrated though facing high costs of migration are a positively selected sample of all immigrants and may therefore have a higher chance of participating in the host-country's labor market.

A second important issue that has to be considered when analyzing the labor supply of immigrants across different host countries is that immigrants might face restrictions in their access to the host country's labor market. Specifically, immigrants from non-EU countries might not be allowed to work in their host country in the first years after arrival. In order to distinguish immigrants that are permitted to work from day one in their host country from those who might face restrictions to do so, we include a dummy variable that indicates whether immigrants underly the "right of free movement of workers" at the time of observation. The right of free movement of workers is a fundamental principle enshrined in Article 45 of the Treaty on the Functioning of the European Union, which generally permits workers to search for employment, to be employed, and to reside in any Member State of the European Union (European Commission, 2010a).[25]

While the aforementioned variable mainly captures the different rights of EU and non-EU immigrants, the labor market access of the latter might still vary across the European countries. Not only may third-country immigrants be prohibited to work in the country of residence in the first years after arrival, they may further have limited access to the full labor market, education system or employment services of the host country.

[24] Changes in genes, hence the emergence of new alleles, happen randomly at an almost constant time. As evolutionary pressure might direct this random change into certain directions, the genetic distance measure focuses on neutral genes, which are not prone to evolutionary pressure. By focusing on neutral changes, the genetic distance measure therefore does not explain differences in labor supply due to superior skills or ability.

[25] While the right of free movement of workers generally applies to all immigrants migrating within the European Union, there is a clause about a transition period before workers from the new Member States can be employed on equal, non-discriminatory terms in the old Member States. The old Member States have the right to impose such transitional period for 2 years, then to decide whether to extend it for additional 3 years, and then, if there is serious proof that labor from new Member States would be disruptive to the market in the old Member States, the period can be extended for the last time for 2 more years. Furthermore, citizens of the Member States of the European Economic Area and Switzerland have the same right of freedom of movement and these countries are treated as old Member States inside the EEA (European Commission, 2003, 2005).

In order to address this issue, we make use of the Migrant Integration Policy Index (MIPEX)[26], which measures policies integrating migrants in 25 EU Member States as and 3 non-EU countries (i.e., Canada, Norway, and Switzerland). It considers over 140 policy indicators grouped into 6 broad policy areas, one of which is the "labor market mobility" of immigrants. "Labor market mobility" measures if migrant workers are eligible for the same opportunities as EU nationals to work in most sectors. In particular, it takes into account whether migrant workers can expect help from labor market integration measures to adjust to the language and professional demands of the labor market. Moreover, it measures how secure migrant workers are in their employment, whether they can renew most types of work permits and remain living in the country and look for work if they lose their job. The index varies between 0 and 100, with higher values meaning that migrants have more rights in the corresponding policy area.

Table 2 shows the descriptive statistics of the aggregated source- and host-country variables as well as the bilateral variables separately for the sample of first- and second-generation immigrants. In order to best represent the country characteristics relevant for the immigrants included in our sample, the values have been calculated as host-country population weighted averages over all observations within each sample. The country characteristics in the top of Table 2 are measured at the time of observation, while the bottom of Table 2 shows the source-country variables for first-generation immigrants measured at the time these immigrants left the country.[27]

With respect to our variable of main interest, $FLFPR$, Table 2 indicates that as compared to the European average, first-generation immigrants come from a source country that has on average a 13 percentage points lower FLFPR and second-generation immigrants come from a source country that has on average a 14 percentage points lower FLFPR at the time of the interview. At the same time, hardly any difference in the average LFPR of males between the immigrants' source and host countries appear. These results support our hypothesis that the low labor market activity of (first-generation) immigrant women in Europe might be explained by the more traditional views about gender roles held in their source countries. However, the fact that second-generation immigrant women are even more likely to participate in the labor market than native women, although their parents come from high-traditional source countries as well, also lends support to our argument that immigrant women might change their preferences and beliefs and assimilate

[26]MIPEX is led by the British Council and Migration Policy Group (MPG) and is freely accessible at: http://www.mipex.eu/.

[27]Note that the variables describing the relationship between the source and the host country are time invariant, except for the share of migrants from the same source country in the immigrant's host country. Technically, the "right of free movement"-variable is time variant as well, as the countries underlying this fundamental principle change over time. However, as this variable serves as a proxy for the immigrants' restrictions in their access to the host country's labor market, a calculation of past values for this variable is of little meaning.

to the labor market behavior of natives.

Regarding the other country characteristics, the results reveal that first-generation immigrant women come from source countries with a higher total fertility rate at the time of observation, while there is no difference in average source- and host-country fertility rates for second-generation immigrants. As expected, GDP per capita is much higher among the immigrants' host countries than among the immigrants' source countries, while the difference between source- and host-country GDP is higher for first- than for second-generation immigrants. Further differences between first- and second-generation immigrants appear with respect to the relationship between the immigrants' source and host country. Both the geographic, the genetic, and the linguistic distance between the source and the host country have increased considerably over migration cohorts, while the role of colonial ties in the immigrants' choice of destination country has decreased.

Lastly, a comparison of the source-country characteristics for the sample of first-generation immigrants calculated at different points of time, i.e., the year of observation (2002 to 2011) and the year the immigrant left her country (1982 to 2011), reveals a large variation in the macroeconomic indicators over time. While FLFPR and years of schooling have increased over time (by 6 percentage points and 1.5 years, respectively), fertility rates have decreased over the observation period (by 0.5 children per women). These findings highlight the importance of conducting a sensitivity analysis in which we assign first-generation immigrants the source-country characteristics based on the year of migration.

4 Basic Results

4.1 Source- and Host-Country Fixed Effects

The estimation results of Model 1, containing both source- and host-country fixed effects, are shown in Table 3. The results for the individual and household controls are in line with previous evidence on female (immigrant) labor supply. For both first- and second-generation immigrants, LFP is significantly lower among older women (46 to 59) as compared to middle-aged women (36 to 45 years). A further strong predictor of the labor supply of immigrant women is their level of education, with those having completed tertiary education being significantly more likely and those with only a primary school degree being significantly less likely to participate in the labor market than those with a secondary school degree. While first-generation female immigrants living together with a partner show a lower LFP probability as compared to single women, cohabitation is uncorrelated with the labor supply of second-generation immigrants. Although we do not know whether the partner is also an immigrant and the two migrated together, the

strong negative correlation for first-generation immigrants might reflect that those women who migrated together with their partner are less likely to have migrated for their own economic interests and are therefore less likely to participate in the labor market than single women. Both the number of children living in the household and the presence of small children (aged 0 to 2) is negatively correlated with female immigrant labor supply. The degree of urbanization of the immigrants' place of residence is hardly correlated with their labor supply decision.

For first-generation female immigrants, labor supply is significantly lower for those who just arrived in their host country (less than 6 years ago) than for those who live in the country for more than 20 years. Those who migrated as adults (age 18 and over), however, do not differ from those who migrated as children. Moreover, speaking the host country's language at home is positively correlated with the likelihood of participating in the labor market. Lastly, second-generation immigrants whose father and mother were both born outside the residence country do not differ from those with a single migrant parent with respect to their labor market behavior.

The bottom of Table 3 shows the results of the variables that describe the relationship between the immigrants' country of origin and their host country. With controlling for both the immigrant's source country and her country of residence, hardly any of these variables show explanatory power in female immigrant labor supply.

For first- and second-generation immigrants, both the source-country dummies and the host-country dummies are jointly highly significant, reflecting a considerable variation in LFP, both between immigrant women from different countries of origin and between immigrant women across the European countries. In order to assess the relative importance of an immigrant's cultural background, as measured by the source-country fixed effects, and her cultural, institutional, and economic environment, as measured by the host-country fixed effects, we re-estimate our model by OLS and calculate the semipartial R^2 of the source- and host-country dummies, respectively. The semipartial R^2 represents the proportion of variance of lfp_{ijk} accounted for by the source- and host-country dummies, respectively, after all other covariates are controlled for. The respective results are displayed in Table A1 in the Appendix. For first-generation immigrants, the results show that 17,4% of the overall variance of lfp_{ijk} can be explained by our covariates, including the source- and host-country fixed effects. Of this explained variance, 21.2% are accounted for by the source-country fixed effects and 7.0% are accounted for by the host-country fixed effects. Hence, the LFP decisions of first-generation female immigrants are more strongly determined by their cultural background than by the cultural, institutional, and economic conditions in their host country. For second-generation immigrants, the difference in the explanatory power of the source- and host-country fixed effects is less prounced. While all covariates account for 11,7% of the overall variation in lfp_{ijk}, 11.8% of this

explained variance can be attributed to the source-country fixed effects and 10.3% can be attributed to the host-country fixed effects. This result supports our expectation that second-generation immigrants are less affected by source-country conditions and more affected by host-country conditions as compared to first-generation immigrants. However, it also reveals that although second-generation immigrant women grow up in the environment of their host country, their labor market behavior is still strongly determined by their country of origin.

4.2 Source-Country FLFPR

In order to gain insights into the driving forces behind the differences in labor supply between women from different countries of origin, we re-estimate the above specification by now replacing the source-country dummies with the respective source-country characteristics (Model 2). The estimation results for this model are shown in Table 4.

The estimated marginal effect of our variable of main interest, $FLFPR_j$, shows a strong positive correlation between the FLFPR in the immigrant's country of origin and her probability of participating in the host country's labor market. This result holds for both first- and second-generation immigrants, while the magnitude of the estimated effect is higher for the latter. On average, a 1-percentage-point increase in the source country's FLFPR is associated with a 0.2 percentage-points increase in the LFP probability of first-generation immigrant women and a 0.4 percentage-points increase in the LFP probability of second-generation immigrant women. However, as the source-country FLFPR is differently distributed for first- and second-generation immigrants, a comparison of the size of the estimated marginal effects is only meaningful to a limited extent.

In order to illustrate and compare the magnitude of the source-country FLFPR effects for first- and second-generation immigrants, we can compare the LFP probability of women from a country with a relatively high FLFPR, at the 75th percentile of our sample, with women from a country with a relatively low FLFPR, at the 25th percentile. Regarding first-generation immigrants, the 25th percentile of the FLFPR in our sample is 48.0, which roughly equals the FLFPR of Sri Lanka in 2011, and the 75th percentile is 80.0 (~Ukraine, 2011). The results suggest that an increase in the source-country's FLFPR from the 25th to the 75th percentile increases the LFP of first-generation female immigrants by approximately 7.0 percentage points. For second-generation immigrants, an increase in the source-country FLFPR from the 25th percentile (50.7, which roughly equals the Philippines in 2011) to the 75th percentile (81.5, which roughly equals Canada in 2011) increases the likelihood of participating in the labor market by approximately 11.8 percentage points.[28]

[28]Note that the high variation in FLFPR across source countries partly accrues from the fact that we use age-group-specific instead of total FLFPR in our analysis. The above-mentioned country-year combinations chosen to illustrate the magnitude of the source-country FLFPR all refer to the FLFPR of

The illustration of the magnitude of the effect of source-country FLFPR on female immigrant labor supply reveals two things: First, the effect is by far not negligible and second, the magnitude of the effect is indeed higher for second-generation immigrants than for first-generation immigrants. The latter result contradicts the argument of Blau (1992), who points out that cultural factors should be more apparent among first-generation immigrants, because second-generation immigrants have had time to adapt to the prevailing tastes and economic conditions of the host country. However, it should be kept in mind that our analysis does not take into account any cohort effects. If early cohorts of immigrants have a stronger source-country identity than later cohorts of immigrants, and the intergenerational transmission of this identity is strong[29], then the children of former immigrant cohorts might be more affected by source-country culture than recent immigrants into the country. Hence, the finding of a relatively stronger source-country FLFPR for second-generation immigrant women does not necessarily reflect that the effect of source-country culture becomes stronger as time spent in the host country increases.

In order to gain insights into whether the influence of source-country culture changes as time spent in the host country increases, we re-estimate Model 2 for first-generation immigrants by now additionally including an interaction term between source-country FLFPR and the dummy variables for the immigrant's years since migration. The marginal effect of $FLFPR_j$ at each category of the years-since-migration variable is displayed in Figure 2. The results show that within the first five years after migration, source-country FLFPR is uncorrelated with women's probability of participating in the labor market.[30] The positive correlation between source-country FLFPR and immigrant labor supply becomes only significant from year six onwards, and then slightly decreases with time spent in the host-country. However, the category-specific effects are not significantly different from each other. Again, this result does not support the assumption that the effect of source-country culture decreases with time since migration.

The results further show a strong negative correlation between source-country GDP per capita and the labor supply of first- and second-generation immigrants. This result seems counterintuitive at first sight, as one would expect that the higher the GDP in the country of origin, the greater the resemblance between that country's economic structure and that of the European countries, and therefore the higher the preparedness of immigrants for the European labor market.[31] However, this line of argumentation does not take into

the population aged 30 to 34.

[29]Using longitudinal data for Germany, which contain information on the ethnic identity of both first-generation immigrants and their children, Casey and Dustmann (2010) find a strong link between parents' and children's home-country identities. Moreover, they find the intergenerational transmission of the home-country identity to be strongest between mothers and their daughters.

[30]As only 1.4% of the women in our sample indicate that they have migrated within the last year, the insignificance of the effect of FLFPR for this subgroup is likely to be due to the small sample size.

[31]This argument is put forward by Blau *et al.* (2011) for immigrants to the U.S. labor market. However, the authors also find a strong negative correlation between source-country GDP and the labor supply

account the aspect of immigrant selection. The economic theory of migration identifies two major determinants of immigrants' selection: the costs of migration (Chiswick, 1999) and the income inequality between source and host countries (Roy, 1951; Borjas, 1987). While the latter model predicts the educational selection of immigrants to be more positive (negative) the higher the return to skills in the destination (source) country as compared to the source (destination) country, empirical evidence on this relationship is not conclusive (e.g., Borjas, 1987; Orrenius and Zavodny, 2005). A possible explanation for ambiguous findings regarding this relationship is brought about by Belot and Hatton (2012), who show that a positive selection of immigrants from high-inequality countries can only be observed once the poverty constraint of immigrants migrating from poor countries is controlled for. In particular, the authors find that immigrants from poor countries are strongly positively selected from among the source country's population. This result is consistent with Chiswick's argumentation that immigrants are the more positively selected the higher their migration costs. Though having high incentives to move, immigrants from poorer countries are less likely to move as they face high (relative) migration costs, which results in the fact that only the most able will succeed. This relationship between migration costs and the selectivity of immigrants is able to explain the negative correlation between source-country GDP and immigrant women's probability of participating in the labor market. All else equal, immigrants from low-GDP countries are expected to be a more positively selected sample of the source-country population than immigrants from high-GDP countries, and thus outperform the latter in the host-country's labor market.

For first-generation immigrants, we further find a positive and significant correlation between the average years of schooling of the source country's population and immigrant women's probability of participating in the host country's labor market. This suggests that although controlling for the immigrant's own education, the level of human capital in her source country matters for her labor market behavior. The fact that this correlation does only hold for first-generation immigrants suggests that source-country education rather captures some unobservable human capital of the immigrant herself, such as the quality of education obtained or her labor market experience before migrating, than reflecting ethnic externalities in the human capital process.

Lastly, the results for the source-country characteristics reveal a positive correlation between source-country total fertility and the labor market participation of second-generation immigrants. This result contradicts Fernández and Fogli (2009), who find a negative correlation between the fertility rate in the source country and the labor supply of second-generation immigrants in the U.S. The authors argue that the fertility rate in the immigrant's source country captures the beliefs regarding the appropriate role of women in society as well as some independent cultural preferences for family size, which leads

assimilation profiles of first-generation immigrant women.

to a negative effect of this cultural proxy on immigrant women's labor supply. However, to assess the true effect of these cultural proxies, the FLFPR and the fertility rate in the source country, on the labor supply of female immigrants, the correlation between the two variables has to be taken into account. For the source-countries included in our sample, fertility and FLFPR are strongly positively correlated once GDP per capita and average years of schooling are controlled for.[32] Hence, women from countries with less traditional gender roles are more likely to come from high-fertility countries, and women from countries with strong traditional gender roles are more likely to come from low-fertility countries. Hence, the positive correlation between source-country fertility and immigrant women's labor supply in their host country is most likely to reflect an indirect effect of FLFPR on immigrant women's labor supply.

The results for the variables describing the relationship between the immigrants' source and host country show that women who migrate between countries that share or have ever shared a colonial relationship show a higher probability of participating in the labor market. This is in line with the assumption that countries with a colonial history often established similar institutional settings, which reduces the barriers of immigrants to enter the host country's labor market. As expected, we further find a significantly higher LFP probability for women who migrate from countries whose citizens underlie the right of free movement of workers in the host country. The other relationship variables, however, show hardly any explanatory power in female immigrants' labor supply decisions.

Lastly, we see that the effects of the individual and household controls on female immigrant labor supply are robust to the substitution of the source-country dummies by the respective source-country characteristics. This indicates that our estimates do not suffer from unobserved source-country characteristics that are correlated with the individual determinants of labor supply.

4.3 Host-Country FLFPR

While our finding of a significant positive relationship between the labor supply of immigrant women in Europe and the FLFPR in their source country supports the results of earlier studies for the U.S., little is known about the role of host-country characteristics in immigrants' labor supply. In order to gain insights into whether immigrant women's labor supply is affected by the FLFPR in their host country, we re-estimate Model 1 by now replacing the host-country dummies with the respective host-country characteristics (Model 3). The estimation results for this model are shown in Table 5.

For both first- and second-generation immigrants, the estimated effect of $FLFPR_k$

[32] An OLS regression of source-country FLFPR on the total fertility rate, GDP per capita, years of schooling, and time dummies yielded a coefficient for the fertility rate of 2.95 with a standard error of 0.34.

is significantly positive, indicating a positive relationship between the FLFPR in the immigrant's host country and her probability of participating in the labor market. On average, a 1-percentage-point increase in the host country's FLFPR increases the likelihood of participating in the labor market by 0.7 percentage points for first-generation immigrant women and 0.9 percentage points for second-generation immigrant women. If we think of the host country's FLFPR as reflecting the LFP decisions of all women living in the immigrants' host country, which, amongst other factors, depend on the economic, institutional, and cultural environment within the country, the fact that this aggregate variable has explanatory power in immigrant women's labor supply decisions suggests that immigrant women, at least to a certain extent, adapt to the labor market behavior of native women.

The source of this assimilation effect, however, is ambiguous. One possible explanation for the positive correlation between host-country FLFPR and the labor supply of female immigrants is brought about by the model of cultural change developed by Fogli and Veldkamp (2011) and Fernández (2013). By observing other working women in their environment, immigrant women might change their preferences and beliefs regarding women's roles and gradually adapt to the labor market behavior of native women.

A second possible explanation is the influence of institutional circumstances on immigrant women's labor supply decisions. A positive correlation between the host-country's FLFPR and immigrant women's labor supply might indicate that the LFP decisions of immigrant women are subject to the same institutional conditions as those of native women. Regulations affecting the work incentives for women, such as the tax treatment of single persons and second earners, respectively, as well as measures to facilitate the reconciliation of work and family, such as the provision of paid parental leave and the supply of public daycare, are possible candidates to affect the labor supply decisions of native and immigrant women as well.

Moreover, the correlation between host-country FLFPR and female immigrant labor supply might be due to differences in economic conditions across the European countries. For example, differences in employment prospects or wage levels might lead to different incentives for women to participate in the labor market.

Lastly, it cannot be ruled out that selective migration spuriously generates an effect of host-country FLFPR on immigrant women's labor supply in their host country. If less traditional women select themselves into high-FLFPR countries, as these countries offer the best opportunities for women's market work, a positive correlation between immigrant women's probability of participating in the labor market and the FLFPR in their host country may simply reflect this selection process. However, as we control for a variety of host-country characteristics beyond FLFPR, as well as for several variables capturing the relationship between the immigrant's source and host country, selective migration alone

can hardly explain the strong effect of host-country FLFPR on immigrant women's labor supply.

The relative magnitude of the host-country FLFPR effect can again be best illustrated by the use of interquartile ranges. For first-generation immigrants, the 25th percentile of the host-country FLFPR in our sample is 74.7 (~United Kingdom, 2011), while the 75th percentile is 82.7 (~Switzerland, 2011). The results suggest that an increase in the host country's FLFPR from the 25th to the 75th percentile increases the LFP of first-generation female immigrants by approximately 5.1 percentage points. For second-generation immigrants, the 25th percentile of the host-country FLFPR is 76.3 (~Greece, 2011) and the 75th percentile is 83.8 (~Spain, 2011). An increase in the host-country FLFPR from the 25th to the 75th percentile is associated with a 6.7 percentage-point increase in the probability of participating in the labor market.[33] These results suggest that the magnitude of the effect of host-country FLFPR on female immigrant labor supply is higher for second-generation immigrants than for first-generation immigrants. This finding meets our expectation that the labor supply decisions of first-generation immigrants, who grew up under a different cultural and institutional environment, are less strongly affected by the economic, institutional, and cultural conditions of their host country than those of second-generation immigrants. However, we do not find evidence that the effect of host-country FLFPR on the labor supply of first-generation immigrants increases with time since migration (see Figure 3). The illustration of the magnitude of the FLFPR effects further reveals that for both first- and second-generation immigrants, the relative size of the effect of host-country FLFPR on female immigrant labor supply is smaller than the corresponding effect of source-country FLFPR (Model 2). This result again highlights the importance of source-country culture in shaping immigrant women's labor supply decisions.

Regarding the other host-country characteristics, we find that none of the macroeconomic indicators shows additional explanatory power for the variation in the LFP of first-generation immigrant women. For second-generation immigrants, we find a positive correlation between host-country fertility and a negative correlation between host-country GDP per capita and women's likelihood of participating in the labor market. While the low LFP of women in high-GDP countries might reflect an indirect effect of the country's generosity of welfare provision on women's incentives to work, the positive relationship between host-country fertility and immigrant labor supply is hard to explain.

We further find the genetic distance between the source and the host country to be negatively correlated, and the linguistic distance between the two countries to be positively correlated with the LFP of second-generation female immigrants. These results seem contradictory at first sight, as both variables should capture the costs of migration of

[33] Again, the country-year examples refer to the FLFPR of the population aged 30 to 34.

the immigrants' parents. Hence, if showing any explanatory power in the labor supply decisions of second-generation immigrants, one would expect these variables to be positively correlated with women's LFP probability, reflecting that parents who migrate though facing high migration costs are a positively selected sample of all immigrants. However, while both the linguistic and the genetic distance capture the selection of the immigrants' parents, the latter might further have a direct impact on the labor market outcomes of the second generation. One can imagine that the higher the genetic distance between the host country's and the source-country's population, i.e., the higher the dissimilarities between the two populations with respect to their physical appearance, their behavior, and their cultural habits, the higher the barriers for immigrants to integrate into the host country's society, an effect that might even continue through the second generation.

Lastly, our results show that once the host country's total migrant stock is controlled for, the LFP of first-generation women increase with the share of immigrants from the same source country. This result might be explained by network effects, indicating that individuals who migrate to a country with a high proportion of people from the same ancestry will find it easier to gain information about the host country's labor market and therefore be more likely to find a job shortly after arrival.

While the above results highlight the importance of source-country culture and host-country conditions on the labor supply of first- and second-generation immigrants in Europe, we now check the sensitivity of these results to several robustness analyses.

5 Sensitivity Analyses

5.1 Control for Partner Characteristics

As outlined above, for women living in couple households, labor supply decisions might be related to the characteristics of their partner for reasons related to assortative mating and joint labor supply decision-making within the household. In order to test whether our results are robust to controlling for the characteristics of a womans's partner, we re-estimate Models 2 and 3 by now including the partner's working hours and his highest level of education as additional control variables. The estimation results are displayed in Table 6.

For second-generation female immigrants, husband's working hours are positively correlated with their probability of participating in the labor market, which might be indicative of assortative mating with respect to similar preferences for market work. For first-generation immigrants, none such relationship is found. A possible explanation of this result is given by the family migration model, which was proposed by Baker and Benjamin (1997) and empirically tested, amongst others, by Basilio *et al.* (2009). The

model predicts that immigrant women will initially take dead-end jobs to finance their husbands' human capital investments and eventually drop out of the labor market or reduce their labor supply as their husbands' labor market outcomes improve. The existence of such a substitutionary relationship between husband's and wife's labor supply might blur the positive correlation in the partner's labor supply found for second-generation immigrants. However, as we do not know whether an immigrant woman's partner is also an immigrant and the two migrated together, this interpretation is somewhat speculative. Neither for first- nor for second-generation immigrants, we find any correlation between the husbands' highest level of education and their wives' labor supply. This might be a result of the opposing effects of assortative mating and joint labor supply decision-making within the household. The higher the husband's education (and income), the lower his wife's incentives to work, but the higher the probability that his wife is well educated as well and will participate in the labor market.

The most important finding, however, is that the effects of source-country FLFPR and host-country FLFPR on female immigrant labor supply are hardly affected by the inclusion of spousal characteristics. Both effects are similar in statistical significance and magnitude. The correlations of the other country and country-pair variables with immigrant women's labor supply remain constant as well. An exception are the effects of host-country fertility and GDP per capita on the LFP of second-generation immigrants, which are smaller in magnitude and not significant any more.

While the above analysis shows that our results are robust to controlling for the human capital of a woman's partner, the partner's cultural background is also likely to play a role in her LFP decision. Fernández and Fogli (2009) show that a husband's culture, as measured by the LFPR in his father's country of birth, is an important determinant of his wife's employment decision. More generally, Fernández *et al.* (2004) as well as Johnston *et al.* (2012) find evidence that an important factor explaining whether a man's wife works is whether his own mother worked when he was growing up. The authors argue that a mother's decision to work or not is influenced by her beliefs about women's roles, which then have been transmitted to her son and influenced any household decision affecting his wife's work outcome. Unfortunately, the ESS data do neither contain information on a partner's cultural background (i.e., his immigration status and his country of origin), nor do they include information on his parent's employment outcomes, making it impossible to control for any kind of assortative mating with respect to perceptions about gender roles. In particular, a woman who would like to work is presumably more likely to marry a man who would be in agreement with these choices. Given that the FLFPR in the source country serves as proxy for an individual's beliefs regarding women's role in society, we would assume that women from high FLFPR countries will be more likely to marry men from high FLFPR countries. Hence, we have to keep in mind that part of the effect of our

cultural proxy might not capture a direct impact on an immigrant women's decision to participate in the labor market. Rather, it might reflect an indirect effect of a woman's mating decision, which is influenced by her beliefs regarding gender roles and ultimately effects her decision about market work.

5.2 Control for Parents' Human Capital and Employment

As outlined above, evidence suggests that individual beliefs, preferences, and attitudes are transmitted from parents to children, and that this intergenerational transmission shapes the child's economic outcomes (see, e.g., Guiso *et al.*, 2006; Fernández *et al.*, 2004; Fernández and Fogli, 2009). In particular, Johnston *et al.* (2012) find a strong correlation between mothers' and children's gender role attitudes and that a mother's attitudes are strongly predictive of her daughter's labor supply. However, the authors also show that even when controlling for the mother's attitudes toward gender roles, her full-time employment status when her daughter was 5 years old has additional explanatory power in her daughter's labor supply, suggesting that both parental attitudes and the parents' actual behavior predict their children's future labor supply decisions. In this respect, it is of interest to test whether the positive effect of source-country culture on immigrant labor supply still holds after controlling for the labor supply of the immigrant's parents.

Controlling for parental economic outcomes has the further advantage of disentangling the effect of source-country culture from that of the immigrants' own labor supply before migrating. For first-generation immigrants, work experience prior to their arrival in the host country might be positively correlated with the source country's FLFPR. If this is true, the estimated effect of the latter does not only reflect the role of source-country culture, but partly contains the effect of the level of job-related human capital accumulated before migration. Having information on the human capital and labor supply of the immigrant's parents can help to solve this problem, as parental economic behavior in the source country may serve as a proxy for the daughter's labor supply before migrating.

The estimation results of Models 2 and 3 including controls for the parents' highest level of education and their labor market status when their daughter was 14 years are displayed in Table 7. For both first- and second-generation immigrants, we find that women whose mothers and fathers were employed when they were young are more likely to participate in the host-country's labor market than those whose parents were not employed at this time.[34] This result shows that the parents' past employment behavior is a strong predictor of their daughter's labor supply even if the daughter's cultural background is controlled for. With respect to the parents' education, we find women whose fathers have a tertiary degree to be more likely to participate in the labor market than those whose

[34]The respective marginal effects are positive across all specifications but only statistically significant for Model 2.

fathers have a secondary degree, while this relationship is not found for mothers and their daughters. Apart from that, the results show no clear relationship between the labor supply of immigrant women and their parents' education.[35]

Our results further show that the estimated effects of the host- and source-country characteristics are robust to the inclusion of the controls for parental education and employment. In particular, the effects of host- and source-country FLFPR remain positive and significant. The latter result suggests that source-country culture plays an important role in the labor supply decisions of first- and second-generation immigrants even if the intergenerational transmission of human capital is controlled for.

5.3 Ratio of FLFPR to MLFPR

A possible concern when attempting to assess the effect of source-country culture on female immigrant labor supply is that such an approach might suffer from an omitted variable bias. If there exist any unobserved economic conditions in the source country (beyond the macroeconomic indicators we controlled for) that affect an immigrant woman's labor supply decisions, and if these factors are further correlated with the source-country FLFPR, then the estimated effect of our cultural proxy will be biased, as it contains the effect of these unobserved conditions as well. Although it is hard to think of any macroeconomic conditions that fulfill both conditions, we attempt to rule out the possibility of the existence of an omitted variable bias by checking the robustness of our cultural proxy. Following Blau and Kahn (2011) and Blau *et al.* (2011), we use the LFPR of women relative to men's (i.e., FLFPR/MLFPR) instead of FLFPR as our cultural proxy. This relative measure is appropriate in that it captures the gender division of labor explicitly. If there exist any unobserved macroeconomic conditions correlated with a country's FLFPR, these factors must differently affect the LFPR of men and women in order to still bias our estimates. A further advantage of using the ratio of FLFPR to MLFPR is that it implicitly adjusts for problems in measuring the labor force, particularly at different levels of economic development, at least to the extent that such problems affect men's and women's measured participation rates similarly (Blau *et al.*, 2011). We apply the same robustness check to Model 3, with the idea that the effect of FLFPR/MLFPR shows us the role of the labor market behavior of native women in immigrant women's labor supply net of any host-country conditions that affect male LFP as well.

The estimation results of Model 2 and 3 using FLFPR/MLFPR as our explanatory variable of interest are displayed in Table 8. We find that the ratio of the female to the male LFPR in the immigrants' source country is significantly positively related to

[35]We also estimated Models 2 and 3 including only the father's characteristics and only the mother's characteristics, respectively, in order to account for the fact that the parents' educational degrees might be highly correlated. The results of these models are similar to those displayed in Table 7.

the LFP of first- and second-generation immigrant women. Moreover, the effects of the other source-country characteristics on female immigrant labor supply remain similar in significance and magnitude. These results indicate that the correlation between source-country FLFPR and immigrant women's labor supply is not due to unobserved economic conditions that are correlated with the labor market activity in the immigrants' source country. Our results further show a strong positive correlation between the ratio of the female to the male LFPR in the immigrants' host country and the probability of first- and second-generation women to participate in the labor market. As FLFPR and MLFPR, respectively, represent the aggregated LFP decisions of women and men living in the immigrants' host country, which depend on a variety of individual and country-related characteristics, the ratio of the two variables can be thought of as representing only those factors that are relevant to the LFP decisions of women, but not of men. A positive correlation between this aggregate variable and immigrant women's labor supply therefore provides some further evidence that the LFP decisions of immigrant women are affected by similar country-specific conditions as those of native women, and thus immigrant women assimilate to the labor market behavior of natives.

5.4 Source-Country Characteristics at Year of Migration

While in the above analyses of the role of source-country characteristics in immigrant women's labor supply the aggregated source-country variables refer to the year of observation, we know check the robustness of our results by assigning first-generation immigrants source-country values based on the year the immigrants left their source country, as was done by Bisin *et al.* (2011), Blau and Kahn (2011), and Blau *et al.* (2011). That way, these values reflect the norms and values the immigrants grew up with and carry to their host country.

We calculate the year the immigrant left the home country by using information on the year of observation and the immigrant's years since arrival in the host country.[36] Since the latter is not a continuous variable but is subdivided in predefined categories, we set years since migration equal to the mid-point of each interval and to the lower bound of the top interval (i.e., 20 years). Thus, our source-country data for first-generation immigrants now span the years 1982 to 2011.

The estimation results of Model 2 using past instead of current values of the source-country characteristics for first-generation immigrants are displayed in Table 9. Again, we find a significant positive correlation between source-country FLFPR and immigrant women's probability of participating in the labor market. The magnitude of this effect is

[36] As previous studies, we thereby implicitly assume that the year the immigrant left her home country equals the year she arrived in the host country. I.e., we assume that immigrants directly move from their source country to their destination country and thus ignore the possible case of repeat migration.

similar to the effect of FLFPR measured at time of observation (see Table 4). Hence, using past instead of current values of our cultural proxy does not alter the results substantially. This result is consistent with the finding of Fernández and Fogli (2009), who show that both fertility rates and FLFPR are strongly correlated over time, such that the choice over which point of time to take these values from is of minor relevance. Apparently, this argument does not hold true for our education variable, as the positive correlation between the average years of schooling of the source country's population and immigrant women's labor supply becomes insignificant once past values of the former variable are used.

5.5 Bias-Reduced Linearization of Standard Errors

As emphasized by Moulton (1986, 1990), ignoring within-group dependence in standard errors that appears whenever estimating the effects of aggregate explanatory variables on individual-specific response variables can underestimate true standard errors. The usual solution to address this problem is to calculate cluster-robust standard errors that permit heteroskedasticity and within-cluster error correlation. However, a practical limitation of inference with cluster-robust standard errors is that the asymptotic justification assumes that the number of clusters goes to infinity. With a small number of clusters the cluster-robust standard errors can still be downward biased, a problem that has been documented, amongst others, in Bell and McCaffrey (2002), Bertrand *et al.* (2004) and Cameron *et al.* (2008).

While there is still no consensus in the literature on when the number of clusters is considered to be small[37], we check the robustness of our results by using an alternative approach to clustering to correct for a correlation in the regression disturbances within source and host countries, respectively. In particular, we use a bias-reduced linearization (BRL) method as proposed by Bell and McCaffrey (2002). Using Monte-Carlo simulations, the authors show that even if the number of clusters is small (20 clusters), BRL produces unbiased variance estimates in the event that errors are i.i.d., and it greatly reduces bias otherwise. As their approach is only applicable to linear regression models, we re-estimate equations (2) and (3) by OLS.[38] In order to assess the difference between the cluster-robust and the BRL standard errors, we first estimate OLS regressions with standard errors clustered at the source- and host-country level, respectively (top of Table 10). In a second step, the standard errors of the respective models are estimated by the BRL method (bottom of Table 10).

[37] If indicated at all, the critical number of clusters to assure the unbiasedness of cluster-robust standard errors ranges between 20 and 50.

[38] While in the context of linear regression models several bias corrections have been proposed in the literature, comparable solutions for non-linear regression models are scarce. For an overview of methods attempting to address the problem of both intraclass and serial correlation in standard errors, see Angrist and Pischke (2009).

Regarding Model 2, we indeed find the BRL standard errors to exceed the cluster-robust standard errors for all explanatory variables. On average, BRL estimates are 35 percent larger than the respective cluster-robust estimates. For our variable of interest, the FLFPR in the immigrants' source country, the deviation of the BRL standard errors is somewhat smaller (25% for first-generation immgrants and 32% for second-generation immigrants), and the respective coefficients are still significantly different from zero. The same applies to the coefficients for the FLFPR in the immigrants' host country (Model 3), whose BRL standard errors only slightly exceed those obtained by OLS (22% and 3% for first- and second-generation immgrants, respectively). However, the results for Model 3 also show that for some coefficients, BRL standard errors are even smaller than the respective cluster-robust standard errors. Bell and McCaffrey (2002) explain this result by the fact that linearization methods, as other non-parametric variance estimators, can produce estimators with high variance under certain conditions. The authors therefore conclude that BRL methods will reduce, but not completely solve the inference problem for multi-stage samples with small cluster sizes. Hence, while the above results show that our conclusions are consistent with the inference based on an alternative approach to clustering, we will follow previous literature (e.g., Fernández and Fogli, 2009; Bisin *et al.*, 2011; Blau and Kahn, 2011) and cluster standard errors at the source- and host-country level, respectively, in our main regressions.

6 Conclusion

In the present paper, we focus on an important aspect of migration and integration policy: the labor supply of first- and second-generation female immigrants. In particular, we investigate the extent to which home- and host-country characteristics affect immigrant women's labor supply in Europe. Our contributions to the literature are manifold. While previous literature on the role of source-country culture in female immigrant labor market behavior has exclusively focused on the U.S., we complement the existing literature by providing first evidence on this relationship for Europe. The use of cross-country data further allows us to investigate the role of host-country characteristics in immigrant women's labor supply decisions, a topic that has so far been neglected by previous research. Lastly, we conduct our analysis separately for first- and second-generation immigrants to shed further light on cultural and economic assimilation patterns.

Using data from the European Social Survey 2002-2011 covering immigrants in 26 European countries, we find that the labor supply of both first- and second-generation immigrants is positively associated with the FLFPR in their (parents') source country. This result supports previous evidence for immigrants in the U.S. and suggests that immigrant women's labor supply is affected by preferences and beliefs regarding women's

roles in society in her source country. The effect of this cultural proxy on the labor supply of immigrant women is robust to controlling for spousal characteristics, parental characteristics, and a variety of source-country characteristics. Moreover, we find evidence for a strong positive correlation between the FLFPR in the immigrant's host country and immigrant women's decision to participate in the labor market. This result suggests that immigrant women adapt to the culture, institutions, and economic conditions in their host country and that way assimilate to the work behavior of natives. Again, this result is robust to various sensitivity analyses.

Our results have important policy implications. As the native-born working-age population declines in many European countries, issues on the financing and the fiscal sustainability of the welfare state capture increasing attention. As a result, the active recruitment of high-skilled immigrants as well as the integration of recent immigrants into the host countries' labor markets have become important policy goals within Europe (European Commission, 2010b). The latter aspect is especially relevant for immigrant women, whose formal labor market participation is still on a considerably low level. For the effective design of such policies, however, knowledge about whether and to what extent immigrant women's labor supply is shaped by their cultural background on the one hand, and the cultural, economic, and institutional conditions in the host country on the other hand, is of great interest.

Our finding that the labor supply of immigrant women is strongly related to the FLFPR in their host country reveals that host-country conditions indeed matter for immigrant women's decision to participate in the labor market. This suggests that integration and labor market policies that aim at increasing the labor market attachment of immigrants can indeed be a successful tool in stimulating the labor supply of immigrant women in Europe. However, our results also suggests that the success of such policies is likely to vary depending on the immigrants' cultural background. In addition to the conditions of their host country, the preferences and beliefs held in their source country strongly determine the LFP of female immigrants. This suggests that integration policies alone might be of limited effectiveness in achieving the envisaged goal. Rather, the balance between tailored integration policies on the one hand, and selective immigration policies on the other hand, might be a successful tool in increasing the labor market attachment of immigrants in Europe.

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Figures

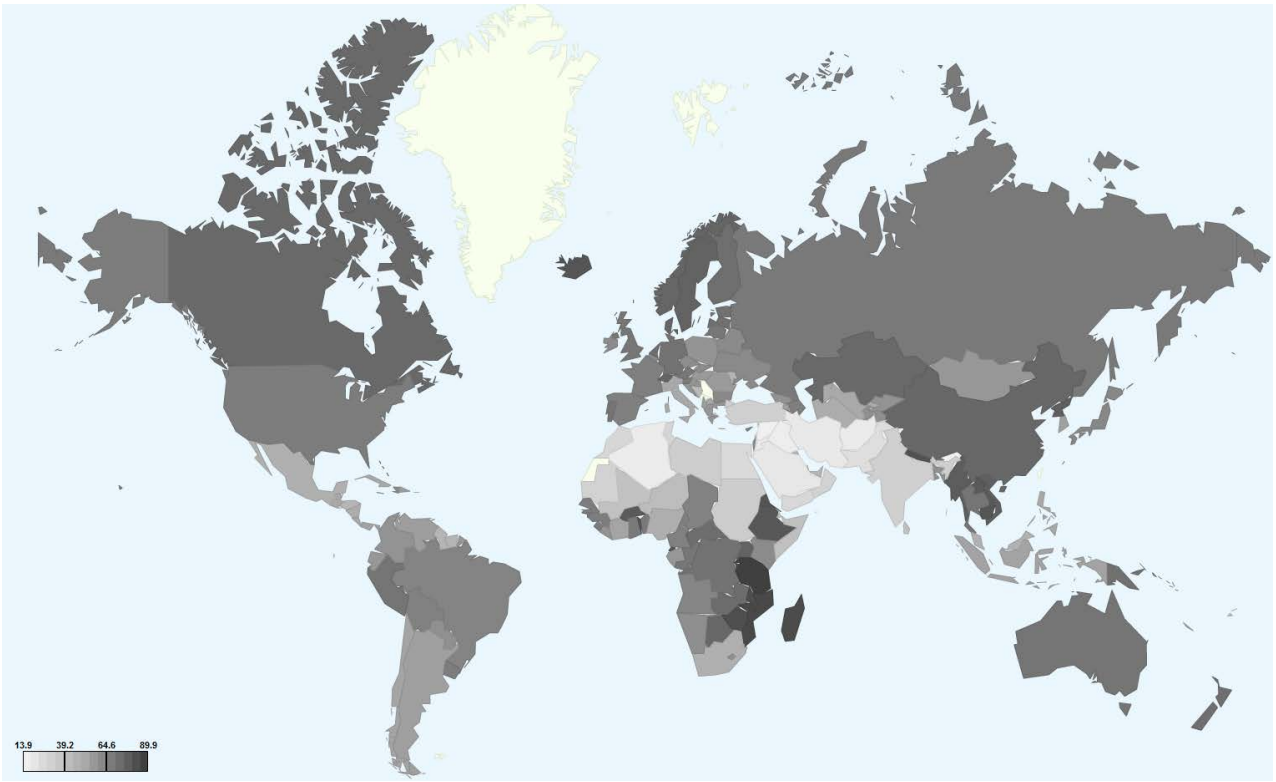
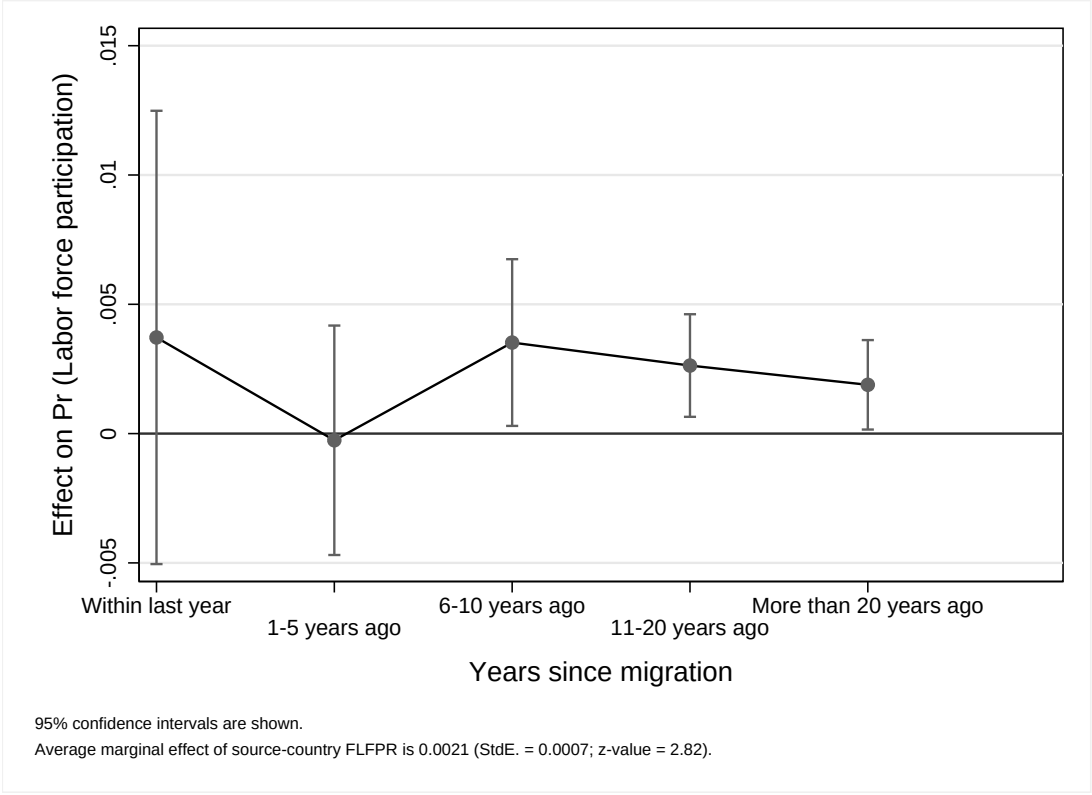


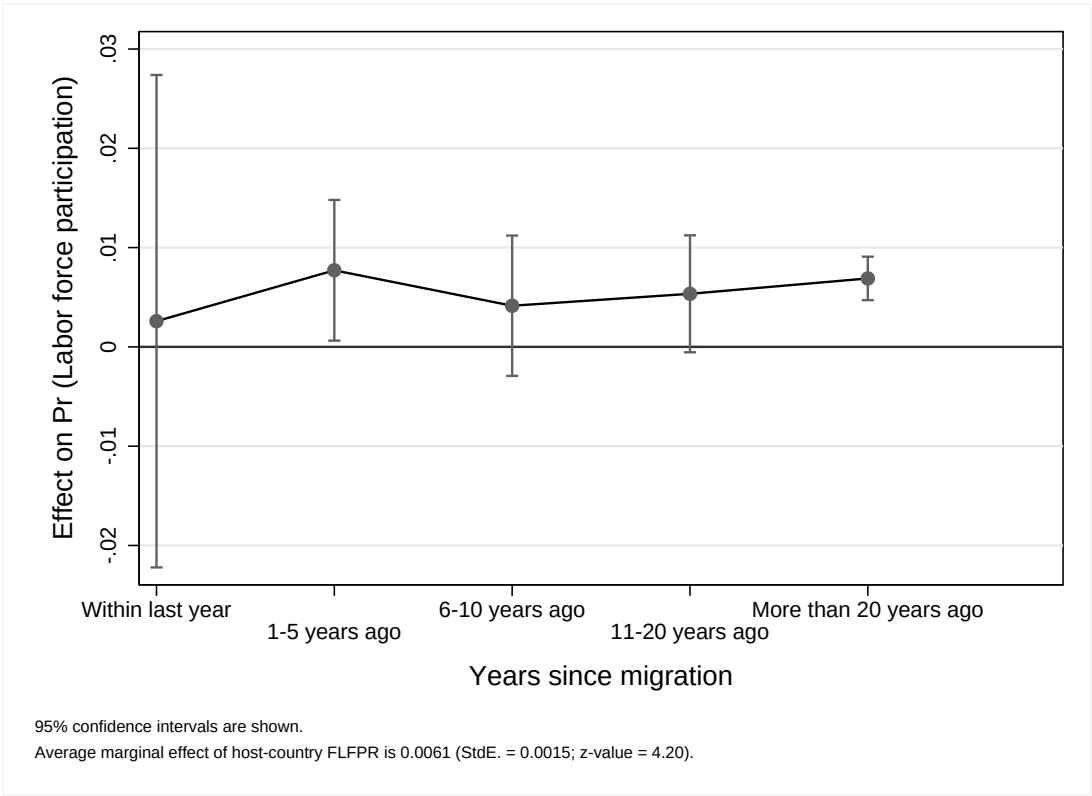
Figure 1: Female Labor Force Participation Rate (Age 15-64) – Year 2011
Source: ILO.



95% confidence intervals are shown.

Average marginal effect of source-country FLFPR is 0.0021 (StdE. = 0.0007; z-value = 2.82).

Figure 2: Effect of Source-Country FLFPR by Years since Migration



95% confidence intervals are shown.

Average marginal effect of host-country FLFPR is 0.0061 (StdE. = 0.0015; z-value = 4.20).

Figure 3: Effect of Host-Country FLFPR by Years since Migration

Tables

Table 1: Descriptive Statistics – Individual Variables

	1^{st}-Generation Immigrants		2^{nd}-Generation Immigrants		Native Women	
	Mean	StdD	Mean	StdD	Mean	StdD
Participates in the labor market	0.647	0.478	0.705	0.456	0.688	0.463
Age	40.748	9.343	42.783	9.380	42.924	9.498
Highest level of education						
Primary education	0.347	0.476	0.286	0.452	0.339	0.473
Secondary education	0.286	0.452	0.386	0.487	0.358	0.479
Tertiary education	0.362	0.480	0.325	0.468	0.301	0.459
Other education	0.005	0.073	0.003	0.055	0.002	0.046
Partner in household	0.746	0.435	0.698	0.459	0.735	0.441
No. of children in household	0.732	0.977	0.626	0.940	0.586	0.899
Youngest child 0-2	0.115	0.319	0.093	0.290	0.086	0.280
Youngest child 3-5	0.115	0.319	0.091	0.288	0.085	0.279
Population density						
Densely populated	0.410	0.492	0.358	0.479	0.292	0.455
Medium populated	0.356	0.479	0.346	0.476	0.351	0.477
Thinly populated	0.234	0.424	0.296	0.457	0.357	0.479
Years since migration						
Less than 1 year	0.022	0.146	–	–	–	–
1 to 5 years	0.157	0.364	–	–	–	–
6 to 10 years	0.176	0.381	–	–	–	–
11 to 20 years	0.237	0.425	–	–	–	–
More than 20 years	0.408	0.491	–	–	–	–
Migrated after age 18	0.828	0.377	–	–	–	–
Speaks host-country language	0.841	0.366	–	–	–	–
Both parents migrants	–	–	0.299	0.458	–	–
Partner characteristics[a]						
Working hours	34.980	19.077	34.920	19.031	35.663	19.353
Education						
Primary education	0.312	0.463	0.268	0.443	0.331	0.471
Secondary education	0.325	0.469	0.371	0.483	0.365	0.482
Tertiary education	0.344	0.475	0.348	0.476	0.290	0.454
Other education	0.019	0.136	0.014	0.116	0.014	0.116
Parents characteristics[a]						
Father employed at age 14	0.912	0.283	0.922	0.268	0.935	0.247
Father's Education						
Primary education	0.559	0.497	0.544	0.498	0.594	0.491
Secondary education	0.204	0.403	0.259	0.438	0.255	0.436
Tertiary education	0.221	0.415	0.186	0.389	0.140	0.347
Other education	0.015	0.123	0.011	0.104	0.010	0.102
Mother employed at age 14	0.481	0.500	0.577	0.494	0.547	0.498
Mother's Education						
Primary education	0.661	0.474	0.671	0.470	0.697	0.460
Secondary education	0.177	0.381	0.211	0.408	0.217	0.412
Tertiary education	0.147	0.354	0.110	0.313	0.076	0.265
Other education	0.015	0.123	0.009	0.093	0.010	0.099
Observations	5,187		3,064		53,090	

Notes: – [a] Partner and parents characteristics are calculated for a reduced sample size. Partner characteristics are shown for households with partner only. – Host-country population weights are applied.

Table 2: Descriptive Statistics – Aggregated Variables

	1^{st}-Generation Immigrants		2^{nd}-Generation Immigrants	
	Host Country Mean/StdD	Source Country Mean/StdD	Host Country Mean/StdD	Source Country Mean/StdD
	Measured at time of observation			
Source-/host-country characteristics				
FLFP rate (in %)	63.716	76.783	64.154	77.628
	(21.822)	(9.577)	(21.537)	(10.353)
MLFP rate (in %)	90.038	91.300	88.706	90.126
	(8.153)	(6.853)	(9.267)	(8.776)
FLFPR/MLFPR	70.622	83.957	72.103	85.929
	(23.090)	(7.861)	(22.284)	(6.975)
Total fertility rate	1.940	1.607	1.689	1.686
	(0.740)	(0.263)	(0.403)	(0.280)
GDP per capita (in USD 1,000)	14.302	35.002	20.362	34.191
	(15.205)	(8.906)	(15.878)	(10.196)
Average years of schooling	9.538	–	10.393	–
	(2.721)		(2.277)	
Unemployment rate (in %)	–	8.214	–	7.886
		(3.570)		(2.909)
Total migrant stock (% of population)	–	11.601	–	10.895
		(3.742)		(3.928)
MIPEX: Labor market mobility	–	66.219	–	–
		(15.883)		
Relationship between source and host country				
Source-country migrant stock (% of population)	1.049		1.225	
	(1.784)		(2.111)	
Colonial ties	0.287		0.366	
	(0.452)		(0.482)	
Geographic distance (in 1,000 km)	3.026		1.412	
	(3.320)		(1.941)	
Genetic distance	0.327		0.186	
	(0.512)		(0.341)	
Linguistic distance	79.923		77.129	
	(30.692)		(30.365)	
Right of free movement of workers	0.325		–	
	(0.469)			
	Measured at time of migration			
Source-country characteristics				
FLFP rate (in %)	58.289	–	–	–
	(23.215)			
Total fertility rate	2.439	–	–	–
	(1.271)			
GDP per capita (in USD 1,000)	10.829	–	–	–
	(11.898)			
Average years of schooling	7.960	–	–	–
	(3.208)			
Relationship between source and host country				
Source-country migrant stock (% of population)	1.030		–	
	(2.077)			
Observations	5,187	5,187	3,064	3,064

Note: – Time of observation refers to the years 2002 to 2011, while time of migration spans the years 1982 to 2011. – Host-country population weights are applied.

Table 3: Model 1 – Source- and Host-Country Fixed Effects

	1^{st}-Generation Immigrants		**2^{nd}-Generation Immigrants**	
	ME	StdE	ME	StdE
Age group (Ref.: Age 36-45)				
Age 26-35	−0.0346	(0.0313)	−0.0099	(0.0362)
Age 46-59	−0.1300†	(0.0322)	−0.1363†	(0.0347)
Highest level of education (Ref.: Secd. education)				
Primary education	−0.1028†	(0.0299)	−0.0853**	(0.0366)
Tertiary education	0.0678**	(0.0281)	0.1030†	(0.0306)
Partner in household	−0.1288†	(0.0249)	0.0371	(0.0306)
No. of children in household	−0.0842†	(0.0150)	−0.0859†	(0.0181)
Youngest child 0-2	−0.1867†	(0.0442)	−0.1862***	(0.0616)
Youngest child 3-5	−0.0089	(0.0393)	−0.0710	(0.0543)
Population density (Ref.: Medium populated)				
Densely populated	0.0225	(0.0255)	0.0513*	(0.0302)
Thinly populated	0.0162	(0.0290)	−0.0046	(0.0321)
Years since migration (Ref.: > 20 years)				
Less than 1 year	−0.1701*	(0.0962)	–	–
1 to 5 years	−0.0980**	(0.0453)	–	–
6 to 10 years	−0.0313	(0.0402)	–	–
11 to 20 years	0.0443	(0.0305)	–	–
Migrated after age 18	−0.0171	(0.0384)	–	–
Speaks host-country language	0.1198†	(0.0355)	–	–
Both parents migrants	–	–	0.0104	(0.0305)
Relationship between source and host country				
Source-country migrant stock (% of population)	0.0155	(0.0106)	−0.0150	(0.0125)
Colonial ties	0.0018	(0.0480)	0.0557	(0.0556)
Geographic distance (in 1,000km)	0.0311	(0.0259)	0.0288	(0.0507)
Genetic distance	0.1150	(0.1458)	−0.4084	(0.2918)
Linguistic distance	0.0003	(0.0008)	0.0008	(0.0009)
Right of free movement of workers	0.1137*	(0.0580)	–	–
Host-country FE	yes		yes	
Source-country FE	yes		yes	
Year dummies	yes		yes	
Log likelihood	-2278.8		-1447.3	
Pseudo R^2	0.144		0.103	
Observations	5,187		3,064	

Notes: – † $p < 0.001$; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. – *Robust standard errors in parentheses.* – *Host-country population weights are applied.*

Table 4: Model 2 – Source-Country Characteristics

	1^{st}-Generation Immigrants		2^{nd}-Generation Immigrants	
	ME	StdE	ME	StdE
Age group (Ref.: Age 36-45)				
Age 26-35	−0.0299	(0.0412)	−0.0042	(0.0344)
Age 46-59	−0.0835***	(0.0272)	−0.0976†	(0.0255)
Highest level of education (Ref.: Secd. education)				
Primary education	−0.0921†	(0.0272)	−0.0776	(0.0477)
Tertiary education	0.0652**	(0.0292)	0.1015***	(0.0380)
Partner in household	−0.1168†	(0.0267)	0.0367*	(0.0201)
No. of children in household	−0.0862†	(0.0136)	−0.0906†	(0.0140)
Youngest child 0-2	−0.1772†	(0.0448)	−0.1790***	(0.0611)
Youngest child 3-5	−0.0060	(0.0431)	−0.0708	(0.0646)
Population density (Ref.: Medium populated)				
Densely populated	0.0254	(0.0278)	0.0454	(0.0302)
Thinly populated	0.0168	(0.0236)	−0.0069	(0.0249)
Years since migration (Ref.: > 20 years)				
Less than 1 year	−0.1858**	(0.0898)	–	–
1 to 5 years	−0.0988***	(0.0381)	–	–
6 to 10 years	−0.0410	(0.0333)	–	–
11 to 20 years	0.0357	(0.0264)	–	–
Migrated after age 18	−0.0049	(0.0353)	–	–
Speaks host-country language	0.1096†	(0.0256)	–	–
Both parents migrants	–	–	0.0243	(0.0346)
Source-country characteristics				
FLFP rate (in %)	0.0022***	(0.0008)	0.0039***	(0.0014)
Total fertility rate	0.0340	(0.0250)	0.1020**	(0.0429)
GDP per capita (in USD 1,000)	−0.0047†	(0.0013)	−0.0022**	(0.0010)
Average years of schooling	0.0201***	(0.0071)	−0.0056	(0.0109)
Relationship between source and host country				
Source-country migrant stock (% of population)	0.0083	(0.0083)	−0.0080	(0.0061)
Colonial ties	0.0511*	(0.0289)	0.0630***	(0.0197)
Geographic distance (in 1,000km)	0.0069	(0.0054)	−0.0003	(0.0126)
Genetic distance	0.0054	(0.0386)	−0.0767	(0.0476)
Linguistic distance	0.0005	(0.0005)	0.0004	(0.0004)
Right of free movement of workers	0.1543†	(0.0361)	–	–
Host-country FE	yes		yes	
Year dummies	yes		yes	
Log likelihood	-2327.5		-1451.3	
Pseudo R^2	0.125		0.101	
Observations	5,187		3,064	

Notes: – † $p < 0.001$; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. – *Standard errors are clustered at the source-country level.* – *Host-country population weights are applied.*

Table 5: Model 3 – Host-Country Characteristics

	1^{st}-Generation Immigrants		2^{nd}-Generation Immigrants	
	ME	StdE	ME	StdE
Age group (Ref.: Age 36-45)				
Age 26-35	−0.0289	(0.0546)	0.0169	(0.0312)
Age 46-59	−0.0702*	(0.0372)	−0.0460**	(0.0211)
Highest level of education (Ref.: Secd. education)				
Primary education	−0.0992†	(0.0236)	−0.0765**	(0.0352)
Tertiary education	0.0602†	(0.0178)	0.0963†	(0.0196)
Partner in household	−0.1291†	(0.0286)	0.0328*	(0.0195)
No. of children in household	−0.0909†	(0.0242)	−0.0955†	(0.0173)
Youngest child 0-2	−0.1780†	(0.0376)	−0.1662*	(0.0881)
Youngest child 3-5	−0.0078	(0.0329)	−0.0611	(0.0581)
Population density (Ref.: Medium populated)				
Densely populated	0.0175	(0.0177)	0.0555***	(0.0190)
Thinly populated	0.0191	(0.0216)	0.0019	(0.0216)
Years since migration (Ref.: > 20 years)				
Less than 1 year	−0.1586	(0.1177)	–	–
1 to 5 years	−0.0717*	(0.0371)	–	–
6 to 10 years	−0.0155	(0.0285)	–	–
11 to 20 years	0.0391***	(0.0144)	–	–
Migrated after age 18	−0.0225	(0.0606)	–	–
Speaks host-country language	0.1057†	(0.0294)	–	–
Both parents migrants	–	–	0.0158	(0.0202)
Host-country characteristics				
FLFP rate (in %)	0.0065†	(0.0012)	0.0094†	(0.0006)
Total fertility rate	−0.0357	(0.0638)	0.1006**	(0.0420)
GDP per capita (in USD 1,000)	−0.0002	(0.0032)	−0.0048**	(0.0023)
Unemployment rate (in %)	0.0010	(0.0047)	−0.0027	(0.0042)
Total migrant stock (% of population)	−0.0059	(0.0056)	0.0052	(0.0046)
MIPEX: Labor market mobility	0.0005	(0.0013)	–	–
Relationship between source and host country				
Source-country migrant stock (% of population)	0.0127**	(0.0059)	−0.0037	(0.0049)
Colonial ties	0.0055	(0.0269)	0.0285	(0.0272)
Geographic distance (in 1,000km)	0.0543*	(0.0291)	0.0120	(0.0235)
Genetic distance	−0.0074	(0.0608)	−0.1084***	(0.0410)
Linguistic distance	−0.0001	(0.0006)	0.0011**	(0.0004)
Right of free movement of workers	0.1210***	(0.0439)	–	–
Source-country FE	yes		yes	
Year dummies	yes		yes	
Log likelihood	-2284.9		-1419.4	
Pseudo R^2	0.141		0.121	
Observations	5,187		3,064	

Notes: – † $p < 0.001$; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. – *Standard errors are clustered at the host-country level.* – *Host-country population weights are applied.*

Table 6: Models 2 & 3 – Controlling for Partner Characteristics

	Model 2		**Model 3**	
	1^{st}-Generation Immigrants ME/StdE	2^{nd}-Generation Immigrants ME/StdE	1^{st}-Generation Immigrants ME/StdE	2^{nd}-Generation Immigrants ME/StdE
Partner characteristics				
Working hours	0.0006	0.0015**	0.0005	0.0013***
	(0.0006)	(0.0006)	(0.0003)	(0.0004)
Education (Ref.: Secd. education)				
Primary education	0.0174	0.0078	0.0339	0.0027
	(0.0338)	(0.0366)	(0.0227)	(0.0253)
Tertiary education	−0.0036	−0.0346	−0.0087	−0.0411
	(0.0247)	(0.0363)	(0.0118)	(0.0251)
Other education	−0.0036	0.0534	0.0604	0.1174*
	(0.0852)	(0.1183)	(0.0711)	(0.0637)
Source-/host-country characteristics				
FLFP rate (in %)	0.0019**	0.0039***	0.0065†	0.0088†
	(0.0008)	(0.0014)	(0.0011)	(0.0007)
Total fertility rate	0.0417	0.1096**	−0.0516	0.0803
	(0.0264)	(0.0460)	(0.0665)	(0.0514)
GDP per capita (in USD 1,000)	−0.0048†	−0.0021**	0.0007	−0.0034
	(0.0014)	(0.0010)	(0.0031)	(0.0027)
Average years of schooling	0.0195***	−0.0070	–	–
	(0.0074)	(0.0121)		
Unemployment rate (in %)	–	–	0.0024	0.0009
			(0.0046)	(0.0055)
Total migrant stock (% of population)	–	–	−0.0072	0.0031
			(0.0058)	(0.0054)
MIPEX: Labor market mobility	–	–	0.0003	–
			(0.0013)	
Relationship between source and host country				
Source-country migrant stock (% of population)	0.0078	−0.0065	0.0120*	0.0005
	(0.0088)	(0.0070)	(0.0065)	(0.0060)
Colonial ties	0.0626**	0.0660***	0.0108	0.0202
	(0.0305)	(0.0230)	(0.0250)	(0.0307)
Geographic distance	0.0066	0.0021	0.0580*	0.0255
	(0.0060)	(0.0156)	(0.0296)	(0.0259)
Genetic distance	−0.0084	−0.0919	0.0284	−0.1114**
	(0.0384)	(0.0585)	(0.0662)	(0.0498)
Linguistic distance	0.0003	0.0003	−0.0004	0.0012***
	(0.0006)	(0.0004)	(0.0006)	(0.0004)
Right of free movement of workers	0.1525†	–	0.1014**	–
	(0.0385)		(0.0454)	
Individual controls	yes	yes	yes	yes
Host-country FE	yes	yes	no	no
Source-country FE	no	no	yes	yes
Year dummies	yes	yes	yes	yes
Log likelihood	-2189.2	-1356.2	-2140.2	-1326.9
Pseudo R^2	0.121	0.111	0.141	0.130
Observations	4,805	2,819	4,805	2,819

Notes: – † $p < 0.001$; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. – *Standard errors are clustered at the source-country level (Model 2) and host-country level (Model 3), respectively.* – *Host-country population weights are applied.*

Table 7: Models 2 & 3 – Controlling for Parents Characteristics

	Model 2		Model 3	
	1^{st}-Generation Immigrants ME/StdE	2^{nd}-Generation Immigrants ME/StdE	1^{st}-Generation Immigrants ME/StdE	2^{nd}-Generation Immigrants ME/StdE
Parents characteristics				
Father employed at age 14	0.0455	0.0501	0.0680**	0.0688*
	(0.0444)	(0.0436)	(0.0313)	(0.0409)
Father's education (Ref.: Secd. education)				
Primary education	0.0246	0.0775***	0.0273	0.0674***
	(0.0316)	(0.0269)	(0.0252)	(0.0228)
Tertiary education	0.0702**	0.1157†	0.0781***	0.1043†
	(0.0338)	(0.0341)	(0.0279)	(0.0284)
Other education	−0.1206	−0.0060	−0.1543	0.0618
	(0.1409)	(0.1594)	(0.2092)	(0.1307)
Mother employed at age 14	0.0273	0.0640**	0.0355†	0.0539**
	(0.0206)	(0.0305)	(0.0087)	(0.0268)
Mother's education (Ref.: Secd. education)				
Primary education	0.0626**	−0.0503	0.0647**	−0.0632**
	(0.0307)	(0.0425)	(0.0280)	(0.0301)
Tertiary education	−0.0251	−0.0914	−0.0301	−0.1123***
	(0.0419)	(0.0596)	(0.0324)	(0.0362)
Other education	0.1641**	−0.0229	0.2044**	−0.0636
	(0.0716)	(0.2102)	(0.0876)	(0.1762)
Source-/host-country characteristics				
FLFP rate (in %)	0.0025†	0.0042**	0.0063†	0.0104†
	(0.0008)	(0.0017)	(0.0012)	(0.0007)
Total fertility rate	0.0244	0.1489***	−0.0658	0.1103***
	(0.0241)	(0.0565)	(0.0704)	(0.0384)
GDP per capita (in USD 1,000)	−0.0041***	−0.0037***	0.0005	−0.0071***
	(0.0014)	(0.0012)	(0.0029)	(0.0025)
Average years of schooling	0.0177**	−0.0007	–	–
	(0.0075)	(0.0169)		
Unemployment rate (in %)	–	–	−0.0004	−0.0089**
			(0.0049)	(0.0042)
Total migrant stock (% of population)	–	–	−0.0087	0.0057
			(0.0054)	(0.0047)
MIPEX: Labor market mobility	–	–	0.0002	–
			(0.0014)	
Relationship between source and host country				
Source-country migrant stock (% of population)	0.0141*	−0.0096	0.0176***	−0.0062
	(0.0075)	(0.0083)	(0.0065)	(0.0058)
Colonial ties	0.0282	0.0359	−0.0223	−0.0146
	(0.0304)	(0.0272)	(0.0297)	(0.0342)
Geographic distance	0.0091	−0.0053	0.0623*	0.0098
	(0.0066)	(0.0139)	(0.0361)	(0.0251)
Genetic distance	0.0275	−0.0776	−0.0268	−0.1064*
	(0.0372)	(0.0559)	(0.0547)	(0.0634)
Linguistic distance	0.0006	0.0005	−0.0001	0.0010**
	(0.0006)	(0.0005)	(0.0005)	(0.0004)
Right of free movement of workers	0.1392†	–	0.0613	–
	(0.0377)		(0.0450)	
Individual controls	yes	yes	yes	yes
Host-country FE	yes	yes	no	no
Source-country FE	no	no	yes	yes
Year dummies	yes	yes	yes	yes
Log likelihood	-1981.6	-1158.6	-1936.6	-1121.2
Pseudo R^2	0.126	0.116	0.145	0.144
Observations	4,545	2,628	4,545	2,628

Notes: – † $p < 0.001$; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. – *Standard errors are clustered at the source-country level (Model 2) and host-country level (Model 3), respectively.* – *Host-country population weights are applied.*

Table 8: Models 2 & 3 – Ratio of FLFPR to MLFPR

	Model 2		**Model 3**	
	1^{st}-Generation Immigrants ME/StdE	2^{nd}-Generation Immigrants ME/StdE	1^{st}-Generation Immigrants ME/StdE	2^{nd}-Generation Immigrants ME/StdE
Source-/host-country characteristics				
FLFPR/MLFPR	0.0018***	0.0031**	0.0048†	0.0097†
	(0.0007)	(0.0014)	(0.0013)	(0.0014)
Total fertility rate	0.0346	0.1000**	−0.0399	0.0508
	(0.0252)	(0.0496)	(0.0614)	(0.0827)
GDP per capita (in USD 1,000)	−0.0047†	−0.0021**	−0.0003	−0.0038
	(0.0013)	(0.0010)	(0.0017)	(0.0025)
Average years of schooling	0.0205***	−0.0026	–	–
	(0.0071)	(0.0100)		
Unemployment rate (in %)	–	–	−0.0004	−0.0038
			(0.0037)	(0.0060)
Total migrant stock (% of population)	–	–	−0.0041	0.0063
			(0.0038)	(0.0047)
MIPEX: Labor market mobility	–	–	0.0007	–
			(0.0007)	
Individual controls	yes	yes	yes	yes
Host-country FE	yes	yes	no	no
Source-country FE	no	no	yes	yes
Year dummies	yes	yes	yes	yes
Bilateral variables	yes	yes	yes	yes
Log likelihood	-2329.6	-1457.4	-2297.9	-1440.0
Pseudo R^2	0.125	0.097	0.137	0.108
Observations	5,187	3,064	5,187	3,064

Notes: – † $p < 0.001$; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. – *Standard errors are clustered at the source-country level (Model 2) and host-country level (Model 3), respectively.* – *Host-country population weights are applied.*

Table 9: Model 2 – Source-Country Characteristics at Year of Migration

	1^{st}-Generation Immigrants	
	ME	StdE
Source-country characteristics		
FLFP rate (in %)	0.0021**	(0.0008)
Total fertility rate	0.0190	(0.0155)
GDP per capita (in USD 1,000)	−0.0043***	(0.0015)
Average years of schooling	0.0136	(0.0092)
Individual controls	yes	
Host-country FE	yes	
Year dummies	yes	
Bilateral variables	yes	
Log likelihood	-2337.4	
Pseudo R^2	0.122	
Observations	5,187	

Notes: – † $p < 0.001$; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.
– *Standard errors are clustered at the source-country level.*
– *Host-country population weights are applied.*

Table 10: Models 2 & 3 – Bias-Reduced Linearization of Standard Errors

	Model 2		**Model 3**	
	1^{st}-Generation Immigrants Coef/StdE	2^{nd}-Generation Immigrants Coef/StdE	1^{st}-Generation Immigrants Coef/StdE	2^{nd}-Generation Immigrants Coef/StdE
	OLS with clustered standard errors			
Source-/host-country characteristics				
FLFPR (in %)	0.0021***	0.0038***	0.0060†	0.0098†
	(0.0007)	(0.0013)	(0.0011)	(0.0006)
Total fertility rate	0.0285	0.1010**	−0.0341	0.0919**
	(0.0230)	(0.0416)	(0.0579)	(0.0367)
GDP per capita (in USD 1,000)	−0.0042†	−0.0020**	0.0001	−0.0040*
	(0.0011)	(0.0009)	(0.0026)	(0.0020)
Average years of schooling	0.0173***	−0.0043	–	–
	(0.0065)	(0.0098)		
Unemployment rate (in %)	–	–	0.0014	−0.0023
			(0.0039)	(0.0038)
Total migrant stock (% of population)	–	–	−0.0058	0.0042
			(0.0047)	(0.0040)
MIPEX: Labor market mobility	–	–	0.0005	–
			(0.0011)	
Individual controls	yes	yes	yes	yes
Host-country FE	yes	yes	no	no
Source-country FE	no	no	yes	yes
Year dummies	yes	yes	yes	yes
Bilateral variables	yes	yes	yes	yes
Log likelihood	-3100.3	-1754.2	-3041.1	-1710.1
Adjusted R^2	0.143	0.101	0.157	0.124
Observations	5,187	3,065	5,187	3,065
	Bias-reduced linearization of standard errors			
Source-/host-country characteristics				
FLFPR (in %)	0.0021**	0.0038**	0.0060†	0.0098†
	(0.0009)	(0.0017)	(0.0013)	(0.0006)
Total fertility rate	0.0285	0.1010*	−0.0341	0.0919
	(0.0268)	(0.0589)	(0.0704)	(0.0582)
GDP per capita (in USD 1,000)	−0.0042***	−0.0020	0.0001	−0.0040**
	(0.0013)	(0.0014)	(0.0017)	(0.0017)
Average years of schooling	0.0173**	−0.0043	–	–
	(0.0086)	(0.0157)		
Unemployment rate (in %)	–	–	0.0014	−0.0023
			(0.0036)	(0.0034)
Total migrant stock (% of population)	–	–	−0.0058**	0.0042*
			(0.0029)	(0.0025)
MIPEX: Labor market mobility	–	–	0.0005	–
			(0.0012)	
Individual controls	yes	yes	yes	yes
Host-country FE	yes	yes	no	no
Source-country FE	no	no	yes	yes
Year dummies	yes	yes	yes	yes
Bilateral variables	yes	yes	yes	yes
Log likelihood	–	–	–	–
Adjusted R^2	–	–	–	–
Observations	5,187	3,065	5,187	3,065

Notes: – † $p < 0.001$; *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. – *The standard errors of the OLS regression are clustered at the source-country level (Model 2) and host-country level (Model 3), respectively.* – *Host-country population weights are applied.*

Appendix

Table A1: Explanatory Power of Source- & Host-Country Fixed Effects

	1^{st}-Generation Immigrants			2^{nd}-Generation Immigrants		
	Full Model	**Restricted Model**		**Full Model**	**Restricted Model**	
		Excl. SC-FE	Excl. HC-FE		Excl. SC-FE	Excl. HC-FE
R^2	0.1739	0.1370	0.1617	0.1170	0.1032	0.1049
Semipartial R^2	–	0.0369	0.0122	–	0.0138	0.0121
Expl. Power SC-FE	21.22%	–	–	11.80%	–	–
Expl. Power HC-FE	7.02%	–	–	10.34%	–	–
Observations		5,187			3,064	

Notes: – Results are obtained from OLS regressions of Model 1. – Host-country population weights are applied. – The explanatory power of the source- and host-country fixed effects is computed as the difference between the R^2 of the full model and the R^2 of the respective restricted model. The values represent the proportion of the explained variance that can be explained by the sum of the source- and host-country fixed effects, respectively.

Table A2: List of Source Countries

	1^{st}-Generation Immigrants		2^{nd}-Generation Immigrants	
Source Country	Observations	Frequency (in %)	Observations	Frequency (in %)
Albania	121	2.33	–	–
Algeria	54	1.04	61	1.99
Argentina	32	0.62	–	–
Australia	36	0.69	–	–
Austria	49	0.94	72	2.35
Belgium	73	1.41	28	0.91
Bolivia	18	0.35	–	–
Brazil	111	2.14	–	–
Bulgaria	48	0.93	–	–
Canada	36	0.69	–	–
Chile	26	0.50	–	–
China	27	0.52	–	–
Colombia	33	0.64	–	–
Congo	32	0.62	–	–
Czechoslovakia	135	2.60	239	7.80
Denmark	38	0.73	35	1.14
DR Congo	15	0.29	–	–
Ecuador	41	0.79	–	–
Finland	104	2.01	95	3.10
France	224	4.32	123	4.01
Germany	385	7.42	310	10.12
Ghana	17	0.33	–	–
Greece	32	0.62	22	0.72
Hungary	38	0.73	89	2.90
India	67	1.29	28	0.91
Indonesia	32	0.62	64	2.09
Iran	49	0.94	–	–
Iraq	35	0.67	–	–
Ireland	26	0.50	73	2.38
Italy	141	2.72	286	9.33
Jamaica	–	–	17	0.55
Japan	16	0.31	–	–
Kenya	17	0.33	–	–
Mauritius	18	0.35	–	–
Morocco	112	2.16	47	1.53
Mozambique	18	0.35	–	–
Netherlands	66	1.27	49	1.60
Norway	31	0.60	32	1.04
Pakistan	33	0.64	–	–
Peru	20	0.39	–	–
Philippines	63	1.21	–	–
Poland	215	4.14	143	4.67
Portugal	188	3.62	31	1.01
Republic of Korea	16	0.31	–	–
Romania	152	2.93	59	1.93
South Africa	35	0.67	–	–
Spain	67	1.29	67	2.19
Sri Lanka	31	0.60	–	–
Sweden	90	1.74	34	1.11
Switzerland	31	0.60	16	0.52
Thailand	30	0.58	–	–
Tunisia	24	0.46	23	0.75
Turkey	179	3.45	72	2.35
United Kingdom	307	5.92	108	3.52
USA	98	1.89	48	1.57
USSR	755	14.56	582	18.99
Venezuela	19	0.37	–	–
Viet Nam	24	0.46	–	–
Yugoslavia	457	8.81	211	6.89
Total	5,187	100.00	3,064	100.00

Note: To form a consistent list of source countries, we aggregate source countries that split or combined over time (i.e., Czechoslovakia, the USSR, and Yugoslavia).

Table A3: Macroeconomic Data – Sources and Descriptions

Variable	Description	Years	Source
I. Source- & host-country variables			
FLFPR & MLFPR	Labor force participation rate is the proportion of a country's working-age population that engages actively in the labor market, either by working or looking for work. It provides an indication of the relative size of the supply of labor available to engage in the production of goods and services during a specified time-reference period. The rates are calculated for females and males by 5-year age group for the population aged 26 to 59 years. We interpolate missing values for intervening years from the available data. When linear interpolation is not possible, we impute missing values using estimated rates of change derived from available data for other age groups in the respective country.	1982–2011	ILO Department of Statistics, LABORSTA Internet. http://laborsta.ilo.org
Total fertility rate	Total fertility rate represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates. We interpolate missing values for intervening years from the available data. When linear interpolation is not possible, we impute missing values using estimated rates of change derived from available data for the respective country.	1982–2011	World Bank Database, World Development Indicators. http://data.worldbank.org/indicator/SP.DYN.TFRT.IN
GDP per capita (in USD 1,000)	Per capita GDP is GDP in constant 2005 prices in USD 1,000 divided by the population. Data in constant prices in USD are converted into national currency using the annual period-average exchange rate of the base year for all years.	1982–2011	United Nations Statistics Division, National Accounts Main Aggregates Database. http://unstats.un.org/unsd/snaama/introduction.asp
Average years of schooling	Average years of schooling represents the number of years of schooling attained by an average person at all levels of schooling combined (primary, secondary, and tertiary). These data are measured by 5-year age group for the population aged 26 to 59 years. The data are available in 5-year intervals for the years 1980–2010. We interpolate missing values for intervening years from the available data for the period 1980–2010 and extrapolate for the year 2011.	1982–2011	Barro and Lee (2010). http://www.barrolee.com

Table A3: Macroeconomic Data – Sources and Descriptions (Continued)

Variable	Description	Years	Source
Unemployment rate	Unemployment rate represents the share of the total labor force that is without work but available for and seeking employment. We extrapolate the unemployment rate from the available data for the year 2011.	2002–2011	World Bank Database, World Development Indicators. http://data.worldbank.org/indicator/SL.UEM.TOTL.ZS
Total migrant stock	International migrant stock is the number of people born in a country other than that in which they live. The data are available for the years 2000–2010 at five-year intervals. We interpolate missing values for intervening years from the available data for the period 2000–2010 and extrapolate for the year 2011.	2002–2011	World Bank Database, World Development Indicators. http://data.worldbank.org/indicator/SM.POP.TOTL.ZS
MIPEX: Labor market mobility	The Migrant Integration Policy Index (MIPEX) considers over 140 policy indicators grouped into 6 broad policy areas. Labor market mobility measures if migrant workers are eligible for the same opportunities as EU nationals to work in most sectors. The index varies between 0 and 100, with higher values meaning that migrants have more rights in the corresponding policy area. MIPEX is available for the years 2004, 2007, and 2010. As some of the countries included in our sample are only included from the 2010 version onwards, we use 2010 values for all years.	2010	http://www.mipex.eu
II. Bilateral variables			
Source-country migrant stock	Source-country migrant stock provides information on the host country's international migrant stock by country of birth in 10-year intervals for the years 1980–2010. The data are mostly based on population censuses and population register records. We interpolate missing values for intervening years from the available data for the period 1980–2010 and extrapolate for the year 2011.	1982–2011	World Bank Database, Global Bilateral Migration Database. http://data.worldbank.org/data-catalog/global-bilateral-migration-database
Colonial ties	Binary variable that is unity if the country-pair have ever had a colonial relationship.	constant	Mayer and Zignago (2011). http://www.cepii.fr/anglaisgraph/bdd/distances.htm

Table A3: Macroeconomic Data – Sources and Descriptions (Continued)

Variable	Description	Years	Source
Geographic distance	Geographic distance is the geodesic distance between country capitals in 1,000km. Geodesic distances are calculated following the great circle formula, which uses the geographic coordinates of the capital cities for calculating the distances between the countries.	constant	Mayer and Zignago (2011). http://www.cepii.fr/anglaisgraph/bdd/distances.htm
Genetic distance	The F_{ST} genetic distance index measures the genetic differences between populations as a fraction of the total genetic variance. The genetic distance data are collected by Cavalli-Sforza *et al.* (1994). The F_{ST} index is based on the frequency of 128 alleles related to 45 genes. By construction, the F_{ST} index ranges between 0 and 1; a higher F_{ST} is associated with larger differences. Genetic distance reports the calculated distance divided by 1,000.	constant	Spolaore and Wacziarg (2009). http://www.anderson.ucla.edu/faculty_pages/romain.wacziarg
Linguistic distance	The linguistic distance measure is drawn from linguistic research. The Automatic Similarity Judgment Program (ASJP), developed by the German Max Planck Institute for Evolutionary Anthropology, automatically evaluates the phonetic similarity between all of the world's languages. The basic idea is to compare pairs of words having the same meaning in two different languages according to their pronunciation. For each word pair, it is evaluated how many additions or subtractions are necessary to transform one word in one language into the same word in another language. The approach is called normalized and divided Levenshtein distance. We use the most prevalent native language of each country to calculate the distance.	constant	Bakker *et al.* (2009). http://www.eva.mpg.de
Right of free movement of workers	Binary variable that is unity if citizens of a given host country underly the right of free movement of workers in a given source country. The right of free movement of workers permits workers to search for employment, to be employed, and to reside in any Member State of the European Union. While it generally applies to all immigrants migrating within the European Union, there is a clause about a transition period before workers from the new Member States can be employed on equal, non-discriminatory terms in the old Member States. Citizens of the Member States of the European Economic Area and Switzerland have the same right of freedom of movement and these countries are treated as old Member States inside the EEA.	2002–2011	European Commission (2003, 2005)

Note: The macroeconomic indicators for the combined countries (i.e., Czechoslovakia, the USSR, and Yugoslavia) are calculated as a population-weighted average of the single-country values.