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Do Attitudes Towards Immigrants Matter?

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Do attitudes towards immigrants matter?

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Abstract

We exploit the regional variation in negative attitudes towards immigrants to Sweden in order to analyse what are the consequences of such attitudes on immigrants' welfare. A well educated immigrant from a non developed country who lives in a municipality with strong negative attitudes earns less than what she would earn if she lived in a municipality where natives are more positive. If attitudes changed from the average level to the most positive level, her wage would increase by 12%. This would reduce the wage gap to well-educated immigrants from developed countries by 70%. We interpret this effect as evidence of labour market discrimination. The same reduction in negative attitudes would increase the welfare of immigrants from Africa and Asia, through their wage and local amenities, by an equivalent to one third of their wage. The analogous amount for immigrants from South America and Eastern Europe is one fourth of their wage if they are well educated and one tenth otherwise.

1 Introduction

Attitudes toward immigration reveal deep views about economic self-interest and social identity. If natives' attitudes are based on their economic interests, those who benefit from immigration will support it, and those who are economically hurt by immigration will oppose it. A second reason for negative attitudes

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is racism, xenophobia or milder forms of nationalist sentiment that turn natives against foreigners[1]. We identify attitudes towards immigration through attitudes towards the immigrants themselves. The purpose of this paper is to study the effect of such attitudes on the immigrants' welfare.

Unlike in the US, immigration to Sweden is a relatively recent phenomenon, yet it has reached similar proportions. The share of foreign-born in the population in Sweden was less than one percent in 1900. By 1960, 4% of the population were born abroad. The share of foreign-born had increased to almost 13% in 2006, while the same share was 12.5% in the US. In the European context, Sweden was one of the countries with the largest share of foreign-born in the population in 2004, as shown in Figure 1.

Immigration to Sweden was insignificant until World War II. During the first post-war decades, there was a sharp increase in demand for labour and workers were recruited from other European countries, first from other Nordic countries and later from Turkey, Greece, Yugoslavia, Poland and Italy. These immigrants were accepted because they were wanted in the labour market. There are no reliable opinion polls dealing with people's views on immigration from that time, but the early labour immigrants adapted fairly well and gradually became accepted in the cities where they settled.

Since the 1970s, when there was a change in the economic conditions and the need for labour all but disappeared, immigration to Sweden has become increasingly restricted to political refugees and their families. Refugees then mainly came from Chile, Iran, Iraq, Somalia and former Yugoslavia. Many studies have detected the existence of negative attitudes towards immigrants in Sweden since the 1970s[2]. The rise in the share of votes for anti-immigration parties since the late 1980s is further evidence of the prevalence of such attitudes.

Still, studies making a comparison across countries in Europe find that Sweden is one of the countries with the most generous attitudes. For example,

[1] Card et. al. (2005) describe models of economic self-interest, and then discuss broader sociological models focused on aspects of identity and group affiliation.

[2] Some examples are the Intolerance Report (Intolerans 2004) and Westin(2000).

Card et. al. (2005) study how attitudes differ with the immigrants' characteristics. People tend to be more negative to immigrants of a different ethnicity and immigrants from less prosperous countries. Respondents who favour a tighter immigration policy tend to put more weight on being a Christian or being of white ethnicity. Thus, immigrants do not constitute a homogeneous group and the attitudes towards subgroups can differ substantially.

The Special Eurobarometer Wave 60.1 "Citizenship and sense of belonging" published in 2004 indicates how Sweden fares in Europe with respect to attitudes towards immigrants. Figure 2 plots a summary of the answer to question III.6 "Immigrants contribute a lot to our country" and question III.7 "immigrants are a threat to our way of life". Both variables are defined as the difference between the share of respondents that agree and those that disagree with the statement. Countries whose inhabitants agree more with the statement in question III.6 and disagree more with the statement in question III.7 tend to be more positive towards immigrants. Sweden stands out by its positive attitudes towards immigrants in this survey. We are then studying if attitudes affect immigrants' welfare in one of the countries where natives are most positive to immigrants.

With repect to question III.6 "Immigrants contribute a lot to our country", a 52% majority disagreed with this statement in the EU 15 region. This negative view was particularly strong in Belgium where virtually two-thirds (66%) of the population disagreed to a lesser or greater extent with the proposition that immigrants contributed a great deal to their country. At the other end of the spectrum, only 26% of the Portuguese and 31% of the Swedes held this negative view.

With repect to question III.7, 42% deem immigrants to be a threat to their way of life and 48% disagree with the proposition in the EU 15 region. Greece was the country with the highest level of concern about this with 69% of the poll seeing immigrants as a threat. In the UK, 54% of those polled saw immigrants as a threat and high figures of 53% were also noted in Belgium. In Sweden, only 25% of the respondents held this opinion and a substantial 71% disagreed with the proposition.

In this paper, we are not interested in the causes of negative attitudes towards immigrants; instead we want to analyse the consequences of such attitudes on immigrants' welfare. Even though we recognize that not every native with negative attitudes would discriminate, we believe that negative attitudes are systematically related to discrimination. Thus, we will be referring to discrimination in the paper despite the fact that we can only measure attitudes.

We formulate a simple model where negative attitudes affect immigrants' welfare through two channels: i) immigrants' wages through discrimination in the labour market and ii) immigrants' amenities, that is, the attractiveness of a geographic location, discrimination in the housing market, schools, hospitals, treatment in the streets, etc. Immigrants maximize their welfare by making a location choice where local attitudes play a major role.

The immigrants' geographic sorting is usually based on both observable and unobservable factors, which makes it difficult to study the effect of negative attitudes on their labour market outcomes and location decisions. To avoid (part of) that problem, we concentrate on a group of immigrants for which there is an exogenous source of variation in their first location in Sweden. This variation is given by a refugee settlement policy pursued by the government from 1985 to 1994, whereby newly arrived refugees were placed in different regions according to certain well-defined criteria. There were no restrictions on mobility after this first placement, however.

We take into account that natives' attitudes towards immigrants can differ by considering two kinds of heterogeneity, by origin and by level of education. We define three origin groups. Refugees belong to group B if they come from Africa and non developed countries in Asia and to group G if they come from South America or Eastern Europe. We expect group B to be more affected by attitudes than group G, as the members of this group are ethnically more distant from Swedes and come from less prosperous countries. A third group, W, composed by immigrants from developed countries, is also defined. These immigrants are not refugees, they were never placed and we expect them to be much less affected by negative attitudes. They are included as a placebo group.

When it comes to education, we call those immigrants who have attained at least high school "well educated".

The placement of refugees in a region may exacerbate negative attitudes towards them. This problem is addressed by considering the data on attitudes measured prior to the refugee settlement policy. We obtain our measure of attitudes towards immigrants from five surveys on Swedish Opinion (Svensk opinion), collected from 1979 to February 1985 by Stiftelsen för Opinionsanalyser.

The empirical purpose of this paper is to exploit the regional variation in negative attitudes towards immigrants to analyse whether labour market outcomes and the mobility decisions of immigrants (refugees) are systematically related to such attitudes.

In a nutshell, we find that attitudes towards immigrants matter; they affect both labour market outcomes and location decisions. Well educated immigrants from non developed countries receive lower wages when they live in a municipality with more negative attitudes. If attitudes became more positive and changed from their average level to the most positive level, this would increase these immigrants' wages by 12%.

Immigrants from non developed countries prefer to live in municipalities where attitudes towards them are less negative. Our estimates imply that less educated immigrants from Africa and Asia are willing to sacrifice as much as 34% of their wages to enjoy living in a municipality with zero negative attitudes rather than average attitudes. Well educated immigrants from Africa and Asia would accept a reduction of 23% of their wages and immigrants from South America and Eastern Europe a reduction of 11%, independent of their level of education.

Related Research

Our paper relates to research on the discrimination of immigrants in the labour market, and in particular, the empirical research related to Sweden.

The relationship between wages and discrimination in our simple model is justified by the results of a companion paper, Larsen and Waisman (2007), that

introduces labour market discrimination in a search model (following Borjas and Bronars (1989)).

The model in our paper relates both to research on individual's migration decision (Sjaastad (1962)) and self-selection (Roy (1951)). Nakosteen and Zimmer (1980) and Borjas et. al. (1992) apply Roy's self-selection framework to internal migration. Our paper considers self selection in the migration decision in the spirit of a Roy model.

There are some empirical studies analysing the internal migration decision in Scandinavia. Åslund (2001) finds that immigrants to Sweden are attracted to regions with many immigrants from their own country of birth and, in general, better labour market opportunities and many welfare recipients. Damm and Rosholm (2005) find that the hazard rate into first job of refugee immigrants to Denmark is decreasing in the local population size and the local share of immigrants and that geographical mobility had large, positive effects on the hazard rate into first job, thus suggesting that restrictions on placed refugees' subsequent out-migration would hamper the labour market integration of refugees. None of these studies considers the effect of different attitudes towards immigrants on their migration decision.

Several empirical studies (for example Bevelander and Skyt Nielsen (1999), Arai et. al. (1999) and Arai and Vilhelmsson (2004)) have found lower income and employment rates for immigrants than for comparable natives in Sweden. These studies cannot tell us if the differences are caused by ethnic discrimination or differences in unobserved characteristics of the two populations. By analysing the difference in labour market outcomes in regions with different attitudes towards immigrants, we intend to test discrimination in a more direct way.

There are other studies performing different types of more direct tests of discrimination in Sweden. Rooth (2001) analysed the labour market performance of adoptees with dissimilar looks to natives and concluded that discrimination against skin colour may exist in the Swedish labour market. Åslund and Rooth (2005) found no sign of increased discrimination against certain immigrants to Sweden after the temporary change of attitudes caused by the terrorist attacks

on September 11, 2001. Carlsson and Rooth (2006) performed a field experiment in May 2005 to February 2006 which showed every fourth employer to discriminate against men with Arabic sounding names in the hiring process. Compared to these studies, ours is more general as it is not restricted to certain groups of immigrants.

In the next section, we will present a simple model that can help us understand how negative attitudes affect immigrants.

2 Some Simple Theory

Consider an immigrant who derives utility from the consumption of goods afforded by her wage and amenities, that is, different features that increase quality of life. In the same spirit as a Roy model, different geographical areas are modelled as having different earnings and different amenity benefits for different immigrants. These local amenities affect quality of life because people have preferences for certain types of areas; they may prefer to live in temperate climates more than in severe ones, for instance[3].

Each geographic location is characterized by a level of negative attitudes towards immigrants, determined by the share of the population that dislikes immigrants. Negative attitudes towards immigrants potentially affect both components of the utility function. When we model how negative attitudes affect immigrants, we will think of discrimination. In a companion paper, Larsen and Waisman (2007), we study the effects of discrimination of immigrants on the labour market within a search and wage-bargaining setting. In such a setting, discrimination implies that the wages received by immigrants are lower than the wages received by natives, even when they face a non-discriminatory employer. Amenities or quality of life may be affected by negative attitudes in many different ways. For example, negative attitudes can induce discrimination in the housing market, at schools or in hospitals.

[3] Graves (1979), Mueser and Graves (1995) and Huffman and Feridhanusetyawan (2007) show evidence of amenities affecting people's migration decisions and welfare.

We represent the utility for individual i in region j by the following equation

$$U_i^j\left(d^j\right) = w_i^j\left(d^j\right) + A_i^j\left(d^j\right), \tag{1}$$

where w_i^j denotes wage, A_i^j the amenities and d^j the level of negative attitudes in region j.

Every immigrant maximizes utility by making a location choice. When deciding where to live, he/she considers the level of wages and the quality of life he/she expects to receive in different geographical locations. He/she will move to region k if

$$U_i^k\left(d^k\right) > U_i^j\left(d^j\right) + C_i, \tag{2}$$

where C_i reflects the immigrant's individual costs of moving.

According to this simple location model, we expect more immigrants to move into or stay in regions with less negative attitudes. If two groups of immigrants are differently affected by attitudes and have similar costs for moving, then we expect a higher frequency of movement in the most affected group. The effect of negatives attitudes on wages and the location decision will be studied in the empirical section.

3 Empirical Background, Data and Method

Immigrants choose where to live on basis of many factors. They may choose to live where natives are not negative towards them, where the labour market opportunities are good, where the weather and other geographic conditions are more similar to their home countries, where many other immigrants speak their own language, etc. Immigrants' sorting is based on both observable and unobservable factors which makes it generally difficult to study the effect of negative attitudes on labour market outcomes and location decisions. We will therefore study a group of immigrants for which there is an exogenous source of variation in their first location in Sweden given by a refugee settlement policy that the government pursued from 1985 to 1994.

The refugee settlement policy placed newly arrived refugees in different local municipalities according to certain well-defined criteria. The idea of the programme was to get a more even distribution of immigrants and facilitate integration. In practice, the distribution was mainly determined by housing availability. There was no interaction between municipal officers and refugees, so the selection was, by definition, purely made on basis of observed characteristics; language, formal qualifications, and family size seem to have been the main criteria. Preferences were given to highly educated individuals and individuals that spoke the same language as some members of the resident immigrant stock. The assignment of municipality was not the immigrants' choice and was independent of unobserved individual characteristics giving a quasi-experimental character to the data, as described by Edin, Fredriksson and Åslund (2003). These authors argue that the housing market was booming, thus making it difficult to find vacant housing in attractive areas.

The government settlement policy clearly increased the dispersion of immigrants. Before 1985, refugees were allowed to choose where to settle. In 1985, the immigrant shares in Stockholm and the north of Sweden were at 36% and 5%, respectively. By 1991, the share living in Stockholm had been reduced by more than 3%, while the share residing in the north had increased by 2%. Formally, the policy of assigning refugees to municipalities was in place from 1985 to 1994. However, the strictest application of the assignment policy took place between 1987 and 1991. During this period, almost 90% of the refugees were assigned an initial municipality of residence by the Immigration Board. There were no restrictions on ex post mobility, except that the refugees lost some activities granted in an introduction programme of about 18 months.

We exploit this natural experiment to analyse whether the mobility decisions of immigrants and their labour market outcomes are systematically related to attitudes in the different regions. We mainly use an unbalanced panel of data from 1996 to 2003, including only those immigrants that arrived in the period 1987 to 1991[4].

[4] In section 5 we repeat the same analysis in a larger sample, composed by all immigrants

Immigrants are not a homogeneous group and we believe that not all of them are equally affected by negative attitudes. We will divide the immigrants into three groups by origin. Group B consists of immigrants from Africa and non developed countries of Asia. Group G consists of immigrants from South America and Eastern Europe. The third group called W is composed by immigrants from developed countries. These immigrants are not refugees, they were never placed and we expect them to be much less affected by negative attitudes. We include them as a placebo group.

We also differentiate immigrants by their level of education. We call those immigrants who have attained at least high school "well educated".

We recognize that the placement of immigrants in a region may exacerbate negative attitudes towards them. This problem is addressed by considering the data on attitudes measured prior to the refugee settlement policy. For this reason, we assume attitudes to be constant in the short run. If we allow attitudes to vary over time, they will be strongly influenced by the refugees' arrival. Note that almost 60% of the immigrants living in Sweden in 2003 arrived after February 1985, the last period of our attitude data. We will use a measure of negative attitudes that is not directly caused by these last large waves of immigration.

3.1 Data

Data on the labour market performance of immigrants is available in the Longitudinal Individual Data Base (LINDA) stored at Statistics Sweden. Income registers and population census data constitute the core of the data set[5]. It contains information on 300 000 individuals annually plus a non-overlapping sample of 20% of all immigrants. From this database, we obtain information about the immigrants' monthly wage[6], country of origin, year of immigration,

that arrived in the period 1985 to 1994, that is, the whole official period of application of the refugee settlement policy as a robustness test.

[5] See Edin and Fredriksson (2000) for a presentation of this data set.

[6] In 1996 and 1997, the data on monthly wage rates was not available for all individuals employed in the private sector, while it covered all public employees incorporated in this

the municipality where she lived upon arrival and where she lives now, her level of education, age, civil status, etc.

We cannot observe which immigrants in LINDA are refugees, so we concentrate our analysis to those coming from non developed countries, i.e. those that are more likely to have been placed by the government. In our groups of interest, B and G, we include immigrants from countries outside Western Europe that were not members of the OECD in 1985 and from Turkey. Immigrants from developed countries constitute the group of "white" immigrants, W.

We obtain our measure of attitudes towards immigrants from five cross-sectional surveys on Swedish Opinion collected from 1979 to February 1985 by Stiftelsen för Opinionsanalyser (SSD 0099, Göteborg University). The data was collected through a mail survey sent to around 2 000 individuals aged 17-80. We add the answers of all surveys to get more observations per municipality, all in all 11 539 answers.

We are interested in the question: How important do you think less immigration is? The possible answers (frequency in parenthesis) are: (1) very important (25.75%), (2) quite important (23.45%), (3) not very important (11.35%), (4) not important at all (fine now) (17.69%), (5) better with more immigrants (3.13%), (6) hesitant (13.83%), (7) no answer (4.80%).

We construct a measure of negative attitudes by adding the number of individuals answering (1) or (2) and deducting the number of individuals answering (5). This variable is normalized to vary between 0 and 1. A map of Sweden in Figure 3 shows how attitudes are distributed throughout the country. Attitudes are more negative in municipalities that had a high share of immigrants from non developed countries (0.08), higher average days of unemployment (0.11), and lower average wages (–0.17) in the period 1996 to 2003. If we go back in time, closer to the period in which these attitudes were revealed, we can see that municipalities with more negative attitudes had lower employment in 1985 (–0.14) and more immigrants in 1979 (0.05). The correlation coefficients in

sample. LINDA contains full data on monthly wage rates from 1998, but not for all family members.

parenthesis (weighted by population) are all significantly different from zero at the 1% level.

Table I includes descriptive statistics of the variables of interest in our study. These include individual characteristics of the immigrants and municipal characteristics of their location.

Table II has a richer description of the municipal characteristics where immigrants are divided by group and separated into stayers and movers. Stayers are immigrants who still live in the municipality where they were placed. Movers are immigrants who left their municipality of placement in any period from the arrival to the year studied. Most immigrants moved before 1996 and very few during the period 1996 to 2003. Stayers constitute 47% of group B and 60% of group G immigrants. As is evident from the table, stayers were placed in municipalities with less negative attitudes towards immigrants, a higher share of immigrants from non developed countries, a larger population, better labour market conditions and more social benefits than movers. Those who moved chose municipalities with more positive attitudes, a higher share of immigrants, a larger population, better labour market conditions and more social benefits than the municipalities where they were placed. Well educated immigrants (those who have attained at least high school) chose to move to a higher extent than less educated immigrants. Group B immigrants moved to a higher extent than group G immigrants. Movers appear to earn higher wages than stayers for both levels of education.

Table III characterizes the initial and final location of immigrants who came from developed countries in the same period. The "white" immigrants were never placed, they chose themselves where to live already upon arrival and 62% stayed in that first location. Those who moved chose municipalities with a smaller share of immigrants from non developed countries, a smaller population, better labour market conditions and lower social benefits.

The location choices of immigrants suggested by these means are consistent with our theory. Both the average group B mover and the average group G mover chose to move towards more positive attitudes. Those who decided to

stay had been placed in municipalities with more positive attitudes. Group B immigrants (ethnically more distant from Swedes and coming from less prosperous countries) moved to a higher extent than group G immigrants and both groups moved more than group W immigrants. But this is just a comparison of means, we need a deeper analysis of the data to measure the effect of negative attitudes.

3.2 Empirical Strategy

We want to estimate the effect of negative attitudes on the wages and the location decision of immigrants represented in equation (2). Larsen and Waisman (2007) show that, in the presence of discrimination, immigrants' wages are negatively affected by the share of immigrants in the economy. Living in a region with many immigrants could also be positive, if immigrants form social networks that allow members to help each other in the labour market. Both the direct effect and the incentive to form networks may depend on how negative the attitudes towards immigrants are in the region. Similarly, the effect of attitudes on local amenities may vary depending on how many other immigrants live in the municipality. We take this into account and incorporate a term allowing for an interaction between negative attitudes and the share of immigrants in our wage and amenities equations. We assume the wage and amenity functions in equation (1) above to take the form

$$\begin{aligned} w_{it}^{j}\left(d^{j}\right) &= d^{j\prime}\alpha_1 + \left(d^{j} * M_t^{j}\right)'\alpha_2 + X_t^{j\prime}\alpha_3 + Y_{ti}'\alpha_4 + \varepsilon_{it}^{j} \\ &= E\left(w_{it}^{j}\left(d^{j}\right)\right) + \varepsilon_{it}^{j}, \qquad \varepsilon_{it}^{j} \sim N\left(0,\sigma^2\right) \qquad \text{for } j = p,m \\ A_{it}^{j}\left(d^{j}\right) &= d^{j\prime}\beta_1 + \left(d^{j} * M_t^{j}\right)'\beta_2 + Z_t^{j\prime}\beta_3, \qquad \text{for } j = p,m \\ C_i &= Y_{ti}'\gamma, \end{aligned}$$

where M_t^j is the share of immigrants from non developed countries living in municipality j in period t, X_t^j are municipal characteristics that affect wages, ε_{it}^j is a residual term or shock to individual i's wage, Z_t^j are municipal characteristics that affect amenities and Y_{ti} are individual characteristics. We will call

p the municipality of placement and m the municipality where an immigrant is considering to move. The cost of moving is assumed to depend on individual characteristics only.

When we estimate equation (2) above for the movers, we observe the wage that the immigrant received in municipality m, $w_{it}^{m}\left(d^{m}\right)$, but we need to estimate the wage he/she had received if he/she had stayed in the municipality of placement, $w_{it}^{p}\left(d^{p}\right)$. An immigrant is a mover if

$$w_{it}^{m}\left(d^{m}\right)+A_{it}^{m}\left(d^{m}\right)>w_{it}^{p}\left(d^{p}\right)+A_{it}^{p}\left(d^{p}\right)+C_{i},$$

$$w_{it}^{m}\left(d^{m}\right)-E\left(w^{p}\left(d^{p}\right)\right)+\left[A_{it}^{m}\left(d^{m}\right)-A_{it}^{p}\left(d^{p}\right)\right]-C_{i}>\varepsilon_{it}^{p}, \tag{3}$$

where

$$A_{it}^{m}\left(d^{m}\right)-A_{it}^{p}\left(d^{p}\right)=\left\{\begin{array}{c}-\left(d^{p\prime}-d^{m\prime}\right)^{\prime}\beta_{1}-\left[\left(d^{p}*M_{t}^{p}\right)^{\prime}-\left(d^{m}*M_{t}^{m}\right)^{\prime}\right]\beta_{2}\\ -\left(Z_{t}^{p\prime}-Z_{t}^{m\prime}\right)^{\prime}\beta_{3}\end{array}\right\}.$$

For a stayer, we observe the wage she receives in the municipality of placement, but we need to estimate what she would counterfactually receive in a target municipality. We cannot observe to which municipality an immigrant considered moving, if she decided to stay. We define the target municipality of stayers as the average municipality where all immigrants have chosen to live in our sample. In this way, we use the immigrants' own revealed preferences when we determine what the potential target would have been[7]. The alternative destinations are therefore collapsed into a single alternative, the target municipality. An immigrant is a stayer if

$$w_{it}^{m}\left(d^{m}\right)+A_{it}^{m}\left(d^{m}\right)\leq w_{it}^{p}\left(d^{p}\right)+A_{it}^{p}\left(d^{p}\right)+C_{i},$$

$$w_{it}^{p}\left(d^{p}\right)-E\left(w_{it}^{m}\left(d^{m}\right)\right)+\left[A_{it}^{p}\left(d^{p}\right)-A_{it}^{m}\left(d^{m}\right)\right]+C_{i}>\varepsilon_{it}^{m}. \tag{4}$$

We initially assume that the residuals in the wage equations for movers (3) and stayers (4), ε_{it}^{p} and ε_{it}^{m}, are independent of each other. This assumption

[7] As a robustness check, we have performed the estimation using other potential targets, for example, an average of the ten most preferred municipalities (as revealed by immigrants' choices). There was no substantial change in the results.

may not be realistic. High ability immigrants that have positive residuals upon placement are likely to also have positive residuals after moving. We can actually test if this is the case by looking at the small group of immigrants that moved from the municipality where they had been placed upon arrival (1987-1991) during the period 1996-2003 and for which we can observe wages in both the municipality of placement and the municipality of their final location[8]. For this particular group of immigrants, we can calculate an average wage throughout the period both upon placement and where they chose to move and estimate the correlation between these average wages. The correlation turns out to be positive and high. For this reason, we will present results where the residuals are assumed to be independent, as well as results where we incorporate the estimated correlation among residuals.

We include several covariates and controls, so that the differences in the wages and amenities are not determined by differences in the labour market opportunities or geographical characteristics of the regions themselves. Controlling by fixed effects at the individual level does not help because we have very few individuals that moved during the period in our sample and for which we can observe wages both before and after moving. We consider as movers all immigrants that chose to move from their first location in the country, even if this happened before the period in our analysis.

Identification rests on the assumption that the effect of negative attitudes on the wages and location decisions of group B and G immigrants are independent of the residual terms in (3) and (4), ε. Identification fails if some other factor determines both the level of attitudes and the differences in wages and amenities in the region, through its effect on the residual terms. It could be imagined, for example, that a generally bad labour market causes poor outcomes for recent immigrants as well as negative attitudes among natives. The attitudes we capture in our measure were displayed more than ten years before the period of analysis, but a bad labour market may be persistent over time.

[8] This group only includes about 100 individuals. Most of the refugees that moved until 2003 had already moved by 1996.

To check whether some other factor determines both the level of attitudes and the differences in wages and amenities in the region**,** we include a third group in our analysis, immigrants from developed countries, that we expect not to be affected by attitudes. The idea is that if our estimation of the effect of attitudes on wages and amenities is the result of some other factor that produces lower wages, we should estimate the same effect on this placebo group. This is not the case however; attitudes have no effect on these immigrants' wages or location decision.

There is no considerable difference among the three groups of immigrants with respect to individual characteristics. They have a similar average age (37.6 for group W, 35.6 for group G and 34.6 for group B), a similar gender composition (50% of group W immigrants are women, 56% of group G and 50% of group B) and a similar civil status (56% of group W immigrants are married or cohabitants, 52% of group G and 54% of group B). Most importantly, their education level is not that different. We can compare the different education levels of immigrants in a measure that scales from 0 (no education at all) to 6 (Ph.D. level). A value of 3 in this education measure corresponds to high school education, so the variable "well educated" in our study corresponds to values 4, 5 and 6. The average level of education of white immigrants is 3.4 (with a standard deviation of 1.47), while it is 3.2 (with a standard deviation of 1.4) for immigrants from South America and Eastern Europe and 2.9 (with a standard deviation of 1.4) for immigrants from Africa and non developed countries in Asia. One important difference is that immigrants from developed countries are not affected by attitudes while those from non developed countries are.

3.3 Estimation Method

We estimate equations (3) and (4) for each group of immigrants separately. Recall that group B consists of immigrants from Africa and non developed countries of Asia, group G consists of immigrants from Eastern Europe and South America and group W consists of immigrants from developed countries.

Imposing the same slope coefficients on all regressors in a common specification (with dummy variables to allow for a different effect of attitudes only) is not very attractive as we want to allow for heterogeneity across groups.

In the model, we have assumed that the effect of negative attitudes on wages is the same for stayers and movers. We have tried an alternative specification, separating the effect of the variables of interest on the wages of stayers and movers. The effects of negative attitudes are somewhat stronger for movers than for stayers, but the coefficients are not very different for the two groups, so we have chosen this specification to make the presentation simpler.

We estimate the effect of negative attitudes on wages and the location decision by maximum likelihood. The maximium likelihood principle says that out of all possible values for the different coefficients and the residual's variance, the values that make the likelihood of the observed data largest should be chosen.

The log likelihood function is

$$\sum_{s_i=0} \ln\left(\Pr\left(s_i=0\right)\right) f\left(w_{it} \mid s_i=0\right) + \sum_{s_i=1} \ln\left(\Pr\left(s_i=1\right)\right) f\left(w_{it} \mid s_i=1\right),$$

where $s_i = 1$ if the individual is a stayer and $s_i = 0$ if she is a mover. When errors ε_{it}^p and ε_{it}^m are uncorrelated, we can write the log likelihood contributions, based on (3) and (4), for the stayers

$$\Phi\left(\frac{w_{it}^p - E\left(w_{it}^m\right) + \left(A_{it}^p - A_{it}^m + C_i\right)}{\sigma}\right) \varphi\left(w_{it}^p, E\left(w_{it}^p\right), \sigma^2\right),$$

and for the movers

$$\Phi\left(\frac{w_{it}^m - E\left(w_{it}^p\right) - \left(A_{it}^p - A_{it}^m + C_i\right)}{\sigma}\right) \varphi\left(w_{it}^m, E\left(w_{it}^m\right), \sigma^2\right).$$

When we allow for correlated residuals, $\varepsilon_{it}^p \sim N\left(0, \sigma^2\right)$ and $\varepsilon_{it}^m = \rho\varepsilon_{it}^p + u_{it}^m \sim N\left(0, \sigma^2\right)$, where $u_{it}^m \sim N\left(0, \sigma^2\left(1-\rho^2\right)\right)$ and ρ is the correlation coefficient, the log likelihood contributions become

$$\Phi\left(\frac{w_{it}^p - E\left(w_{it}^m\right) + \left(A_{it}^p - A_{it}^m + C_i\right) - \rho\left(w_{it}^p - E\left(w_{it}^p\right)\right)}{\sigma\left(1-\rho^2\right)^{\frac{1}{2}}}\right) \varphi\left(w_{it}^p, E\left(w_{it}^p\right), \sigma^2\right),$$

and

$$\Phi\left(\frac{w_{it}^m - E\left(w_{it}^p\right) - \left(A_{it}^p - A_{it}^m + C_i\right) - \rho\left(w_{it}^m - E\left(w_{it}^m\right)\right)}{\sigma\left(1-\rho^2\right)^{\frac{1}{2}}}\right) \varphi\left(w_{it}^m, E\left(w_{it}^m\right), \sigma^2\right).$$

4 Results

Even if the effect of attitudes on wages and location comes out of the same regression, we present these results in two separate tables to simplify the exposition. Table IV presents the estimation of the α coefficients, while table V presents the estimation of the β and γ coefficients in equations (3) and (4).

4.1 Results for Wages

Table IV reports our results on the effect of negative attitudes on wages for the three groups of immigrants. To differentiate immigrants by level of education, we interact each variable of interest with a dummy that is equal to one for "well educated" individuals, that is, those who have attained at least high school. For groups B and G, we report both the results considering only negative attitudes and the results where negative attitudes are interacted with the share of immigrants from non developed countries. We report results both with independent and correlated residuals. All specifications include individual controls, municipal controls, region effects, year effects, dummies for the country of origin and the number of refugees that arrived from the same country to the same municipality in the period 1987 to 1991.

The individual controls are age, age squared, level of education, sex, civil state and the years since immigration. The municipal controls include the average level of wages, the average days of unemployment and the average level of social benefits received in the municipality each year. The regional effects are considered at the county level (there were 24 counties and 288 municipalities in Sweden in 1996). We cannot include fixed effects at the municipal level because our measure of discrimination is constant. We estimate standard errors that are robust to individual correlation by clustering per individual.

Negative attitudes reduce the wages of well educated group B immigrants in all specifications. Less educated immigrants' wages are not affected by negative attitudes. We will mainly concentrate on the last column for each group, where residuals are correlated and the interaction between negative attitudes

and the share of immigrants is taken into account. If attitudes improved from the average level (0.5) to the most positive level (0), this would increase these immigrants' wages by 12%. The share of immigrants from non developed countries is associated with higher wages for all group B immigrants. An increase in this share from the minimum possible level (0) to the average level (0.10) would increase group B immigrants' wages by 6%. In this sense, the effect of improving attitudes is twice as high as the potential network effect or the effect of increasing the share of immigrants.

The effect of negative attitudes on the wages of well educated group G immigrants has the same order of magnitude, still negative, but less precisely estimated. It turns out to be significantly different from zero only when the interaction with the share of immigrants is considered. The share of immigrants has no direct effect on wages for group G, but a positive interaction term attenuates the effect of negative attitudes when we assume independent residuals. The interaction term is still positive but much smaller and not significantly different from zero when we take residual correlation into account. According to the results in the last column, an improvement in attitudes from the average to the most positive level would increase the well educated group G immigrants' wages by 13%.

Negative attitudes have no effect at all on the wages of immigrants from developed countries, our placebo group W. We interpret these results as evidence of discrimination in the labour market for well educated immigrants from less developed countries. The average wages of well educated group W immigrants in our sample are 20% (15%) higher than the average wages of well educated group B (G) immigrants. A large part of this difference could thus be explained by discrimination[9]. The effects of the controls on immigrants' wages are relatively similar across groups. Wages are higher for immigrants living in municipalities with higher average wages and immigrants that are well educated, older, male, married or cohabitants and that have been longer in Sweden. In our estimation,

[9] Note that the comparison is made with similar immigrants that have been in the country for an equally long period.

the direct effect of being well educated (attaining high school or higher) is an increase in wages by 30% for group B and G immigrants, but almost half of that increase is lost due to discrimination. The direct effect of being well educated is a rise in wages by 12% for group W immigrants.

4.2 Results for Mobility

Table V reports the results for the effect of negative attitudes on the location decision. The explanatory variables in this table represent, for each individual, the difference in the characteristics of the municipality of placement and the target municipality. "Negative attitudes" denote the difference between negative attitudes upon placement and at the final or prospective location, that is, $(d^p - d^m)$. The municipal and individual controls are the same as those in Table IV. The individual controls represent the cost of moving in the location decision. There are additional controls that are assumed to affect the location decision, but not the wage of the immigrants. These "geographical variables" are the ten-year average minimum temperature in the winter (January to March), latitude (that influences how dark a region is in the winter) and the size of the population. In the literature on amenities, it is common to hypothesize that people prefer moderate climates.

More negative attitudes reduce quality of life in a region for both group B and group G immigrants, but the coefficients are somewhat unstable across specifications. Immigrants in the placebo group W are not affected by the difference in negative attitudes in their location decision. Once more, we concentrate on the results with correlated residuals that incorporate the interaction between negative attitudes and the share of immigrants from non developed countries. For group B immigrants, the interaction term strengthens the effect of the difference in negative attitudes on amenities, especially for less educated individuals. The average share of immigrants is 0.10, so the total effect for less educated individuals in the average municipality is –0.69 $(-0.29 - 4 * 0.1)$ and for well educated immigrants, it is –0.46 $[-0.29 - (4 - 2.35) * 0.1]$. This means that less

(well) educated immigrants in group B are willing to sacrifice 34% (23%) of their wages to enjoy living in a municipality with no negative attitudes instead of the average level of negative attitudes. Group G immigrants are willing to sacrifice 11% of their wages for an improvement in attitudes.

Immigrants in group B and G enjoy living in a municipality with more immigrants around, while "white" immigrants feel that the attractiveness of a region decreases with the difference in the share of immigrants from non developed countries. Group W immigrants are willing to sacrifice 11% ($-1.14 * 0.1$) of their wages to live in a municipality without immigrants from non developed countries, instead of the average share.

Also in the location decision are the effects of the controls relatively similar across groups. The value of amenities increases with the difference in average wages and decreases with the difference in average days of unemployment and social benefits received in the municipality. Immigrants in group B value having a higher temperature in the winter, especially the well educated ones, while immigrants in group G instead value lower latitudes. The difference in the size of the population does not seem to be of any importance after controlling for all other municipal and geographical variables. Group W immigrants care more about the winter temperature than the latitude. In groups B and G, older immigrants, less educated, women and those who are married or cohabitants have a higher cost of moving In group W, age seems to be the only factor determining the cost of moving.

Negative attitudes do affect all immigrants from non developed countries, but the effect varies in strength and character. Negative attitudes affect the welfare of well educated immigrants through both wages and amenities, but only the low educated immigrants' amenities. Well educated immigrants from South America and Eastern Europe are more affected than less educated immigrants of the same origin. All immigrants from Africa and non developed countries in Asia suffer more from negative attitudes than South Americans and Eastern Europeans. This is consistent with the observation that group B immigrants are ethnically and culturally more distant from Swedes and come

from less prosperous countries and that they moved to a higher extent than group G immigrants. Similarly, well educated immigrants, whose wages are more affected by attitudes in our results, moved to a higher extent than less educated immigrants.

5 Robustness Tests

5.1 Alternative Specification

An alternative way of analysing the effect of negative attitudes is to concentrate on the wages of those immigrants that still live where they were placed by the government according to the refugee settlement policy. If we do so, we need to correct for the selection bias created by the fact that these individuals chose themselves to stay in their placement municipality. We estimate the effect of negative attitudes on the wages of stayers using a Heckman-style selection bias correction.

The results of the estimation are presented in table VI. The first two columns show the effect of the variables of interest on the stayers' wages. The last two columns show the effect of the "differences" in the variables of interest, the variables upon placement minus the variables in the target municipality, on the location decision. In this case, we have not been able to compute the results for the three groups of origin in separate regressions, due to lack of convergence. Therefore, we used dummy variables to distinguish the effects of the variables of interest on the wages and location decisions of the stayers in group B, G and W. In this way, we are restricting the coefficients for the individual and the municipal controls in the wage equation to be the same for all three groups. We use dummies to allow for different coefficients for the municipal and geographical variables in the location equation.

In the interpretation of the results, we concentrate on the results in the second and fourth columns which allow for the interaction between attitudes and the share of immigrants from non developed countries. In this setting, we

find that negative attitudes reduce the wages of well educated stayers from Africa and Asia, even though a positive interaction effect attenuates this reduction in municipalities with many immigrants from non developed countries. Improving attitudes from the average level to zero would reduce the stayers' wages by 6% in the average municipality, if we take the interaction term into account. The wages of South American and Eastern European stayers are not affected by negative attitudes.

The wages of immigrants from developed countries that stayed in the first chosen location (they were never placed) are positively related to negative attitudes and the share of immigrants from non developed countries in the region. We have no good explanation for these positive coefficients, but the fact that group W wages increase with the negative attitudes shows that we are not capturing the effect of a third factor that affects negative attitudes positively and wages negatively for all workers.

With respect to the location decision, all immigrants from non developed countries are less likely to stay in a municipality with more negative attitudes. The effect is stronger for immigrants from Africa and Asia, both directly (a more negative coefficient) and indirectly, through the interaction term. Immigrants from developed countries prefer to stay in a municipality with more negative attitudes, as shown by a positive interaction term. Immigrants from Africa and Asia prefer to live in regions with a higher share of immigrants from non developed countries. Immigrants from developed countries instead move away from such regions.

In summary, the results in this alternative specification do not contradict our main findings.

5.2 Alternative Sample

We now repeat the same analysis in a larger sample, composed by all immigrants that arrived in the period 1985 to 1994, that is, the whole official period of application of the refugee settlement policy. In the additional years, however,

the placement of immigrants was less strict, meaning that more refugees were allowed to choose their first location. The exogenous source of variation in the immigrants' first location in Sweden is thus potentially a worse assumption for this larger sample.

Tables VII and VIII report the results arising from repeating the same analysis as in tables IV and V in the larger sample. We once more concentrate on the results that incorporate the interaction with the share of immigrants and the correlation in the residuals of stayers and movers, that is, the last column for each group of immigrants.

The results are very similar to those obtained with the smaller sample for immigrants from Africa and non developed countries in Asia. If negative attitudes were reduced from the average level to zero, the wages of well educated group B immigrants would increase by 11% and the value of amenities they enjoy would rise by 17%. The same improvement in attitudes would increase the value of amenities for low educated group B immigrants by 27%. So the total utility cost of negative attitudes is equivalent to 27% of the wages for less educated and 28% of the wages for well educated immigrants from Africa and Asia. This utility cost is smaller than that estimated in the smaller sample (35%), but the magnitude is still quite high. Immigrants from Africa and Asia receive higher wages and a larger value of amenities if they live in a municipality with a higher share of immigrants from non developed countries.

For immigrants from South America and Asia, the effect on wages is very small and has the wrong sign. A reduction in negative attitudes from the average effect to zero would increase wages by 2.5% through the interaction term. The same reduction in negative attitudes increases the value of amenities for these immigrants by 10%. So, the total utility cost of negative attitudes is equivalent to 7.5% of the wages for all group G immigrants. Once more, the total effect is smaller than in the more restricted sample.

Negative attitudes do not affect the wages of immigrants from developed countries, while they increase the value of their amenities. Group W immigrants prefer to live in a municipality with less immigrants from non developed

countries and more negative attitudes.

The controls are the same as in tables IV and V and have the expected signs.

The estimation of the effect of attitudes on wages is less precise for group G immigrants on this larger sample. Out of all immigrants in this group, 60% came to Sweden between 1992 and 1994 and as many as 95% of the late arrivals came from former Yugoslavia. It may be the case that these immigrants were more similar to Swedes than the immigrants coming from the rest of Eastern Europe and Latin America. This would explain why their wages were less affected by negative attitudes. Negative attitudes still influence their location decisions as much as it did for the group B immigrants in the benchmark sample. Immigrants from Africa and Asia are more affected than immigrants from South America and Eastern Europe. Immigrants from developed countries actually benefit from negative attitudes which, once more, shows that we are not capturing the effect of a third factor that affects negative attitudes positively and utility negatively for all workers.

6 Conclusions

We find that attitudes towards immigrants matter: they affect both their labour market outcomes and their quality of life. Well educated immigrants from non developed countries receive lower wages when they live in a municipality with more negative attitudes towards immigration. The average wages of well educated immigrants from developed countries in our sample are 17% higher than the average wages of well educated immigrants from non developed countries. If negative attitudes were to disappear, this would increase these immigrants' wages by 12%. In other words, 70% of the wage gap could be explained by discrimination. The potential effect of more positive attitudes is twice as high as the potential network effect or the effect of increasing the share of immigrants from non developed countries from zero to its average value.

All immigrants from non developed countries prefer to live in municipalities where attitudes towards them are less negative. Our model implies that less

educated immigrants from Africa and Asia are willing to sacrifice as much as 34% of their wages to enjoy living in a municipality with zero negative attitudes, instead of the average level. Well educated immigrants from Africa and Asia would accept a reduction of 23% of their wages and immigrants from South America and Eastern Europe a reduction of 11%, independently of their level of education.

By their revealed location choices, immigrants from non developed countries enjoy living in a municipality where there are similar immigrants, while "white" immigrants appear to believe that the attractiveness of a region decreases with the share of immigrants from non developed countries.

The fact that the wages and the quality of life of immigrants from developed countries, our placebo group, are not affected (or are affected in the opposite way) by negative attitudes indicates that we are not capturing the effect of omitted variables that have a positive effect on negative attitudes and a negative effect on wages or amenities for all workers in a region.

A reduction in negative attitudes from the average level to zero would increase the total welfare of immigrants from Africa and Asia, consisting of their wage and quality of life, by an equivalent to the utility provided by one third of their wage. The same amount for immigrants from South America and Eastern Europe is one fourth of their wage if they are well educated and one tenth otherwise. These effects are really strong. If the attitudes towards immigrants became more positive, it would make a large difference for these individuals.

We end with two examples that may give a better concrete illustration of how much attitudes matter.

The first example is Lund, a municipality with much less negative attitudes than the average. Placed immigrants tend to stay and many immigrants placed in other municipalities choose to move to Lund. Lund is a municipality in Skåne, southern Sweden. The city of Lund has more than 76 000 inhabitants and is believed to have been founded around the year 990, when the Scanian lands belonged to Denmark. It soon became the Christian centre of Northern Europe with an archbishop and the towering Lund Cathedral. Lund University, estab-

lished in 1666, is Sweden's largest university. Lund is an island of immigrants' acceptance ($A = 0.302$) in a county where attitudes are very negative. In our sample, 66 immigrants from Africa and non developed countries of Asia were placed in Lund during the period 1987 to 1991. As many as 59 immigrants with the same continents of origin that were placed in other municipalities chose to move to Lund. Out of the 54 immigrants placed in Lund who decided to stay, our model estimates that almost 90% would not have stayed had the attitudes not been so much more negative in the target municipality.

The second example is Orust, a municipality where attitudes are more negative than the average. Most placed immigrants have chosen to move away from Orust. Orust is an island and municipality in Bohuslän on the West Coast, Sweden's third-largest island with an area of 346 km^2. The island has just over 15 000 residents, but this figure increases in the summer. Most of the municipality consists of countryside, with a number of small population centres. Eight immigrants from Africa and non developed countries in Asia were placed in Orust, where our measure of attitudes is higher than the average ($A = 0.545$). One of them stayed, one moved to a municipality with even more negative attitudes, while the remaining six moved to municipalities with more positive attitudes. According to our estimation, half of these immigrants would not have moved had the attitudes to them in Orust not been negative.

7 References

Arai M, H Regnér and L Schröder (1999) Är arbetsmarknaden öppen för alla?, Bilaga 6 till Långtidsutredningen 1999 (SOU 2000:7), Fritzes, Stockholm.

Arai, M. and R. Vilhelmsson (2001), "Immigrants' and Natives' Unemployment-risk: Productivity Differentials or Discrimination?", FIEF Working Paper Series Nr. 169.

Bevelander P. and H. Skyt Nielsen (1999), "Declining Employment Assimilation of Immigrants in Sweden: Observed or Unobserved Characteristics?", CEPR Discussion Paper No. 2132.

Borjas, G., S. Bronars and S. Trejo (1992), "Self-Selection and Internal Migration in the United States", NBER Working Papers 4002, National Bureau of Economic Research, Inc.

Borjas G. and S. Bronars (1989), "Consumer Discrimination and Self-employment", Journal of Political Economy, 97(3), pp. 581-605.

Card, D., C. Dustmann and I. Preston (2005), "Understanding Attitudes to Immigration: The Migration and Minority Module of the First European Social Survey", Centre for Research and Analysis of Migration (CReAM) Discussion Paper Series 0503, Department of Economics, University College London.

Carlsson, M. and D.-.O Rooth (2006), "Evidence of Ethnic Discrimination in the Swedish Labor Market Using Experimental Data", IZA Discussion Papers No. 2281.

Damm, A.P. and M. Rosholm (2004), "Employment Effects of Dispersal Policies on Refugee Immigrants: Empirical Evidence", IZA Discussion Papers No 925.

Edin, P.-A. and P. Fredriksson (2000), "LINDA - Longitudinal INdividual DAta for Sweden", Working Paper 2000:19, Department of Economics, Uppsala University.

Edin, P.-A., P. Fredriksson and O. Åslund (2003), "Ethnic Enclaves and the Economic Success of Immigrants - Evidence from a Natural Experiment", Quarterly Journal of Economics, 118(1), pp. 329-357.

Graves, P.E. (1979), "A Life-Cycle Empirical Analysis of Migration and Climate, by Race", Journal of Urban Economics, VI, pp. 135-147.

Huffman W. and T. Feridhanusetyawan (2007), "Migration, Fixed Costs, and Location-Specific Amenities: A Hazard Analysis for a Panel of Males", American Journal of Agricultural Economics, 89(2), pp. 368-382.

Intolerans – Antisemitiska, homofobiska, islamofobiska och invandrarfientliga tendenser bland unga, 2004, Forum för Levande Historia och Brottsförebyggande Rådet, Stockholm.

Larsen, B. and G. Waisman (2007), "Who is Hurt by Discrimination?", mimeo.

Mueser P. and P. Graves (1995), "Examining the Role of Economic Opportunity and Amenities in Explaining Population Redistribution," Journal of Urban Economics, Elsevier, vol. 37(2), pages 176-200.

Nakosteen, R. and M. Zimmer (1980), "Migration and Income: The Question of Self- Selection", Southern Economic Journal, 46, pp. 840-851.

Rooth D.-O. (2001), "Adopted Children in the Labour Market – Discrimination or Unobserved Characteristics?", mimeo, Högskolan i Kalmar.

Roy, A. (1951), "Some Thoughts on the Distribution of Earnings", Oxford Economic Papers, 3, pp. 135-146.

Sjaastad, L. (1962), "The Costs and Returns of Human Migration", Journal of Political Economics (Supplement), 70, pp. 80-93.

Westin, C. (2000), "Settlement and Integration Policies towards Immigrants and their Descendants in Sweden". International Migration Papers 34. ILO, Geneva, 2000.

Åslund, O. (2001), "Now and Forever? Initial and Subsequent Location Choices of Immigrants", Working Paper 2001:11, Institute for Labour Market Policy Evaluation, Uppsala.

Åslund, O. and D.-O. Rooth (2005), "Shifts in Attitudes and Labor Market Discrimination: Swedish Experiences after 9-11", Journal of Population Economics, 18, pp. 603-629.

Figure 1

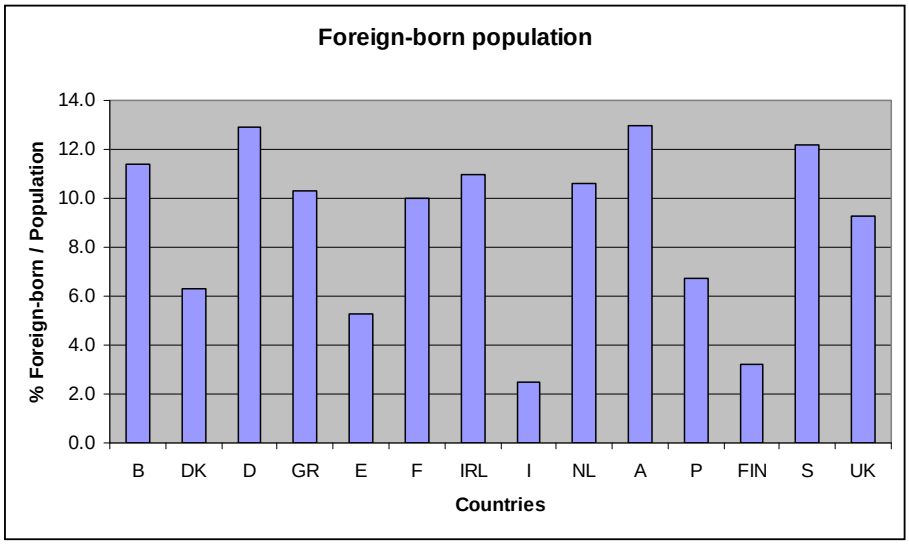
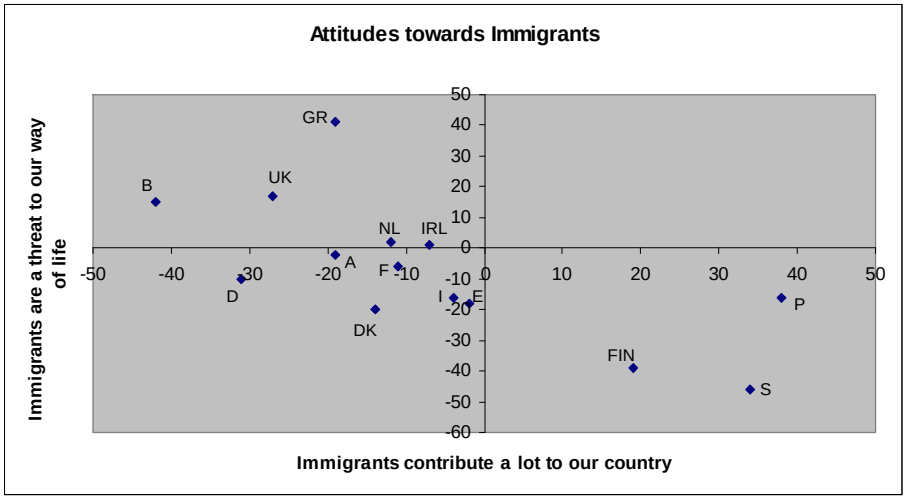


Figure 2



B: Belgium, DK: Denmark, D: Germany, GR: Greece, E: Spain, F: France, IRL: Ireland, I: Italy, NL: Netherlands, A: Austria, P: Portugal, FIN: Finland, S: Sweden, UK: United Kingdom.

Figure 3

Attitudes 1979-85

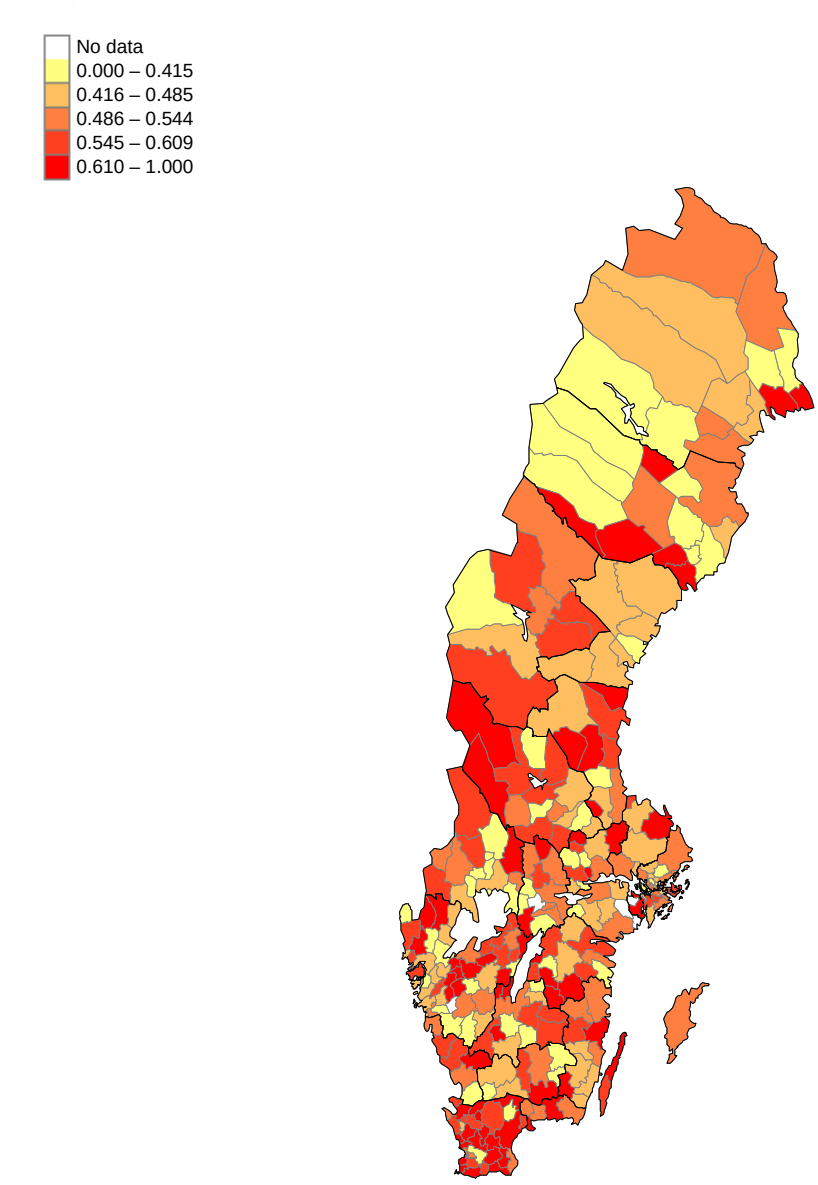


Table I

Immigrants who arrived from Non-Developed Countries 1987 – 1991
Panel Data 1996 - 2003

Variable	Obs.	Mean	Std Dev.	Min.	Max.
Individual characteristics					
Log of wages	15739	9.74	0.26	7.60	12.33
Share of Well Educated	15739	0.33	0.47	0	1
Age	15739	38.2	9.23	18	64
Women	15739	0.56	0.50	0	1
Married / Cohabitant	15739	0.64	0.48	0	1
Years in Sweden	15739	11.4	2.51	5	16
Characteristics of the municipality where they live					
Negative Attitudes	15739	0.50	0.08	0.17	1
Share of Immigrants from ND countries	15739	0.10	0.05	0.01	0.25
Average log of wages	15739	9.88	0.10	9.61	10.38
Average days unemployment	15739	6.27	2.87	1.16	21.04
Average social benefits received	15739	1326	942	0	13846
Average minimum temperature in winter	15739	-4.57	2.28	-20	-1.3
Latitude	15739	58.56	1.69	55.37	67.85
Population (1000)	15739	228	262	2.6	762

Table II

Immigrants from Non-Developed Countries 1987 – 1991

Means for 1996 to 2003

	Stayers		Movers			
	Placement		Placement		Last location	
	All	Well educated	All	Well educated	All	Well educated
Group B: Africa and non developed countries in Asia						
Observations	4448	1185	5028	1911	5028	1911
Individual wages	16272	18073			17222	19900
Negative Attitudes	0.504	0.503	0.513	0.515	0.500	0.495
% immigrants ND countries	0.099	0.094	0.056	0.055	0.106	0.103
Population (1000	248	245	95	111	248	245
Average wages (municipality)	19484	19549	18902	18977	19701	19811
Av. days unemployment (m)	6.27	6.19	6.63	6.70	5.95	5.99
Av. social benefits (m)	1349	1321	883	894	1306	1274
Group G: South America and Eastern Europe						
Observations	3734	1125	2524	1043	2524	1043
Individual wages	16963	19343			17869	20737
Negative Attitudes	0.509	0.506	0.523	0.516	0.513	0.506
% immigrants ND countries	0.091	0.096	0.068	0.071	0.094	0.090
Population (1000	205	225	111	121	185	183
Average wages (municipality)	19172	19314	18956	19055	19271	19406
Av. days unemployment (m)	6.67	6.67	6.39	6.27	6.33	6.31
Av. social benefits (m)	1367	1408	945	954	1262	1211

Table III

Immigrants from Developed Countries 1987 – 1991

Means for 1996 to 2003

	Stayers		Movers			
	First location		First location		Last location	
	All	Well educated	All	Well educated	All	Well educated
Group W: OECD countries (in 1985) except Turkey						
Observations	2481	997	1489	715	1489	715
Individual wages	19275	22320			20500	23675
Negative Attitudes	0.504	0.500	0.501	0.496	0.501	0.495
% immigrants ND countries	0.071	0.074	0.078	0.081	0.074	0.080
Population (1000	156	194	190	208	135	166
Average wages (municipality)	18822	19092	19157	19284	19291	19607
Av. days unemployment (municipality)	7.04	6.78	6.88	6.77	6.34	6.15
Av. social benefits (municipality)	1146	1195	1188	1220	1000	1081

Table IV

Immigrants that arrived 1987 – 1991

Effects on Wages

		Group B				Group G				Group W
Negative Attitudes	0.00	-0.04	0.04	0.02	0.04	-0.02	0.10	0.07	-0.07	-0.06
	(0.05)	(0.06)	(0.05)	(0.05)	(0.07)	(0.07)	(0.06)	(0.06)	(0.10)	(0.09)
Neg. Attitudes *	-0.28 **	-0.29 **	-0.23 **	-0.24 **	-0.22	-0.26 *	-0.20	-0.26 *	0.07	0.09
Well Educated	(0.11)	(0.13)	(0.11)	(0.12)	(0.15)	(0.16)	(0.15)	(0.16)	(0.18)	(0.16)
% Immigrants		0.91 ***		0.64 ***		-0.46		-0.41	-0.40	-0.81
from NDC		(0.22)		(0.20)		(0.33)		(0.31)	(0.93)	(0.90)
% Immigrants *		-0.29		-0.22		-0.11		-0.41	1.77	1.89
Well Educated		(0.50)		(0.49)		(0.99)		(1.05)	(1.56)	(1.52)
Neg. Attitudes *		-0.29		-0.33		1.18 **		0.79	2.09	1.66
% Immigrants		(0.37)		(0.33)		(0.52)		(0.49)	(1.51)	(1.51)
Neg. Attitudes *		0.72		0.53		0.76		1.19	-1.45	-1.96
% Immig * Ed		(0.93)		(0.90)		(1.77)		(1.91)	(2.77)	(2.73)
Correlated residuals	no	no	yes	yes	no	no	yes	yes	no	yes
Observations		9452				6252				3941
Clusters		3293				1947				1129

All columns include the following controls: individual controls (age, age squared, level of education, sex, civil status and years since immigration), municipal controls (average level of wages, average days of unemployment, average level of social benefits), regional effects at the county level, year effects, country of origin dummies and controls for the number of refugees coming from the same country to the municipality during 1987 – 1991. * significant at 10% ; ** significant at 5% and *** significant at the 1% level.

Table V

Immigrants that arrived 1987 – 1991

Effects on Location

	Group B					Group G				Group W
Negative Attitudes	-0.12	-0.51 ***	-0.07 *	-0.29 ***	-0.27 **	-0.43 **	-0.16 ***	-0.23 ***	0.14	0.10
	(0.08)	(0.10)	(0.04)	(0.06)	(0.12)	(0.15)	(0.06)	(0.08)	(0.18)	(0.09)
Neg. Attitudes *	-0.14	0.00	-0.02	0.08	0.17	0.03	0.12	0.09	-0.10	-0.07
Well Educated	(0.14)	(0.18)	(0.07)	(0.10)	(0.24)	(0.26)	(0.12)	(0.13)	(0.30)	(0.15)
% Immigrants		2.31 ***		1.22 ***		1.16 ***		0.63 ***	-2.16 ***	-1.14 ***
from NDC		(0.24)		(0.14)		(0.33)		(0.17)	(0.66)	(0.34)
% Immigrants *		-0.08		-0.12		-0.02		-0.13	0.89	0.42
Well Educated		(0.39)		(0.21)		(0.57)		(0.29)	(0.97)	(0.49)
Neg. Attitudes *		-7.30 ***		-4.00 ***		-1.26		-0.84	0.62	0.99
% Immigrants		(1.44)		(0.86)		(2.06)		(1.15)	(2.57)	(1.44)
Neg. Attitudes *		3.32		2.35 *		-3.21		-1.05	-2.08	-1.96
% Immig * Ed		(2.42)		(1.34)		(3.26)		(1.77)	(4.74)	(2.58)
Correlated residuals	no	no	yes	yes	no	no	yes	yes	no	yes

All columns include the same controls as the ones in table IV plus geographical variables (ten years average minimum temperature in winter and latitude) and population size. * significant at 10% ; ** significant at 5% and *** significant at the 1% level.

Table VI
Heckman Selection Bias Correction
Immigrants that arrived 1987 - 1991

Effects on:		Wages		Location
Negative Attitudes * group B	-0.02	0.01	-0.21	-0.80 ***
	(0.05)	(0.07)	(0.14)	(0.17)
Negative Attitudes * group B *	-0.24 **	-0.52 **	0.16	0.07
well educated	(0.11)	(0.21)	(0.29)	(0.36)
Negative Attitudes * group G	0.05	0.11	-0.50 **	-0.55 **
	(0.05)	(0.07)	(0.24)	(0.28)
Negative Attitudes * group G *	-0.09	-0.33	0.22	0.02
well educated	(0.12)	(0.21)	(0.44)	(0.49)
Negative Attitudes * group W	0.22 ***	0.19 ***	-0.30	0.00
	(0.05)	(0.07)	(0.27)	(0.25)
Negative Attitudes * group W *	0.01	-0.22	0.16	0.00
well educated	(0.11)	(0.20)	(0.53)	(0.53)
% immigrants ND countries		-0,38		3.92 ***
* group B		(0.50)		(0.36)
% immigrants NDC * group B		-1.67		0.11
* well educated		(1.28)		(0.75)
% immigrants ND countries		-0.76		0.48
* group G		(0.62)		(0.55)
% immigrants NDC * group G		-2.34		1.38
* well educated		(1.76)		(1.22)
% immigrants ND countries		2.20 **		-2.32 ***
* group W		(1.01)		(0.72)
% immigrants NDC * group W		-0.63		-1.82
* well educated		(2.10)		(1.46)
Neg. Attitudes * % immigrants		1.04		-11.45 ***
NDC * group B		(0.87)		(2.32)
Neg. Attitudes * % immig. NDC		4.00 *		-3.58
* group B * well educated		(2.28)		(4.45)
Neg. Attitudes * % immig. NDC		1.34		-0.83
* group G		(1.08)		(3.68)
Neg. Attitudes * % immig. NDC		4.87		-6.96
* group G * well educated		(3.15)		(6.20)
Neg. Attitudes * % immig. NDC		-2.75		7.78 *
* group W		(1.85)		(4.00)
Neg. Attitudes * % immig. NDC		1.64		-7.17
* group W * well educated		(3.89)		(8.69)
Lambda			-0.01	-0.03
Observations		92044		
Individuals (clusters)		15886		

Controls: same as in Tables IV (effects on wages) and V (effects on location).
* significant at 10% ; ** significant at 5% and *** significant at the 1% level.

Table VII

Immigrants that arrived 1985 - 1994

Effects on Wages

		Group B				Group G				Group W
Negative	0.03	-0.02	0.06	0.04	-0.05	-0.08 **	-0.01	-0.02	-0.08	-0.08
Attitudes	(0.04)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.09)	(0.08)
Neg. Attitudes *	-0.28 ***	-0.26 **	-0.24 ***	-0.21 **	-0.10	-0.16 *	-0.07	-0.12	0.10	0.17
Well Educated	(0.09)	(0.10)	(0.09)	(0.10)	(0.08)	(0.09)	(0.08)	(0.09)	(0.17)	(0.15)
% Immigrants		0.77 ***		0.54 ***		-0.05		-0.12	-0.85	-0.26
from ND countries		(0.18)		(0.17)		(0.18)		(0.17)	(0.69)	(0.67)
% Immigrants NDC *		-0.03		0.04		-0.31		-0.51	1.71	1.84
Well Educated		(0.40)		(0.38)		(0.55)		(0.56)	(1.16)	(1.15)
Neg. Attitudes *		-0.03		-0.14		0.63 **		0.52 **	1.62	1.18
% Immigrants NDC		(0.30)		(0.27)		(0.27)		(0.25)	(1.16)	(1.15)
Neg. Attitudes *		0.22		-0.07		0.98		1.16	-2.34	-2.75
% Immig * Ed.		(0.73)		(0.70)		(1.00)		(1.04)	(2.10)	(2.10)
Correlated residuals	no	no	yes	yes	no	no	yes	yes	no	yes
Observations		15393				17255			6441	
Clusters		5486				5799			1858	

Controls: same as in table IV. * significant at 10% ; ** significant at 5% and *** significant at the 1% level.

Table VIII

Immigrants that arrived 1985 - 1994

Effects on Location

		Group B				Group G				Group W
Negative	-0.12 *	-0.43 ***	-0.07 **	-0.25 ***	-0.28 ***	-0.36 ***	-0.17 ***	-0.20 ***	0.26	0.16 *
Attitudes	(0.06)	(0.09)	(0.03)	(0.05)	(0.06)	(0.08)	(0.03)	(0.04)	(0.16)	(0.09)
Neg. Attitudes	-0.14	0.00	-0 02	0.08	-0.02	-0.17	0.04	0.00	-0.20	-0.16
* Well Educated	(0.12)	(0.16)	(0.06)	(0.08)	(0.12)	(0.14)	(0.06)	(0.07)	(0.26)	(0.13)
% Immigrants		2.02 ***		1.05 ***		0.64 ***		0.34 ***	-2.04 ***	-1.03 ***
from NDC		(0.18)		(0.10)		(0.19)		(0.10)	(0.52)	(0.27)
% Immig NDC *		0.28		0.07		0.49		0.12	0.14	0.03
Well Educated		(0.32)		(0.16)		(0.34)		(0.17)	(0.77)	(0.40)
Neg. Attitudes *		-4.89 ***		-2.89 ***		-1.24		-0.74	2.57	1.31
% Immig NDC		(1.23)		(0.68)		(1.16)		(0.65)	(2.50)	(1.39)
Neg. Attitudes *		2.70		1.97 *		-2.32		-0.59	0.36	-0.03
% Immig * Ed.		(2.11)		(1.08)		(1.89)		(1.01)	(3.79)	(2.13)
Correlated residuals	no	no	yes	yes	no	no	yes	yes	no	yes

Controls: same as in table V. * significant at 10% ; ** significant at 5% and *** significant at the 1% level.

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