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Working paper 4-2012

Wages, Amenities and Negative Attitudes

Gisela Waisman and Birthe Larsen

Wages, Amenities and Negative Attitudes

Gisela Waisman* and Birthe Larsen^{† ‡}

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Abstract

We exploit the regional variation in negative attitudes towards immigrants to Sweden in order to analyse the consequences of the attitudes on immigrants' welfare. We find that attitudes towards immigrants are of importance: they both affect their labour market outcomes and their quality of life. We interpret the negative effect on wages as evidence of labour market discrimination. We estimate the welfare effects of negative attitudes, through their wage and local amenities, for immigrants with different levels of skills, origin, gender and age.

Keywords: Attitudes towards immigration, Geographical Mobility, Wages, Amenities.

JEL classifications: J15, J31, J61, J71

1 Introduction

Sweden has gone from being a land of emigration to a land of immigration. Immigration 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. These early labour immigrants adapted fairly well and gradually became accepted in the cities where they settled. Since the 1970s, when the need for labour shrank substantially, immigration to Sweden has become increasingly restricted to political refugees and their families. No other affluent nation in recent decades has accepted as many political refugees, per capita, as Sweden has. The share of foreign-born reached 15% in 2010, about half of them from non developed countries.

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Recently, many studies have detected the existence of negative attitudes towards immigrants.¹ For example, the SOM-institute (Gothemburg University) has investigated attitudes towards immigration and refugees since 1986 and found growing resistance against receiving refugees until 1992, while thereafter the attitude has slowly been more generous. But, in 2005, still nearly half the population thought that it was a good suggestion to receive fewer refugees in Sweden. Studies making a comparison across European countries, for example Card et. al. (2005), find that Sweden is one of the countries with the most generous attitudes towards immigrants. Therefore, if we find any effect, then immigrants' welfare potentially is even more affected in other countries.

Do these attitudes matter? Or is it just something people say but never act upon? We explore if actual discrimination is related to negative attitudes towards immigrants. If attitudes do not influence the immigrants' welfare, then they are no indication of discrimination and may be less of a concern.

The aim of this paper is to exploit the regional variation in negative attitudes towards immigrants in order to analyse whether the mobility decisions and the labour market outcomes of immigrants are affected by such attitudes. We recognize that not every native with negative attitudes may discriminate, but we conjecture negative attitudes to be systematically related to discrimination.

We develop a simple model that describes how discrimination affects immigrants when they are capable of forming networks. In this model, firms choose their optimal number of employees using two methods of search: they either advertise or find workers through networking. We find that more severe negative attitudes reduce immigrant wages and amenities, and that the impact on wages is weaker the more immigrants present in a region, through the networking effect. We also find that more immigration directly increases immigrants' wages through a networking effect, as well as their amenities.

In the empirical analysis, we can disregard the immigrants' initial geographical sorting by concentrating on 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 pursued by the government. We study the movements from this first location as indication of better labour market conditions and/or better quality of life. We take into account the fact that the immigrants are not a homogeneous group by considering various kinds of heterogeneity, by origin, by level of education, by gender and by age. The placement of refugees in a region may exacerbate negative attitudes towards them, therefore we consider data on attitudes measured prior to the refugee settlement policy.

Identification fails if some other factor that we are not considering determines both the level of attitudes, the share of immigrants and the differences in wages and quality of life in the region. We test this by including a placebo group in

¹Some examples are the Intolerance Report (Intolerans 2004) and Westin (2000).

our analysis, immigrants from developed countries, that we expect be very little 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.

In a nutshell, we find that attitudes towards immigrants are of importance for the refugees, but they have no effect on the wages or quality of life of immigrants from developed countries. The location pattern of refugees shows that their quality of life is lower when attitudes are more negative towards them. A reduction of negative attitudes from the average value to zero increases their quality of life by an equivalent of 10% of their wages. Immigrants also receive lower wages when attitudes are more negative. The same reduction in negative attitudes would allow them to obtain 5% higher wages.

We begin by forcing the coefficients in the wage equation to be the same for those refugees that stayed where they had been placed (stayers) and those who moved. Then we allow these coefficients to vary and observe that the effect on wages is only present for the movers. Some individual characteristics, for example the type of education or occupation, may determine that some individuals are more vulnerable to discrimination than others. More vulnerable individuals, being more affected by negative attitudes, are also more likely to move if they have been placed in municipalities with high negative attitudes. Reducing negative attitudes towards immigrants from the mean value to zero would increase the movers' welfare by an equivalent of 17% of their wages, while the stayers only benefit from an equivalent of 10% of their wages via amenities.

When we take heterogeneity into account, we see that the effect on wages is present for well educated, female, older refugees and for those coming from Eastern Europe and Asia. Well educated movers would have 18% higher wages if negative attitudes decreased from the mean value to zero. Our interpretation is that some of these well educated immigrants may be performing jobs below their skill levels if they live in a municipality with very negative attitudes.

We acknowledge the fact that the residuals of the amenities and wage equations in the municipality of placement are positively correlated to the residuals of the amenities and wages equations in the target municipality if the refugee moves. If an individual has high wages given his or her observed characteristics at placement, the individual is very likely to have a high wage after moving. We incorporate various alternative correlations in residuals and the effect of attitudes on wages and amenities is very little affected.

Related Research

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

In a companion paper, Larsen and Waisman (2008), we introduce labour

market discrimination in a search model where firms cannot direct their search to natives or immigrants. Discrimination in that paper is supposed to take place on entry, while it takes place on exit in this paper.

Our setting relates both to research on individuals' migration decisions (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. Other studies analyse the internal migration decision in Scandinavia. Åslund (2001) finds that immigrants to Sweden are attracted to regions with many immigrants, better labour market opportunities and many welfare recipients. Damm and Rosholm (2005) find that the hazard rate into the 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.

Henry (2008) shows that the probability of African American migrants choosing a city in the US is significantly reduced by the level of race-based crimes against them and by racially intolerant attitudes held by whites and the poor evolution of the feelings of whites about racial diversity. In her analysis, she does not study how attitudes affect labour market outcomes.

Knabe et al (2009) analyse the effects of right-wing extremism on the well-being of immigrants in Germany. They find that the higher vote shares for the extreme right are associated with a lower subjective well-being of immigrants. Moreover, educated immigrants are more strongly affected by right-wing attitudes of the host population than low-skilled immigrants. As compared to our paper, this study uses a different measure of right-wing attitudes in the native population and a subjective measure of life satisfaction as they cannot infer quality of life from migration decisions.

Several empirical studies (for example Bevelander and Skyt Nielsen (1999) and Arai et. al. (1999)) 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.

Other studies perform different types of more direct tests of discrimination in Sweden (Rooth (2001), Åslund and Rooth (2005)). These studies focus on the labour market outcomes of certain groups of immigrants, while we consider that attitudes may affect their migration decision as well.

In the next section, we present a simple model guiding our empirical analysis.

2 The Model

We consider a search and matching model where natives and immigrants search for jobs and firms search for workers. For simplicity, we assume that firms may supply vacancies directed towards immigrants or natives.² When describing a job, it is possible to indicate the preferences against immigrant workers, for example, by demanding excellent native language knowledge. On the contrary, some job descriptions explicitly stress the appreciation of cultural diversity. We will describe the full model for jobs directed to immigrants only.

We incorporate two additional features into the model. First, workers can use not only formal methods of search, but also their social networks (friends and acquaintances) to get a job. Second, immigrants are subject to discrimination in the labour market by individuals with negative attitudes towards immigration.

We assume the presence of negative attitudes towards immigrants in a region increases the separation rate of immigrant workers from the firm. The firm opening a vacancy does not know if discrimination will take place, it only knows that immigrants have a higher separation rate caused by random negative shocks to the preferences of co-workers, clients, etc. The shock is thus considered a sudden irrational behaviour, in the sense that it is not a decision which requires any optimization from the firm or the workers point of view. As a consequence, the worker may be fired or may voluntarily quit when the discomfort caused by discrimination is strong enough.³

2.1 Matching

We follow Fontaine (2007) setting up a simple search and matching model including social networks. We assume that firms advertise vacancies V_I directed to immigrants, unemployment is given by u_I , there are L_I employees, and the labour market tightness faced by immigrants is given by $\theta_I = (V_I + \lambda_I L_I) / u_I$. The transition rate for an unemployed immigrant is given by $f(\theta_I) = 1 - e^{-\theta_I}$, and for the firm it is $q(\theta_I) = (1 - e^{-\theta_I}) / \theta_I$ where $f'(\theta_I) = e^{-\theta_I} > 0$, $f''(\theta_I) = -e^{-\theta_I} < 0$, $q'(\theta_I) < 0$ and $q''(\theta_I) > 0$.

²In Larsen & Waisman (2008) we assume that it is not possible for firms to supply vacancies directed towards immigrants or natives. Therefore, any negative impact on immigrants through vacancy supply, will also affect natives. The simplifying assumption in this paper allows us to ignore effects on natives' wages which is not the focus of the present analysis.

³In Larsen & Waisman (2008), we assume discrimination takes place in the matching process instead (both alternatives are simplifications) and provide a justification for the mechanism through which discrimination is assumed to affect immigrants.

2.2 The Firm

The firm chooses the number of vacancies offered to immigrants so as to maximize profits subject to negative attitudes towards immigrants and networking effects. Each immigrant worker produces y and receives the bargained wage, w_I . A firm chooses the optimal number of vacancies to advertise, V_I^j taking into account that its employees also produce new applicants. Each firm h in municipality j facing immigrants therefore solves the following Bellman equation

$$\rho \Pi_I^j \left(L_I^j \right) = \max_{V_n^j} [y L_{ih}^j - w_n^j L_{ih}^j - ky V_{ih}^j + \dot{\Pi}_I^j \left(L_{ih}^j \right)] \quad (1)$$

$$st \quad \dot{L}_{Ih}^j = \left(\lambda_I^j L_{ih} + V_{Ih}^j \right) q \left(\theta_I^j \right) - s \left(1 + a^j \right) L_{Ih}^j, \quad (2)$$

Networking happens at the rate $\lambda_I^j L_{ih} f(\theta_I)$, where we assume that $\lambda_I^j = mI^j$. ρ is the discount rate, s is the rate by which jobs are destroyed and a^j is the rate determining how negative people in a region are against immigrants. Matches between immigrants and the firm are dissolved more often the higher negative attitudes towards immigration are. With identical firms, using (1)-(2) and Kuhn-Tucker conditions, we obtain the non-trivial solution in steady state determining labour market tightness, θ_I :

$$\frac{ky}{q \left(\theta_I^j \right)} = \frac{y - w_I^j}{\rho + s \left(1 + a^j \right) - \lambda_I^j q \left(\theta_I^j \right)}.$$

2.3 The worker

Let U_I^j be the present discounted value facing an unemployed immigrant and E_I^j be the present discounted value facing an employed immigrant, where $j = t, p$ denotes either the target municipality the worker considers moving to, t , or the municipality where he or she has been placed, p .

$$\rho U_I^j = Q_I^j + f \left(\theta_I^j \right) \left(E_I^j - U_I^j \right), \quad j = t, p, \quad (3)$$

$$\rho E_I^j = Q_I^j + w_I^j + s \left(1 + a^j \right) \left(U_I^j - E_I^j \right), \quad j = t, p, \quad (4)$$

where Q_I^j is the quality of life or amenities the immigrant enjoys in a certain municipality. Negative attitudes towards immigration induce discrimination in housing, schools, hospitals, streets that reduce the quality of life of immigrants, so $dQ_I^j/da^j < 0$. Living in a region with a large share of immigrant may offer benefits such as a larger availability of services and goods oriented towards immigrants (for example food), networks that could help recent immigrants find housing, etc. These factors increase the quality of life of immigrants living in a region implying that $dQ_I^j/dI^j > 0$.

Wages are determined by Nash bargaining and we assume that the bargaining power is a half, so that $X_I^j = E_I^j - U_I^j$, where $X_I^j = \left(ky/q \left(\theta_I^j \right) \right) = \frac{y - w_I^j}{\rho + s - \lambda_I^j q \left(\theta_I^j \right)}$ giving that $ky = X_I^j q \left(\theta_I^j \right)$ and thereby we obtain

$$w_I^j = 0.5 \left(1 + \left(\lambda_I^j + \theta_I^j \right) k \right) y. \quad (5)$$

The labour market tightness faced by immigrants θ_I^j is determined by:

$$2k \left(\rho + s \left(1 + a^j \right) \right) = \left(1 - \theta_I^j k + \lambda_I^j k \right) q \left(\theta_I^j \right), \quad (6)$$

More severe negative attitudes, $a^j, j = t, p$ reduces the attractiveness of opening a vacancy such that labour market tightness falls and thereby immigrants face lower wages. The opposite is true for more networking, λ_I^j .⁴

2.4 Mobility

We assume for simplicity that only unemployed immigrants make a migration choice. When individuals decide whether to stay in the region of placement or not, they compare the value of staying as an unemployed worker to the value of moving, taking into account mobility costs. Immigrants have heterogeneous mobility costs⁵ that are assumed to be uniformly distributed, $c_I \in (0, 1)$. Workers with high mobility costs find it too costly to move, whereas low mobility costs workers find it more than worthwhile to do so. The marginal immigrant is defined as having mobility costs \hat{c}_I which makes him or her just indifferent between moving or staying where the worker has been placed. The condition determining the moving costs of the marginal worker is

$$\rho U_I^t - \hat{c}_I = \rho U_I^p. \quad (7)$$

As wages are endogenous we can use equations (3)-(4), (7), the wage equation (5) and the free entry condition which gives the following condition

$$\left(Q_I^t - Q_I^p \right) / ky + \theta_I^t - \theta_I^p = \hat{c}_I / (ky). \quad (8)$$

Equation (8) gives \hat{c}_I as a function of the endogenous variable θ_I^t and θ_I^p . The higher the difference in labour market tightness, which captures both wages and employment probability differences, the more people will move. This is captured

⁴The same equations for natives would be $w_N^j = 0.5 \left(1 + \left(\lambda_N^j + \theta_N^j \right) k \right) y$ and $2k \left(\rho + s \right) = \left(1 - \theta_N^j k + \lambda_N^j k \right) q \left(\theta_N^j \right)$. These equations would also be valid for any group that is not much affected by negative attitudes towards immigration, such as the immigrants from developed countries.

⁵Mobility costs depend on factors such as family situation, age, education level, etc.

by a higher threshold cost for the marginal immigrant, \hat{c}_I , because if mobility is more advantageous, then workers are willing to pay higher costs of moving. If two regions, t and p are identical in terms of equal labour market tightness and amenities, then no one will move between these two regions.

3 More negative attitudes

When attitudes become more negative, a^j increases, then we obtain a negative impact on labour market tightness facing immigrants

$$d\theta_I^j/da^j = k2s / \left(-kq \left(\theta_I^j \right) + \left(1 - \theta_I^j k + \lambda_I^j k \right) q' \left(\theta_I^j \right) \right) < 0.$$

More severe negative attitudes reduce the expected duration of a match, which makes it less attractive for a firm to open a vacancy. Immigrants' employment chances therefore fall. The impact is weaker the higher the fraction of immigrants and thus networking, $\frac{(d^2\theta_I^j)}{(da^j dI^j)} = -\frac{k2sq'(\theta_I^j)km}{(-kq(\theta_I^j)+(1-\theta_I^j k+\lambda_I^j k)q'(\theta_I^j))^2} > 0$. This is the case as more networking makes it easier for a firm to find a worker. Furthermore, the fall in the vacancy supply reduces the bargaining power of an immigrant worker, such that immigrant wages are indirectly affected, through the impact on labour market tightness, hence $dw_I/da = 0.5ky(d\theta_I/da) < 0$. Workers in regions with more severe negative attitudes are therefore willing to work for a lower wage, as they face a lower probability of finding a job than a similar worker in a region with more positive attitudes towards immigrants. This negative wage effect is going to modify the negative impact of negative attitudes on job opportunities, but the total impact is negative.

Regarding mobility we have the result that as more severe negative attitude in a region reduces employment chances and wages, captured in the equation by reduced labour market tightness and amenities, mobility into that region falls, $d\hat{c}_n/da^t = dQ_I^t/da^t + ky(d\theta_I^t/da^t) < 0$. Immigrants thus tend to move away from regions with more severely negative attitudes, both due to a direct reduction of the quality of life, but also due to the lower employment changes and corresponding wages.

4 More immigrants

More immigration will induce the fraction of immigrants to increase and thereby networking, which causes labour market tightness to increase, that is, $d\theta_I^j/dI^j = -mkq \left(\theta_I^j \right) / \left(-kq \left(\theta_I^j \right) + \left(1 - \theta_I^j k + \lambda_I^j k \right) q' \left(\theta_I^j \right) \right) > 0$. Networking has both a direct and an indirect positive impact on wages facing immigrants, and hence $dw_I^j/dI^j = \left(d\theta_I^j/dI^j + m \right) 0.5ky > 0$. More immigrants around leads to more

hiring through networking causing immigrants to face better employment chances, which increases their bargaining power and results in higher wages.

This effect then implies that more immigrants move into regions where the fraction of immigrants is higher, together with a potentially positive direct impact on amenities, $d\hat{c}_n/dI^t = dQ_I^t/dI^t + ky(d\theta_I^t/dI^t) > 0$.

In the next section we will describe the empirical background, data and method which will allow us to examine the impact of immigrant welfare through both the impact on their employment chances and thereby wages and their amenities and moving decisions.

5 Empirical Background, Data and Method

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 migration decisions. We will 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 pursued by the government from 1985 to 1994. The movement from this first location is considered to be endogenous in our analysis and provides information about the quality of life immigrants enjoy in different regions and their cost of moving.

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. There was no interaction between municipal officers and refugees, so the selection was, by definition, purely made on basis of observed characteristics, such as family size. Edin, Fredriksson and Åslund (2003) argue that the fact that the assignment of municipality was not the immigrants' choice and was independent of unobserved individual characteristics gives a quasi-experimental character to the data. There were no restrictions on ex post mobility, except that the refugees lost some activities granted in an introduction programme.

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. There is, to our knowledge, no data available on the evolution of municipal attitudes towards immigrants over time, so we cannot directly test this assumption. Still, it is not clear that receiving more refugees should increase the population's negative attitudes towards immigration. Different theories predict that greater day-to-day contact with immigrants may either increase or decrease the perceived threat posed by immigrants. At the national level, the attitudes towards immigration have become less negative in Sweden between 1990 and 2004, while the number

of foreign born individuals living in Sweden increased by more than 30%.⁶

5.1 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.⁷ 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 immigrant's monthly wage,⁸ country of origin, year of immigration, the municipality where he or she lived upon arrival and where the person lives now, its level of education, age, civil status, etc. We use an unbalanced panel of data from 1996 (two years after the latest arrivals) and 2003.

We cannot observe which immigrants in LINDA are refugees, so we restrict the analysis to the countries from which most refugees came while the refugee settlement policy was pursued. Table I lists the origin of 99.2% of the accepted refugees in the period 1990 - 1994,⁹ that is, those immigrants who were granted residence permits according to the Genève convention, de facto refugees, persons in need of protection, humanitarian reasons and special refugee quota.¹⁰

In this period almost 23,500 immigrants were granted residence permits as refugees on average every year. But many more, around 40,000 individuals, came as asylum seekers from the countries in our sample per year and may have received residence permits in later years. 62.7% of the immigrants from the countries in our sample that received residence permit were refugees.

Immigrants also received residence permits for family reunion and labour market reasons. Only 64 out of the 218 immigrants who received residence permit for labour market reasons per year came from the countries in our sample. The labour market immigrants came mainly from the UK, Germany, Poland, China, USA, former Yugoslavia, Holland and Japan.

⁶In 1993, 52% of the respondents to the Swedish Opinion survey completely agreed with the statement "There are too many foreigners in Sweden" and 25% with "I would not like having an immigrant from another part of the world married into my family". By 2004 the shares had gone down to 42% and 15% respectively. Hjerm (2009) concludes in a sociological study in Sweden that a recent influx of immigrants to the municipality does not matter for levels of anti-immigrant attitudes. Similarly, Card et al (2005) finds a negative relation between higher immigrant stocks and the fraction of people who want to restrict immigration in Europe, but the relationship is not statistically significant.

⁷See Edin and Fredriksson (2000) for a presentation of this data set.

⁸Until 1998, the data on full-time equivalent monthly wage rates was not available for all private sector employees, while it covered all public employees incorporated in this sample.

⁹We do not have this data separated for the period 84-89, only the total figures for 80-89.

¹⁰The countries in our sample are: former Yugoslavia, Poland, Romania, Russia, Ethiopia, Somalia, Uganda, Cuba, Chile, Peru, Afghanistan, Bangladesh, Iraq, Iran, China, Lebanon, Sri Lanka, Syria, Turkey and Palestina.

The remaining 37.1% of the residence permits in our sample allowed families to reunite. The immigrants receiving permits for family reunion reasons came mainly from former Yugoslavia, Iran, Turkey, Poland, Iraq, Somalia, Lebanon, Thailand, USA, Ethiopia, UK, Chile, Philippines, Vietnam and Germany. During this period, 40% of the immigrants coming to Sweden for family reunion reasons (from any country of origin) were joining a refugee. This share is likely to be much larger for those coming from the countries in our sample. When the family joins an immigrant that came to Sweden as a refugee and was placed by the government, it will be indirectly affected by the placement as well.

Our sample contains 3,300 individuals that arrived in the period 1985 - 1994. Their distribution by country of origin is different, so we control for the number of asylum seekers coming from the same country in all regressions. We refer to them as refugees even if some may be their families and a few may be labour market immigrants or have joined a non-refugee family.

We will repeat the analysis on a group of immigrants arriving in the same period from developed countries, that is, countries in the OECD at that point in time (except for Turkey) as a placebo. This group of immigrants is unlikely to be as affected by negative attitudes as refugees are. The advantage of using this group instead of natives as a placebo is, that they are more similar in the sense of not knowing the language and culture so well when they arrive.

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 Opinionsanalys (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%) and (7) no answer (4.80%).

We construct a measure of negative attitudes by adding the number of individuals answering (1) or (2) and deducting those answering (5).¹¹ This variable is normalized to vary between 0 and 1. A map of Sweden in Figure 1 shows how attitudes are distributed throughout the country.

We obtain from Statistics Sweden the following municipal characteristics: open unemployment, the share of income originating in the private sector (market support), the share of firms with less than 50 employees (share of small firms), the share of well educated inhabitants (defined as those with more than high-school education) in the population and the municipal tax rates. The geo-

¹¹We have tried alternative measures, such as just adding (1) and (2), with no significant changes in the results.

geographic characteristics included in the analysis are the latitude (that influences how dark it becomes in winter) and the ten-year average minimum temperature in the winter (January to March).

Table II includes descriptive statistics of the variables of interest in our study. These include individual characteristics of the immigrants and the characteristics of the municipality where immigrants live and where they were placed. 45% of the immigrants in our sample stayed where they had been placed. The stayers constitute 62% of Latin Americans, 45% of the Asians, 42% of the East Europeans and only 38% of the Africans. Low educated stayed more often than well educated were they had been placed (48% vs 40%) and women more often than men (47% vs 43%). We will allow in our study for heterogeneity in the immigrant group, dividing it by origin, education, gender and age.

If we compare the municipalities of placement, we observe that movers were placed in municipalities with more negative attitudes, lower share of immigrants from non developed countries, lower share of well educated individuals, lower market support, lower share of small firms, higher municipal tax rates, lower average temperature in winter and larger latitude. When they move, they choose less negative attitudes, larger share of immigrants, lower unemployment, larger share of well educated population, more market support, larger share of small firms, lower municipal tax rates, warmer weather and brighter winters.

These are the factors we will consider as determining the quality of life and cost of moving of immigrants. These factors affect wages as well, we only exclude the geographic conditions from the wage equations. The migration decisions of immigrants suggested by these means are consistent with our theory. But this is just a comparison of means; we need a deeper analysis of the data to measure the effect of negative attitudes.

5.2 Empirical Strategy

We initiate the analysis by performing a probit regression to analyse how the variables of interest (negative attitudes towards immigration and share of immigrants from non developed countries) affect the probability that an immigrant stays where the individual has been placed. We control for all the individual and municipal characteristics described in table II. We cannot control for fixed effects at the individual level because very few individuals in our sample moved during 1996 - 2003.¹² Neither can we control for fixed effects at the municipal level since attitudes are assumed to be constant over time. We will control for fixed effects at the labour market area level. The division of the 290 municipalities into 70 labour market areas is built by Statistics Sweden based on actual commuting conditions. The pattern and intensity of commuting flows decide

¹²Most refugees that moved did so relatively soon after placement.

how the municipalities are combined into these labour market areas. Labour market areas are a good unit for controlling for similar labour market conditions that are constant over time. We control for time trends by including year effects.

Second, we study the effect of the variables of interest on the wages of the immigrants. The refugee placement policy provides us with an exogenous first location in the country. We begin by studying the wages of those refugees who chose to stay where placed. As we have already seen that the decision to move is affected by the variables of interest, we need to correct for the bias introduced by considering only stayers. To apply the sample selection procedure of Heckman (1979) to the panel data, we estimate the probability of staying where placed for each year separately and obtain eight inverse Mills ratios that are incorporated into the wage equation. We include the same controls as in the probit regressions except for the geographic conditions.

Until now we have ignored the information we have on the movers' wages. We can actually make use of all the information we have by studying the migration decision directly and that is what we do in the third step of our analysis. In this way we exploit the fact that the refugees were exogenously placed by the government in their first location and then some of them chose to move providing us with additional information about their preferences by their new location choice. We study the migration decision for individual i given by equation (8):

$$\begin{aligned} (Q_i^t - Q_i^p) + (\theta_i^t(w_i^t(a^t, \lambda_I^t)) - \theta_i^p(w_i^p(a^p, \lambda_I^p))) ky &> c_i, \text{ then } i \text{ moves,} \\ (Q_i^t - Q_i^p) + (\theta_i^t(w_i^t(a^t, \lambda_I^t)) - \theta_i^p(w_i^p(a^p, \lambda_I^p))) ky &< c_i, \text{ then } i \text{ stays,} \end{aligned}$$

where we acknowledge that labour market tightness, θ_i^j , is positively correlated with wages, w_i^j ¹³. For movers we know where they were placed (p) and where they moved afterwards (t). But we cannot observe to which municipality a stayer considered moving. The target municipality of stayers is defined as the average municipality where all immigrants that were placed in a given municipality are living in 2003. This measure reflects both the immigrants that stayed where they were placed and the destination of the movers. We assume then that all immigrants staying in one municipality of placement had the same target in mind, the target they decided not to move to. In this way, we use the immigrants' own revealed preferences when we determine what the potential target would have been.¹⁴

In our analysis we collapse the difference in quality of life or amenities and the cost of moving to just one variable ($Q_i^p - Q_i^t - c_i$). We consider that the

¹³The regression is performed on the natural logarithm of wages, which facilitates the interpretation of the coefficients.

¹⁴We 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 changes in the results.

individual variables affect mainly the cost of moving, while the difference in municipal characteristics between the placement and the target municipality affect mainly the difference in quality of life. From the model, we furthermore have that networking is directly increasing in immigration if the worker is an immigrant, whereby we include the fraction of immigrants in the analysis.

The wage function at placement is assumed to have the form:

$$\begin{aligned} w_i^p &= \alpha' X^p + \beta' Z_i + u_i, \\ \alpha' X^p &= \alpha_1 a^p + \alpha_2 I^p + \alpha_3 (a^p * I^p) + \sum_{l=4}^n \alpha'_l \tilde{X}_l^p, \end{aligned}$$

where X^p are municipal characteristics at placement, including negative attitudes (a^p), the share of immigrants from non developed countries (NDC) (I^p) and other municipal covariates (\tilde{X}^p) and Z_i are the individual characteristics. u_i is an error term. Similarly, the wage function at the target municipality has the form:

$$\begin{aligned} w_i^t &= \gamma' X^t + \delta' Z_i + v_i, \\ \gamma' X^t &= \gamma_1 a^t + \gamma_2 I^t + \gamma_3 (a^t * I^t) + \sum_{l=4}^n \gamma'_l \tilde{X}_l^t, \end{aligned}$$

where X^t are the same characteristics in the target municipality.

The municipal covariates (\tilde{X}^j) that characterize the labour market conditions in municipality j are open unemployment, the share of income originating in the private sector (market support), the share of firms with less than 50 employees (share of small firms) and the share of individuals with more than high-school education living in the municipality (% well educated). Municipal tax rates are also related to the economic conditions in the municipality, wherefore they are also included as controls. We include fixed effects at the labour market area level to capture additional labour market differences across regions that are constant during the period of analysis. We additionally control for the number of asylum seekers that came from the same country during the period 1985 - 1994. We control for the following individual characteristics: education, age, age squared, gender and civil status.

The change in amenities and cost of moving is assumed to have the form:

$$\begin{aligned} (Q_i^p - Q_i^t - c_i) &= \eta'(X^p - X^t) + \zeta' Z_i + w_i, \\ \eta'(X^p - X^t) &= \eta_1 (a^p - a^t) + \eta_2 (I^p - I^t) + \sum_{l=4}^n \eta'_l (\tilde{X}_l^p - \tilde{X}_l^t) \end{aligned}$$

where $(X^p - X^t)$ is the difference between the municipal characteristics at the placement and those at the target municipality.

The amenities depend on the same factors as wages plus additional geographic controls: latitude (that influences how dark it becomes in winter) and the ten-year average minimum temperature in the winter (January to March). In the literature on amenities, it is common to hypothesize that people prefer moderate climates. The cost of moving is assumed to depend on individual characteristics: education, age, age squared, gender and civil status.

By maximum likelihood we minimize the error term:

$$\xi_i^p = w_i^p - (\alpha' X^p + \beta' Z_i) + [\eta'(X^p - X^t) + \zeta' Z_i] \quad (9)$$

in the observations where the immigrant is a stayer and

$$\xi_i^t = w_i^t - (\gamma' X^t + \delta' Z_i) - [\eta'(X^p - X^t) + \zeta' Z_i] \quad (10)$$

in the observations where she is a mover.

We begin our analysis assuming that the coefficients in the wage equations are the same for at the municipality of placement and at the target municipality, that is, $\alpha' = \gamma'$ and $\beta' = \delta'$ in (9) and (10). In practise, this is equivalent to minimizing the error term

$$\xi_i^j = w_i^j - (\alpha' X^j + \beta' Z_i) + (2s - 1) [\eta'(X^p - X^t) + \zeta' Z_i], \quad (11)$$

where j is the municipality where the refugee lives (p or t) and s is an indicator equal to one in the observations where the refugee is a stayer.

When we instead allow for separate coefficients at both municipalities, providing in practise different coefficients for stayers and movers, we control for fixed effects at the county level (25 counties) in order to increase the degrees of freedom.

In our base equations we assume that the residuals in the wage and amenities regressions at the placement and target municipality are independent of each other. This assumption may not be realistic. High ability immigrants that have positive residuals upon placement are likely to also have positive residuals after moving. We incorporate three alternative positive correlations in residuals (0.25, 0.50 and 0.75) in the estimation to see how results are affected.

First, we run regressions for all immigrants, then we allow for heterogeneity across immigrants with different origins, educational level, gender and age.

Identification rests on the assumption that the effect of the variables of interest on the wages and quality of life is independent of the residual terms. Identification fails if some other factor determines both the level of attitudes and the differences in wages and quality of life 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. We include several covariates to control for the labour market conditions, but acknowledging that this is not sufficient we do the following. To check whether some other factor determines both the level of attitudes and the differences in wages and quality of life in the region, we include another group in our analysis, immigrants from developed countries, that we expect not to be significantly 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.

There is no considerable difference between these groups of immigrants with respect to individual characteristics. They have on average a similar age (39.5 for immigrants from developed countries versus 38 for the refugees), gender composition (58% versus 55% are women), civil status (64% versus 68% are married). Most importantly, their educational level is not that different. In a measure that scales from 0 (no education at all) to 6 (Ph.D. level), a value of 3 corresponds to high-school education, so that the variable "well educated" in our study refers to values 4 to 6. The average level of education of immigrants from developed countries is 3.9 (with a standard deviation of 1.5), while it is 3.5 (with a standard deviation of 1.4) for the immigrants in our sample.

6 Results

6.1 Probit estimation of the probability of staying where placed and effect of the variables of interest on wages

The first column in Table III shows the marginal effects in the probit estimation of the probability that a refugee stays where he or she has been placed.¹⁵ The variables of interest are important in the migration decision. Immigrants are less likely to stay in a municipality with more negative attitudes and lower share of immigrants from non developed countries. A small increase in negative attitudes decreases the probability that a refugee stays by almost 35%. The effect of a small increase in the share of NDC immigrants is even stronger, it increases this probability by almost 175%. These marginal effects are large, but so are the effects of better labour market conditions in general. The open unemployment does not seem to be important compared to having a large share of small firms in the economy, a large private sector and a large share of well educated individuals in the population. Refugees are more likely to stay when taxes are high, probably reflecting the appreciation of public services financed by the taxes.

¹⁵The coefficients indicate the change in this probability for an infinitesimal change in a continuous explanatory variable and the discrete change when dummies change from 0 to 1.

Low educated immigrants are 12% more likely to stay than low educated, women are 2% more likely to stay than men and married refugees are 5% more likely to stay than those that are unmarried. Latin Americans are more likely to stay than East Europeans while Asians and Africans are more likely to move. This pattern by continent confirms the mean comparisons. Age reduces the probability that a refugee stays. The geographic variables do not seem to be very important once all other variables are considered.

The results of the estimation of the effect on the wages of stayers correcting for sample selection bias are also presented in table III. We find no effect of the variables of interest on the wages of the stayers and the same is true for the labour market conditions in the municipality. Low educated, young, female and married immigrants receive lower wages. Asians and Latin American immigrants in the sample get lower wages than East Europeans, while Africans receive the lowest wages on average.

So far we have found that the variables of interest and the labour market conditions are very important in the migration decision, but they do not affect refugee wages. Wages seem to be affected only by the individual characteristics of the refugees. This would imply that a refugee placed in the capital Stockholm would receive the same wage if he or she had been placed in the poorest municipality in Sweden. More analysis is needed before we reach such a strong conclusion. We proceed then to consider simultaneously the effect of the variables of interest on wages and amenities which implies making use of the information on wages for all refugees (not just the stayers) and extracting additional information from the migration decision of the refugees.

6.2 Simultaneous estimation of the effect on wages and amenities

In tables IV to X, the results are presented in five columns. The first two columns correspond to the coefficients of the wage and amenity functions when we estimate equation (11). The last three columns correspond to the coefficients of the wage functions of stayers (at the placement municipality) and movers (at the target municipality) and the amenity function when we lift the constraint forcing the coefficients on the wage equation to be equal for stayers and movers.

Table IV contains the results for the whole group of refugees in our sample, assuming that the residuals at the placement and target municipalities are independent of each other. We show the coefficients of all explanatory variables except the number of asylum seekers coming from the same country of origin, the fixed effects and the year effects. In tables V to X we only display the coefficients corresponding to the three first rows (the variables of interest), but the same covariates and controls are included in the regressions in all tables.

When we restrict the coefficients to be identical for movers and stayers, we

find that negative attitudes affect both wages and amenities of the refugees in our sample. The measure we use is the natural logarithm of wages, so the coefficients tell us the percentage increase in wages due to a small increase in the explanatory variables. Reducing negative attitudes from the average level of 0.5 to zero would allow these immigrants to have 5% higher wages. We do not find in this regression much evidence of networking, the coefficient for the share of NDC immigrants is positive but not significantly different from zero. The coefficient for the interaction between negative attitudes and share of NDC immigrants is positive but small and not significantly different from zero.

The migration choice of the immigrants gives us an indication of the difference in quality of life in the placement and target municipality and the cost of moving. A reduction in negative attitudes from 0.5 to 0 would increase the quality of life of refugees by an equivalent of 10% of their wages, while an increase of the share of NDC immigrants from zero to its average level (10%) increases their quality of life by an equivalent of 19% of their wages.

Lower open unemployment, higher level of education in the population and higher share of income originating in the private sector increase the refugees' wages and amenities. A higher share of small firms in the municipality and lower municipal tax rates increase their welfare mainly through quality of life. Women get lower wages than men. Wages are higher for well educated, older immigrants and their cost of moving seems to be lower. Asian and Latin American refugees have lower wages than Eastern Europeans, while the African refugees receive the lowest wages. Married immigrants have a higher cost of moving. Asians and Latin Americans have a higher cost of moving and Africans a lower cost of moving than East Europeans.

In the three last columns, we allow the coefficients to differ for the wages at the placement municipalities (wages received by stayers) and at the target municipality (received by movers). We can examine which of these groups is more affected by the variables of interest, but at the cost of accepting broader fixed effects to increase the degrees of freedom. We find that negative attitudes affect mainly the wages of the movers. If negative attitudes decreased from 0.5 to 0 movers would receive 7% higher wages and all refugees would enjoy an increase in their quality of life equivalent to 11% of their wages. Most covariates have similar effects on the wages of stayers and movers and similar effects on amenities as in the regression with identical coefficients.

Until now we have assumed that the residuals of the wages and amenities equations are independent of the placement and target municipalities. We explore now the consequences a correlation of residuals would have on our results.

6.2.1 Correlated residuals

If, for example, a low educated immigrant has very high ability, the worker is likely to get a high wage that cannot be explained by the variables in our regression. If he or she moves to another municipality, his or her wage is likely to be high there as well. This means that the correlation in residuals is likely to be positive.

If we could observe the wages of many immigrants before and after moving, then it would be possible to estimate this correlation. But most movers actually did move soon after the placement, long before we observe them in our sample. We will then simply introduce a wide range of correlations of residuals in our main regression and study how the coefficients change with this introduction. In table V we present just the coefficients corresponding to the variables of interest, but all regressions include the same controls as in table IV.

We introduce three alternative correlation values (0.25, 0.50 and 0.75) with very small effect on the coefficients. Both the effect of negative attitudes and of the share of NDC immigrants on the quality of life seems to be smaller the higher the correlation of residuals. The larger the correlation of residuals, the stronger the effect of negative attitudes on the wages of stayers and the weaker the effect on the wages of movers, but the changes are very small. Also the effect of the variables of interest on the quality of life becomes smaller as correlation rises. Our interpretation is that assuming a positive correlation is a more realistic assumption that explains better the migration decision and therefore leaves less to be explained as quality of life and costs of moving in our regressions.

In most of the following tables the results are displaced including both independent errors and a correlation of 0.50. In some cases we restrict to the results with correlated errors (where our results are weaker) for the sake of space.¹⁶

The immigrants are not an homogeneous group. We now study how they are affected by the variables of interest depending on their education level.

6.2.2 Results for immigrants with different education levels

In table VI it is investigated whether attitudes have different effects on the immigrants' welfare depending on their education level. Low educated immigrants have completed high school education at the most. We have more detailed information on education (a seven level scale), but we prefer to divide into just two groups in order to minimize concerns about the differences in the quality of education across countries of origin.

One common criticism to discrimination studies is that differences in wages between natives and immigrants to a large extent reflect differences in the quality of education even when two individuals have formally reached the same level. As

¹⁶We can provide results with independent errors and alternative correlations if requested.

we compare the situation of similar refugees across municipalities with different levels of attitudes, we are not affected by this criticism. We would only be affected if the employers in municipalities with more negative attitudes had better information about the low quality of education in the countries of origin than employers living in municipalities with less negative attitudes. This does not seem plausible. It does seem plausible that employers in municipalities with more negative attitudes perceive the quality of education as lower, but we interpret that as one form of discrimination.

All the coefficients for negative attitudes in the wage equations of the well educated refugees are negative and larger than the coefficients we found in table V, but standard errors are large implying that most coefficients are not significantly different than zero. When we assume independent errors it is only the coefficient for the movers' wages that is significantly different from zero. The movers' wages would increase by 15% if negative attitudes decreased from the average level to zero. When we assume correlated errors instead, the effect is found on the stayers' wages. But a positive coefficient for the interaction between negative attitudes and the share of NDC immigrants means that the effect of attitudes is only negative if the share of NDC immigrants in the economy is relatively low. Already in table V we saw that the larger the correlation of residuals, the stronger the effect of negative attitudes on the wages of stayers and the weaker the effect on the wages of movers. A rise in the share of NDC immigrants increases the quality of life of all well educated immigrants, but it reduces the wages of both well educated stayers and movers if errors are correlated.

An increase in negative attitudes affects only the quality of life of low educated refugees. A reduction of negative attitudes from the average level to zero increases the amenities of low educated refugees by 8 - 10%. An increase in the share of NDC immigrants increases both the quality of life and wages of low educated immigrants, indicating that networking is important for low educated immigrants only.

6.2.3 Results for immigrants with different continent of origin

Table VII presents the same regression performed in four subgroups depending on the continent the immigrant came from. All regressions assume an error correlation of 0.5. Note that the number observations is quite small in some cases and these regressions are very demanding. Negative attitudes reduce the quality of life of the refugees from Eastern Europe and Asia, but they seem to affect only the wages of the immigrants from Asia (particularly the stayers). An increase in the share of immigrants coming from non developed countries increases the quality of life of all refugees, independently of the continent they come from. This last effect is stronger for Africans and Asians.

6.2.4 Results for immigrants with different gender and age

Table VIII presents our results for different gender and age groups, assuming again an error correlation of 0.5.

The quality of life of both female and male refugees are negatively affected by an increase in negative attitudes towards immigrants and positively influenced by a rise in the share of NDC immigrants. Both effects are stronger for males than females. But only the females' wages are affected by negative attitudes towards immigrants, particularly the female stayers. Reducing negative attitudes from the average level to zero would increase their wages by 7% (and the wages of all women by 6%). It would also increase the amenities of all women by 8% and the quality of life of males by 9-10%. An increase in the share of NDC immigrants increases the quality of life of males by 17%, while it increases the quality of life of women by 12-14%.

The amenities of both refugees over and under 40 years old are negatively affected by an increase in negative attitudes towards immigrants and positively influenced by a rise in the share of NDC immigrants. The effects are of similar magnitude for both groups. Negative attitudes seem to affect wages of older immigrants (those over 40 years old) rather than younger ones. A reduction of negative attitudes from 0.5 to 0 would increase the wages of these immigrants by 8%. The effect would be stronger for older movers, they would get 10% higher wages. The same reduction of negative attitudes would increase the quality of life of both older and younger refugees by approximately 9%.

6.3 Results for immigrants from Developed Countries

We present in table IX the same regressions for a group of immigrants, who are not refugees and have never been placed. We study them as a placebo group. If some other factor that we have not considered in our regressions determines both an increase in the level of negative attitudes and a reduction in the wages and quality of life in the region, then we should estimate the same effect on this group.

We show the results for all refugees from developed countries (DC) assuming first independent errors and then an error correlation of 0.5. Then we present the regression results for females and for older immigrants assuming correlated residuals, as these are the groups for which we found stronger results in the previous analysis.

Basically we can observe that negative attitudes have no effect on the wages of DC immigrants and, when they affect their quality of life (for older DC immigrants) it is actually in the opposite direction. We observe that the share of immigrants from developed countries increases the quality of life and in many cases even the wages of DC immigrants. This seems to indicate that developed

immigrants benefit more from networking in the labour market.

6.4 Interpretation of the results

These results may be evidence of discrimination of immigrants from non developed countries. The strongest effects are found via the migration decisions of refugees, which can indicate that discrimination is a more serious problem in other areas than the labour market. Some potential examples are discrimination in schools, housing, hospitals, etc. We also find weak evidence of discrimination in the labour market. We interpret the fact that wages of well educated are more affected than those of low educated as an indication that some well educated refugees may be performing jobs below their skill levels (for example, driving a taxi) if they live in a municipality with very negative attitudes. It is not necessarily the case that they get paid less for the same job, but it could be the case that they do not get access to jobs that correspond to their qualifications.

The fact that the wages of women are more affected by discrimination than those of men may reflect the fact that they are less mobile as shown in table III. If men decide where their family lives, then it may be the case that a woman that suffers discrimination cannot move to a less discriminatory area unless her husband is also affected by discrimination. Individual characteristics such as the kind of education or occupation may turn a woman more vulnerable to discrimination than her husband.

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 towards immigrants. This is an indication 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.

We provide two examples that may give a more concrete illustration of to what extent attitudes are of importance.

The first example is Lund, a municipality in Skåne County, 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, established in 1666, is Sweden's largest university. Lund is an island of immigrants' acceptance in a county where attitudes are very negative. Out of 91 refugees placed in Lund in our sample, 67 (74%) chose to stay there. Furthermore, 87 immigrants that had been placed in other municipalities chose to move there. The immigrants that chose to stay are on average younger (39 years old) and less educated (3.95 on a scale up to 7) than those who moved into Lund (41 years old and 4.36) and those who moved out (45 years old and 4.62). 51% of the immigrants placed in Lund came from Eastern Europe, mainly Poland. 42% of the immigrants that moved out went to

municipalities with large cities, mainly Stockholm. Only 20% of the immigrants that moved to Lund came from such municipalities, mainly Malmö.

The second example is Dals-Ed municipality, in western Sweden, on the border to Norway. Its seat is located in the town of Ed, 366 km Northwest from Lund. In Dals-Ed there are about 400 lakes, a national park and several nature reservations. The northern-most oak tree forest of the province grows there. The municipality is also rich in ancient remains, around 60 grave mounds, stone formations and a stone circle from the late Iron Age are still preserved. It is the scarcest populated municipality in Västra Götaland County, with 6.7 inhabitants per square kilometer. Dals-Ed is one of the municipalities with most negative attitudes. In our sample we observe 67 immigrants that were placed in Dals-Ed during the period 1985 - 1994, but only one of them is still there by 2003. The average age of the immigrants placed in Dals-Ed was 43 and their average education was 3. 69% of the immigrants came from Asia, mainly Iran. Almost half of the movers went to municipalities with large cities, mainly Göteborg.

The third example Härryda municipality, also situated in Västra Götaland County, is one of the municipalities with lowest negative attitudes and probably a more fair comparison to Dals-Ed. Its seat is located in the town of Mölnlycke, with about 15,000 inhabitants. Forests cover about half the municipality area and lakes about one twelfth. Out of 31 refugees placed in Härryda in our sample, only 12 (39%) chose to stay there. But, at the same time, as many as 49 immigrants that had been placed in other municipalities chose to move to Härryda. The average age and education of the immigrants placed in Härryda was 36.9 and 2.9, respectively. The same characteristics for the immigrants moving into Härryda were 35.6 and 2.8.

We do not claim that attitudes is the only reason explaining why Lund and Härryda are more attractive for immigrants than Dals-Ed, but the numbers suggest it is one important reason.

7 Robustness Tests

7.1 Income instead of wages

We have performed our study on the wages received by refugees, where part-time wages had been recalculated (by Statistics Sweden) as corresponding full-time wages. This is the best measure available to compare the situation of refugees in different locations, as it is not affected by temporary unemployment spells while the refugee seeks for a new job after she or he has moved.

As a robustness test, we will repeat the analysis looking at the effect of the variables of attitudes on the refugees' labour income. This is the income result-

ing from employment, self-employment, pensions, sick-leave and other taxed transfers. It excludes all capital income. One advantage of this measure is that it allows us to capture the effect of discrimination on employment as well as on wages. If refugees have a lower probability of being employed in municipalities with more negative attitudes due to discrimination, they will have to rely more on unemployment benefits and will enjoy lower labour income than they would in a municipality with less negative attitudes. This effect cannot be captured in our analysis of wages. The other advantage is that it increases substantially the number of observations available for analysis. The main disadvantage of analyzing labour income is, that this measure is affected by many decisions endogenously taken by the individual, for example, the decision to study or work part-time.

Table X presents the results for all refugees assuming first independent errors and then an error correlation of 0.5. Then, we show the results for two groups that we expect to be less affected by endogeneity in their decisions. We show the results for males (that are less likely to choose part-time jobs) and the results for refugees in a middle-age group, that is, between 30 and 55, whom are less likely to have chosen to be students or to retire. The measure we are using is the natural logarithm of labour income, so the coefficients tell us the percentage increase in income due to a small increase in the variables of interest.

An increase in negative attitudes towards immigrants has a strong negative effect on the quality of life and the labour income of the refugees, particularly for the movers. The coefficients are larger than those we obtained when studying wages.

A decrease of negative attitudes from the average level to zero, assuming correlated errors, increases the refugees' labour income by 16% when we force the coefficients to be the same for stayers and movers. If we lift this restriction (at the cost of broader fixed effects), then we observe that the same reduction in negative attitudes would increase the labour income of the movers by as much as 42 %. These numbers are very large and we only take them as an indication that lower wages are only part of the effects of discrimination. If refugees are not employed due to discrimination, then we will see a larger effect on labour income than on wages. The effect on quality of life indicated by the migration decisions is also very large. A rise in the share of NDC immigrants also increases the quality of life and labour income of the refugees, indicating the presence of networking effects. All coefficients have the same sign and are even larger when we assume independent errors.

If we look at males only, we find lower coefficients for negative attitudes and larger for the share of NDC immigrants, but the effects are still very similar. The same is true when we consider the 30-55 years only. This indicates that the results we find are not just an effect of the endogenous choices the refugees

take themselves.

7.2 Removing some countries of origin

We have chosen the countries in our sample so as to obtain a very high likelihood that the individuals we study are refugees. We can increase this likelihood somewhat by removing from the sample the individuals coming from Poland. Out of 1422 residence permits obtained by Polish immigrants, only 47 correspond to refugees. No other country in our sample has such a low proportion of refugees as a share of all residence permits. However, recall that almost all the rest of the immigrants getting a residence permit is due to family reunion, and therefore indirectly will be affected by the placement as well. This it therefore mainly seen as an additional robustness check.

We present in table XI the results of our regressions assuming first independent errors and then correlated errors (with a correlation of 0.5). We find that the quality of life is affected negatively by an increase in negative attitudes towards immigration and positively by a rise in the share of immigrants from non developed countries. We also find a negative effect of negative attitudes on wages of the movers. A reduction in negative attitudes from the average level (0.5) to zero would increase wages by 6% and the quality of life by 8% in this smaller sample (assuming correlated errors), which is slightly lower effects than what we had in the full sample.

8 Conclusions

We find that attitudes towards immigrants are of importance: they both affect the refugees' labour market outcomes and their quality of life whereas they do not affect the welfare of immigrants from developed countries.

In the basic specification of the model, presented in table IV (and V), we calculate the total welfare loss that refugees suffer due to negative attitudes towards immigration. The welfare loss of average negative attitudes (compared to the lowest level of zero) is equivalent to 15 % of the refugees' wages. One third of this loss is suffered directly via lower wages, probably due to discrimination in the labour market, and two thirds due to lower quality of life. The lower quality of life or amenities may be the consequence of discrimination in schools, hospitals, shops, streets, etc. If we are willing to accept a broader level for fixed effects, then we can differentiate the welfare loss for those who chose to stay where they had been placed and those who chose to move. We find that the welfare loss is higher for the movers, it is equivalent to 18.5% of the wages (2/5 of this via lower wages), while the stayers only suffer a welfare loss of 11% via lower quality of life.

Our favourite specification of the model, displayed in table V, assumes a correlation of 0.5 in the errors at placement and at the target municipality. When we assume that coefficients are identical for stayers and movers, we find a welfare loss for all refugees equivalent to 13.4% of their wages (37% of this via lower wages) due to negative attitudes probably reflecting discrimination. Allowing for different coefficients we find a welfare loss equivalent to 15% of the wages for movers (via lower wages and amenities) and 9.5% for stayers via lower quality of life.

In order to gain more insight, we estimate the same regressions for different groups of the population, recognizing heterogeneity by education, continent of origin, gender and age. Well educated, Asian, female and older refugees seem to be relatively more affected by negative attitudes towards immigrants. Well educated, Asian and female stayers are more affected than movers, but in all three cases, the movers also have negative coefficients, not being much lower. However, these numbers are more imprecisely estimated.

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Figure 1
Attitudes 1979-85

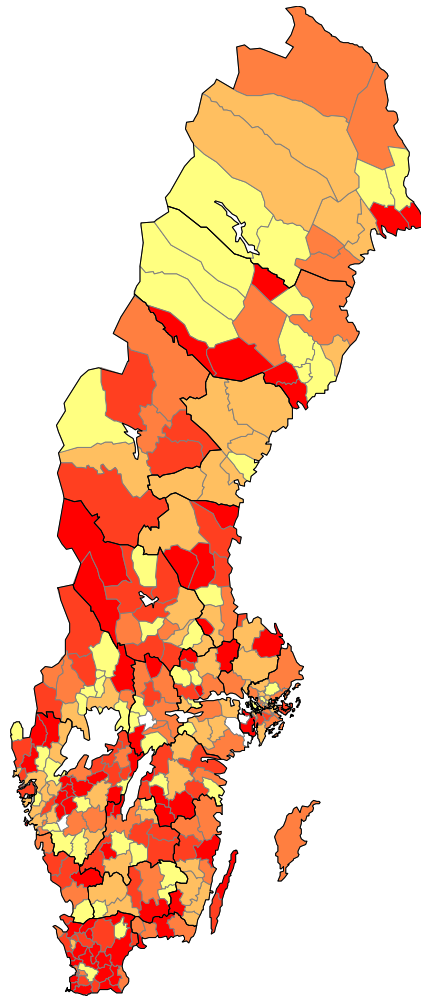
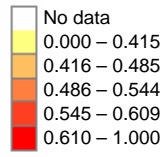


Table I
Immigrants to Sweden from Selected Countries
On average per year during the period 1990 – 1994

Country	Residence permits obtained by reason:			Total	Sample
	Refugees 1)	Family reunion	Labour market		
Ex-Yugoslavia	13860	3080	12	16952	1036
Poland	47	1356	19	1422	75
Romania	201	427	0	627	41
Russia	172	489	6	667	18
Ethiopia	623	575	0	1197	53
Somalia	1323	819	0	2142	118
Uganda	91		0	91	14
Cuba	88		0	88	4
Chile	135	436	0	571	36
Afghanistan	116		0	116	16
Bangladesh	86		1	87	13
Iraq	2663	955	0	3617	239
Iran	1542	1532	3	3077	171
China	78	220	19	317	21
Lebanon	596	650	0	1246	132
Sri Lanka	83	157	0	240	17
Syria	416	429	0	846	75
Turkey	401	1517	0	1918	94
Stateless/ Unknown/ Oth. 2)	892	1230	6	2128	65
Total coming from countries in our sample	23410	13872	64	37346	2230
Other countries 3)	69	8101	154	8254	
Total coming from all countries	23479	21972	218	45600	

- 1) Granted residence permits according to the Genève convention, de facto refugees, persons in need of protection, humanitarian reasons, special refugee quota
- 2) Stateless and unknown (mainly Palestinians), former Soviet Union and Peru, where many asylum seekers came from in the period.
- 3) For family reunions: mainly UK, Germany, USA, Philippines, Thailand, Vietnam. For labour permits: mainly UK, Germany, Netherlands, Greece, Canada, USA, Brazil, Japan, South Korea.

Source: Migrationsverket

Table II

Summary Statistics

	Obs	Mean	Std Dev.	Min	Max
Individual Characteristics					
In Wages	26425	9.74	0.25	7.60	12.33
Education	26168	3.52	1.37	0	7
Age	26425	38.04	9.30	18	64
Woman	26425	0.55	0.50	0	1
Married/Cohabitant	26425	0.68	0.47	0	1
Municipal characteristics where the Stayers live					
Negative Attitudes	11960	0.509	0.083	0.169	1.000
Share immig NDC	11963	9.3%	4.8%	0.6%	24.7%
Unemployment	11963	4.3%	1.8%	0.4%	13.7%
% well educated	11963	20.9%	7.7%	7.0%	42.9%
Market support	11963	52.4%	6.9%	23.4%	69.0%
Share small firms	11963	27.4%	4.8%	11.5%	40.0%
Municipal tax rate	11963	30.8%	1.3%	26.5%	34.0%
Min temp winter	11963	-4.6	2.3	-18.7	-1.3
Latitude	11963	58.52	1.67	55.37	67.17
Municipal characteristics where the Movers live					
Negative Attitudes	14414	0.508	0.084	0.169	0.886
Share immig NDC	14448	9.7%	4.8%	0.7%	24.7%
Unemployment	14456	4.1%	1.7%	0.4%	13.4%
% well educated	14462	21.2%	7.4%	6.8%	42.9%
Market support	14462	53.2%	6.6%	24.7%	69.0%
Share small firms	14456	27.2%	4.5%	5.3%	43.8%
Municipal tax rate	14456	30.7%	1.3%	26.5%	34.1%
Min temp winter	14448	-4.36	2.12	-20.0	-1.3
Latitude	14448	58.29	1.63	55.37	67.85
Municipal characteristics where the Movers were placed					
Negative Attitudes	14455	0.522	0.119	0.152	1.000
Share immig NDC	14462	5.3%	4.0%	0.5%	24.7%
Unemployment	14462	4.3%	1.7%	0.9%	13.4%
% well educated	14462	15.4%	6.6%	6.5%	42.9%
Market support	14462	48.2%	7.1%	23.4%	69.0%
Share small firms	14462	24.0%	5.1%	11.1%	43.7%
Municipal tax rate	14462	31.5%	1.3%	26.5%	34.4%
Min temp winter	14462	-6.30	3.54	-20.0	-1.3
Latitude	14462	59.31	2.45	55.37	67.85

Sample composed of citizens of the countries listed in table I that immigrated to Sweden in the years 85-94, with the following proportions: Eastern Europe (46%), Asia (37%), South America (11%) and Africa (6%). The sample corresponds to the years 1996 – 2003. Negative Attitudes is negative attitudes towards immigrants. Share immig NDC is the share of immigrants from non-developed countries. % well educated is the share of immigrants with more than high school education (education > 12). Market support is the share of income originated in the private sector. Share small firms is the share of firms with less than 50 employees. Min temp winter is the average minimum temperature in winter.

Table III			
Marginal effects in the probit estimation of the probability of staying where placed and Estimation of the effect on the wages of stayers correcting for the selection bias			
Endogenous variables	All workers		
	Prob(stayer)		Wage of stayer
Negative attitudes towards immigration	-0.346 *** (0.05)		-0.11 (0.12)
Share of immigrants from non-developed countries (NDC)	1.743 *** (0.16)		-0.492 (0.66)
Negative Attitudes towards immigrants * Share of immigrants from NCD			0.773 (1.12)
Well educated	-0.116 *** (0.01)		0.100 *** (0.02)
Age	-0.020 *** (0.01)		0.021 *** (0.00)
Age 2	0.0001 *** (0.00)		-0.0003 *** (0.00)
Woman	0.017 ** (0.01)		-0.101 *** (0.01)
Married / cohabitant	0.048 *** (0.01)		-0.017 (0.01)
Africa	-0.159 *** (0.01)		-0.05 * (0.03)
Latin America	0.079 *** (0.01)		-0.06 *** (0.02)
Asia	-0.019 ** (0.01)		-0.02 ** (0.01)
Latitude	-0.017 (0.02)		
Average minimum temperature in winter	0.009 (0.01)		
Open unemployment	0.779 (0.56)		0.040 (0.60)
Share of well-educated inhabitants in the population	1.251 *** (0.09)		-0.059 (0.15)
Market support	0.409 *** (0.11)		0.076 (0.15)
Share of small firms	1.277 *** (0.15)		-0.073 (0.28)
Municipal tax rate	2.397 *** (0.67)		-0.756 (0.85)
Fixed and year effects	yes		yes
Observations	26488		11351

* significant at 10% ; ** significant at 5% and *** significant at the 1% level. Regional fixed effects at the labour market area level. We further control for the number of asylum seekers from the same country of origin in the corresponding period. Standard errors clustered at the individual level displayed under the coefficients.

Table IV
Simultaneous estimation – All immigrants – Independent errors

Endog var	Same coefficients		Diff. coeff. stayers & movers			
	Wages	Δ Amenities 1)	W Stayers	W Movers	Δ Amenities 1)	
Negative Attitudes	-0.091 *	-0.198 ***	-0.049	-0.143 *	-0.226 ***	
	(0.05)	(0.05)	(0.07)	(0.07)	(0.05)	
% immigrants from NDC	0.368	1.890 ***	-0.026	0.433	1.965 ***	
	(0.37)	(0.17)	(0.54)	(0.50)	(0.17)	
Neg Attitudes *% immig NCD	0.040		0.654	-0.062		
	(0.63)		(0.92)	(0.82)		
Well educated	0.149 ***	-0.034 ***	0.096 ***	0.190 ***	-0.078 ***	
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	
Age	0.012 ***	-0.006 **	0.012 ***	0.012 ***	-0.006 *	
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
Age 2	-0.0001 ***	0.0001 ***	-0.0001 ***	-0.0001 ***	0.0001 **	
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
Woman	-0.097 ***	0.009	-0.088 ***	-0.106 ***	0.021 *	
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	
Married / cohabitant	0.005	0.026 ***	0.001	0.004	0.021 *	
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	
Africa	-0.049 ***	-0.036 **	-0.061 ***	-0.042 ***	-0.046 **	
	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	
America	-0.024 ***	0.051 ***	-0.002	-0.048 ***	0.074 ***	
	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	
Asia	-0.023 ***	0.035 ***	-0.028 ***	-0.027 ***	0.039 ***	
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	
Latitude		-0.026 ***			-0.026 ***	
		(0.01)			(0.01)	
Avge min temp winter		-0.008			-0.009 *	
		(0.01)			(0.01)	
Unemployment	-2.088 ***	-6.757 ***	-1.889 ***	-2.546 ***	-7.009 ***	
	(0.30)	(0.48)	(0.39)	(0.37)	(0.44)	
Share well educated	0.209 ***	0.847 ***	0.136 *	0.263 ***	0.869 ***	
	(0.05)	(0.11)	(0.07)	(0.07)	(0.10)	
Market support	0.219 ***	0.368 ***	0.403 ***	0.186 **	0.292 ***	
	(0.07)	(0.12)	(0.09)	(0.09)	(0.11)	
Share small Firms	0.095	0.408 ***	0.196 *	-0.000	0.434 ***	
	(0.09)	(0.16)	(0.11)	(0.00)	(0.14)	
Tax rate	-0.322	-1.783 ***	-0.384	-0.002	-2.035 ***	
	(0.29)	(0.56)	(0.46)	(0.01)	(0.54)	
Fixed/year effect	yes	yes	yes	Yes	yes	
Observations		25967		26013		

1) Δ Amenities is the difference in amenities at placement and target municipality plus the cost of moving.

* significant at 10% ; ** at 5% and *** at the 1% level. We control for the number of asylum seekers from the same country of origin.. The explanatory variables are defined as the differences in values between placement and target municipality. Standard errors clustered at the individual level displayed under the coefficients.

Table V
Simultaneous estimation – All immigrants – Correlated errors

	Same coefficients		Diff. coeff. stayers & movers		
	Wages	Δ Amenities 1)	W stayers	W movers	Δ Amenities 1)
Independent errors					
Negative	-0.091 *	-0.198 ***	-0.049	-0.143 *	-0.226 ***
Attitudes	(0.05)	(0.05)	(0.07)	(0.07)	(0.05)
Share immig	0.368	1.890 ***	-0.026	0.433	1.965 ***
NDC	(0.37)	(0.17)	(0.54)	(0.50)	(0.17)
Att * Share	0.040		0.654	-0.062	
immig	(0.63)		(0.92)	(0.82)	
Correlated errors - Correlation: 0.25					
Negative	-0.096 *	-0.193 ***	-0.062	-0.130 *	-0.218 ***
Attitudes	(0.05)	(0.05)	(0.06)	(0.07)	(0.04)
Share immig	0.241	1.666 ***	0.080	0.307	1.729 ***
NDC	(0.38)	(0.15)	(0.50)	(0.47)	(0.15)
Att * Share	0.101		0.491	0.033	
immig	(0.64)		(0.86)	(0.79)	
Correlated errors - Correlation: 0.50					
Negative	-0.098 *	-0.170 ***	-0.069	-0.113 *	-0.190 ***
Attitudes	(0.05)	(0.04)	(0.06)	(0.07)	(0.04)
Share immig	0.116	1.376 ***	0.150	0.188	1.400 ***
NDC	(0.38)	(0.13)	(0.47)	(0.45)	(0.13)
Att * Share	0.143		0.304	0.097	
immig	(0.64)		(0.80)	(0.75)	
Correlated errors - Correlation: 0.75					
Negative	-0.096 *	-0.127 ***	-0.069	-0.088	-0.138 ***
Attitudes	(0.05)	(0.03)	(0.06)	(0.06)	(0.03)
Share immig	-0.022	0.979 ***	0.136	0.073	0.967 ***
NDC	(0.38)	(0.09)	(0.43)	(0.42)	(0.09)
Att * Share	0.172		0.127	0.111	
immig	(0.64)		(0.73)	(0.71)	
Observations		25967		26737	

1) Δ Amenities is the difference in amenities at placement and target municipality plus the cost of moving. The explanatory variables are defined as the differences in values between placement and target municipality.

* significant at 10% ; ** significant at 5% and *** significant at the 1% level.

Same covariates and controls as in Tables III and IV. Regional fixed effects at the labour market area when the coefficients are assumed to be identical for stayers and movers and at the county level otherwise. We further control for the number of asylum seekers from the same country of origin in the corresponding period. Standard errors clustered at the individual level displayed under the coefficients.

Table VI
Simultaneous estimation – Heterogeneity by education level

	Same coefficients		Diff. coeff. stayers & movers		
	Wages	Δ Amenities 1)	W stayers	W movers	Δ Amenities 1)
Well educated immigrants – Independent errors					
Negative	-0.166	-0.056	-0.173	-0.310 *	-0.168
Attitudes	(0.13)	(0.13)	(0.15)	(0.19)	(0.11)
Share immig	-0.662	1.451 ***	-1.765	-1.190	1.489 ***
NDC	(0.87)	(0.37)	(1.43)	(1.12)	(0.35)
Att * Share	1.413		3.538	1.932	
immig	(1.46)		(2.42)	(1.88)	
Observations		8519			8537
Well educated immigrants Correlated errors					
Negative	-0.201	-0.042	-0.284 **	-0.222	-0.134
Attitudes	(0.13)	(0.10)	(0.15)	(0.18)	(0.09)
Share immig	-0.033	0.995 ***	-2.154 *	-1.119 *	1.006 ***
NDC	(0.90)	(0.28)	(1.26)	(1.04)	(0.27)
Att * Share	1.700		3.991 *	1.624	
immig	(1.51)		(2.14)	(1.76)	
Observations		8519			8537
Low educated immigrants – Independent errors					
Negative	-0.033	-0.202 ***	-0.001	-0.047	-0.202 ***
Attitudes	(0.05)	(0.05)	(0.07)	(0.07)	(0.04)
Share immig	0.765 **	1.813 ***	0.588	1.005 *	1.943 ***
NDC	(0.35)	(0.17)	(0.52)	(0.44)	(0.17)
Att * Share	-0.622		-0.453	-0.857	
immig	(0.59)		(0.89)	(0.75)	
Observations		17448			17476
Low educated immigrants Correlated errors					
Negative	-0.028	-0.168 ***	0.014	-0.044	-0.169 ***
Attitudes	(0.05)	(0.04)	(0.06)	(0.06)	(0.03)
Share immig	0.590 *	1.307 ***	0.903 **	0.652 *	1.364 ***
NDC	(0.34)	(0.12)	(0.43)	(0.40)	(0.12)
Att * Share	-0.612		-0.999	-0.534	
immig	(0.58)		(0.73)	(0.67)	
Observations		17448			17476

* significant at 10% ; ** significant at 5% and *** significant at the 1% level.

Same covariates and controls as in Tables III and IV. Error correlation: 0.50.

1) Δ Amenities is the difference in amenities at placement and target municipality plus the cost of moving. The explanatory variables are defined as the differences in values between placement and target municipality.

Table VII

Simultaneous estimation – Heterogeneity by origin

	Same coefficients			Diff. coeff. stayers & movers		
	Wages	ΔAmenities 1)		W stayers	W movers	ΔAmenities 1)
Eastern Europe – Correlated errors						
Negative	-0.057	-0.166	***	-0.021	-0.078	-0.188 ***
Attitudes	(0.07)	(0.06)		(0.08)	(0.08)	(0.05)
Share immig	0.504	1.032	***	0.410	0.879	1.247 ***
NDC	(0.55)	(0.21)		(0.72)	(0.63)	(0.21)
Neg Att * %	-0.449			-0.257	-0.789	
immig NDC	(0.88)			(1.17)	(1.00)	
Observations		11656			11675	
Asia – Correlated errors						
Negative	-0.220 **	-0.246	***	-0.220 *	-0.144	-0.206 ***
Attitudes	(0.11)	(0.08)		(0.11)	(0.14)	(0.07)
Share immig	-0.419	1.699	***	-0.402	-0.469	1.472 ***
NDC	(0.64)	(0.21)		(0.73)	(0.82)	(0.20)
Neg Att * %	0.931			1.240	0.980	
immig NDC	(1.09)			(1.25)	(1.42)	
Observations		9734			9761	
Latin America – Correlated errors						
Negative	0.194	-0.061		0.200	0.286	-0.148
Attitudes	(0.17)	(0.17)		(0.17)	(0.20)	(0.13)
Share immig	-0.357	0.954	***	-0.067	0.395	0.961 ***
NDC	(1.25)	(0.34)		(1.34)	(1.42)	(0.33)
Neg Att * %	0.650			0.669	-0.908	
immig NDC	(2.18)			(2.39)	(2.46)	
Observations		2871			2871	
Africa – Correlated errors						
Negative	0.314	-0.179		-0.056	0.060	-0.124
Attitudes	(0.28)	(0.16)		(0.45)	(0.27)	(0.13)
Share immig	2.034	1.806	***	1.545	0.334	1.576 ***
NDC	(1.48)	(0.34)		(2.30)	(1.49)	(0.35)
Neg Att * %	-3.011			-1.243	-0.203	
immig NDC	(2.63)			(4.10)	(2.59)	
Observations		1706			1706	

* significant at 10% ; ** significant at 5% and *** significant at the 1% level. See footnote in table V. Error correlation: 0.50.

Table VIII

Simultaneous estimation – Heterogeneity by gender and age

	Same coefficients			Diff. coeff. stayers & movers						
	Wages		ΔAmenities 1)	W stayers	W movers	ΔAmenities 1)				
Females - Correlated errors										
Negative	-0.128	**	-0.163	***	-0.137	**	-0.112	-0.170	***	
Attitudes	(0.06)		(0.05)		(0.07)		(0.08)	(0.05)		
Share immig	0.199		1.142	***	-0.355		0.698	1.227	***	
NDC	(0.44)		(0.16)		(0.50)		(0.55)	(0.16)		
Neg Att * %	0.180				1.086		-0.460			
immig NDC	(0.74)				(0.84)		(0.93)			
Observations			14126				14147			
Males - Correlated errors										
Negative	-0.081		-0.180	***	0.011		-0.128	-0.215	***	
Attitudes	(0.10)		(0.06)		(0.11)		(0.11)	(0.06)		
Share immig	-0.146		1.711	***	0.665		-0.541	1.673	***	
NDC	(0.66)		(0.20)		(0.87)		(0.71)	(0.19)		
Neg Att * %	0.364				-0.535		0.965			
immig NDC	(1.10)				(1.49)		(1.18)			
Observations			11841				12866			
Over 40 years old - Correlated errors										
Negative	-0.171	*	-0.169	**	-0.105		-0.216	*	-0.178	***
Attitudes	(0.09)		(0.07)		(0.10)		(0.12)	(0.06)		
Share immig	-0.689		1.762	***	-0.662		-0.946	1.732	***	
NDC	(0.65)		(0.24)		(0.78)		(0.82)	(0.23)		
Neg Att * %	1.339				1.571		1.893			
immig NDC	(1.08)				(1.33)		(1.35)			
Observations			10749				10767			
40 years old and younger - Correlated errors										
Negative	-0.033		-0.172	***	-0.044		-0.030	-0.196	***	
Attitudes	(0.06)		(0.05)		(0.07)		(0.07)	(0.04)		
Share immig	0.650		1.177	***	0.620		0.918	1.215	***	
NDC	(0.42)		(0.14)		(0.52)		(0.47)	(0.14)		
Neg Att * %	-0.767				-0.489		-1.142			
immig NDC	(0.71)				(0.89)		(0.81)			
Observations			15218				15246			

* significant at 10% ; ** significant at 5% and *** significant at the 1% level. See footnote in table V. Error correlation: 0.50.

Table IX

Simultaneous estimation – Immigrants from Developed countries

	Same coefficients			Diff. coeff. stayers & movers		
	Wages	ΔAmenities 1)		W stayers	W movers	ΔAmenities 1)
All immigrants DC - Independent errors						
Negative	0.053	0.233		-0.128	0.206	0.207
Attitudes	(0.12)	(0.20)		(0.12)	(0.18)	(0.17)
Share immig	0.228 *	0.494 ***		-0.010	0.488 **	0.493 ***
DC	(0.13)	(0.13)		(0.09)	(0.24)	(0.12)
Neg Att * %	-0.044			0.136	-0.200	
immig DC	(0.22)			(0.16)	(0.45)	
Observations	6450			6450		
All immigrants DC - Correlated errors						
Negative	0.045	0.174		0.001	0.077	0.155
Attitudes	(0.12)	(0.14)		(0.12)	(0.15)	(0.13)
Share immig	0.200 *	0.381 ***		0.077	0.507 ***	0.444 ***
DC	(0.12)	(0.09)		(0.09)	(0.19)	(0.09)
Neg Att * %	-0.042			-0.031	-0.293	
immig DC	(0.21)			(0.17)	(0.35)	
Observations	6450			6450		
Females - Correlated errors						
Negative	-0.083	0.180		-0.110	0.009	0.142
Attitudes	(0.12)	(0.16)		(0.12)	(0.16)	(0.14)
Share immig	0.085	0.344 ***		0.018	0.419	0.376 ***
DC	(0.11)	(0.10)		(0.09)	(0.18)	(0.09)
Neg Att * %	0.107			0.077	-0.287	
immig DC	(0.18)			(0.16)	(0.30)	
Observations	3729			3729		
Over 40 years old - Correlated errors						
Negative	-0.078	0.799 ***		-0.069	0.037	0.541 **
Attitudes	(0.19)	(0.27)		(0.18)	(0.27)	(0.23)
Share immig	-0.051	0.183		-0.053	0.588	0.404 **
DC	(0.24)	(0.17)		(0.19)	(0.39)	(0.17)
Neg Att * %	0.487			0.276	-0.123	
immig DC	(0.38)			(0.29)	(0.69)	
Observations	2699			2699		

* significant at 10% ; ** significant at 5% and *** significant at the 1% level. Same covariates and controls as in Table III, except Share immig DC (share of immigrants from developed countries). Error correlation: 0.50.

Table X

Robustness Tests - Effects on the Immigrants' Labour Income

	Same coefficients				Diff. coeff. stayers & movers				
	Income		ΔAmenities 1)		I stayers	I movers	ΔAmenities 1)		
All immigrants NDC - Independent errors									
Negative	-0.358	*	-1.353	***	-0.440	-0.946	***	-1.625	***
Attitudes	(0.20)		(0.26)		(0.28)	(0.25)		(0.22)	
Share immig	4.407	***	7.392	***	-0.593	2.938	*	8.290	***
NDC	(1.32)		(0.74)		(2.09)	(1.68)		(0.75)	
Neg Att * %	-1.221				4.790	0.948			
immig NDC	(2.22)				(3.53)	(2.81)			
Observations			82527					82708	
All immigrants NDC - Correlated errors									
Negative	-0.325	*	-0.944	***	-0.305	-0.836	***	-1.182	***
Attitudes	(0.18)		(0.17)		(0.23)	(0.23)		(0.15)	
Share immig	2.899	**	4.576	***	2.467	0.997		5.241	***
NDC	(1.23)		(0.49)		(1.74)	(1.47)		(0.53)	
Neg Att * %	-0.792				1.908	2.557			
immig NDC	(2.07)				(2.92)	(2.47)			
Observations			82527					82708	
Males - Correlated errors									
Negative	-2.222		-0.800	***	-0.080	-0.822	***	-1.132	***
Attitudes	(1.89)		(0.32)		(0.36)	(0.32)		(0.22)	
Share immig	1.392		5.068	***	5.736	**	0.269	5.700	***
NDC	(1.62)		(0.75)		(2.68)	(2.06)		(0.76)	
Neg Att * %	7.169				-3.580	3.2304			
immig NDC	(22.1)				(4.50)	(3.47)			
Observations			40566					40660	
Middle-age - Correlated errors									
Negative	-1.279		-0.827	***	-0.397	-0.830	***	-1.131	***
Attitudes	(1.56)		(0.26)		(0.27)	(0.27)		(0.18)	
Share immig	2.456	*	3.877	***	1.211	-0.249		4.611	***
NDC	(1.35)		(0.60)		(2.03)	(1.74)		(0.61)	
Neg Att * %	-10.65				2.731	3.778	**		
immig NDC	(18.4)				(3.41)	(2.94)			
Observations			573595					57485	

* significant at 10% ; ** significant at 5% and *** significant at the 1% level. Same covariates and controls as in Table III. Error correlation: 0.50.

Table XI

Robustness Tests - Estimation in a more restricted sample

	Same coefficients			Diff. coeff. stayers & movers				
	Wages	Δ Amenities 1))		W stayers	W movers	Δ Amenities 1)		
Independent errors								
Votes for Ny	-0.061	-0.182	***	0.021	-0.167	**	-0.198	***
Demokrat	(0.06)	(0.06)		(0.08)	(0.08)		(0.05)	
Share immig	0.753	*	2.184	***	0.531	0.225	2.203	***
NDC	(0.42)	(0.19)		(0.62)	(0.53)		(0.18)	
Votes * %	-0.640			-0.380	0.264			
immig NDC	(0.69)			(1.01)	(0.88)			
Observations	20827			20867				
Correlated errors - Correlation: 0.75								
Votes for Ny	-0.077	-0.155	***	-0.019	-0.122	*	-0.167	***
Demokrat	(0.06)	(0.04)		(0.07)	(0.07)		(0.04)	
Share immig	0.380	1.515	***	0.510	0.135		1.590	***
NDC	(0.42)	(0.13)		(0.52)	(0.49)		(0.14)	
Votes * %	-0.400			-0.454	0.147			
immig NDC	(0.70)			(0.88)	(0.81)			
Observations	20827			20867				

1) Δ Amenities is the difference in amenities at placement and target municipality plus the cost of moving. The explanatory variables are defined as the differences in values between placement and target municipality.

* significant at 10% ; ** significant at 5% and *** significant at the 1% level.

Same covariates and controls as in Tables III and IV including year and regional fixed effects. Regional fixed effects at the labour market area when the coefficients are assumed to be identical for stayers and movers and at the county level when they are assumed to be different. We further control for the number of asylum seekers from the same country of origin in the corresponding period. Standard errors clustered at the individual level displayed under the coefficients.