How do Migrants Choose their Destination Country? An Analysis of Institutional Determinants

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Abstract

For a long time, migration has been subject to intensive economic research. Nevertheless, empirical evidence regarding the determinants of migration still appears to be incomplete. In this paper, we analyze the effects of socio-economic and institutional determinants, especially labor-market institutions, on migrants' choices. Based on a large data set constructed from micro-data for France, Germany, the UK and the US, we study their decisions to migrate to one of the four countries using a Multinomial Choice framework. Our estimates confirm a number of conventional results such as positive effects of wages and immigrant networks and negative effects of unemployment rates. In addition, we find that employment protection, union coverage and unemployment benefits have positive effects on migration. Also good education and health systems tend to attract migrants, while generous pension systems may deter them. Based on separate estimations for high- and low-skilled migrants, there is evidence that the effects of labor-market institutions differ across skill groups.

JEL Code: A00, J21, J31, J61.

Keywords: migration, labour-market institutions, micro-data, Multinomial Choice.

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1 Introduction

Moving to another country often implies fundamental changes for the life of migrants. They have to build up a new social network and get accustomed to a new institutional framework. Usually, migration is not the result of a spontaneous decision, but the outcome of a long decision process. Therefore, the institutions of possible destination countries should at least play some role in this process. For instance, if public regulation impedes labor-market entry for "outsiders", migrant workers should *ceteris paribus* prefer destination countries with more flexible labor markets. Similarly, older persons should prefer countries that give them access to a better health-care system, and parents should prefer countries that offer their children better education. The aim of our paper is to analyze whether these and other institutions play a role for the migration decision and to quantify their effects.

How migrants choose their destination country is an interesting research question *per se*. In addition, the answer to this question has important implications for migration policy. On the one hand, it can help to estimate migration potentials for the case of unrestricted mobility which, in turn, may have a strong influence on the final decision about immigration policy if a country is considering some modifications. On the other hand, it can have an influence on the assessment of migration regulations already in place. A prominent example for this is the large inflow of Polish people to the UK after the EU enlargement in 2004. It is argued that a large part of these people would have come to Germany, if Germany had also opened its labor market immediately (Baas and Brücker 2007). However, in the relevant years unemployment in the UK was much lower than in Germany. Thus, one could also argue that these people would have gone to the UK anyway because of their better labor-market prospects there. Last but not least, knowledge about the determinants of migration decisions can help policy makers to design effective programs to attract specific groups of foreigners (such as the British "Highly Skilled Migrant Programme" the H1B visa in the US, or the German "Green Card" for IT specialists).

Over the last few years, a series of papers have emerged that analyze the determi-

nants of migrants' location choices (*e.g.*, Pedersen *et al.* 2008; Mayda 2007; Docquier *et al.* 2007). These papers are based on international macro-data panels.[1] Besides unemployment rates and GDP per capita, they find that distance plays an important role for migration decisions. In addition, a common language and colonial ties obviously have a positive effect on the choice of a particular destination country. However, the use of aggregate data carries some problems, as the determinants of migration most likely differ between population groups (*e.g.*, labor-market access may vary by qualifications and experience; the quality of the destination country's education system is more important for young parents than for childless retires; *etc.*).[2] Therefore, we follow another route and build our analysis on micro-data.

Unfortunately, no large international micro-data base exists that could be used for our purposes.[3] We therefore construct our own data set, merging micro-data from four of the most important immigration countries, namely France, Germany, the UK and the US.[4] Because of the limited number of countries covered, we can only analyze migrants' choices conditional on that they are willing to migrate at all and that they end up living in one of these four destination countries.[5] We combine these micro-data with data regarding a number of institutions that potentially have an impact on the location decision. Using a Multinomial Choice framework, we then estimate the effects of these institutions on the choice of a particular destination among our four countries. From a technical perspective, Constant and D'Agosto (2008) is the paper on international migration that is probably closest to ours. Based on a data set covering Italian scientists living abroad, they analyze

[1]See Lundberg (1993) for an earlier study based on cross-section data.

[2]Docquier *et al.* (2007) differentiate between high-skilled and low-skilled migrants, whereas the other researchers look at total migration between two countries.

[3]The European Labour Force Survey would be such a data base but, in its publicly accessible form, it contains no information on the origin of migrants.

[4]Defoort (2007) states that, together with Canada and Australia, these countries attract 77% of all migrants to the OECD world.

[5]For an analysis of the unconditional migration decision, one would also have to observe populations and institutions in the source countries, and one should probably be able to add more destination countries.

the determinants of their choice of a destination country. In contrast to our approach, however, they only use individual characteristics and no general features of the destination countries as explanatory variables. There is a number of papers using a similar approach to determine the regional distribution of immigrants within their destination countries (Åslund 2005; Bartel 1989; Jaeger 2000; and Bauer *et al.* 2005; 2007). Since political and economic institutions do not vary very much across regions of one country, whereas they differ substantially across countries, the results are only partially comparable with ours.

To date, the impact of institutions on migration decisions has hardly been studied in a systematic way.[6] Thus, our results offer interesting and important new insights regarding the determinants of migration decisions. Our more conventional findings are that wages and migrant networks have a positive effect on the probability to migrate to a particular country, while the unemployment rate has a negative effect. The income tax wedge negatively affects migration, and the same applies to generous pension benefits, while good education systems and good health-care systems appear to have a positive impact. In addition, we find that the labor-market institutions which we consider – employment protection, union coverage and unemployment benefits – all have positive effects on the migration decision. Running separate estimations for qualified and low-skilled migrants, we find for most institutions the same effects. However, union coverage and unemployment benefits now negatively affect the migration choice for qualified migrants, while the positive effects are again there for low-skilled migrants. Also, the positive effect of employment protection remains for both groups.

The paper is organized as follows. In the next section, we explain how our data set is constructed. In section 3, we present a number of descriptive results regarding immigration to the four countries of our analysis. Section 4 deals with determinants of migration and, in particular, with institutions that may have an influence on migration decisions. In section 5, we discuss our estimation strategy, and in section 6, we present

[6]Borjas (1999) investigated the role of welfare benefit entitlements for migration within the US, which led to his "welfare magnet" hypothesis. More recently, Docquier *et al.* (2007) found a positive effect of social expenditure and health expenditure. We are not aware of any studies investigating labor-market institutions as potential determinants of migrants' location choices.

our results based on the full sample and on separate estimations for qualified and low-skilled migrants. Section 7 concludes.

2 The data set

Our data set combines micro-data from large official surveys of the British, French, German and US population. The source of our French data is the *Enquête Emploi en Continu 2005*, a representative survey of about 0.5% of the French population. The German data are taken from the *Mikrozensus 2005*, a representative 1% survey (0.7% in the Scientific Use File we are using). The British data are from the (British) *Labour Force Survey* for the first quarter of 2005, a survey of about 0.2% of the population in the UK. For the US, we use the *American Community Survey 2005*, a representative 1% survey of the US population. In order to analyze the motivation of migrants, flow data would actually be preferable to stock data. However, existing flow data generally contain much less information and are less precise than stock data. Therefore, we rely on data of the latter type, implying that we actually do not analyze decisions to migrate to another country, but decisions to migrate to another country and stay there until the sampling period.

An important preliminary step is to find a proper definition of migrants. Immigrants could be defined as persons holding one or more foreign nationalities. Yet, this approach is problematic as naturalization policies of the four countries differ substantially. For instance, the German naturalization policy is much more restrictive than the American one. Hence, looking at individuals with foreign nationalities could lead to biased results. Defining immigrants by their country of birth circumvents this problems. However, since foreign-born children whose parents are both natives are then classified as immigrants, this definition can also lead to problems, *e.g.*, if a non-marginal part of the foreign-born population are children of armed forces positioned abroad. Therefore, we choose the following approach: we define immigrants as foreign-born people, but re-classify persons with two native parents as natives.[7] The effect of this re-classification on the overall

[7]For the UK, respectively, we re-classify persons who state to be "ethnically British".

number of immigrants is small, but their composition changes notably (see Geis *et al.* 2008 for more details).

In the case of Germany, we have to deal with two specific issues. First, in the German data the country of birth of immigrants is not recorded. We therefore use the nationality, respectively the nationality before naturalization, as a proxy for the country of birth. The second issue is related to the "(*Spät-*)*Aussiedler*" legislation. According to this legislation, persons with German ancestors (who sometimes emigrated centuries ago, mainly to countries in Eastern Europe) can acquire the German nationality immediately upon arrival in Germany. After the fall of the "Iron Curtain", a large number of "*Spät-Aussiedler*" came to Germany (Koller 1997). Yet, in spite of their quantitative importance, official statistics in Germany hardly collect any data on this group. In our data set, we are able to identify them as immigrants,[8] but we cannot assign them a country of birth.

For the source countries, or countries of birth, we choose the following classification: EU countries, non-EU Europe (including Russia and Turkey), West Asia (from Lebanon to Iran), East Asia and Oceania, Africa, Latin America, Canada[9] and "unclassified"[10]. A more detailed differentiation is not possible, due to existing classifications in the German and French data sources. For the econometric analysis, people who migrate between our four destination countries also have to be excluded,[11] but the descriptive results reported in the next section cover these migrants as well.

As a further step, we have to standardize a number of other variables we are using. The only institution for which the standardization is not trivial is education. Here, we classify educational attainments of our observations using the International Standard

[8]Alternative explanations for why Germans with German parents should have "migrated" to Germany are highly unlikely. For instance, since World War II Germany had hardly any armed forces positioned abroad. Also, all persons with German nationality who came to Germany before 1949, mostly as refugees from former parts of the country, are automatically defined as natives.

[9]In the case of Germany, Canadians are excluded, as we cannot distinguish them from US Americans.

[10]By far the largest part of them being German "*Aussiedler*".

[11]The reason is that, with respect to migration between the four countries, we can only observe potential outcomes of migration to three destination countries. Decisions to stay in the home country or to migrate there, though vastly different, cannot be told apart.

Classification of Education (ISCED) 1997. For the German data, we use the algorithm proposed by Schrödter *et al.* (2006) and for the American data the mapping between years of schooling and ISCED levels given in Institute for Education Sciences (2007). The French data already contain education levels in the ISCED classification. For the British data, our re-classification follows the LFS User Guide (2007) with two deviations.[12] Also, we do not use all ISCED levels, but form four categories: no secondary educational attainment (ISCED 0-1), lower-secondary educational attainment (ISCED 2), upper-secondary and post-secondary non-tertiary educational attainment (ISCED 3-4) and tertiary educational attainment (ISCED 5-6). Differentiations between ISCED 3 and 4 and between ISCED 5 and 6 are hardly comparable across countries.

In the last step, we merge the standardized variables from the four national data sets to form one large data base, using the weights from the original data sources. As these weights make the data sets representative for the different countries, our data base should also be representative. Since the *Enquête Emploi* does not contain information on persons who are younger than 15, our descriptive results only refer to people aged 15 and over. For the econometric analysis, we further drop all individuals who are younger than 25, as many of these people have not yet reached their final educational level. Including these observations could thus lead to biased estimates.

3 Some descriptive results

Before turning to the econometric analysis, we present some descriptive statistics from our data. These statistics do not only serve as background information for our estimation results, they are also interesting in themselves. Applying a consistent definition of migrants,

[12]First, we classify people who state to have been in school, but have not acquired any formal degree as ISCED 1, not ISCED 2. Second, we do not classify people who state to have "other qualifications" as ISCED 3, but assign them the median ISCED level of people with the same age and the same (last) occupation. For this, we use the SOC (Standard Occupational Classification) 2000 unit-level classification which distinguishes between 353 different occupations. An assignment of educational levels is necessary, as most foreign degrees are recorded as "other qualification" in the British LFS.

our data give a very precise picture of the migrant population in the four countries.[13]

Comparing the shares of immigrants in the population aged 15 and older in the four countries already leads to a surprising result (*cf.* table 1). We find the highest share of immigrants in Germany, with 16.8%, followed by the US with 14.4%, France with 8.5% and the UK with 8.2%. The large share of immigrants in Germany, a country that is actually well-known for its restrictive immigration policy, has two reasons. The German "guest-worker" agreements with Turkey, Italy, Yugoslavia, Spain and Portugal caused a large immigration wave between 1955 and 1973, and has led to a continuous in-flow of migrants due to family re-unification programs ever since. In addition, and probably even more important, is the "(*Spät-*)*Aussiedler*" legislation mentioned above. The other shares are in line with common expectations: the US as an "immigration country" have a much larger share of immigrants than France and the UK. Effects of the recent, more liberal immigration policy in the UK, especially the opening of the labor market for people from Eastern Europe in 2004, are not yet visible in the data from 2005.

Table 1 also gives an overview over the most important countries of origin of the migrants to the four countries. In France, these are above all neighboring countries in Europe and Northern Africa. In Germany, Southern and Eastern European countries are the most important countries of origin; at the same time, one third of all German immigrants cannot be classified, most of them being "(*Spät-*)*Aussiedler*" in all likelihood. In contrast to Germany and France, the most important source countries of immigrants to the UK are former colonies outside Europe, together with Ireland and Poland. For the US, countries in Central and Caribbean America and large East Asian countries are the most important ones. It is remarkable that almost one third of the American immigrant population comes from Mexico. In none of the European countries, immigration is similarly concentrated on one country of origin. However, the European countries also differ with respect to the concentration: 38.8% of the immigrants to France, but only 26.8% and 24.5% of the immigrants to Germany and the UK respectively are from the three

[13]For a larger set of descriptive results that are based on the same data base, see Geis *et al.* (2008).

most important countries of origin.

There are not only differences regarding the countries of origin of immigrants, but also regarding their structure in terms of educational attainments. Table 2 shows how immigrants aged 25 to 54 are distributed over the educational groups defined above. For comparison, we add the corresponding distribution of natives. The share of "high-skilled" immigrants (ISCED 5+6) is highest in the US, followed by the UK, Germany and France. The picture is similar for "qualified" immigrants, *i.e.*, for those with at least an upper secondary degree (ISCED 3-6). Obviously, the Anglo-Saxon countries attract people with higher qualifications than the countries in Continental Europe. At the same time, immigrant populations within a particular country are far from being homogeneous in this respect. For instance, the share of high-skilled immigrants from Mexico to the US is far below that of natives; this is also the case for immigrants from other Latin American countries, but the difference is much smaller; however, the share by far exceeds that of natives for immigrants from non-Latin American countries. All in all, this leads to a U-shaped pattern of educational attainments of immigrants to the US. In Europe, there are similar differences between various immigrant groups, *e.g.*, between Turkish and other immigrants to Germany, but they are much smaller than in the US.[14]

A further interesting aspect is the economic integration of immigrants. As a rough measure, we include unemployment rates (following the ILO definition) differentiated by educational attainments in table 2. In all European countries, unemployment rates of immigrants are much higher than those of natives, but in the UK they are still much lower than in France and Germany. In the US, however, unemployment rates of immigrants fall short of those of natives, except for the highest education level (ISCED 5+6). Note that this cannot be explained by different selections into unemployment and non-participation, since participation rates of immigrants are not smaller compared to those of natives in the US than in Europe. These observations clearly indicate that all the European countries we consider have more difficulties in integrating immigrants into their labor markets than

[14]See, again, Geis *et al.* (2008) for more details.

the US. They also show that economic integration differs across skill groups. When analyzing the determinants of migration, it is thus less appropriate to rely on country-wide averages. Specific information, *i.e.* information differentiated with respect to skill groups for example, is of value, which we are able to use in the following due to the micro-structure of our data.

4 Determinants of migration

In the economic migration literature, wages and unemployment rates are generally considered the most important determinants of migration (see the seminal papers by Sjaastad 1962; Todaro 1969; Harris and Todaro 1970). As these two factors vary strongly across different population groups, detailed data are needed for a meaningful econometric analysis.With our micro-data, we are able to include differentiated data. For this, we use the unemployment rates following the ILO definition and calculate specific unemployment rates of immigrants differentiated by education and gender.

However, obtaining consistent data on wages is very difficult in general and still far from easy even with our micro-data, since the wage data provided in our data sets are not comparable across countries. To generate wage information from our four national data sources which are as consistent as possible, we proceed as follows: In a first step, we calculate wages per hour using information on wage earnings and working hours contained in all datasets. As our German dataset actually contains income and not wage data, we consider only persons stating to have no income other than wages for this.[15] In a next step, we calculate wages of immigrants for the various gender-education groups relative to the respective average wages in each country. In the last step, we multiply these relative wages of immigrants with data on GDP per capita (from OECD 2007a). We cannot directly compare our intermediate results regarding wages per hour, since we have information on net wages for the European countries, while we observe gross wages in the US. Note that

[15]Note, that after the further steps described in the following, we assign wage information also to those Germans with other income sources, which enables us to again use the complete dataset.

this means that the dispersion of our wage measure for the US is probably exaggerated compared to that in the European countries. Still, we think our differentiated measure of wages is superior to (uniform) GDP per capita which is used in many other studies on the determinants of migration (see, *e.g.*, Pedersen *et al.* 2008; Mayda 2007; Docquier *et al.* 2007).

Another very important determinant of migration are migrant networks (see Munshi 2003 for a comprehensive analysis of Mexican networks in the US). These networks facilitate migration as they transmit detailed information about the destination country and provide a social network once new migrants have arrived. Furthermore, where such networks exist, many people have the opportunity to use preferential family re-unification programs to immigrate. In our econometric analysis, we use the share of persons from a specific source country in the population of the destination country as a measure of the strength of the migrant network. Due to data limitations, we can actually do so only for immigrant groups representing at least 0.2% of the population in the destination country. This need not be a problem, however, as smaller groups are probably lacking the critical mass to deliver the benefits of a network. As the effect of the size of the network on migration decisions may not be linear – in smaller networks, additional persons are probably more important than in larger ones – we also include the square of this measure.

In addition, immigration policy and the openness of a country for immigrants may also influence the migration decision. However, immigration policy is difficult to measure – immigration laws are usually complex and rather case-specific – and there does not exist a consistent indicator of immigration policy, or openness, for all our four destination countries.[16] Thus, we cannot observe this determinant directly. Yet, as one should assume that in the long run a more open country attracts more immigrants, we use the total share of foreign-born persons in a country as a rough measure for its openness to migrants.

Beside the factors discussed so far, there is a host of other potential determinants of

[16]For the European countries, the British Council and Migration Policy Group (2007) has proposed such an indicator, called MIPEX. However, it does not contain any information regarding the US.

migrants' location choices.[17] For instance, unemployment benefits should also have an influence on migration decisions, since expected income in the destination country is basically given by the employment rate times wages plus the unemployment rate times these benefits. However, quantifying unemployment benefits is complicated as benefit entitlements often depend on the time a person has been (un-)employed. For our set-up, the most convincing measure that is available are average replacement rates for the first five years of unemployment as provided by the OECD (2004).[18] The role of unemployment benefits may also depend on the unemployment rate in a given country. If unemployment is low, migrants expect to find work, and benefits have next to no influence on the decision for this country. However, if unemployment is high, migrants expect to become unemployed with some probability, and benefits really matter for their potential income. To control for this effect, we interact the replacement rate with the unemployment rate.

Other factors which affect expected income in the destination country are income taxes and social-security contributions. As we are unable to fully capture the different schemes by which these levies redistribute income from highly productive to less productive individuals we use total tax wedges (including social-security contributions), differentiated for average high- and low-income workers without children and for average workers with children, as indicated by the OECD (2006b) as a measure for the fiscal burdens that arise.

There are further labor-market institutions that may also have an impact on location decisions of migrants. For people who have to build up a new existence abroad, job security is probably an important criterion. A good measure for job security is the (overall) employment protection legislation (EPL) indicator calculated by the OECD (2004). It ranks the legal requirements for dismissals in various countries on a scale from 0 to 6, higher values indicating stricter regulation. In many countries, trade unions are another important labor-market institution. To capture their power, we use the share of employment contracts covered by collective wage agreements (OECD 2004). Employment

[17] Table 3 gives an overview of the institutional determinants we include in our analysis.

[18] Unfortunately, these data do not allow for a differentiation by educational levels. Replacement rates may be higher for low-skilled than for high-skilled individuals if part of the benefits are lump-sum.

protection and union power, though attractive for those covered or represented, may also lead to insider-outsider problems. Therefore, we additionally interact them with the unemployment rate.

When considering to migrate, people may not only look at their labor-market prospects but also at institutions in other areas. One important factor may be the health-care system in potential destination countries. We effectively use infant mortality (OECD 2007b) as a measure for the quality of health-care systems. For young families (and persons who think about having children), the education system in the destination country may also play a role. We thus include PISA science scores (OECD 2006a) as a measure for the quality of the education system. At the same time, people who do not (plan to) have children may not prefer high-quality public education as this requires higher taxes. The education system of a destination country can also affect the choice of potential immigrants for other reasons. Countries with a high share of high-skilled individuals are potentially more innovative than others and therefore likely to generate higher growth. We therefore include the share of people with a tertiary degree (ISCED 5+6) from our micro-data as a measure for the skill structure.

Last but not least, a generous old-age pension system could also have a positive impact on the location choice; but since migrants first have to pay a correspondingly higher amount of contributions, the effect can also be negative.[19] In any case, we use pension replacement rates differentiated by wage brackets (OECD 2007c) to control for this aspect. There are certainly many more institutions that may also play a role for the decision to migrate to a particular country. We believe, however, that the institutions described here (see also table 3) are the most important ones.

[19]This is actually the prediction derived from simulations of the financial effects of public pension schemes for migrants in Werding and Munz (2005).

5 Estimation strategy

For the estimation, we use a combination of a Conditional and a Multinomial Logit Model (CMNL).[20] The basic idea of the model is that among a range J of options – in our case, among destination countries, individuals choose the one that offers them the highest utility, V_{ij}; here, i denotes the individual and j the option. This utility, in turn, depends on option-dependent explanatory variables, X_{ij}, and on option-invariant ones, Z_i. Assuming a linear relation and adding an error term, utility levels are represented by the following equation:

$$V_{ij} = X'_{ij}\beta + Z'_i\gamma_j + \epsilon_{ij} \tag{1}$$

The observed variable y_{ij} indicates which option an individual has chosen. Thus, for $k \in J$, $y_{ik} = 1$ and $y_{i\neg k} = 0$ if $V_{ik} = max_j(V_{ij})$. Furthermore, it is assumed that the error terms, ϵ_{ij}, are independent and log-Weibull-distributed; the density of this function is $e^{(-\epsilon_{ij}-e^{-\epsilon_{ij}})}$. It can be shown that the probability function has the following form (see Amemiya 1981):

$$p_{ij} = Prob(y_{ij} = 1|X, Z) = \frac{e^{X'_{ij}\beta+Z'_i\gamma_j}}{\sum_{l=1}^{J} e^{X'_{il}\beta+Z'_i\gamma_l}} \tag{2}$$

For the estimation, this CMNL has to be transformed into a pure Conditional Logit Model. Following Cameron and Trivedi (2005), we use the following probability function for the estimation:

$$p_{ij} = Prob(y_{ij} = 1|X, Z^*) = \frac{e^{X'_{ij}\beta+Z^{*'}_{ij}\gamma^*}}{\sum_{l=1}^{J} e^{X'_{il}\beta+Z^{*'}_{il}\gamma^*}} \tag{3}$$

where Z^* is the Kronecker product of Z and a $J \times J$ identity matrix I, $Z^* = Z \otimes I$, and $\gamma^* = [\mathbf{0}', \gamma'_2, \ldots, \gamma'_J]$; $\gamma_1 = \mathbf{0}$ is a normalization. The model is estimated by maximum likelihood. The resulting first-order condition is given by:

$$\sum_{i=1}^{N}\sum_{j=1}^{M} y_{ij}(\mathbf{x}_{ij} - \bar{\mathbf{x}}_i) = 0 \tag{4}$$

[20] Although this combination is well-known in the econometric literature, it has no particular name. It is sometimes called Mixed or Multinomial Logit Model, but these labels also refer to other models.

with $\bar{\mathbf{x}}_i = \sum_{l=1}^{m} p_{il}\mathbf{x}_{ij}$. The marginal effects of changes in the option-dependent explanatory variables can be calculated as follows (*cf.* Cameron and Trivedi 2005):

$$\frac{\partial p_{ij}}{\partial \mathbf{x}_{ik}} = p_{ij}(\delta_{ijk} - p_{ik})\beta \tag{5}$$

The equation gives the effect of a change in the independent variable for option k on the probability that option j is chosen; δ_{ijk} is equal to 1 if $j = k$ and 0 otherwise. Elasticities are given by:

$$\frac{\partial p_{ij}}{\partial \mathbf{x}_{ik}} \frac{\mathbf{x}_{ik}}{p_{ij}} = \mathbf{x}_{ik}(\delta_{ijk} - p_{ik})\beta \tag{6}$$

It can be shown that the resulting estimates are consistent, asymptotically normal and asymptotically efficient. A characteristic of the Conditional Logit Model which is often criticized is the independence of irrelevant alternatives. In our case, this is actually an advantage, as we can only observe a limited number of countries. Our results would be of very limited relevance if the possibility to go to Spain had an effect on choices between Germany and the US.

The low variation in our institutional variables – many of them are country-specific – clearly presents a challenge. On the one hand, considering all of them in a single regression is not possible, as this would lead to multi-collinearity. On the other hand, more detailed information is not available, and adding more destination countries to our data set is all but easy. Therefore, we choose to expand the number of estimations using different combinations of the various institutions captured by our data. The following individual-specific variables are included in all regressions: level of education, gender, age (and age squared), (squared) years since migration and region of the country of birth. Furthermore, all regressions contain information on wages, unemployment rates and the (squared) size of migrant networks, as these are variables which are conventionally found to have a strong impact on migrants' location decisions.

In a first step, the institutional variables are then included one by one in the regressions. As there could also be interactions between the institutions, we repeat the estimations with all possible pairs and triplets of institutions (while including four or more institutional variables in a single estimation may lead to multi-collinearity). If the

dispersion of estimated coefficients for an explanatory variable is not too large, the estimate should not be affected by an omitted-variables problem. We then infer the direction and magnitude of the effects from the median coefficients we obtain. Similar approaches have been proposed in other areas of economics and social sciences (for instance, Sala-i-Martin 1997 uses a similar approach to explain economic growth; Hegre and Salaris 2007 do the same to explain civil wars). We use the extreme-bound criterion proposed by Leamer (1985) to test the significance of our estimates.[21]

6 Estimation results

The results of regressions in which we control for wages, unemployment rates, networks (squared) and *one* further institutional variable (for a complete list, see table 3) are shown in table 4. The variables are all significant at the 1% level. Due to space limitations, estimates for individual-level characteristics are not reported; except for the country-of-birth dummies for Canada and for those not classified (mainly German "*Spät-Aussiedler*"), they are also significant at the 1% level. The pseudo-R^2 of about 0.64 indicates that our explanatory variables are indeed important determinants of migrants' choices of a destination country. Most variables have positive effects, the exceptions being the unemployment rate, infant mortality, the tax wedge, the pension replacement rate and the share of high skilled. There are also negative effects of the squared network effect and the interaction terms of employment protection, unemployment benefits and union coverage with the unemployment rate.

Table 5 displays the median results derived from the full set of our estimations, i.e., where we control for one, two or three institutional variables in addition to wages, unemployment rates and networks (squared). Except for the share of high skilled, the median

[21]Lower (upper) extreme bounds are given by minimum (maximum) estimates minus (plus) two times the corresponding standard deviation. We also tried to apply the criterion proposed by Sala-i-Martin (1997). However, in our case – with low standard errors of the estimates, but relatively high variation over specifications – this criterion is inappropriate, as it attaches no weight to the variation of coefficients over specifications.

results of our estimates all have the same signs as those reported in table 4.[22] This indicates that the estimated effects are stable across specifications. Furthermore, most of our results are in line with expectations. For instance, for wages we find the expected positive effect and for unemployment rates the expected negative effect. Immigrant networks have a positive effect, but their impact is decreasing as the squared network variable has a negative sign. This indicates that networks really facilitate immigration to a country; however, when the network is already large, an increase in its size has hardly an additional positive effect. We also find that open countries, *i.e.*, those with a high share of foreign-born people, are indeed more attractive for immigrants than countries with a low share.

Other results are less clear *a priori*, hence potentially more interesting. Employment protection, union coverage and unemployment benefits have positive effects, indicating that migrants prefer destination countries where they are protected from labor-market risks. It also implies that the immigrants in our data set did not expect to become outsiders in the labor market of their destination country. Otherwise, these measures should be detrimental for immigrants as they hamper access to the labor market. At the same time, the negative coefficients for the interaction terms of employment protection and union coverage with the unemployment rate indicate that if unemployment becomes large, insider-outsider effects may become an issue.

We also find a negative effect of the income tax wedge on migration decisions, although higher taxes are potentially connected with better public services. The negative effect of pension replacement rates can be explained by the fact that more generous pension systems usually involve higher contributions and, hence, create a higher "implicit tax" than less ambitious schemes. Also, they may be subject to higher political risks in countries with low fertility rates. Good health-care systems and good education systems involve higher taxes as well which have to be paid also by healthy or childless immigrants.

[22] Also, except for union coverage, median and average estimates reported in table 5 all have the same signs.

Nevertheless, the quality of both systems has a positive effect on migration decisions.[23] The negative effect of the share of high-skilled people in the destination country is a bit puzzling. However, a potential explanation is that quite a number of migrants are high-skilled themselves and have to compete against these "incumbents". We will discuss this in more detail below , based on additional estimations that are differentiated by skill levels of migrants. There, we also obtain more differentiated results regarding the effects of labor-market institutions.

To reduce the potential selection of our sample through re-migration, we repeat our estimations for the sub-group of individuals who migrated after 1995, *i.e.*, within a maximum period of 10 years. The results are shown in table 6.[24] By and large, the estimates confirm our earlier results, but three coefficients change their sign. We now find a positive effect of the pension replacement rate, while the estimates for union coverage and unemployment benefits become negative. The latter may indicate that insider-outsider problems arising from labor-market institutions are indeed relevant for newly arriving migrants.[25]

To assess the quantitative importance of our estimates, we calculate a matrix of elasticities for the socio-economic and institutional variables that is presented in table 7.[26] Among other things, we find that a 1% increase in the unemployment rate in the US decreases the probability to migrate to the US by 0.13%, while it increases the one to go to Germany by 0.07%, to the UK by 0.02% and to France by 0.04% (thus exactly absorbing the change in Prob(US)). A 1% increase in the unemployment rate in France decreases

[23]Higher quality of the health-care system is reflected in a *decrease* in infant mortality.

[24]In another series of alternative estimates, we also applied a different weighting scheme for individual observations, hypothetically normalizing the population in each of our destination countries to 50 million. The idea was to avoid any biases that might arise from huge differences in terms of population size. However, the results were basically unchanged.

[25]Alternatively, there could be both time effects and cohort effects affecting the results with respect to more recent immigration.

[26]Note that these elasticities do not reflect indirect effects of changes in institutions. For instance, an increase in unemployment benefits is often linked to a decrease in (net) wages. Our elasticities show how large the effects of institutions are in *ceteris-paribus* terms and give us an idea of the importance of these institutions for the choice of a destination country.

the probability to go to France by 0.83% (the large difference between the US and France being due to the fact that a 1% increase equals a total change by 0.07 percentage points in the US, but by 0.19 percentage points in France). Also, the *ex-ante* probability to go to the US is higher than the probability to go to France. The elasticities with respect to wages have the same magnitude as those for unemployment rates, but with opposite signs. Most of the elasticities regarding the institutional variables are even larger than those for wages and unemployment rates. Note, however, that this is partly due to the scaling and the actual range of variation of the variables.[27] In any case, they show that the role of labor-market institutions and other institutional characteristics of potential destination countries is not only statistically but also economically significant for migrants' location choices.

Determinants of location choices are very likely to differ for high-skilled and low-skilled migrants. Therefore, we further exploit out micro-data and repeat our estimates running separate regressions for low-skilled (ISCED 0-2) and qualified (ISCED 3-6) migrants.[28] Note that, in contrast to existing studies based on macro data, we already control for differences between skill levels in the analysis of the full sample. However, the estimated coefficients only represent average effects, and skill-related differences are therefore captured in option-invariant variables and in the error term.

Table 8 summarizes the estimates for low-skilled and qualified migrants. Note that the estimates for qualified immigrants are in general more reliable than those for low-skilled ones: High-skilled persons are relatively free in their choice of a destination country, while low-skilled people face more restrictive immigration policies and thus a more limited choice of destinations. For wages, networks and employment protection we find positive effects for both groups, as in the full data set; for unemployment and tax wedges we find negative effects. The other estimates differ between the two groups. The estimated effects for

[27]For instance, the employment protection indicator effectively ranges from 0.7 to 2.9, while the PISA scores lie between 489 and 516 points (cf. table 3).

[28]In this case, we exclude interactions with the unemployment rate, as they could lead to multicollinearity in this smaller data set.

union coverage and unemployment benefits are positive for low-skilled immigrants and negative for the qualified. This could be explained by the fact that low-skilled people usually benefit more from high unemployment benefits and collectively negotiated wages than high-skilled ones. In fact, unemployment benefits are generally associated with costs which have to be paid more than proportionally by people with higher skills. Pension replacement rates now have a positive effect for high-skilled people, while for the low skilled the effect is still negative. The observed change for the high skilled might be due to the fact that the pension replacement rates as we use them, i.e. differentiated by wage brackets, indeed capture two characteristics of pension systems: their overall generosity as well as their tax-benefit link. There is evidence that both are positively connected (see Koethenbuerger *et al.* 2008); hence, the high skilled might be better off in countries with higher pension replacement rates which are less redistributive, whereas low-skilled immigrants might prefer systems that are less generous, but possibly more redistributive. PISA scores and the share of foreigners have the expected positive sign for high-skilled immigrants and a negative sign for the low skilled while infant mortality has the expected negative sign for the high skilled and a positive sign for low-skilled immigrants.[29] For these specific results, even public expenditure does not offer a plausible reason, as the high skilled usually pay more taxes than the low skilled. Moreover, low-skilled immigrants tend to have more children and often suffer from more health problems than the high skilled. We consider these results as underlining the lower reliability of the estimates for the low skilled as just discussed. The share of high-skilled people shows the expected signs now. For high-skilled immigrants who have to compete with high-skilled natives, it is negative; for low-skilled immigrants who are probably complements, it is positive.

[29]In the case of low-skilled migrants, the negative sign for PISA scores and the positive effect of infant mortality, which captures a low quality of the health system, are puzzling.

7 Conclusions

The decision to migrate to a particular country is a complex process and may be affected by various factors. Economists conventionally expect wages and unemployment rates to have an impact on this decision. In this paper, we show that the institutional setting in potential destination countries also plays an important role. Effectively, our results indicate that wages and unemployment rates alone do by far not suffice to explain location choices of ("non-refugee") migrants.

In addition to the conventional effects of wages and unemployment rates, which are positive respectively negative, we find a positive, but declining, effect of the size of immigrant networks and a positive effect of the "openness" of a country in general. For employment protection, union coverage and unemployment benefits, the effects turn out to be positive as well. Thus, protection against labor-market risks is obviously important for immigrants.[30] At the same time, there are indications that insider-outsider problems related to these institutions become an issue if unemployment becomes large. In addition, a higher tax wedge has a negative effect, deterring potential migrants. We also find that PISA scores have a positive effect and infant mortality a negative effect on the migration decision, indicating that migrants value good education and health systems. Our estimate for pension benefits is negative, arguably because of the higher implicit tax rate and higher political risks associated with more generous pension schemes.

Our results regarding the effects of labor-market institutions become more differentiated if we restrict attention to migrants who arrived during the last 10 years only. Union coverage and unemployment benefits then have a negative impact, while employment protection still has a positive one. If we run separate estimations for migrants in different skill groups, the same is true with respect to migration of qualified individuals. Again,

[30] An interesting issue that arises in this context is that of the risk aversion of migrants (see, e.g., Chiswick 1978; and Todaro 1980, for early contributions). Generally speaking migrants should be characterized by a low degree of risk aversion as they take on the risk of migrating. But this is no contradiction to our finding that they are seeking some protection. Also note that we neither compare their risk attitude to that of the population in the migrants' source countries nor to that of the natives of their destination countries.

this may point to negative repercussions of labor-market institutions on the migrants' labor-market prospects.

We are unable to consider all the characteristics of destination countries that are potentially important for the migration decision. For instance, we are lacking any measures for the access of migrants to housing.[31] Also, some of the proxies we are using, *e.g.*, for education systems, health protection as well as immigration policies, have limitations resulting from the lack of consistent data. Another shortcoming of our analysis arises from the fact that, for some of the variables we include, there is actually little variation in the data. For some of the institutions we investigate, it is difficult to reconstruct all variation that exists at the individual level, while others are simply fixed at a national level, *i.e.*, they are the same for all migrants living in one country. Still, combining micro-data from four major destination countries we provide new insights as to whether and how institutions play a role for migration decisions.

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Table 1: Important immigrant groups (aged 15 years and older)

France			Germany			UK			USA		
	Number	Share		Number	Share		Number	Share		Number	Share
Total	50,033,805		Total	71,183,550		Total	47,891,659		Total	227,783,897	
Natives	45,805,640	91.5%	Natives	59,229,636	83.2%	Natives	43,948,682	91.8%	Natives	195,049,054	85.6%
Immigrants	4,228,165	8.5%	Immigrants	11,953,914	16.8%	Immigrants	3,930,175	8.2%	Immigrants	32,734,843	14.4%
of which from			of which from			of which from			of which from		
1. Algeria	579,313	13.7%	1. Turkey	1,442,949	12.1%	1. India	422,204	10.7%	1. Mexico	10,136,329	31.0%
2. Portugal	534,994	12.7%	2. Russia	992,851	8.3%	2. Ireland	278,612	7.1%	2. Philippines	1,521,699	4.6%
3. Morocco	525,982	12.4%	3. Poland	762,334	6.4%	3. Pakistan	264,049	6.7%	3. India	1,337,894	4.1%
4. Italy	313,420	7.4%	4. Italy	432,790	3.6%	4. Bangladesh	179,661	4.6%	4. China	1,115,409	3.4%
5. Spain	267,343	6.3%	5. Serbia and Montenegro	286,169	2.4%	5. Jamaica	127,322	3.2%	5. Vietnam	1,038,901	3.2%
6. Tunisia	202,259	4.8%	6. Croatia	260,469	2.2%	6. South Africa	113,698	2.9%	6. El Salvador	945,666	2.9%
7. Turkey	195,768	4.6%	7. Greece	231,670	1.9%	7. Poland	106,089	2.7%	7. Korea	923,535	2.8%
8. Poland	105,322	2.5%	8. Bosnia and Herzegovina	224,118	1.9%	8. Kenya	104,969	2.7%	8. Cuba	872,350	2.7%
9. Germany	102,868	2.4%				9. Nigeria	96,388	2.5%	9. Dominican Republic	672,573	2.1%
10. UK	86,325	2.0%	not classifiable	4,029,519	33.7%	10. USA	88,639	2.3%	10. UK	646,985	2.0%

Source: National micro-data sets; authors' calculations.

Table 2: Educational attainments of immigrants (aged 25–54)

Immigrants	France	Germany	UK	USA
ISCED 0-1				
Number	699,323	718,828	509,257	3,884,751
Share	28.56%	11.70%	21.13%	18.27%
Participation rate	67.98%	60.36%	49.95%	73.25%
Unemployment rate	19.15%	26.86%	9.25%	7.99%
Wage*	$12.91	$13.51	$12.47	$11.39
ISCED 2				
Number	512,363	1,596,041	305,096	2,659,406
Share	20.92%	25.97%	12.66%	12.51%
Participation rate	76.05%	75.08%	78.99%	74.26%
Unemployment rate	21.55%	20.65%	7.65%	7.80%
Wage*	$13.22	$13.42	$15.98	$12.84
ISCED 3+4				
Number	701,190	2,547,618	880,387	7,583,786
Share	28.63%	41.46%	36.53%	35.67%
Participation rate	81.39%	84.46%	84.08%	78.40%
Unemployment rate	17.19%	15.56%	5.65%	6.26%
Wage*	$14.23	$14.71	$19.77	$16.38
ISCED 5+6				
Number	535,926	1,282,602	715,139	7,132,580
Share	21.89%	20.87%	29.68%	33.55%
Participation rate	80.90%	81.55%	87.75%	81.23%
Unemployment rate	15.81%	12.69%	5.43%	4.24%
Wage*	$19.56	$20.02	$26.16	$30.08

Natives	France	Germany	UK	USA
ISCED 0-1				
Number	1,613,090	368,143	2,590,481	1,667,184
Share	7.13%	1.24%	11.96%	1.63%
Participation rate	74.75%	68.14%	61.94%	51.41%
Unemployment rate	13.18%	29.47%	6.98%	13.33%
Wage*	$12.87	$9.61	$14.17	$14.24
ISCED 2				
Number	4,478,207	3,003,786	3,905,006	7,655,447
Share	19.78%	10.14%	18.03%	7.47%
Participation rate	84.92%	79.40%	82.30%	67.58%
Unemployment rate	12.10%	18.42%	4.27%	14.63%
Wage*	$14.44	$13.31	$15.99	$14.13
ISCED 3+4				
Number	10,167,941	17,763,323	8,428,241	53,448,746
Share	44.92%	59.96%	38.91%	52.18%
Participation rate	90.00%	88.62%	88.44%	81.64%
Unemployment rate	6.90%	9.87%	2.78%	6.39%
Wage*	$15.32	$15.30	$18.60	$18.75
ISCED 5+6				
Number	6,375,285	8,490,608	6,736,941	39,661,288
Share	28.17%	28.66%	31.10%	38.72%
Participation rate	91.67%	90.61%	93.08%	87.84%
Unemployment rate	5.45%	3.92%	1.81%	3.01%
Wage*	$20.86	$20.87	$25.87	$30.68

* Hourly wages are derived as described in section 4.
Source: National micro-data sets; authors' calculations.

Table 3: Socio-economic and and institutional variables

Name	Definition	Source	Min.	Max.	Type of Variation
Unemployment	Specific unemployment rates for immigrants (ILO-definition)	Micro-data and own calculations	4.24	26.86	group-specific (gender, education)
Wage	Wages of immigrants in US$ (PPP) as derived in section 4	Micro-data and own calculations	11.39	30.08	group-specific (gender, education)
Network	Share of persons with the same country of birth in the population of the destination country (0 if share $< 0.2\%$)	Micro-data and own calculations	0.00	5.66	group-specific (country of birth)
Share of foreigners	Share of foreign-born persons in the population of the destination country	Micro-data and own calculations	10.30	16.75	country-specific
Infant mortality	Deaths under 1 year per 1000 children born	OECD Health at a Glance: 2007	3.6	6.8	country-specific
Employment protection	Employment protection legislation indicator (version 2); Range 0 (not restrictive) – 6 (extremely restrictive)	OECD Employment Outlook: 2004	0.7	2.9	country-specific
Union coverage	Share of workers who are covered by collective wage agreements	OECD Employment Outlook: 2004	14	93	country-specific
Unemployment benefits	Benefit replacement rate in the first five years of unemployment	OECD Employment Outlook: 2004	13.8	39.4	country-specific
Tax wedge	Income tax wedge (including employer and employee social security contributions)	OECD Taxing Wages 2005-2006	11.7	52.5	group-specific (children, income)
Pension benefits	Net pension replacement rate	OECD Pensions at a Glance: 2007	30.6	78.4	group-specific (income)
PISA scores	PISA scores in sciences	OECD PISA 2006	489	516	country-specific
Share of high skilled	Share of persons with ISCED 5+6 in the population of the destination country	Micro-data and own calculations	27.63	37.93	country-specific

Table 4: Estimation results (full sample)

Unemployment	-0.0455***	-0.0483***	-0.0598***	-0.0348***	-0.0501***	-0.0527***	-0.0388***	-0.0411***	-0.0514***	-0.0586***
	(0.000149)	(0.000151)	(0.000159)	(0.000511)	(0.000424)	(0.000553)	(0.000152)	(0.000153)	(0.000156)	(0.000159)
Wage	0.0330***	0.0351***	0.0229***	0.0243***	0.0243***	0.0249***	0.0428***	0.0245***	0.0287***	0.0234***
	(0.000170)	(0.000171)	(0.000175)	(0.000177)	(0.000177)	(0.000177)	(0.000176)	(0.000182)	(0.000174)	(0.000175)
Network	2.200***	2.211***	2.158***	2.150***	2.153***	2.153***	2.218***	2.193***	2.191***	2.163***
	(0.00137)	(0.00137)	(0.00138)	(0.00138)	(0.00138)	(0.00138)	(0.00137)	(0.00137)	(0.00137)	(0.00138)
Network^2	-0.436***	-0.439***	-0.424***	-0.422***	-0.423***	-0.424***	-0.441***	-0.434***	-0.433***	-0.425***
	(0.000364)	(0.000366)	(0.000366)	(0.000366)	(0.000366)	(0.000366)	(0.000365)	(0.000365)	(0.000365)	(0.000366)
Share of foreigners		0.167***								
		(0.00129)								
Infant mortality			-0.573***							
			(0.00217)							
Employment protection				1.192***						
				(0.00435)						
Empl. prot. * unempl.				-0.0129***						
				(0.000224)						
Union coverage					0.0296***					
					(0.000124)					
Union cov. * unempl.					-0.000149***					
					(6.30e-06)					
Unempl. benefits						0.0911***				
						(0.000382)				
U. ben. * unempl.						-0.000214***				
						(1.86e-05)				
Tax wedge							-0.0260***			
							(0.000116)			
Pension benefits								-0.0159***		
								(0.000121)		
PISA-Scores									0.0298***	
									(0.000232)	
Share of high skilled										-0.152***
										(0.000624)
Log likelihood	-21361233	-21352731	-21326051	-21311166	-21321032	-21319924	-21335925	-21352611	-21353033	-21331378
Pseudo R^2	0.6358	0.6359	0.6364	0.6367	0.6365	0.6365	0.6362	0.6359	0.6359	0.6363
Observations	301484	310484	310484	310484	310484	310484	310484	310484	310484	301484

Standard errors are in parentheses. *Source:* Authors' calculations and estimations.

Table 5: Aggregate estimation results (full sample)

	Median	Average	Minimum	Maximum	Cross variance	Within standard error	Total standard error	Number of regressions	Lower extreme bound	Upper extreme bound
Unemployment	-0.0510	-0.0652	-0.6610	0.1800	0.0162	0.0005	0.1274	130	-0.66468	0.181612
Wage	**0.0245**	**0.0258**	**0.0022**	**0.0444**	**0.0001**	**0.0002**	**0.0088**	**130**	**0.001816**	**0.044754**
Network	2.1595	2.1638	2.1450	2.2270	0.0003	0.0014	0.0170	130	**2.14224**	**2.22976**
Network^2	-0.4260	-0.4269	-0.4450	-0.4200	0.0000	0.0004	0.0047	130	**-0.445734**	**-0.419266**
Share foreigners	0.3130	0.2892	-0.2030	0.6840	0.0160	0.0015	0.1264	37	-0.21126	0.68754
Infant mortality	-0.5360	-2.2401	-40.0400	16.4300	104.6143	0.0220	10.2281	37	-40.388	16.5696
Employment protection	**3.2480**	**8.3916**	**1.1920**	**23.1200**	**62.9219**	**0.0234**	**7.9324**	**37**	**1.1833**	**23.2234**
Empl. prot. * unempl.	**-0.0230**	**-0.2108**	**-0.5920**	**-0.0120**	**0.0597**	**0.0007**	**0.2444**	**37**	**-0.59528**	**-0.011552**
Union coverage	0.0367	-0.2599	-4.0900	0.6450	0.7180	0.0013	0.8474	37	-4.112	0.65024
Union cov. * unempl.	-0.0002	-0.0007	-0.0260	0.0165	0.0001	0.0000	0.0115	37	-0.0261544	0.0165934
Unempl. benefits	0.0909	0.2667	-1.8920	9.6100	4.0478	0.0030	2.0119	37	-1.9009	9.6616
U. ben. * unempl.	0.0000	0.0185	-0.0010	0.0778	0.0007	0.0001	0.0263	37	-0.00104	0.078262
Tax wedge	**-0.0450**	**-0.0417**	**-0.0490**	**-0.0250**	**0.0001**	**0.0001**	**0.0085**	**37**	**-0.049256**	**-0.024768**
Pension benefits	**-0.0110**	**-0.0106**	**-0.0180**	**-0.0020**	**0.0000**	**0.0001**	**0.0039**	**37**	**-0.018244**	**-0.001742**
PISA-scores	0.0113	0.0657	-0.1740	0.5680	0.0261	0.0005	0.1615	37	-0.175188	0.57282
Share of high skilled	0.0162	0.4076	-7.7260	9.0930	5.8775	0.0051	2.4244	37	-7.766	9.172

Bold numbers are significant by the extreme bound criterion.
Source: Authors' calculations and estimations.

Table 6: Aggregate estimation results (people who immigrated after 1995)

	Median	Average	Minimum	Maximum	Cross variance	Within standard error	Total standard error	Number of regressions	Lower extreme bound	Upper extreme bound
Unemployment	-0.0780	-0.1052	-0.7080	0.0680	0.0182	0.0009	0.1349	130	-0.7144	0.0707
Wage	**0.0293**	**0.0282**	**0.0042**	**0.0445**	**0.0001**	**0.0003**	**0.0072**	**130**	**0.0036**	**0.0451**
Network	0.9630	0.9679	0.9550	1.0210	0.0002	0.0023	0.0144	130	**0.9504**	**1.0256**
Network^2	-0.1900	-0.1916	-0.2060	-0.1880	0.0000	0.0006	0.0039	130	**-0.2072**	**-0.1868**
Share foreigners	0.1590	0.1114	-1.2360	0.5680	0.0619	0.0029	0.2489	37	-1.2521	0.5744
Infant mortality	-1.1140	-2.0941	-23.9800	11.3700	38.8886	0.0422	6.2362	37	-24.6400	11.6620
Employment protection	1.4680	6.1421	-2.1710	33.3400	59.4195	0.0429	7.7085	37	-2.2264	33.6740
Empl. prot. * unempl.	0.0105	-0.1346	-0.3970	0.0206	0.0350	0.0013	0.1871	37	-0.4028	0.0215
Union coverage	-0.0250	-0.1758	-3.1230	0.6610	0.4380	0.0024	0.6618	37	-3.1630	0.6661
Union cov. * unempl.	0.0005	-0.0021	-0.0260	0.0118	0.0001	0.0001	0.0107	37	-0.0263	0.0120
Unempl. benefits	-0.0830	-0.0772	-1.8800	7.1440	2.4734	0.0056	1.5727	37	-1.8952	7.2384
U. ben. * unempl.	**0.0021**	**0.0218**	**0.0016**	**0.0809**	**0.0008**	**0.0001**	**0.0275**	**37**	**0.0015**	**0.0817**
Tax wedge	-0.0110	-0.0093	-0.0150	0.0016	0.0000	0.0002	0.0050	37	-0.0154	0.0020
Pension benefits	0.0046	0.0044	-0.0120	0.0143	0.0000	0.0002	0.0069	37	-0.0124	0.0148
PISA-scores	0.0867	0.1036	-0.0120	0.4080	0.0058	0.0010	0.0759	37	-0.0143	0.4126
Share of high skilled	-0.3460	-0.2370	-6.4190	5.0720	2.5030	0.0097	1.5821	37	-6.4912	5.2222

Bold numbers are significant by the extreme bound criterion.
Source: Authors' calculations and estimations.

Table 7: Median elasticities (full sample)

		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	-0.131	0.075	0.022	0.034	6.92%
unemployment	Germany	0.551	-0.694	0.056	0.087	17.59%
rate in	UK	0.207	0.069	-0.307	0.031	6.64%
	France	0.575	0.199	0.057	-0.831	18.50%
		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	0.150	-0.089	-0.029	-0.032	$19.18
wage per hour in	Germany	-0.237	0.288	-0.023	-0.029	$15.34
	UK	-0.310	-0.098	0.445	-0.036	$20.21
	France	-0.239	-0.075	-0.023	0.337	$15.25
		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	0.015	-0.004	-0.008	-0.003	0.90%
Network in	Germany	-0.026	0.052	-0.005	-0.021	0.55%
	UK	-0.076	-0.011	0.093	-0.006	0.06%
	France	-0.028	-0.045	-0.012	0.085	0.11%
		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	1.676	-0.982	-0.294	-0.400	15.46%
share of foreign	Germany	-3.231	3.983	-0.319	-0.433	16.75%
born in	UK	-1.987	-0.654	2.908	-0.266	10.30%
	France	-2.251	-0.741	-0.222	3.214	11.67%
		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	-1.261	0.737	0.223	0.301	6.8
infant mortality	Germany	1.286	-1.587	0.128	0.173	3.9
	UK	1.682	0.553	-2.460	0.226	5.1
	France	1.187	0.390	0.118	-1.695	3.6
		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	0.786	-0.460	-0.138	-0.189	0.7
employment	Germany	-4.999	6.166	-0.494	-0.673	2.5
protection	UK	-2.199	-0.722	3.218	-0.296	1.1
indicator in	France	-5.799	-1.904	-0.573	8.275	2.9

Table 7 (continued)

		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	0.178	-0.104	-0.031	-0.042	14%
union coverage in	Germany	-1.537	1.894	-0.151	-0.206	68%
	UK	-0.746	-0.245	1.091	-0.100	33%
	France	-2.102	-0.692	-0.207	3.000	93%
		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	0.434	-0.254	-0.077	-0.104	13.8%
unemployment benefits in	Germany	-1.634	2.016	-0.162	-0.220	29.2%
	UK	-0.912	-0.300	1.334	-0.123	16.3%
	France	-2.204	-0.724	-0.219	3.148	39.4%
		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	-0.364	0.211	0.063	0.091	22.17%
tax wedge in	Germany	1.274	-1.582	0.129	0.179	45.73%
	UK	0.875	0.291	-1.285	0.118	31.23%
	France	1.314	0.435	0.131	-1.880	46.77%
		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	-0.243	0.140	0.042	0.060	58.6%
pension benefits in	Germany	0.414	-0.511	0.041	0.055	57.3%
	UK	0.328	0.108	-0.485	0.048	45.7%
	France	0.461	0.152	0.046	-0.659	63.9%
		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	1.911	-1.117	-0.338	-0.457	489
PISA-score in	Germany	-3.587	4.425	-0.356	-0.483	516
	UK	-3.580	-1.176	5.237	-0.482	515
	France	-3.441	-1.130	-0.342	4.913	495
		Change in Prob(US)	Change in Prob(GE)	Change in Prob(UK)	Change in Prob(FR)	Average value
1% increase in	US	0.213	-0.125	-0.037	-0.051	37.93%
share of high skilled persons (ISCED 5+6)	Germany	-0.276	0.340	-0.027	-0.037	27.63%
	UK	-0.306	-0.101	0.448	-0.041	30.70%
in	France	-0.276	-0.091	-0.027	0.394	27.68%

Source: Authors' calculations and estimations.

Table 8: Aggregate estimation results (by skill levels)

Qualified	Median	Average	Min.	Max.	Cross variance	Within standard error	Total standard error	Number of regressions	Lower extreme bound	Upper extreme bound
Unemployment	-0.0220	-0.0227	-0.4060	0.3370	0.0218	0.0013	0.1476	130	-0.4121	0.3425
Wage	0.0397	0.0480	-0.0180	0.1280	0.0026	0.0006	0.0510	130	-0.0190	0.1294
Network	**1.7690**	**1.7715**	**1.7610**	**1.7900**	**0.0000**	**0.0017**	**0.0057**	**130**	**1.7576**	**1.7934**
Network^2	**-0.3920**	**-0.3924**	**-0.3980**	**-0.3890**	**0.0000**	**0.0005**	**0.0018**	**130**	**-0.3989**	**-0.3881**
Share foreigners	**0.7130**	**0.6905**	**0.4950**	**0.7540**	**0.0032**	**0.0035**	**0.0564**	**37**	**0.4884**	**0.7621**
Infant mortality	-0.3940	-3.0554	-90.1900	36.8300	482.1424	0.0577	21.9578	37	-91.0560	37.2200
Employment protection	0.9820	5.6333	-1.1960	19.1800	39.6862	0.0407	6.2998	37	-1.2234	19.3574
Union coverage	-0.0050	-0.3009	-4.8230	1.3800	1.0661	0.0027	1.0325	37	-4.8692	1.3947
Unempl. benefits	-0.0080	0.4283	-3.0660	11.5500	6.1853	0.0064	2.4870	37	-3.0944	11.6620
Tax wedge	**-0.0390**	**-0.0380**	**-0.0400**	**-0.0330**	**0.0000**	**0.0002**	**0.0015**	**37**	**-0.0403**	**-0.0327**
Pension benefits	0.0219	0.0334	-0.2150	0.2200	0.0131	0.0012	0.1144	37	-0.2178	0.2234
PISA-scores	0.0822	0.2026	-0.2650	1.2690	0.0931	0.0013	0.3052	37	-0.2687	1.2817
Share of high skilled	-0.1200	0.9081	-8.2120	20.6200	23.3505	0.0134	4.8323	37	-8.2880	20.8200

Low skilled	Median	Average	Min.	Max.	Cross variance	Within standard error	Total standard error	Number of regressions	Lower extreme bound	Upper extreme bound
Wage	0.0616	0.0382	-0.0950	0.1510	0.0038	0.0015	0.0616	130	-0.0993	0.1535
Network	**2.9455**	**2.9497**	**2.9390**	**2.9890**	**0.0001**	**0.0026**	**0.0115**	**130**	**2.9339**	**2.9941**
Network^2	**-0.5630**	**-0.5653**	**-0.5760**	**-0.5620**	**0.0000**	**0.0007**	**0.0035**	**130**	**-0.5773**	**-0.5607**
Share foreigners	**-0.0430**	**-0.0268**	**-0.2250**	**0.8340**	**0.0261**	**0.0029**	**0.1615**	**37**	**-0.2312**	**0.8491**
Infant mortality	0.1480	0.3958	-9.3330	11.1300	10.4597	0.0438	3.2344	37	-9.6350	11.8420
Employment protection	0.0626	-0.6797	-16.2100	2.9220	10.2811	0.0324	3.2066	37	-16.4800	2.9716
Union coverage	0.0342	0.0563	-0.1740	0.5950	0.0229	0.0021	0.1512	37	-0.1770	0.6332
Unempl. benefits	0.1180	0.1160	-1.3030	0.5310	0.1052	0.0049	0.3244	37	-1.3940	0.5398
Tax wedge	**-0.0560**	**-0.0542**	**-0.0620**	**-0.0400**	**0.0000**	**0.0002**	**0.0058**	**37**	**-0.0625**	**-0.0396**
Pension benefits	-0.0330	-0.0344	-0.0530	-0.0260	0.0000	0.0005	0.0067	37	-0.0540	-0.0250
PISA-scores	-0.0630	-0.0674	-0.1100	-0.0350	0.0003	0.0010	0.0177	37	-0.1199	-0.0340
Share of high skilled	0.1760	0.1946	-2.2540	2.2120	0.5040	0.0100	0.7100	37	-2.4158	2.2734

Bold numbers are significant by the extreme bound criterion.
Source: Authors' calculations and estimations.

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